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**TI DSP THIRD-PARTY  
DEVELOPMENT SUPPORT GUIDE**

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**DSP Solutions**  
Texas Instruments



**DSP Solutions**  
Texas Instruments



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**TMS320**  
**Third-Party Development**  
**Support Guide**



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## About This Manual

The *TI DSP Third-Party Development Support Guide* lists, in one easy-to-use source, the development products available for the TMS320 family of digital signal processors. Third-party products are grouped according to the product type, then arranged alphabetically by the name of the third-party vendor.

Extensive cross-reference tables allow you to perform rapid product comparisons on hard specifications like Processors Supported and Clock Speed.

Check out the on-line version of this directory at: [www.ti.com/sc/dsp\\_3pguide](http://www.ti.com/sc/dsp_3pguide). This on-line version will be kept current by monthly updates.

A CD-ROM version of this directory is also available.

## THIS DOCUMENT CONTAINS THE FOLLOWING CHAPTERS:

SUMMARY TABLES

HARDWARE

Development Boards

Device Programmers

Emulators

Logic Analyzers

DEVELOPMENT SOFTWARE

Debuggers

Simulation Models

Simulators

Software Development Utilities

THIRD-PARTY CONSULTANTS



## How to Use This Manual

Use the product cross-reference tables to quickly identify the products of interest to you, then turn to the appropriate listings for full details. The cross-reference tables will allow you to qualify your search, saving you time.

Or scan the indexes to find the companies whose products have been successful for you in the past. Identify the offerings you're interested in, then go to the full entry for more detail.

The sample entry below details for you what you'll find in each type of listing.

Listings for all products include the company name and brief background, full contact information including e-mail and Web site addresses, features and benefits of each product, product or service specifications, and an extended description.

Listings for consultants include company name and full contact information as in the product listings, a description of the consulting services offered, and qualifications and awards.

### MZ 7772 OCTAL 'C40 DSP ENGINE

by Mizar, Inc.

**FEATURES & BENEFITS**

- Co-developed with Texas Instruments, Defense Systems and Electronics Group
- Eight 'C40 processors in a single VMEslot utilizing TAB packaging
- Up to 4-MB zero-wait-state SRAM per processor and 8-MB global SRAM
- 1-MB Flash memory, BIT included
- 25-MHz/32-bit wide Near Global™ interface per 'C40 for memory or I/O expansion

**SPECIFICATIONS**

<p><b>TMS320 Devices Supported:</b> TMS320C40</p> <p><b>Platforms Supported:</b> VMEbus</p> <p><b>BUS:</b> XxxXxxxx</p> <p><b>CPU:</b> XxxXxxxx</p> <p><b>Clock Speeds Available:</b> XxxXxxxx</p>	<p><b>Board Size:</b> XxxXxxxx</p> <p><b>Memory (DRAM/SRAM):</b> 8MB Global SRAM</p> <p><b>Software Included:</b> XxxXxxxx</p> <p><b>Technical Support/Training Available:</b> XxxXxxxx</p>
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**PRODUCT DESCRIPTION**

This is a sample description of the product's features and benefits, detailing its performance and capabilities.

**COMPANY INFORMATION**

**Mizar, Inc.**  
 2410 Luma Road, Carrollton, TX 75006 USA  
 (214) 277-4600 or (800) 635-0800  
 Fax: (214) 277-4666  
 e-mail: info@mizarinc.com  
 www: http://www.mizarinc.com

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## **Related Documentation From Texas Instruments**

The *TI DSP Third-Party Development Support Guide* (literature number SPRT149) describes the TMS320 family of digital signal processors and the various Texas Instruments products that support this product line. This includes code-generation tools (compilers, assemblers, and linkers) and system integration and debug tools (simulators, emulators, and evaluation modules).

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## **Related Documentation on Software Algorithms From Third Parties**

The *TI DSP Third-Party Application Software Guide* (literature number SPRT148) contains easy-to-use, off-the-shelf, digital signal processing algorithms from third-party software vendors. The *Third-Party Application Software Guide* contains algorithm data sheets on general and application-specific algorithms. These include speech, audio, image, motor control, and telecommunications software just to name a few. Contact the TI Literature Response Center to request your free guide.

## If You Need Assistance

### FOR MORE INFORMATION

#### TI Product Information

Product Information Center .....	(972) 644-5580
Product Information Center WWW Site .....	<a href="http://www.ti.com/sc/docs/pic/home.htm">www.ti.com/sc/docs/pic/home.htm</a>
TMS320 WWW Site.....	<a href="http://www.ti.com/dsps">www.ti.com/dsps</a>

#### USA Product Information

TI Literature Response Center USA .....	(800) 477-8924
TMS320 Hotline .....	(281) 274-2320
TMS320 Hotline Fax .....	(281) 274-2324
TMS320 BBS.....	(281) 274-2323
TMS320 email address .....	<a href="mailto:dsph@ti.com">dsph@ti.com</a>
TMS320 Internet BBS.....	<a href="http://ftp.ti.com">ftp.ti.com</a>
Software Registration/Upgrades.....	(972) 638-0333

#### Europe Product Information

European Product Information Center (EPIC)

Multi-Language Support

Deutsch .....	+49 8161 80 33 11
English.....	+44 1604 66 33 99
Francais.....	+33 1 30 70 11 64
Italiano .....	+33 1 30 70 11 67
Fax-line.....	+33 1 30 70 10 32
email.....	<a href="mailto:epic@ti.com">epic@ti.com</a>

#### ASIA Product Information

Literature Response Center .....	+852 2 956 7288
Literature Response Center Fax .....	+852 2 956 2200
Taiwan DSP Hotline.....	+886 2 377 1450
Taiwan DSP Hotline Fax.....	+886 2 377 2718
Taiwan DSP BBS .....	+886 2 376 2592
Korea DSP Hotline .....	+82 2 551 2804
Korea DSP Hotline Fax.....	+82 2 551 2828
Korea DSP BBS .....	+82 2 551 2914
Hong Kong DSP Hotline.....	+852 2 956 7268
Hong Kong DSP Hotline Fax.....	+852 2 956 1002
Singapore DSP Hotline Fax .....	+65 390 7179

#### Japan Product Information

Product Information Center .....	(in Japan) 0120 81 0026
or call .....	03 3457 0972 or (intl) 813 3457 0972
Product Information Center Fax .....	(in Japan) 0120 81 0036
or call .....	03 3457 1259 or (intl) 813 3457 1259
DSP Hotline.....	03 3769 8735 (intl) 813 3769 8735
DSP Hotline Fax.....	03 3457 7071 (intl) 813 3457 7071
DSP BBS via NIFTY-Serve.....	Type "Go TIASP"

#### Technical Training Information

US Technical Training Organization .....	(972) 644-5580
For Europe, contact the European Product Information Center	

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## Introduction

Texas Instruments has been making history with DSP Solutions for fifteen years as the driving force behind the digital revolution. Digital videoconferencing and digital television demand the high performance characteristics that only DSPs can muster. Cellular telephones fit in smaller spaces and maximize battery life because of the low power consumption that DSPs require. Cars will someday be able to help “drive” themselves as DSPs enable navigation and terrain-sensing systems.

You can be sure that DSPs from Texas Instruments will power the miracles of tomorrow, including such next-millennium designs as cable modems that will make access to the Internet quick and easy, intelligent cruise controls that will truly let you sit back and enjoy the ride, and accurate speech recognition that will eliminate cumbersome keyboards and control panels.

Why? Because DSPs do a great job of performing human-interface functions. In other words, DSPs translate the analog input data generated by the environment into digital signals that a machine’s central processing unit (CPU) can manipulate and analyze. Analog sound waves can be captured, converted and relayed by DSPs to approximate listening and speaking. Similarly, video data can provide sight, pressure data simulates “touch” ... there are even sensors that capture analog odors and flavors so DSPs can imitate the acts of smelling and tasting.

CPUs can’t manage these functions on their own because sensory data has to be processed in real time—as it occurs. Delays are unacceptable, which explains the intense interest in speech recognition and with TI’s determination to provide leading edge DSP Solutions like the 1600 MIPS C6x-architecture, the futures looking pretty bright.



## **TI DELIVERS DSP SOLUTIONS...**

Whether you need to maximize performance, minimize power consumption, or optimize system control, the Texas Instruments DSP family keeps you at the forefront of innovation. Among TI's digital signal processing product line:

- The high performance TMS320C6x generation offers ten times the speed of competing DSPs, so you can meet the market's ever increasing need for better information technology, faster telecommunications, and more intense entertainment experiences.
- TMS320C54x generation meets your customers' demands for DSP performance while increasing portability and maximum battery life as personal communication extends beyond cellular telephones to wireless computing with personal digital assistants (PDAs) that can fit in a shirt pocket.
- The TMS320C2xx generation provides DSP performance for the embedded market. To simplify upgrades and designs, the 'C2xx uses on-chip flash memory for in-system programmability. By using the best mix of peripherals, it makes your appliances smarter and your motors quieter.

In addition, Texas Instruments addresses all of your design needs by providing complete DSP Solutions with a portfolio of products and technology, system expertise, software, development tools, and third-party support to speed you from concept to creation.

## **THIRD PARTY SUPPORT EXTENDS YOUR DESIGN TEAM...**

Of course, one of the benefits designers gain from specifying Texas Instruments DSPs is access to the first and most extensive network of third-party hardware and software providers in the industry. Because we've been the leader for more than 15 years, TI has in excess of 250 third-party DSP Solutions providers that offer a broad range of application software, development hardware, development software, training and consulting services worldwide.

TI's commitment to its third-parties continues to grow as their role in shaping tomorrow's products becomes more important, freeing you to concentrate on the excitement of innovation rather than the process of implementation.



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EWA  
hema Elektronik GmbH

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IAT AG

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SSE Czech and Matzner	PRIM DesignTool . . . . .	11-42
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Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
TAP-802	Analogic Corporation	ISA	Windows NT, Unixware	C3x
B100 Digital Tuner Processor	Applied Signal Technology, Inc.	ISA		C2x
B105 Modular Digital Processor	Applied Signal Technology, Inc.	ISA		C3x, C5x
B108D Four-Channel Digitizer	Applied Signal Technology, Inc.	VME	Solaris	C2x
System Explorer MP3 and MP4	Aptix Corp.	Standalone	Solaris 2.5.1, HP/UX v10.x	C1x, C2x, C3x, C4x, C5x, C54x, C6x, C8x
Commio-IP	Ariel Corp.	VME	Solaris, SunOS, VxWorks	C4x
Hydra-II	Ariel Corp.	VME	Solaris, SunOS, VxWorks	C4x
Hydraplus	Ariel Corp.	VME	Solaris, SunOS, VxWorks	C4x
Hyperhydra	Ariel Corp.	VME	Solaris, SunOS, VxWorks	C4x
A1024 MPEG Audio Encoder Module	ASPI Digital	ISA	Windows 3.1	C3x
Banshee II System Board	ASPI Digital	ISA	DOS	C3x
Elf Coprocessor Board	ASPI Digital	Standalone, Daughter Board		C3x
Elf DSP Platform	ASPI Digital	ISA, Standalone	Windows 3.1	C3x
Elf/SR60	ASPI Digital	ISA, Standalone	Windows 3.1	C3x
MPEG Digital Audio Processor	ASPI Digital	VME		C3x
Peachtree DSP Platform	ASPI Digital	ISA	DOS	C3x
Vortex System Board	ASPI Digital	ISA	DOS	C3x, C4x
BN1416	Bridgenorth Signal Processing, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C40, C30
BN3000	Bridgenorth Signal Processing, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C3x
BN3216	Bridgenorth Signal Processing, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C40, C30
BN4000	Bridgenorth Signal Processing, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
CEX-32386-0	Concur System Technologies	Standalone	Windows 95, Windows NT	C3x
F/64-PCI	Coreco Inc.	PCI PC	Windows 3.1, Windows 95, Windows NT	C4x
Python/C6	Coreco Inc.	PCI PC	Windows 3.1, Windows 95, Windows NT	C6x
Model 250	Dalanco Spry	ISA	Windows 3.1, Windows 95, DOS	C2x
Model 310B	Dalanco Spry	ISA	Windows 3.1, Windows 95, DOS	C3x
Model 5000	Dalanco Spry	ISA	Windows 3.1, Windows 95, DOS	C5x
Model C32-104	Dalanco Spry	PC/104	Windows 3.1, Windows 95, DOS	C3x
CSDK-14, 25, 50, 240	Deemax Technology, Inc.	ISA, Standalone	Windows 3.1, Windows 95, DOS	C1x, C2x, C2xx, C5x
DSPROT031	DiCon Lab, Inc.	ISA	Windows 3.1, Windows 95	C3x
DSPROT032	DiCon Lab, Inc.	PC Parallel Port	Windows 3.1, Windows 95, Windows NT	C3x
DSP Back-Plane	DiCon Lab, Inc.	Standalone	Windows 3.1, Windows 95, Windows NT	C3x

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
12	60 MHz	Full Card	SRAM	Debuggers, Libraries	Yes	4-9
2	64 MHz	Full Card		Code Generation Tools	Yes	4-10
	57 MHz	Full Card	DRAM	Code Generation Tools	Yes	4-11
	65 MHz	Full Card		Libraries	Yes	4-12
		13 x 20 x 2			Yes	4-13
1	48 MHz	Full Card	SRAM		Yes	4-14
4	60 MHz	Full Card			Yes	4-15
4	50 MHz	Full Card	SRAM		Yes	4-16
8	60 MHz	Full Card			Yes	4-17
1	2, 3 MHz				Yes	4-18
	40 MHz	Full Card	DRAM	Debuggers, Libraries	Yes	4-19
1	60 MHz		SRAM	Debuggers	Yes	4-20
1	33 MHz	Half Card	DRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-21
1	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-22
					Yes	4-23
1	50 MHz	Half Card	SRAM		Yes	4-24
2	50 MHz	Full Card	SRAM	Debuggers, Libraries	Yes	4-25
0	0.4 MHz	Half Card	8MB Global SRAM	Function Library	Yes	4-26
1	33, 40 MHz	Full Card	SRAM	Debuggers, PC Interface Library	Yes	4-27
0	0.4 MHz	Half Card	8MB Global SRAM	Function Library	Yes	4-28
1	40, 50, 60 MHz	Full Card	SRAM	Debuggers, PC Interface Library	Yes	4-29
2	60 MHz	8 x 9 x .5	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-30
4		Full Card	External Memory DRAM		Yes	4-31
4			DRAM	Debuggers, Code Generation Tools	Yes	4-32
1	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools	Yes	4-33
1	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-34
1	80 MHz	Full Card	SRAM	Debuggers, Code Generation Tools	Yes	4-35
1	50 MHz	10 cm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-36
	57 MHz	Full Card	SRAM	Debuggers	Yes	4-37
1	50, 60 MHz	Half Card	SRAM	Debuggers, Libraries	Yes	4-38
		6.5 x 4.5	SRAM	Debuggers, Libraries	Yes	4-39
1	60 MHz	12 x 6.5		Debuggers, Libraries	Yes	4-40



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
PCI Signal Generator/Digital Sampler	DiCon Lab, Inc.	PCI PC	Windows 3.1	C32
'C6X PC/104-Plus Accelerator	DNA Enterprises, Inc.	PCI/104-Plus	Windows NT, Solaris, VxWorks	C6x
'C6201 General Purpose Devel. Platform	DNA Enterprises, Inc.	PCI PC	Windows 95, Windows NT	C6x
'C6201 Telephony Development Platform	DNA Enterprises, Inc.	PCI PC	Windows 95, Windows NT	C6x
Model 4286: Dual 'C80 VME	DNA Enterprises, Inc.	VME	Windows NT, Solaris	C8x
Quad 'C6201 VME Board	DNA Enterprises, Inc.	VME, VxWorks	Windows NT, Solaris	C6x
Piranha 3111/3112 Vocoder Module	DSP Research, Inc.	ISA		C3x
TIB-2	DSP Research, Inc.	ISA		C3x
Tiger 5XF/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C5x
Tiger 30/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C3x
Tiger 31/IP	DSP Research, Inc.	ISA, PC/104 Bus	Windows 3.1, Windows 95, Windows NT	C3x
Tiger 31/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C3x
Tiger 31/SBus	DSP Research, Inc.	SBus		C3x
Tiger 32 EVM	DSP Research, Inc.	ISA, Standalone	Windows 3.1, Windows 95, Windows NT	C3x
Tiger 40/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
Tiger 40/SBus	DSP Research, Inc.	SBus	Solaris, SunOS	C4x
Tiger 203/PC	DSP Research, Inc.	ISA, Standalone	Windows 3.1, Windows 95, Windows NT	C2xx
Tiger 440/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
Tiger 542/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C54x
Tiger 548/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C54x
Tiger 549/PC	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C54x
Tiger 6201/PC	DSP Research, Inc.	PCI	Windows 3.11, Windows 95, Windows NT	C6201
Tiger 'C31 Co-Processor	DSP Research, Inc.	ISA		C3x
Tiger DAI Digital Audio Interface Board	DSP Research, Inc.	ISA		C3x, C4x
Viper-12 542/PC	DSP Research, Inc.	ISA (HPI, MVIP)	Windows 3.11, Windows 95, Windows NT, UNIX, DOS	C54x
Viper-12 548/PC	DSP Research, Inc.	ISA, PCI, HPI, MVIP	Windows 3.x, Windows 95, Windows NT, UNIX, DOS	C54x
Viper-12 549/PC	DSP Research, Inc.	ISA, PCI, HPI, MVIP	Windows 3.x, Windows 95, Windows NT, UNIX, DOS	C54x
Viper-12 6201/PC	DSP Research, Inc.	PCI	Windows 3.11, Windows 95, Windows NT, UNIX, DOS	C6201
FCX40	DSP Systems, Inc.	VME, PCI PC	Windows NT	C4x
DS1003 DSP Board	dSPACE GmbH	ISA, Ethernet	Windows 3.1, Windows 95, Windows NT	C4x
DS1102 DSP Controller Board	dSPACE GmbH	ISA, Ethernet	Windows 3.1, Windows 95, Windows NT	C3x
DT31-HI	DSP Tools, Inc.	Standalone, PC Parallel	Windows 3.1, Windows 95, DOS	C3x



# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
		Full Card				4-41
1	200 MHz	3.77 x 3.55 in.	DRAM, SRAM		Yes	4-42
1	200 MHz	Full Card	DRAM, SRAM	Libraries	Yes	4-43
1	200 MHz	Full Card	DRAM, SRAM	Libraries	Yes	4-44
2	40, 50, 60 MHz	Full Card			Yes	4-45
4	200 MHz	Full Card			Yes	4-46
1	40/60 MHz	2.9 x 2 in.	SRAM		Yes	4-47
					Yes	4-48
1	Up to 80 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-49
1	40, 50 MHz		SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-50
1	48 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-51
1	50, 60 MHz	Full Card	1MB Global SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-52
1	40 MHz	Full Card	SRAM	Debuggers, Libraries	Yes	4-53
1	50, 60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-54
1	40/50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-55
1	40/50 MHz	Full Card	SRAM		Yes	4-56
1	40 MIPS	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-57
4	40/50 MHz	Full Card	SRAM		Yes	4-58
1	40 MIPS	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-59
1	80 MIPS	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-60
1	100 MIPS	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-61
1	1600 MIPS					4-62
1	40 MHz		SRAM			4-63
					Yes	4-64
12	80 MHz	Full Card	SRAM, 32 or 128k/processor	Debuggers, Code Generation Tools, Libraries	Yes	4-66
12x	80 MIPS	Full Card	SRAM, 32k or 1Mb/processor	Debuggers, Code Generation Tools, Libraries	Yes	4-67
12x	100 MIPS	Full Card	SRAM, 32k or 1Mb/processor	Debuggers, Code Generation Tools, Libraries	Yes	4-68
1	1600 MIPS					4-69
			SRAM	Libraries	Yes	4-70
1	60 MHz	Full Card	SRAM	Libraries, Loader Driver	Yes	4-71
1	60 MHz	Half Card	SRAM	Libraries, Loader Driver	Yes	4-72
1	50 MHz	4 x 5 x .4	SRAM	Debuggeres	Yes	4-73



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
DT31-STD	DSP Tools, Inc.	Standalone, PC parallel	Windows 3.1, Windows 95, DOS	C3x
PC/104 C31	DSP Tools, Inc.	PC/104	Windows 95, DOS	C3x
PCI-31	DSP Tools, Inc.	PCI PC	Windows 95	C3x
Quad Board	DSP Tools, Inc.	Standalone	Windows 3.1, Windows 95, DOS	C3x
4Meg Video Model 10	EPIX Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C2x
4Meg Video Model 12	EPIX Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C2x
CO402	EPIX Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
Timing and Control Unit	EWA	VME	Windows 3.1, Windows 95, Windows NT, Solaris,	C4x
cPCI-DSP4	hema Elektronik GmbH	CompactPCI	Windows 95, Windows NT	C4x
CPL1	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
CPL2	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
DSP1	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
DSP2	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
DSP3	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
DSPCAN1	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
DSPCAN2	hema Elektronik GmbH	Standalone, DSP1, DSP2, DSP3	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
HPS11	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
LINKBUS-II	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
TA2	hema Elektronik GmbH	ISA	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
TPP2	hema Elektronik GmbH	PC Printer Port	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
VSP1	hema Elektronik GmbH	Standalone, LINKBUS-II	Windows 3.1, Windows 95, Windows NT, DOS, OS/2	C4x
HEBASE 104	Hunt Engineering	PC/104	Windows 3.1, Windows 95, Windows NT	C40
HEBUSL1 Bussless, Two TIM-40 Slot	Hunt Engineering	Standalone	Windows 3.1, Windows NT, Solaris	C4x
HEC(C)FG44	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HECPCI1 3U cPCI	Hunt Engineering	cPCI	Windows 3.1, Windows 95, Windows NT, Solaris, VxWorks	C4x
HEGD2 (16Bit A/D)	Hunt Engineering	VME, ISA, PCI PC, Standalone, PC/104	Windows 3.1, Windows 95, Windows NT, Solaris	C40
HEGD1 (3MHz 12 Bit A/D)	Hunt Engineering	VME, ISA, PCI PC	Windows 3.1, Windows 95, Windows NT, Solaris	C40
HEGD3 (RS-232 Granddaughter Module)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C40
HEGD4	Hunt Engineering	VME, ISA, PCI PC, Standalone, PC/104	Windows 3.1, Windows 95, Windows NT, Solaris	C40
HEGD5 (16-Bit D/A Module)	Hunt Engineering	VME, ISA, PCI PC, Standalone, TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEGD6 (Digital Camera Interface Module)	Hunt Engineering	VME, ISA, PCI PC, Standalone, TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEGD7	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C40

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
1	33 MHz	4 x 5 x .4	SRAM	Debuggers	Yes	4-74
1	60 MHz	3.5 x 3.5 x 0.625	SRAM	Debuggers	Yes	4-75
1	50 MHz	Half Card	SRAM	Debuggers	Yes	4-76
0	50 MHz	4, 5, 0.8		Analog I/O daughter card	Yes	4-77
1	40 MHz	Full Card	DRAM		Yes	4-78
1	50 MHz	Full Card	DRAM		Yes	4-79
2	50 MHz	Full Card	SRAM	Debuggers, Libraries	Yes	4-80
1	50 MHz		SRAM	Debuggers, Libraries	Yes	4-81
1	60 MHz	233 x 160 x 20mm	SRAM, FLASH	Libraries	Yes	4-82
		160 x 100 x 20mm			Yes	4-83
		85 x 40 x 17mm			Yes	4-84
1	60 MHz	160 x 100 x 20mm			Yes	4-85
1	60 MHz	160 x 100 x 20mm			Yes	4-86
2	60 MHz	160 x 100 x 20mm			Yes	4-87
		160 x 100 x 20mm				4-88
		160 x 100 x 20mm			Yes	4-89
		160 x 100 x 20mm			Yes	4-90
		128 x 58 x 41mm			Yes	4-91
		175 x 108 x 19mm			Yes	4-92
		85 x 14 x 13mm			Yes	7-93
		160 x 100 x 20mm				4-94
		Full Card			Yes	4-95
		4.2" x 7.5"			Yes	4-96
1	50 MHz	Full Card			Yes	4-97
	60MHz	3U		Libraries	Yes	4-98
		Full Card			Yes	4-99
					Yes	4-100
					Yes	4-101
		Full Card			Yes	4-102
		4.0" x 2.5"			Yes	4-103
		4.0" x 2.5"			Yes	4-104
		Full Card			Yes	4-105



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
HEGD8 Bi-Directional Co-Axial Cable	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C40
HEPC4	Hunt Engineering	PCI PC	Windows 3.1, Windows 95, Windows NT, Solaris	
HEPC2E (PC/ISA Board W/4 TIM-40 Slots)	Hunt Engineering	ISA	Windows 3.1, Windows 95, Windows NT	C4x
HEPC2104 (PC104 Format DSP Card)	Hunt Engineering	PC/104	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEPC3	Hunt Engineering	PCI PC	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEQUAD	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HESB40 Sbus to TIM-40 Adapter	Hunt Engineering	VME, ISA, PCI PC, Standalone	Solaris, SunOS	C40
HET40	Hunt Engineering	VME, ISA, PCI PC, Standalone, TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HET40ex (C40 Processing TIM-40 W/EDRAM)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HET40SD/HET38	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HET40SX (SRAM Processing TIM-40)	Hunt Engineering	VME, ISA, PCI PC, Standalone, TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HET403TL/HET403DTL	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	
HETAIO (16 Bit Audio)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	
HETFLASH (ROM Booting TIM-40I)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C40
HETVIO2 (Video I/O TIM-40 Module)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEV40-4 (6U VME Slave W/4 TIM-40 SLOTS)	Hunt Engineering	VME	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEVAL-6A	Hunt Engineering	ISA	Windows 3.1, Windows 95, Windows NT, Solaris, VxWorks	C6x
HETWIN	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HETWIN-C44	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HETWIN-C44E 2X 50 MHz C44S and EDRAM	Hunt Engineering	VME, ISA, PCI PC, Standalone, TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
HEXTIM (Prototyping TIM-40)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
IPackTIM (TIM-40)	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
VIPTIM	Hunt Engineering	VME, ISA, PCI PC, Standalone	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
Codec Board Universal A4	IAT AG	ISA	Windows 3.1, Windows 95, Windows NT, OS/2	C8x
Wonderboard80	IAT AG	PCI PC	Windows 95, Windows NT	C8x
ACQ44	Innovative Integration, Inc.	TIM-40	Windows 95, Windows NT	C4x
ADC64	Innovative Integration, Inc.	ISA	Windows 95, Windows NT	C3x
CADC64	Innovative Integration, Inc.	PCI PC	Windows 95, Windows NT	C3x
CM44	Innovative Integration, Inc.	CompactPCI	Windows 95, Windows NT	C4x
CM62	Innovative Integration, Inc.	CompactPCI	Windows 95, Windows NT	C6x
DAC44	Innovative Integration, Inc.	TIM-40	Windows 95, Windows NT	C4x
Grabber44	Innovative Integration, Inc.	TIM-40	Windows 95, Windows NT	C4x

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
					Yes	4-106
		Full Card		Code Generation Tools, Libraries	Yes	4-107
		Full Card			Yes	4-108
1	60 MHz	Full Card			Yes	4-109
		Half Card			Yes	4-110
4	60 MHz	Full Card			Yes	4-111
		Full Card			Yes	4-112
	50 MHz				Yes	4-113
	60 MHz	Full Card			Yes	4-114
1	50 MHz	Full Card			Yes	4-115
1	60 MHz	Full Card	SRAM		Yes	4-116
		Full Card			Yes	4-117
		Full Card			Yes	4-118
		Full Card			Yes	4-119
1	50 MHz				Yes	4-120
		Full Card			Yes	4-121
1	200 MHz	Full Card	SRAM, SDRAM, SBSRAM, ASRAM, FLASH	Debuggers, Code Gen. Tools, Libraries	Yes	4-122
2	60 MHz				Yes	4-123
2	60 MHz	Full Card			Yes	4-124
2	50 MHz	Full Card			Yes	4-125
1	50 MHz	Full Card			Yes	4-126
1	48 MHz	Full Card			Yes	4-127
1	50 MHz	Full Card			Yes	4-128
1	50 MHz	264 x 122 x 16mm	DRAM	H.320 Library, H.320 API	Yes	4-129
1	50 MHz	220 x 107 x 15mm	DRAM	H.320 Library, H.320 API	Yes	4-130
1	60 MHz	50mm x 100mm x 2cm	SRAM	Debuggers, Code Generation Tools, Libraries	No	4-131
1	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-132
1	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-133
	60 MHz	320mm x 100mm x 2cm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-134
1	200 MHz	320mm x 100mm x 2cm	DRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-135
1	60 MHz	50mm x 100mm x 2cm	SRAM	Debuggers, Code Generation Tools, Libraries	No	4-136
1	60 MHz	50mm x 100mm x 2cm	SRAM	Debuggers, Code Generation Tools, Libraries	No	4-137



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
M44	Innovative Integration, Inc.	PCI PC	Windows 95, Windows NT	C4x
M62	Innovative Integration, Inc.	PCI PC	Windows 95, Windows NT	C6x
PC32	Innovative Integration, Inc.	ISA	Windows 95, Windows NT	C3x
PC44	Innovative Integration, Inc.	ISA	Windows 95, Windows NT	C4x
PC50	Innovative Integration, Inc.	ISA	Windows 95, Windows NT	C5x
PCI31	Innovative Integration, Inc.	ISA	Windows 95, Windows NT	C3x
PCI32	Innovative Integration, Inc.	PCI PC	Windows 95, Windows NT	C3x
PCI44	Innovative Integration, Inc.	PCI PC	Windows 95, Windows NT	C4x
Quatro62	Innovative Integration, Inc.	PCI PC	Windows 95, Windows NT	C6x
SBC31	Innovative Integration, Inc.	Standalone	Windows 95, Windows NT	C3x
SBC32	Innovative Integration, Inc.	Standalone	Windows 95, Windows NT	C3x
SBC54	Innovative Integration, Inc.	Standalone	Windows 95, Windows NT	C54x
SBC62	Innovative Integration, Inc.	Standalone	Windows 95, Windows NT	C6x
ADP44PCI	Instrumental Systems Corp.	PCI PC	Windows 3.1, Windows 95, Windows NT, MS-DOS	C4x
ADP6201PCI	Instrumental Systems Corp.	PCI PC	Windows 3.1, Windows 95, Windows NT, MS-DOS	C6x
DST40A8X40M	Instrumental Systems Corp.	TIM-40 Module	Windows 3.1, Windows 95, Windows NT	C4x
DSM40PCI	Instrumental Systems Corp.	PCI PC	Windows 3.1, Windows 95, Windows NT	C4x
DST40A	Instrumental Systems Corp.	TIM-40 Module	Windows 3.1, Windows 95, Windows NT, MS-DOS	C4x
DST40DDC	Instrumental Systems Corp.	TIM-40 Module	Windows 3.1, Windows 95, Windows NT	C4x
DST44w	Instrumental Systems Corp.	TIM-40 Module	Windows 3.1, Windows 95, Windows NT, MS-DOS	C4x
KC3X/PC Series	Kane Computing	ISA	Windows 95, Windows NT	C3x
KC5XPC Series	Kane Computing	ISA	Windows 95, Windows NT	C5x
KC31/IP	Kane Computing	ISA, PC/104	Windows 95, Windows NT	C3x
KC44PCI Series	Kane Computing	PCI PC	Windows 95, Windows NT	C4x
KC203PC	Kane Computing	ISA, Standalone	Windows 95, Windows NT	C2xx
KC542/PC	Kane Computing	ISA, Standalone	Windows 95, Windows NT	C54x
KCSBus Series	Kane Computing	SUN	Solaris	C3x, C4x
SMT301	Kane Computing	VME	VXI	C40
SMT306-Neural Processing TIM	Kane Computing	TIM		C4x
SMT311-FFT Processing TIM	Kane Computing	VME, ISA, PCI PC, SUN		C4x
Super DSK-C3	Kane Computing			C3x
DBV41 Modular DSP for TMS320C4X	Loughborough Sound Images plc	VME	Windows 3.1, Windows 95, Windows NT, Solaris, VxWorks	C4x

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
1	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-138
1	200 MHz	Full Card	DRAM			4-139
	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-140
	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-141
1	80 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-142
1	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-143
1	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-144
	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-145
4	200 MHz	Full Card	DRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-146
1	50 MHz	3.95 x 6.30	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-147
1	60 MHz	160 x 100mm		Debuggers, Code Generation Tools, Libraries	Yes	4-148
1	100 MHz	100mm x 160mm x 2cm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-149
1	200 MHz	100mm x 100mm x 2cm	DRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-150
1	60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-151
1	200 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-152
1	50 MHz	107 x 65 x 15 mm	SRAM		Yes	4-153
	60 MHz	Full Card	8MB Global SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-154
1	60 MHz	107x 65 x 10 mm	SRAM		Yes	4-155
1	50 MHz	107 x 130 x 15 mm	SRAM		Yes	4-156
2	60 MHz	107 x 65 x 10 mm	SRAM		Yes	4-157
1	60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-158
1	80 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-159
1	48 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-160
4	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-161
1	80 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-162
1	80 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-163
1	50, 60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-164
				8x TIM-4	Yes	4-165
1	50 MHz	107 x 63.5mm	SRAM		Yes	4-166
1	50 MHz	63.5 x 107mm	SRAM		Yes	4-167
						4-168
1		Full Card	SRAM		Yes	4-169



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
DBV44 Modular TMS320C4X DSP Solution	Loughborough Sound Images Ltd.	VME	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
DBV46 120 MFLOPS 6U VME Board	Loughborough Sound Images Ltd.	VME	Windows 3.1, Windows 95, Windows NT, Solaris, VxWorks	C4x
MDC40ED TMS320C40 Module	Loughborough Sound Images Ltd.	TIM-40 Module, PC, VME	Windows 95, Windows NT, Solaris, VcWorks	C4x
MDC40S Parallel DSP Module	Loughborough Sound Images Ltd.	VME, PC, TIM Module	Windows 95, Windows NT, Solaris 2.5, VxWorks	C4x
MDC44S TMS320C44	Loughborough Sound Images Ltd.	TIM-40 Module	Windows 95, Windows NT, Solaris, VxWorks	C4x
MDC44T TMS320C44 TIM-40 Module	Loughborough Sound Images Ltd.	VME, PC, TIM-40 Module		C4x
PC/C32 TMS320C32 Real-Time System	Loughborough Sound Images Ltd.	ISA	Windows 3.1, Windows 95, Windows NT	C3x
PCI/C42 TMS320C4X DSP System	Loughborough Sound Images Ltd.	PCI PC	Windows 95, Windows NT	C4x
PCI/C44 TMS320C4X PCI Card	Loughborough Sound Images Ltd.	PCI PC	Windows 3.1, Windows 95, Windows NT	C4x
PCI/C81 Imaging Board	Loughborough Sound Images Ltd.	PCI PC	Windows 95, Windows NT	C8x
PCI/C6200 TMS320C6201 PCI Board	Loughborough Sound Images Ltd.	PCI PC	Windows 95, Windows NT	C6x
PMC/C42 PMC Module	Loughborough Sound Images Ltd.	PMC Module	Windows 95, Windows NT	C4x
QPC/C40S TMS320C4X	Loughborough Sound Images Ltd.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
Matrox Genesis	Matrox, Imaging Products Group	PCI PC	Windows NT, DOS	C8x
Tornado-31 DSP System & Emulator	MicroLAB Systems Ltd.	ISA PC	Windows 3.1, Windows 95, Windows NT, DOS	C3x
Tornado-32L Low-Cost DSP System	MicroLAB Systems Ltd.	ISA	Windows 3.1, Windows 95, Windows NT, DOS	C3x
Tornado-40D DSP System & Emulator	MicroLAB Systems Ltd.	ISA PC	Windows 3.1, Windows 95, Windows NT, DOS	C4x
Tornado-62 DSP System & Emulator	MicroLAB Systems Ltd.	ISA	Windows 3.1, Windows 95, Windows NT, DOS	C6x
Tornado-542L Low Cost DSP System	MicroLAB Systems Ltd.	ISA	Windows 3.1, Windows 95, Windows NT, DOS	C54x
Tornado-548 DSP System & Emulator	MicroLAB Systems Ltd.	ISA	Windows 3.1, Windows 95, DOS	C54x
Tornado-E31 Standalone DSP Controller	MicroLAB Systems Ltd.	Standalone	DOS	C3x
Tornado-E62 Standalone DSP Controller	MicroLAB Systems Ltd.	Standalone		C6x
Tornado-E548 Standalone DSP Controller	MicroLAB Systems Ltd.	Standalone		C54x
MZ7772-4 Quad C40 Board	Mizar, Inc.	VME	Solaris, HP-UX	C4x
MZ7772-8 Octal C40 Board	Mizar, Inc.	VME	Solaris, HP-UX	C4x
Starburst 104CSX	Nova Engineering, Inc	PC/104, Standalone	Windows 3.1, Windows 95, Windows NT	C5x
Starburst 104C31	Nova Engineering, Inc.	PC/104, Standalone	Windows 3.1, Windows 95, Windows NT	C3x
Micro-Line® C31CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C3x
Micro-Line® Embedded Board C32CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C3x
Micro-Line® Embedded Board C44CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C4x
Micro-Line® Embedded Board C203CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C2xx
Micro-Line® Embedded Board C6201CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C6201



# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
8	60 MHz	Full Card			Yes	4-170
2	60 MHz	Full Card	SRAM & optional DRAM up to 64 MBytes		Yes	4-171
1	50 MHz	Full Card	EDRAM		Yes	4-172
1	60 MHz	Full Card	SRAM		Yes	4-173
1	60 MHz	Full Card	SRAM		Yes	4-174
2	60 MHz	Full Card	SRAM		Yes	4-175
1	60 MHz	Half Card	SRAM		Yes	4-176
2	60 MHz	Full Card	SRAM		Yes	4-177
4	60 MHz	Full Card	SRAM		Yes	4-178
1	50 MHz	Full Card	SDRAM		Yes	4-179
1	200 MHz	Full Card	SDRAM		Yes	4-180
2	60 MHz	Full Card	SRAM		Yes	4-181
8			SRAM		Yes	4-182
13	50 MHz	Full Card	DRAM	Libraries		4-183
1	60 MHz	Half Card	SRAM	Libraries	Yes	4-184
1	60 MHz	Half Card	SRAM	Libraries	Yes	4-185
2	60 MHz	Full Card	SRAM	Libraries	Yes	4-186
1	200 MHz	Half Card	SRAM	Libraries	Yes	4-187
	40 MHz	Half Card	SRAM	Libraries	Yes	4-188
1		Half Card	SRAM	Libraries	Yes	4-189
1	60 MHz	110 x 75mm	SRAM	Libraries	Yes	4-190
1	200 MHz	180 x 130mm	SRAM	Libraries	Yes	4-191
1	66 MHz	110 x 75mm	SRAM	Libraries	Yes	4-192
4	60 MHz	Full Card	SRAM, Third Party Cards		Yes	4-193
8	60 MHz	Full Card	SRAM, Third Party Cards		Yes	4-194
1	40, 57, 80 MHz	3.6 x 3.8 x 0.6	SRAM		Yes	4-195
1	32, 50, 60 MHz	3.6 x 3.8 x 0.6	SRAM		Yes	4-196
	60 MHz	3.85 x 2.59 x 0.78"	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-197
	40, 50, 60 MHz	98 x 66 x 20mm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-198
	40, 50, 60 MHz	98 x 72 x 20mm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-199
	40, 57, 80 MHz	98 x 66 x 20mm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-200
	100, 200 MHz	3.85 x 2.83 x 0.78"	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-201



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
Micro-Line® Embedded Board F206CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C2xx
Micro-Line® Embedded Board F240CPU	Orsys GmbH	Standalone	Windows 3.1, Windows 95, Windows NT, MS-DOS	C2xx
DSP-428	PCM Systems Corp.	VME	Windows 3.1, Windows 95, Windows NT, Solaris, Many	C4x
DSP-444	PCM Systems Corp.	VME	Windows 3.1, Windows 95, Windows NT, Solaris, Many	C4x
DSP-449	PCM Systems Corp.	VME	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
DSPCI-444	PCM Systems Corp.	PCI PC	Windows 3.1, Windows 95, Windows NT, Solaris, Many	C4x
DSPCI-449	PCM Systems Corp.	PCI PC	Windows 3.1, Windows 95, Windows NT, Solaris, Many	C4x
VSP-91	PCM Systems Corp.	VME	Windows 3.1, Windows 95, Windows NT, Solaris	C4x
Model 4243 2-Chan Audio A/D-D/A	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x
Model 4252 16-Chan Audio A/D-D/A	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x	C3x, C4x, C6x
Model 4253 32-Chan 100 KHZ D/A	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x
Model 4254 'C40 Mix Module	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 4257 Dual 'C40 Mix Module	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 4260 Fast Wide SCSI Adapter	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x
Model 4265 16-Chan Audio A/D-D/A	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x, C8x
Model 4269 Dual 'C40 Processor	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 4270 Quad 'C40 Processor	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 4274 10/20 MHZ 14-Bit A/D	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x
Model 4275 32-Chan 100KHZ A/D	Pentek, Inc.	MIX Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x
Model 4280A Dual 'C31 with A/D-D/A	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x
Model 4283 'C30 Processor	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x
Model 4285 Octal 'C40 Processor	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 4286 Dual 'C80 Processor	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x	C8x
Model 4290 Quad 'C6201 Processor	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 5.2	C6x
Model 6102 8-Chan 250 KHZ A/D-D/A	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x, C8x
Model 6106 8-Chan 2 MHz 14-BIT A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x, C8x
Model 6109 8-Chan 20 MHZ 12-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C3x, C4x, C6x, C8x
Model 6110 Comm Port-Taxi Adapter	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x
Model 6310 Fibre Channel Adapter	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6402 Dual 250 KHZ 16-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x, C8x
Model 6410 Dual 10 MHZ 14-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x, C8x
Model 6410-016 10 MHZ 16-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x, C8x

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
	40, 57, 80 MHz	98 x 66 x 20mm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-202
	20, 40 MHz	98 x 66 x 20mm	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-203
2	50 MHz	Full Card	SRAM	Code Generation Tools, Libraries	Yes	4-204
4	50 MHz	Full Card	SRAM	Code Generation Tools, Libraries	Yes	4-205
2	50 MHz	Full Card	SRAM	Code Generation Tools, Libraries	Yes	4-206
4	50 MHz	Full Card	SRAM	Code Generation Tools, Libraries	Yes	4-207
2	50 MHz	Full Card	SRAM	Code Generation Tools, Libraries	Yes	4-208
1	50 MHz	Full Card	SRAM	Code Generation Tools, Libraries	Yes	4-209
1	200 MHz	Half Card		Debuggers, Code Generation Tools, Libraries	Yes	4-210
	50 MHz	Half Card		Debuggers, Code Generation Tools	Yes	4-211
		Half Card		Debuggers, Code Generation Tools, Libraries	Yes	4-212
1	50 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-213
2	50 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-214
		Half Card	SRAM	Debuggers, Code Generation Tools	Yes	4-215
		Half Card		Debuggers, Code Generation Tools, Libraries	Yes	4-216
2	60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-217
4	60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-218
				Debuggers, Code Generation Tools, Libraries	Yes	4-219
				Debuggers, Code Generation Tools, Libraries	Yes	4-220
2	50 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-221
1	40 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-222
8	60 MHz	Full Card	DRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-223
2	60 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-224
	200 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-225
				Debuggers, Code Generation Tools, Libraries	Yes	4-226
				Debuggers, Code Generation Tools, Libraries	Yes	4-227
				Debuggers, Code Generation Tools, Libraries	Yes	4-228
		Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-229
1	50 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-230
	250 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-231
	10 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-232
	10 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-233



## DEVELOPMENT BOARDS (Continued)

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
Model 6441 Dual 41 MHZ 12-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x, C8x
Model 6465 Dual 65 MHZ 12-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x, C8x
Model 6472 2 Chan 70 MHZ 10-Bit A/D	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x, C6x, C8x
Model 6504 4 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6505 4 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6508 8 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6509 8 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6510 8 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6514 16 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6516 16 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 6420 16 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	
Model 6532 32 Chan Digital Receiver	Pentek, Inc.	VME	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 7110 TMS320C44 PMC Module	Pentek, Inc.	PMC Module	Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX	C4x
Model 7280 Dual 'C80 PCI Processor	Pentek, Inc.	PCI PC	Windows 95, Windows NT, Solaris 2.x	C8x
Precision MX Video Engine	Precision Digital Images	PCI PC	Windows NT	C8x
C.A.T. Image Processor & Graphics Accelerator	Primagraphics Ltd.	VME	Windows NT, Solaris 2.5, Various	C8x
Spirit-30 AT/ISA	RadiSys Corp.	ISA	DOS	C3x
Spirit-32 AT/ISA	RadiSys Corp.	ISA	Windows 95, Windows NT, DOS	C32
Spirit-32 E88	RadiSys Corp.	Standalone		C32
Spirit-32 PC/104	RadiSys Corp.	PC/104		C32
Spirit-6000	RadiSys Corp., DSP Division	cPCI	Windows 95, Windows NT	C6x
POLYP	RoBioMat	PCI PC	Windows NT, UNIX's for req., Custom-Piggy	C4x
Videoprocessing C60	SICAN GmbH	PCI PC plug-in	Windows 95, Windows NT	C6x
ADC64	Signalogic, Inc.	PCI PC Plug-in	Windows 3.1, Windows 9x, Windows NT	C32
SigC31-4	Signalogic, Inc.	ISA	Windows 3.1, Windows 9x, Windows NT	C31
SigC32-2	Signalogic, Inc.	ISA	Windows 3.1, Windows 9x, Windows NT	C32
PC32	Signalogic, Inc.	ISA	Windows 3.1, Windows 95, Windows NT	C32
DSP-FPGA Industry Pack(IP) Module	Signalware Corp.	VME, ISA, PCI PC	Windows 3.1, Windows 95, Windows NT	C5x
TMS320C50 Interface Rapid Prototype Kit	Signalware Corp.	Standalone	RS-232 or JTAG	C5x
VPLus, SM5001-11, SM600-	SimPhonics, Inc.	ISA, PCI PC, Ethernet	Windows 95, Windows NT	
Motor Development System	Softronics	Standalone, Serial and JTAG	Windows 95	C2xx
EVM320C5X Evaluation Module	Spectrum Digital, Inc.	Standalone	Windows 3.1, Windows 95, DOS	C51

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
	41 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-234
	65 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-235
	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-236
1	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-237
1	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-238
1	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-239
1	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-240
1	50 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-241
1	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-242
1	50 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-243
	20 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-244
1	70 MHz	Full Card		Debuggers, Code Generation Tools, Libraries	Yes	4-245
1	60 MHz	Half Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-246
2	60 MHz	Full Card	DRAM	Debuggers, Code Generation Tools	Yes	4-247
	40 MHz	Full Card	DRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-248
1	50 MHz	Full Card	SDRAM, SRAM	Libraries	Yes	4-249
1	30/40 MHz	Full Card	SRAM		Yes	4-250
1	40 MHz	Half AT/ISA	SRAM		Yes	4-251
1	60 MHz	8.6, 4"	SRAM	Libraries	Yes	4-252
1	40 MHz	PC/104 Form Factor	SRAM	Libraries	Yes	4-253
		Full Card (6U VME)	SRAM			4-254
1	60 MHz	Full Card	SRAM		Yes	4-255
	200 MHz	Full Card	SDRAM	Preprocessor	Yes	4-256
1	40, 60 MHz	2/3	Up to 512k x 32 SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-257
1	50, 60 MHz	Half Card	Up to 640k x 32 SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-258
1	40, 50, 60 MHz	Half Card	Up to 640k x 32 SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-259
1	40, 50, 60 MHz	Half Card	Up to 512k x 32 SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-260
1	80 MHz	3.9 x 1.8 x 0.606"	SRAM	Libraries	Yes	4-261
1	40 MHz	7.75 x 4.375 x 2.375"	SRAM	Libraries	Yes	4-262
		Full Card			Yes	4-263
	20 MHz	75 x 115	SRAM	Debuggers, Libraries	Yes	4-264
1	80 MHz	160 x 100 mm	SRAM	Debuggers	Yes	4-265



**DEVELOPMENT BOARDS (Continued)**

Board	Company	Platforms Supported	Host O/S Supported	TMS320 Devices Supported
EVM320C203/F206 Evaluation Module	Spectrum Digital, Inc.	Standalone	Windows 3.1, Windows 95	C203, F206
EVM320F240 Evaluation Module	Spectrum Digital, Inc.	Standalone	Windows 3.1, Windows 95	F240
EVM320C548/C549 Evaluation Module	Spectrum Digital, Inc.	Standalone	Windows 3.1, Windows 95	C54x
Barcelona	Spectrum Signal Processing Inc.	CompactPCI	Windows NT, Solaris, VxWorks	C6x
Dakar	Spectrum Signal Processing Inc.	PCI PC	Windows 95, Windows NT	C4x
Daytona	Spectrum Signal Processing Inc.	PCI PC	Windows NT	C6x
Detroit	Spectrum Signal Processing Inc.	PCI PC	Windows NT	C6x
Indy	Spectrum Signal Processing Inc.	ISA	Windows 95, Windows NT	C3x
LeMans	Spectrum Signal Processing Inc.	VXI	Windows 95, HP-UX	C4x
Maranello	Spectrum Signal Processing Inc.	VME	Windows NT, Solaris	C4x
Monaco	Spectrum Signal Processing Inc.	VME	Windows NT, Solaris, VxWorks	C6x
TIM-DDC and TIM-MAI	Spectrum Signal Processing Inc.	TIM-40	N/A	C4x
TIM-DSP 1	Spectrum Signal Processing Inc.	TIM-40		C4x
TIM-DSP2	Spectrum Signal Processing Inc.	TIM-40		C4x
SMT3XM Memory Expansion Module	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT300 4-Slot TIM PC Motherboard	Sundance Multiprocessor Tech. Ltd.	ISA	Windows 3.1, Windows 95	C40, C6x
SMT301A	Sundance Multiprocessor Tech. Ltd.	VME, VXI/VME	Windows 3.1, Windows 95, Windows NT	C4x, C6x
SMT302	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C40
SMT303	Sundance Multiprocessor Tech. Ltd.	Size 2 TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C40
SMT304	Sundance Multiprocessor Tech. Ltd.	Size 2 TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris	C40
SMT305 High Memory 'C40 DRAM TIM	Sundance Multiprocessor Tech. Ltd.	Size 2 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C4x
SMT306 Neural Network Processing TIM	Sundance Multiprocessor Tech. Ltd.	Size 2 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C40
SMT307B High Speed SCSI-2 'C44 TIM	Sundance Multiprocessor Tech. Ltd.	SCSI, TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C44
SMT311 FFT Accelerator TIM	Sundance Multiprocessor Tech. Ltd.	Size 2 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C44
SMT312 RS-232 and Fiber Modem TIM	Sundance Multiprocessor Tech. Ltd.	Size 1 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	
SMT313 Dual-Processor 'C44 EDRAM TIM	Sundance Multiprocessor Tech. Ltd.	Size 1 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C4x
SMT314 Video Grab & Display TIM	Sundance Multiprocessor Tech. Ltd.	Size 2 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C40
SMT315 Dual Processor SRAM TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT316 Four Processor 'C44 SRAM TIM	Sundance Multiprocessor Tech. Ltd.	Size 1 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C44
SMT318 Dual Digital Video Interface	Sundance Multiprocessor Tech. Ltd.	Size 1 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C4x
SMT320 4-Slot TIM PCI Motherboard	Sundance Multiprocessor Tech. Ltd.	PCI PC	Windows 3.1, Windows 95, Windows NT	C4x
SMT321 FFT PCI Accelerator	Sundance Multiprocessor Tech. Ltd.	PCI PC	Windows NT	C4x

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
1		160 x 100mm	SRAM		Yes	4-266
1		160 x, 100mm	SRAM		Yes	4-267
1	C548 = 66 MHz; C549 = 80 MHz	160 x 100mm	SRAM		Yes	4-268
4	200 MHz	Full Card	SRAM		Yes	4-269
1 to 7	60 MHz	Full Card	SRAM		Yes	4-270
2	200 MHz	Full Card	SRAM		Yes	4-271
1	200 MHz	Full Card	SRAM		Yes	4-272
1	60 MHz	Half Card	SRAM		Yes	4-273
2 to 14	60 MHz	Full Card	SRAM		Yes	4-274
1 to 8	60 MHz	Full Card	SRAM		Yes	4-275
4	200 MHz	Full Card	SRAM		Yes	4-276
2	50 MHz		SRAM		Yes	4-277
1	60 MHz		SRAM		Yes	4-278
2	60 MHz		SRAM		Yes	4-279
			SRAM		Yes	4-280
		Full Card				4-281
			SRAM		Yes	4-282
1	60 MHz		DRAM		Yes	4-283
1	50 MHz		SRAM, DRAM	Libraries	Yes	4-284
1	50 MHz		SRAM, DRAM	Libraries	Yes	4-285
1	50 MHz		DRAM		Yes	4-286
1	50 MHz		SRAM	Libraries	Yes	4-287
1	50 MHz		DRAM	Libraries	Yes	4-288
1	50 MHz		SRAM	Libraries	Yes	4-289
					Yes	4-290
2	60 MHz		DRAM	Libraries	Yes	4-291
1	60 MHz		SRAM	Libraries	Yes	4-292
2	60 MHz		SRAM		Yes	4-293
4	60 MHz		SRAM		Yes	4-294
					Yes	4-295
		Full Card		Libraries	Yes	4-297
1	60 MHz	Full Card	DRAM/SRAM	Libraries	Yes	4-298



**DEVELOPMENT BOARDS**

Board	Company	Host Bus/Card Supported	Host O/S Supported	TMS320 Devices Supported
SMT322 Data Acquisition Card	Sundance Multiprocessor Tech. Ltd.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
SMT323 Dual Channel Digital PCI Frame	Sundance Multiprocessor Tech. Ltd.	PCI PC	Windows 3.1, Windows 95, Windows NT	C44
SMT324 Digital Down Converter TIM	Sundance Multiprocessor Tech. Ltd.	Size 1 TIM-40	Windows 3.1, Windows 95, Windows NT, SUN	C44
SMT325 Colour Frame Grabber TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT326 32 Channel Audio I/O TIM	Sundance Multiprocessor Tech. Ltd.	ISA	Windows 3.1, Windows 95, Windows NT	C4x
SMT328 VME TIM Carrier	Sundance Multiprocessor Tech. Ltd.	VME/TIM-40	Windows NT	C4x
SMT330 TMS320C6201 Fibre Channel TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C6x
SMT331 TMS320C6201 Accelerator TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT	C6x
SMT340 2 x 41MSPS, 12-Bit ADC TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT341 Digital Delay Line TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT342 41MSPS, 12-Bit ADC TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT343 Global BUS TIM Carrier	Sundance Multiprocessor Tech. Ltd.	ISA/TIM-40	Windows NT, Solaris	C4x
SMT344 Dual Processor SRAM TIM	Sundance Multiprocessor Tech. Ltd.	TIM-40	Windows NT, Solaris	C4x
SMT345 Fibre Channel Grabber	Sundance Multiprocessor Tech. Ltd.	PCI PC	Windows NT, Solaris	C4x
SMT346 PC/ISA DSP 16-Bit ADC/DAC	Sundance Multiprocessor Tech. Ltd.	ISA/TIM-40	Windows NT	C4x
SMT347 TIM Carrier for CompactPCI	Sundance Multiprocessor Tech. Ltd.	CompactPCI/TIM-40	Windows NT	C4x
SMT350 Global BUS TIM Carrier	Sundance Multiprocessor Tech. Ltd.	PCI PC/TIM-40	Windows NT, Solaris	C4x
SMT400 3 Slot PMC Carrier for VME	Sundance Multiprocessor Tech. Ltd.	PMC	Windows NT, Solaris	C4x
SMT401 TIM Carrier for PMC	Sundance Multiprocessor Tech. Ltd.	TIM-40		C4x
SMT402 Double Width TIM Carrier	Sundance Multiprocessor Tech. Ltd.	PMC		C4x
SMT403 TMS320C44 PMC	Sundance Multiprocessor Tech. Ltd.	PMC		C4x
SMT327 4-slot CompactPCI TIM Carrier	Sundance Multiprocessor Tech. Ltd.	CompactPCI	Windows 3.1, Windows 95, Windows NT, SUN	
EB-1000 Wireless Modem Evaluation System	Synetcom Digital, Inc.	Standalone	C2x, C5x	1
MCK240 DSP Motion Control Kit	Technosoft	PC-RS 232	Windows 3.1, Windows 95, Windows NT	C2xx
TDMB412	Transtech Parallel Systems Corp.	ISA	Windows 3.1, Windows 95	C4x
TDMB413	Transtech Parallel Systems Corp.	ISA	Windows 3.1, Windows 95	C4x
TDMB414	Transtech Parallel Systems Corp.	PCI PC	Windows 3.1, Windows 95	C4x
TDMB423	Transtech Parallel Systems Corp.	VME	Windows, Solaris, VxWorks	C4x
TDMB424	Transtech Parallel Systems Corp.	VME	Windows 3.1, Solaris, VxWorks	C4x
TDMB428	Transtech Parallel Systems Corp.	VME, Windows	Solaris, VxWorks	C4x
TDMB442	Transtech Parallel Systems Corp.	TIM-40, VME, PCI, ISA	PaCE, 3L Parallel C	C4x
TDM407	Transtech Parallel Systems Corp.	VME, ISA, PCI PC, TIM-40 Module	PaCE, 3L Parallel C	C4x



# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
1	50 MHz	Half Card	SRAM	Libraries	Yes	4-299
1	60 MHz	Full Card	SRAM	Libraries	Yes	4-300
1	60 MHz		SRAM	Libraries	Yes	4-301
1	50 MHz		DRAM	Libraries	Yes	4-302
1	60 MHz	Full Card	SRAM	Libraries	Yes	4-303
		Full Card			Yes	4-304
1	200 MHz		SRAM/SDRAM		Yes	4-305
1	200 MHz	Full Card	SSRAM/SDRAM		Yes	4-306
				Libraries		4-307
			DRAM		Yes	4-308
					Yes	4-309
					Yes	4-310
2	60 MHz		SRAM			4-311
1	60 MHz	Full Card	SRAM	Libraries	Yes	4-312
1	60 MHz	Half Card	SRAM		Yes	4-313
		Full Card			Yes	4-314
		Full Card			Yes	4-315
		Full Card			Yes	4-316
		Half Card			Yes	4-317
					Yes	4-318
1	60 MHz		SRAM		Yes	4-319
						4-320
			Yes	Libraries		4-321
1	20 MHz	104 x 63 mm	SRAM		Yes	4-322
	60 MHz	Full Card			Yes	4-323
	60 MHz	Full Card			Yes	4-324
	60 MHz	Full Card			Yes	4-325
1 to 8	60 MHz	Full Card		Solaris Driver	Yes	4-326
2	60 MHz	Full Card			Yes	4-327
1 to 8	60 MHz	Full Card			Yes	4-328
2	60 MHz		SRAM		Yes	4-329
1	60 MHz	4.2 x 2.5"	SRAM		Yes	4-330



**DEVELOPMENT BOARDS**

Board	Company	Host Bus/Card Supported	Host O/S Supported	TMS320 Devices Supported
TDM411	Transtech Parallel Systems Corp.	TIM-40, VME, PCI, ISA	PaCE, 3L Parallel C	C4x
TDM435	Transtech Parallel Systems Corp.	TIM-40, VME, ISA	PaCE, 3L Parallel C	C4x
TDM436	Transtech Parallel Systems Corp.	TIM-40	PaCE, 3L Parallel C	C4x
TDM441	Transtech Parallel Systems Corp.	TIM-40, VME, PCI, ISA	PaCE, 3L Parallel C	C4x
TDM443	Transtech Parallel Systems Corp.	TIM-40, VME, PCI, ISA	PaCE, 3L Parallel C	C4x
TDM444	Transtech Parallel Systems Corp.	TIM-40, VME, PCI, ISA	PaCE, 3L Parallel C	C4x
TDM445	Transtech Parallel Systems Corp.	TIM-40, VME, PCI, ISA		C4x
TDM450	Transtech Parallel Systems Corp.	SCSI		C4x
HEBUSL1 TIM-40 Motherboard	Traquair Data Systems, Inc.	Standalone	Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS	C4x
HECPCI-1 3U CompactPCI Motherboard	Traquair Data Systems, Inc.		CompactPCI, Windows 3.1/95/NT, DOS, VxWorks	C4x
HEPC2E DSP System	Traquair Data Systems, Inc.	ISA	Windows 3.1, Windows 95, Windows NT, MS DOS	C4x
HEPC4 TIM-40 Motherboard	Traquair Data Systems, Inc.	PCI PC	Windows 3.1, Windows 95, Windows NT, MS DOS	C4x
HEPC2104 PC/104 DSP Board	Traquair Data Systems, Inc.	PC/104	Windows 3.1, Windows 95, Windows NT, MS DOS	C4x
HESB40 SBus Interface	Traquair Data Systems, Inc.	SBus	Solaris	C4x
HEV40-4 TIM-40 Motherboard	Traquair Data Systems, Inc.	VME	Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS	C4x
HEVAL6A - TMS320C62X Dev. System	Traquair Data Systems, Inc.	ISA	Windows 3.1, Windows 95, Windows NT, DOS	C6x
Pizza Box TIM-40 Motherboard	Traquair Data Systems, Inc.	Standalone, Desktop chassis	Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS	C4x
TIM-40 Communication Modules	Traquair Data Systems, Inc.	TIM-40		C4x
TIM-40 Data Acquisition Modules	Traquair Data Systems, Inc.	TIM-40 Module	Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS	C4x
TIM-40 Image Processing Modules	Traquair Data Systems, Inc.	TIM-40	Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS	C4x
TIM-40 Processing Modules	Traquair Data Systems, Inc.	TIM-40 Module	Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS	C4x
VS 9C50-1	VisionSmart Inc.	VME	Windows 3.1, DOS	C5x
Mountain-30	White Mountain DSP, Inc.	PC-AT	Windows 3.1, Windows 95	C3x
Mountain-32	White Mountain DSP, Inc.	PC-AT	Windows 3.1, Windows 95	C3x
Mountain-UEVM	White Mountain DSP, Inc.	PC-AT	Windows 3.1, Windows 95, Windows NT	C2xx, C5x, C54x, C6x
Pathway F2XX DSP Starter Kit	White Mountain DSP, Inc.	Standalone	Windows 95	C2xx
Slalom-40	White Mountain DSP, Inc.	PC-AT	Windows 3.1, Windows 95, Windows NT	C4x
Slalom-50	White Mountain DSP, Inc.	PC-AT	Windows 3.1, Windows 95	C5x
DSP Debug Board	Z-Domain Systems Development, Inc.	'C5x DSK	Windows 3.1, Windows 95	C5x
DSP Expansion Board Plus	Z-Domain Systems Development, Inc.	'C54x DSK	Windows 3.1, Windows 95	C5x

# DEVELOPMENT BOARDS

Number of Processors Supported	Clock Speeds Available	Board Size	External Memory (SRAM/DRAM)	Software Included	Technical Support Training Available	Page Number
1	60 MHz	4.2 x 2.5"			Yes	4-331
1	60 MHz	4.2 x 7.5"	SRAM	Libraries	Yes	4-332
1	40 MHz	4.2 x 5"	DRAM		Yes	4-333
2	60 MHz	4.2 x 2.5"	SRAM		Yes	4-334
		4.2 x 2.5"	SRAM		Yes	4-335
2	60 MHz	4.2 x 2.5"	SRAM		Yes	4-336
1	60 MHz	2.5 x 4.2"	SRAM		Yes	4-337
1		Size 2			Yes	4-338
0-8	60 MHz	7 x 4.2	SRAM		Yes	4-339
0-4	60 MHz	3U			Yes	4-340
0-16		Full Card	SRAM		Yes	4-341
0-16	60 MHz	Full Card	SRAM		Yes	4-342
1	60 MHz	Full Card	SRAM		Yes	4-343
		Full Card			Yes	4-344
0-16	60 MHz	Full Card	SRAM		Yes	4-345
1	200 MHz	Full Card	SRAM	Debuggers, Code Generation Tools, Libraries	Yes	4-346
0-32	60 MHz		SRAM		Yes	4-347
					Yes	4-348
					Yes	4-349
0-1	50 MHz				Yes	4-350
1 to 4	60 MHz				Yes	4-351
9	40, 56 MHz	Full Card	8MB Global SRAM		Yes	4-352
1	33 MHz	Full Card	SRAM		Yes	4-353
1	50 MHz	Half Card	SRAM		Yes	4-354
1		Half Card	SRAM		Yes	4-355
1	40 MHz	Half Card	On-Chip SRAM		Yes	4-356
1, 2	40 MHz	Full Card	SRAM		Yes	4-357
2	57 MHz	Full Card	SRAM		Yes	4-358
		4 x 3 in.		Libraries	Yes	4-359
		4 x 3 in.		Libraries	Yes	4-360



**DEVICE PROGRAMMERS**

System	Company	Programming Type	Page
PILOT-MVP	Advin Systems Inc.	EPROM, PROM, Flash, EEPROM, PLDs, microcontrollers	5-2
PILOT-U44-Plus	Advin Systems Inc.	EPROM, Flash, EEPROM, Microcontrollers, PLDs	5-3
PILOT-U84-Plus	Advin Systems Inc.	EPROM, PROM, Flash, EEPROM, microcontrollers, PLDs	5-4
Mountain Flash Programmers	White Mountain DSP, Inc.	Flash	5-5



## EMULATORS

Board	Company	Host Platforms Supported	Host O/S Supported
P-ICE 320C14/C15/C16/C2x/C5x/C2xx	DEEMAX Technology, Inc.	Parallel printer port	Windows 95, DOS
Tem2XX	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT
Tem 30	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT
Tem30S	DSP Research, Inc.	SBus	
Tem40	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT
Tem40S	DSP Research, Inc.	SBus	
Tem50	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT
Tem50S	DSP Research, Inc.	SBus	
Tem54X	DSP Research, Inc.	ISA	Windows 3.1, Windows 95, Windows NT
EML510	Instrumental Systems Corporation	ISA	Windows 3.1, Windows 95, Windows NT, MS-DOS
KCE Series	Kane Computing	ISA, SUN	Windows, 3.1, 95, NT
MIRAGE-510D Emulator	MicroLAB Systems Ltd.	ISA	Windows 3.1, Windows 95, Windows NT, DOS
UECM Emulation Daughter-Card Module	MicroLAB Systems Ltd.	Tornado UECM bu	Windows 3.1, Windows 95, Windows NT, DOS
IcePack	Softronics	ISA, PCI PC, IEEE1394	Windows 95
XDS5110PP Scan Path Emulator	Spectrum Digital, Inc.		Windows 3.1, Windows 95, DOS
LINK-C30	Tasking S.r.l.	ISA	Windows 3.1, Windows 95
USP-10, USP-25	Tasking S.r.l.	Other	Windows 3.1, Windows 95, Windows NT
ETIC-25	TechLab 2000 Ltd.	PC-compatible	Windows 3.1, Windows 95
Mountain-510/LT Universal DSP Emulator	White Mountain DSP, Inc.	PCMCIA	Windows 3.1, Windows 95, Windows NT
Mountain-510 Universal DSP Emulator	White Mountain DSP, Inc.	PC-AT	Windows 3.1, Windows 95, Windows NT
Mountain-510/WS Universal DSP Emulator	White Mountain DSP, Inc.	Sun SBus	Solaris 2.x, Sun 4.1.x
Summit-510 PCI-Based JTAG Emulator	White Mountain DSP, Inc.	PCI PC	Windows 95, Windows NT
Trek-510 Universal Ethernet Emulator	White Mountain DSP, Inc.		Windows '95, Windows NT, SunOS 4.1x

TMS320 Devices Supported	Software Included	Technical Support/ Training Available	Cable Length	Voltage Supported	Page Number
C1x, C2x, C2xx, C5x	Yes	Yes	6 Inches	5	6-2
C2xx	Yes	Yes	10 Feet		6-3
C3x	Yes	Yes	10 Feet		6-4
C3x	Yes	Yes	10 Feet		6-5
C4x	Yes	Yes	10 Feet		6-6
C4x	Yes	Yes	10 Feet		6-7
C5x	Yes	Yes	10 Feet		6-8
C5x	Yes	Yes	10 Feet		6-9
C54x	Yes	Yes	10 Feet		6-11
C3x, C4x, C5x, C54x, C6x, C8x	No	Yes	50 Inches	5	6-12
C2xx, C3x, C4x, C5x, C54x	Yes	Yes	10 Feet	3.3/5	6-13
C2xx, C3x, C4x, C5x, C54x, C6x	Yes	Yes	40 Inches	3/5	6-14
C2xx, C3x, C4x, C5x, C54x, C6x	Yes	Yes	40 Inches	3/5	6-15
C2xx, C3x, C5x, C54x, C6x	Yes	Yes	200 Centimeters	3/5	6-16
C2xx, C3x, C5x, C54x, C6x	Yes	Yes	6 feet/8 Inches	5/3.3	6-17
C3x		Yes	3+6 Feet		6-18
C1x, C2x		Yes	40	5	6-19
C2x	Yes	Yes	20 Inches	5	6-20
C2xx, C3x, C4x, C5x, C54x, C6x, C8x	No	Yes	40 Inches	3/5	6-21
C2xx, C3x, C4x, C5x, C54x, C6x, C8x	No	Yes	40 Inches	3/5	6-22
C2xx, C3x, C4x, C5x, C54x, C6x, C8x	No	Yes	40 Inches	3/5	6-23
C2xx, C4x, C5x, C54x, C6x, C8x	No	Yes	120 Inches	3/5	6-24
C2xx, C3x, C4x, C5x, C54x, C6x, C8x	No	Yes	40 Inches	3/5	6-25



**LOGIC ANALYZERS**

Product	Company	Host Platform(s) Supported	TMS320 Devices Supported	Number of Channels (Total)	Maximum Clock Rate (MHz)
PI-320C20/25	Corelis, Inc.	HP analyzers	C2x	100	
PI-320C30/31	Corelis, Inc.	HP analyzers	C3x	100	
PI-320C32	Corelis, Inc.	HP analyzers	C3x	100	
PI-320C40	Corelis, Inc.	HP analyzers	C4x	100	
PI-320C50/51/53	Corelis, Inc.	HP analyzers	C5x	100	
PI-320C52	Corelis, Inc.	HP analyzers	C5x	100	
PI-320C80	Corelis, Inc.	HP analyzers	C8x	100	
PI-320C548	Corelis, Inc.	HP analyzers	C54x	100	
Personal Line	Digital Logic Instruments GmbH	Windows 3.1, Windows 95, Windows NT	C2xx, C3x, C4x, C5x, C54x, C6x	192	1000

Scope Channels (samples/s)	Memory Depth Per Channel	Triggering Levels	Minimum Detectable Glitch Width (ns)	Software Included	Technical Support/ Training Available	Page Number
				Yes	Yes	7-2
				Yes	Yes	7-3
				Yes	Yes	7-4
				Yes	Yes	7-5
				Yes	Yes	7-6
				Yes	Yes	7-7
				Yes	Yes	7-8
				Yes	Yes	7-9
	32K	15	4	Yes	Yes	7-10





## DEBUGGERS

Debugger	Company	Host O/S Supported	TMS320 Devices Supported
ASPEX Development Environment	Allant Software Corporation	Windows 95, Windows NT, Solaris 2.5	C54x, C2xx, C6xx
Code Hammer	Innovative Integration, Inc.	Windows 3.1, Windows 95, Windows NT	C2xx, C3x, C4x, C5x, C54x, C6x
DSPower-Block Diagram	Signalogic, Inc.	Windows 3.1, Windows 95, Windows NT	C3x, C4x, C5x, C54x, C6x
SDVBX	Spectrum Digital	Windows 3.1, Windows 95	C3x, C5x
DB2XX HLL Debugger	Spectrum Digital	Windows 3.1, Windows 95, DOS	C203, F206, F240
Vista-MP	White Mountain DSP, Inc.	Windows 3.1, Windows 95	C2xx, C4x, C5x, C54x, C6x, C8x
Vista-X	White Mountain DSP, Inc.	Windows 95, Windows NT	C2xx, C4x, C5x, C54x, C6x, C8x

Software Included	Technical Support Training Available	Page Number
Debuggers	Yes	8-2
Debuggers, Code Generation Tools, Libraries	Yes	8-3
Debuggers, Code Generation Tools, Libraries	Yes	8-4
	Yes	8-5
	Yes	8-6
Debuggers	Yes	8-7
Debuggers	Yes	8-8



## SIMULATION MODELS

Board	Company	Host O/S Supported	TMS320 Devices Supported
Mastermodel	Zeelan <sup>®</sup> Technology	Windows 3.1, Windows 95, Windows NT, Solaris, Unix	C4x, C5x, C54x

Software Included	Technical Support/ Training Available	Page Number
Bundled Libraries	Yes	9-2



## SIMULATORS

Board	Company	Host O/S Supported	TMS320 Devices Supported
ASPEX Development Environment	Allant Software Corporation	Windows 95, Windows NT, Solaris	C54x, C2xx, C6xx
SD2000A	Synetcom Digital, Inc.		C2x, C5x

Software Included	Technical Support/ Training Available	Page Number
Debuggers, Code Generation Tools	Yes	10-2
Libraries	Yes	10-3



**SOFTWARE DEVELOPMENT UTILITIES**

Software	Company	Application Area	Code Generation Capabilities	Visual Programming Capabilities
3L Parallel C	3L Ltd.	Communication	C	
3L Windows Server	3L Ltd.	GUI design		
Debugger Support Kit	3L Ltd.	Parallel Debug		
Paramex	3L Ltd.	Visualization	C	
VPB Performance Monitor	3L Ltd.	Parallel	C	
Aladdin Interactive DSP	AB Nyvalla DSP	Prototyping, Simulation, Education, Gen. DSP	Interpreter	Yes
ELVIRA Signal Analysis Software	Applied Signal Technology, Inc.	Communications	C	
System Explorer MP3, MP4	Aptix Corporation	Filter design, Control, Other Communication		
DFDP4/Plus	ASPI Digital	Filter Design	Assembly	
MONARCH Series DSP Software	Athena Group, Inc., The	Filter Design, Signal Analysis	Assembly	No
VPB Toolset	Central Research Laboratories	Performance Tuning	C	
FLASHER	Concur System Technologies	FLASH Programming Utility		Yes
DigiWare™	Digisonix, Inc.	Adaptive/Active Control	C, assembly	
hiPE	hema Elektronik GmbH	Image processing		
HSV11000 Function Generator	Hyperception, Inc.	Test and measure		Yes
HSV12000 Time Domain Analyzer	Hyperception, Inc.	Test and measure		Yes
HSV13000 Frequency Domain Analyzer	Hyperception, Inc.	Speech noise		Yes
HSV14000 Dynamic Signal Analyzer	Hyperception, Inc.	Test and measure		Yes
Hyperception Application Interface	Hyperception, Inc.	Design Applications	C	Yes
Hypersignal Block Diagram	Hyperception, Inc.	Simulation, Others	C, optional add-on	Yes
Hypersignal C Code Generator	Hyperception, Inc.	Code generation	C	Yes
Hypersignal HAppl	Hyperception, Inc.	Application interface		Yes
Hypersignal Ride	Hyperception, Inc.	Filter Design, Control, Various	C	Yes
OORVL DSP Design Studio	Hyperception, Inc.	Compilation		Yes
H.320 API	IAT AG	Visual Communication	C	
H.320 SDK	IAT AG	Visual Communication	C	
InterAct - CodeGen, DataView	IMPACTS Intelligent Systems	Control, Image Recognition	C, Assembly	Yes
fuzzyTECH MCU-320 Edition	Inform Software Corporation	Control	C, Assembly	Yes
Zuma Software Toolset	Innovative Integration, Inc.	Board Libraries	C, Assembly	Yes
Pegasus Parallel Processing	Jovian Systems, Inc.	Filter Design, Control, General	C, Assembly	Yes
Adaptive Signal Processing	MultiDSP	Filter Design, Control	Source code	No
DigiFilter	MultiDSP	Filter Design, Control Systems, Instrumentation	Source code	No

# SOFTWARE DEVELOPMENT UTILITIES

Host Platform(s) Supported	TMS320 Devices Supported	Technical Support/ Training Available	Page Number
Windows 3.1, Windows 95, Windows NT, Solaris	C4x	Yes	11-2
Windows 3.1, Windows 95, Windows NT	C4x	Yes	11-3
Windows 3.1, Windows 95, Windows NT, Solaris	C4x	Yes	11-4
Windows 3.1, Windows 95, Windows NT	C4x	Yes	11-5
Windows 3.1, Windows 95, Windows NT, Solaris	C4x	Yes	11-6
Windows 3.1.x, Windows 95, Windows NT	C3x, C4x	Yes	11-7
	C3x, C5x	Yes	11-8
Solaris 2.5.1, HP/UX 10.x	C1x, C2x, C2xx, C3x, C4x, C5x, C54x, C6x, C8x	Yes	11-9
DOS	C1x, C2x, C3x, C4x	Yes	11-10
Windows 3.1, Windows 95, Windows NT, DOS	C3x, C4x, C5x	Yes	11-11
Windows 3.1, Windows 95, Windows NT	C4x	Yes	11-12
Windows 3.1, Windows 95	C3x	Yes	11-13
Windows 3.1, Windows 95, Windows NT	C3x, C4x	Yes	11-14
Windows 95, Windows NT	C4x	Yes	11-15
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-16
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-17
Windows 95, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-18
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-19
Windows 95, Windows NT	C3x, C4x, C5x, C6x	Yes	11-20
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-21
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-22
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-23
Windows 95, Windows 98, Windows NT	C3x, C4x, C5x, C6x, C8x	Yes	11-24
Windows 95, Windows NT, Windows 98	C2x, C3x, C4x, C5x, C6x	Yes	11-25
Windows 3.1, Windows 95, Windows NT, OS/2	C8x	Yes	11-26
Windows 3.1, Windows 95, Windows NT, OS/2	C8x	Yes	11-27
Windows NT, HP-UX	C3x, C5x	Yes	11-28
Windows 3.1, Windows 95, Windows NT	C2x, C3x, C4x, C5x	Yes	11-29
Windows 95, Windows NT	C2x, C2xx, C3x, C4x, C5x, C54x, C6x	Yes	11-30
Windows 95, Windows NT	C4x, C6x	Yes	11-31
Windows 3.1, Windows 95	C3x	Yes	11-32
Windows 3.1, Windows 95	C3x	Yes	11-33





**SOFTWARE DEVELOPMENT UTILITIES (Continued)**

SOFTWARE DEVELOPMENT UTILITIES

Software	Company	Application Area	Codegeneration Capabilities	Visual Programming Capabilities
DSPlus	MultiDSP	FFT Analyzer, Data Acquisition and Post Processing	Source code	No
Swiftnet	Pentek, Inc.	DSP Development	C	Yes
H.324 Videophone Reference Design	Proton Communications Technologies	Videophone		Yes
TASK-6000	RadiSys Corp.	Telecommunications	C, Assembly, COFF	Yes
Development Assistant for C	Ristanovic CASE	All	Other	No
virtual Trace	SICAN GmbH	Filter Design, Object Recognition	C	
DSPower-Block Diagram	Signalogic, Inc.	Filter Design, Control, DC - MHz, C	Hypersignal macro language, MATLAB.mfile, C	Yes
DISPRO®/Professional/Personal	Signix Corporation	Filter Design	Assembly	
PRIM DesignTool	SSE Czech und Matzner	Design Automation	Assembly, PRIM-C40 configuration files	Yes
PACE	Transtech Parallel Systems Corporation	Filter Design, Control, Other: General	C, Assembly	
VISSIM/DSP	Visual Solutions Inc.	Filter Design, Control, DSP Design	C	Yes

# SOFTWARE DEVELOPMENT UTILITIES

Host Platform(s) Supported	TMS320 Devices Supported	Technical Support/ Training Available	Page Number
Windows 3.1, Windows 95	C3x	Yes	11-34
Windows 95, Windows NT, Solaris	C4x	Yes	11-35
C82 based embedded system	C8x	Yes	11-36
Windows 95, Windows NT	C6x	Yes	11-37
Windows 3.1, Windows 95, Windows NT	C2x, C2xx, C5x, C6x	Yes	11-38
Windows 95, Windows NT	C6x	Yes	11-39
Windows 3.1, Windows 95, Windows NT	C2x, C3x, C4x, C5x, C54x, C6x	Yes	11-40
Windows 3.1, Windows 95	C1x, C2x, C2xx, C3x, C4x, C5x, C54x, C6x, C8x	Yes	11-41
Windows 3.1, Windows 95, Windows NT, Solaris 2.4, Linux	C4x	Yes	11-42
Windows 3.1, Solaris 2.0	C4x	Yes	11-43
Windows 3.1, Windows 95, Windows NT	C3x, C4x, C6x	Yes	11-44



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Analogic Corporation	TAP-802 . . . . . 4-9
Applied Signal Technology, Inc.	B100 Digital Tuner Processor . . . . . 4-10
	B105 Modular Digital Processor . . . . . 4-11
	B108D Four-Channel Digitizer . . . . . 4-12
Aptix Corporation	System Explorer MP3 and MP4 . . . . . 4-13
Ariel Corporation	Commio-IP . . . . . 4-14
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	Elf DSP Platform . . . . . 4-21
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	Vortex System Board . . . . . 4-25
Bridgenorth Signal Processing, Inc.	BN1416 . . . . . 4-26
	BN3000 . . . . . 4-27
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	BN4000 . . . . . 4-29
Concur System Technologies L.L.C.	CEX-32386-0 . . . . . 4-30
Coreco Inc.	F/64-PCI . . . . . 4-31
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Dalanco Spry	Model 250 . . . . . 4-33
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DEEMAX Technology, Inc.	CSDK-14, 25, 50, 240 . . . . . 4-37
DiCon Lab, Inc.	DSProto31 . . . . . 4-38
	DSProto32 . . . . . 4-39
	DSP Back-Plane . . . . . 4-40
	PCI Signal Generator/Digital Sampler . . . . . 4-41
DNA Enterprises, Inc.	'C6X PC/104-Plus Accelerator . . . . . 4-42
	'C6201 General Purpose Development Platform . . . . . 4-43
	'C6201 Telephony Development Platform . . . . . 4-44
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DEVELOPMENT BOARDS



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	Tiger 6201/PCI . . . . .	4-62
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	Viper-12 542/PC . . . . .	4-66
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dSPACE GmbH	DS1003 DSP Board . . . . .	4-71
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DSP Tools, Inc.	DT31-HI . . . . .	4-73
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EPIX Incorporated	4MEG VIDEO Model 10 . . . . .	4-78
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IAT AG

Innovative Integration, Inc.

Innovative Integration, Inc.

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DEVELOPMENT BOARDS

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Z-Domain Systems Development

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**FEATURES & BENEFITS**

- Up to 720MFLOPS and 360MIPS
- MVIP and SCSA Telephony Interfaces
- Voice Compression
- FAX Modem
- Intranet and Internet Telephony
- Up to 30 channels in one slot
- UNIX and Windows NT Drivers

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows NT

Unixware

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

12

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

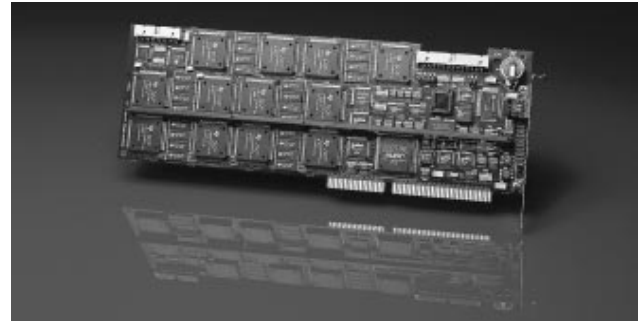
Debuggers, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TAP-802 Telephony Algorithm Processor is a powerful, open DSP platform developed specifically for advanced computer telephony integration (CTI) applications. With twelve 60MHz TMS320C32 floating point processors, the TAP-802 delivers 720MFLOPS of performance. This is enough computing power to handle even the most demanding



computer telephony applications, such as Internet telephony and remote data access. Applications developers can purchase pre-ported algorithms with easily-integrated applications program interfaces (APIs), or develop their own algorithms using the TAP-802's powerful development tools, user-friendly API and on-board debug facilities. Both industry-standard Time Division Multiplex data interfaces, MVIP and SCSA, are supported on the TAP-802, giving users access to the whole CTI market. Each of the 'C32 processors has 512kBytes of zero-wait-state local SRAM. Local SRAM is backed up by 2MBytes of global DRAM, making it practical to store multiple algorithms and quickly reconfigure the functionality of the board. Algorithms available: Lucent SX7300P/SX8300P @ 7.3kbps Fax demod/remod (V.27, V.29 and V.17) Voice Compression: G.723.1 @ 6.4kbps and 5.4kbps G.729A @ 8kbps

**COMPANY INFORMATION**

**Analogic Corporation**

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www: <http://www.analogic.com>

Analogic Corporation is a leading custom designer and manufacturer of advanced electronic systems and subsystems sold to major medical, industrial, and telecommunications OEMs



DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- IF input
- Digital tuners
- E1 inputs
- Modem demodulation
- Compatible w/ELVIRA Signal Analysis
- RF SCAN

## SPECIFICATIONS

### Platforms Supported:

ISA

### TMS320 Devices Supported:

TMS320C2x

### CPU:

2

### Clock Speeds Available

64MHz

### Board Size:

Full card

### Expansion Options:

Analog I/O daughter card

Digital I/O daughter card

Drop receivers

### Software Included:

Code Generation tools

### Technical Support/Training Available:

Unlimited phone support and contract development and training

## PRODUCT DESCRIPTION

The B100 is an IBM PC-compatible, plug-in board capable of processing a selected channel from the baseband or IF input which is sampled at 32.768MHz. A digital tuner can be directed to extract any single channel of selectable bandwidth (3 to 55kHz) from the input signal. This single channel is then processed by the TMS320C25 DSP circuit. Digital outputs are available from the RS-232 port or the byte-wide PC bus. Analog outputs include an audio port and X-Y monitor signals. The host PC downloads the TMS processor application program and exchanges control and status information with the B100.

## COMPANY INFORMATION

### Applied Signal Technology, Inc.

400 West California Avenue

Sunnyvale, CA 94086 USA

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Fax: (408) 522-2960

e-mail: [sandy\\_white@appsig.com](mailto:sandy_white@appsig.com)

www: <http://www.appsig.com>

The company develops and manufactures signal processing products for OEM and system development solutions for wireless telecommunications signals in both the consumer and reconnaissance marketplace.



## FEATURES & BENEFITS

- Digital drop receivers
- IF inputs
- Dual TMS320C50s
- E1/T1 I/O modules
- X-Y monitor
- Supports ELVIRA Signal Analysis Workstation
- Additional plug-in I/O

## SPECIFICATIONS

### Platforms Supported:

ISA

### TMS320 Devices Supported:

TMS320C3x

TMS320C5x

### Clock Speeds Available

57MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

DRAM

### Expansion Options:

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

### Software Included:

Code Generation tools

### Technical Support/Training Available:

Unlimited phone support and contract development and training

## PRODUCT DESCRIPTION

The B105 is a modular, digital signal processor board for the IBM-AT and compatibles. With two 15MHz bandwidth inputs and four digital tuners, multiple signals can be extracted and processed from receiver baseband or IF OUTPUTS. Up to four other I/O types can be accommodated via field changeable I/O and DAC-based analog outputs. The applications for the board include voice-channel modem identification and demodulation, predetected modem demodulation, facsimile processing, RF search, and E1 record and play back. Supported software includes ELVIRA Signal Analysis Workstation and FaxCepter.

## COMPANY INFORMATION

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www: <http://www.appsig.com>

The company develops and manufactures signal processing products for OEM and system development solutions for wireless telecommunications signals in both the consumer and reconnaissance marketplace.

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Solaris

**TMS320 Devices Supported:**

TMS320C2x

**Clock Speeds Available**

65MHz

**Board Size:**

Full card

**Expansion Options:**

Analog I/O daughter card

**Software Included:**

Libraries

**Technical Support/Training Available:**

Unlimited phone support

**PRODUCT DESCRIPTION**

The B108D Four-Channel Digitizer is a VME bus-compatible 6U-160 board which accepts up to four baseband inputs, each with a bandwidth of up to 32.5MHz. 10-bit or 12-bit A/D converters provide four wideband digitized signals to multiple B108T cards. Onboard TMS320C25 DSP processor provides AGC or MGC function for each baseband. The RMS level is readable by a single board computer for external AGC control or power level reporting. There is choice of two onboard sampling clocks, external ECL clock, or sinusoidal test clock input. Spurious-free dynamic range is up to 70dB.

**COMPANY INFORMATION****Applied Signal Technology, Inc.**

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Fax: (408) 522-2960

e-mail: [sandy\\_white@appsig.com](mailto:sandy_white@appsig.com)www: <http://www.appsig.com>

The company develops and manufactures signal processing products for OEM and system development solutions for wireless telecommunications signals in both the consumer and reconnaissance marketplace.



## FEATURES & BENEFITS

- Prototyping of complete systems
- Early integration of hardware and software
- Real-time validation for subjective data
- Fully reconfigurable system prototype
- Any DSP integrated with open architecture
- Aptix provides on-site customer training. A hot-line, field application engineers, and consulting services are available for support

## SPECIFICATIONS

### Platforms Supported:

Standalone

### Host Supported:

Solaris, 2.5.1

HP/UX v10.x

### TMS320 Devices Supported:

TMS320C1x

TMS320C2x

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

### Board Size:

13 x 20 x 2

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The Aptix reconfigurable system prototyping products were developed to rapidly prototype, verify, and debug complex electronic systems in a real-time environment, unlike ASIC emulators and software simulators. The System Explorer products combine Aptix's proprietary FPIC (Field Programmable Interconnect Component) and FPCB (Field



Programmable Circuit Board) and the accompanying software to emulate a complete system. The FPCBs contain free holes for the insertion of user components such as DSPs, cores, memories, FPGAs. The connections between the components are routed through the FPICs. New ASIC components can be implemented in multiple FPGAs and combined with other system components in Aptix's system prototyping solutions. This approach delivers verification throughput up to 30MHz - which is six orders of magnitude ( $10^{**6}$ ) higher than simulation. The real-time verification is key for DSP-based environments where images, sound, protocols, and subjective judgement comprise the validation domain. The Aptix product family includes the System Explorer MP3 and System Explorer MP4. Low-cost hardware replicates are available for early software development for both the MP3 and MP4 products. Aptix tools accept multiple netlist formats, including EDIF.

## COMPANY INFORMATION

### Aptix Corporation

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Tel: (408) 428-6200

Fax: (408) 944-0646

e-mail: [info@aptix.com](mailto:info@aptix.com)

**FEATURES & BENEFITS**

---

- 48MFLOPS floating-point DSP
- Up to 8MBytes zero wait-state SRAM
- Four IndustryPack™ I/O Sites on-board
- Supports JTAG debug over VMEbus
- Comprehensive software support

**SPECIFICATIONS**

---

**Platforms Supported:**

VME

**Host Supported**

Solaris

SunOS

Vxworks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

48MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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TMS320C40 DSP with Modular I/O for VMEbus, CommIO-IP interfaces four standard IndustryPack™ I/O module sites directly to C4x comm ports. Use of the IndustryPack standard provides the Hydra series with a vast array of real-world analog and digital I/O, plus other functions including GPIB, Ethernet, expanded memory, industrial control, and other I/O and communications protocols

**COMPANY INFORMATION**

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**Ariel Corporation**

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Fax: (609) 860-1155

e-mail: ariel@ariel.com

www: <http://www.ariel@ariel.com>**Ariel**



**FEATURES & BENEFITS**

- 240MFLOPS Harvard Architecture
- Up to 32MBytes SRAM
- 32kBytes dual-port RAM
- All active components on main board
- Single-slot 6U VME form factor
- JTAG-emulation interface
- Dual 50/100M byte/sec expansion buses

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Solaris

SunOS

VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Expansion Options:**

Local bus expansion

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Quad TMS320C40 DSPs for VMEbus, The most cost effective quad-C40 VME board available, Hydra-II packs four C40s onto a single 6U VME bus board with up to 32MBytes of zero-wait-state SRAM in a Harvard Architecture. The design is optimized for large-scale parallel systems using high-speed, interprocessor comm port links. Hydra-II also features two 100MByte/sec parallel I/O buses. The comm ports, plus the two I/O buses, are ideal for data acquisition.

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**FEATURES & BENEFITS**

- 200MFLOPS Harvard Architecture
- Up to 32MBytes private zero wait-state SRAM
- Shared memory up to 16MBytes DRAM or 12MBytes
- VMEbus master/slave capability
- Optional VSB master interface
- Flexible communication port configuration
- On-board JTAG controller ASIC

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Solaris

SunOS

VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The new, advanced HydraPlus combines the 200MFLOPS performance of four C40s with VME master/slave capability, plus an optional VSB interface. With up to 32MBytes of private zero-wait-state SRAM in a Harvard Architecture, and up to 16MBytes of shared DRAM or 12MBytes of shared SRAM, HydraPlus is the ideal parallel processing workhorse, bringing the renowned Hydra Architecture to countless DSP applications.

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**FEATURES & BENEFITS**

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- Up to 480MFLOPS in a single slot
- VME64 master/slave capability
- Symmetrical Harvard Architecture
- OpenIOTM high-speed I/O sites
- Up to 32MBytes private zero wait-state SRAM
- Up to 4MBytes shared SRAM
- Comprehensive software support

**SPECIFICATIONS**

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**Platforms Supported:**

VME

**Host Supported:**

Solaris

SunOS

VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

8

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

OHA, Open I/O

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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Octal TMS320C44 DSPs for VMEbus, With eight blazing C44s in a single 6U VME slot, HyperHydra delivers up to 480MFLOPS of uncompromised DSP power and 32MBytes of SRAM in an enhanced superset of the Hydra Architecture that effectively doubles memory I/O speeds. And Hyper-Hydra's OpenIOTM provides multiple, high-speed 32-bit interfaces to a range of real-world I/O plus custom I/O solutions.

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- ISO/IEC 11172-3 and 13818-1 compliant
- Complete MPEG Audio Encoder solution
- Audio/Video synchronization signals
- Smaller than a business card

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

2, 3 MHz

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

The A1024 provides industry standard MPEG 2 audio compression in a self-contained, double sided module occupying only six square inches of printed circuit board space. Input to the A1024 is either analog audio or digital audio through an interface to a digital audio receiver chip. Output is available in either an elementary stream or a packetized elementary stream in both byte-parallel and bit-serial formats. The A1024's complete solution shortens the design time for any application where high quality audio compression is needed.

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.

**FEATURES & BENEFITS**

- Flexible I/O and memory architecture
- 3 modes of 'C30 to host communications
- Includes true dual-port memory

**SPECIFICATIONS****TMS320 Devices Supported:**

TMS320C3x

**Platforms Supported:**

ISA

**Host Supported:**

DOS

**Clock Speeds Available:**

40 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Analog I/O Daughtercard

Digital I/O Daughtercard

**Software Included:**

Debuggers

Libraries

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

The Banshee II System Board, based on the 'C30 DSP, brings tremendous power to an AT or compatible computer. The Banshee II is at the center of a large family of interface boards and other devices that take advantage of the Banshee II's flexible I/O and memory architecture. Data acquisition options include the AD16 dual-channel 16-bit A/D-D/A interface board, the Digital Audio Interface, and two external units, the Serial Voice Interface and the Serial Audio Interface. Also available is the Memory Expansion Board, an add-on board that expands the Banshee II's memory to as much as 64M bytes. The host bus and the TMS320C30's memory and I/O buses are brought out to connectors on the Banshee II board, making it easy for users with unique requirements to develop special interface boards for the Banshee II.

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.

**FEATURES & BENEFITS**

- Can be used standalone
- Does not require an extra slot in the host
- Available as a development system

**SPECIFICATIONS****Platforms Supported:**

Standalone  
daughter board

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60 MHz

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

Debuggers

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

The Elf Coprocessor board is a daughter board for the Elf DSP Platform that provides an additional 'C31 DSP for applications that require even more DSP power. The Elf Coprocessor Board has 128K bytes of static RAM and an EPROM, allowing it to be used standalone, or its processor can be loaded from the host PC through the main Elf Board. The Elf Coprocessor Board also has connectors for the 'C31's serial port; an emulator port, for use with Texas Instruments development tools, and a debugger port for use with ASPI development tools. The debugger port for use with ASPI development tools. The debugger port allows you to develop software on the main Elf processor and the coprocessor simultaneously. This can be done by either using a second PC compatible computer or running Microsoft Windows on the host PC.

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.



## FEATURES & BENEFITS

- Telephone-line interface (DAA)
- Equipped with EPROM monitor
- Can be used in standalone operation
- Stereo 16-bit A-D/D-A

## SPECIFICATIONS

### Platforms Supported:

ISA

Standalone

### Host Supported:

Windows 3.1

### TMS320 Devices Supported:

TMS320C3x

### CPU:

1

### Clock Speeds Available:

33 MHz

### Board Size:

Half Card

### Memory (DRAM/SRAM):

DRAM

### Expansion Options:

Digital I/O Daughtercard

Coprocessor Daughtercard

### Software Included:

Debuggers

Code Generation Tools

Libraries

### Technical Support/Training:

YES

## PRODUCT DESCRIPTION

The Elf DSP Platform is a low-cost board that includes a TI TMS320C31 floating-point DSP, a high-quality stereo 16-bit A/D-D/A converter, 256K words (1M byte) or 1M word (4M bytes) of DRAM, and a telephone-line interface. It also has COM 1 and COM 2 emulation for modem support and a Musical Instrument Digital Interface (MIDI). ASPI Digital can also provide the OEM with DSP algorithms for processing speech, music, and images. also available are a DSP operating system and host-interface software (which allows easy integration into host applications) and a development environment (featuring a loader, assembler, C compiler, and C source debugger).

## COMPANY INFORMATION

### ASPI Digital

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.

**FEATURES & BENEFITS**

- Stereo 16-bit A-D/D-A
- Telephone Line Interface(DAA)
- Can be used in standalone operation
- Additional TMS320C31 available

**SPECIFICATIONS****Platforms Supported:**

ISA

Standalone

**Host Supported:**

Windows 3.1

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60 MHz

**Board Size:**

Half Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Digital I/O Daughtercard

Coprocessor Daughtercard

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

The Elf/SR60 DSP Platform offers the best computational, price/performance ratio yet for a DSP add-in card. The Elf/SR60 DSP Platform is built around a 60 MHz 'C31 floating-point DSP and 256K words (1M byte) of zero-wait-state static RAM for maximum performance. Like the original Elf DSP Platform, it also includes a high-quality stereo 16-bit A-D/D-A converter and a telephone-line interface. The Elf/SR60 design can be licensed for a one-time fee or for royalties by manufacturers who wish to build the Elf/SR60 to use in their own products.

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.



**FEATURES & BENEFITS**

- ISO/IEC 11172-3 compliant
- AES/EBU digital audio interface
- Sample-rate converter on digital-audio input

**SPECIFICATIONS****Platforms Supported:**

VME

**TMS320 Devices Supported:**

TMS320C3x

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

ASPI Digital's MPEG Digital Audio Processor provides high-quality digital-audio compression for mono and stereo signals. It implements the ISO MPEG-1 Audio Compression Algorithm in a single-slot, double VMEbus board. The compression ratio is adjustable over a wide range, delivering sound quality ranging from high-fidelity CD-level down to approximately "toll" telephone quality. For stereo audio-input signals, a joint stereo encoding method is available that exploits similarity between the left and right channels to further compress the signal. The MPEG Digital Audio Processor has both digital-audio and analog-audio inputs and outputs. It can operate at any of the valid MPEG-1 audio sampling rates: 32 kHz, 44.1 kHz, or 48 kHz. A sample rate converter allows digital-audio input at one rate to be encoded at another rate for complete input-rate flexibility. The MPEG Digital Audio Processor has been designed for simple integration into MPEG-1 video encoder systems. UNIX drivers are available. Example code is also available for integration the Digital Audio Processor into other operating environments.

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.

**FEATURES & BENEFITS**

- Stereo 16-bit A-D/D-A converter
- 128K bytes zero-wait-state static RAM
- 16-bit bi-directional digital interface
- Low cost

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50 MHz

**Board Size:**

Half Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Digital I/O Daughtercard

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

The Peachtree DSP Platform is a low-cost OEM board with a TMS320C32, a stereo 16-bit A/D-D/A converter and 32K words (128K bytes) of zero-wait-state static RAM. A byte-wide DRAM interface is provided for low-cost data memory expansion up to 16M bytes. The TMS320C32's external memory interface can automatically load and store 8-, 16-, or 32-bit quantities into this memory and convert them into an internally equivalent 32-bit representation. Also available is the Peachtree Software Developer's Kit which includes ASPI library functions providing real-time input from the A/D and output to the D/A, file reading and writing (fread and fwrite), and standard screen I/O (printf). Also included are library functions for efficient communications between the DSP and the host PC, memory management, and DMA queuing for the 'C32's DMA channel 0.

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.



**FEATURES & BENEFITS**

- 'C31 I/O Processor
- Up to 2M bytes zero wait-state SRAM
- DT-connect interface
- Available as full development system

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

DOS

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

50 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O Daughtercard

Digital I/O Daughtercard

**Software Included:**

Debuggers

Libraries

**Technical Support/Training:**

YES

**PRODUCT DESCRIPTION**

The Vortex is a C'4- board that makes all six on-chip communication prots available to you, allowing direct processor-to-processor communication. An unique feature of the Vortex is its I/O processor, a 'C31. Interfaced to the 'C40 through true dual-port RAM, the 'C31 allows I/O overhead to be removed from the 'C40, freeing the 'C40 for computational tasks. Vortex/SPOX Systems include a 'C31 I/O system with device drivers for ASPI I/O interfaces including: the AD16 dual-channel 16-bit A-D/D-A interface board; the digital audio interface; and two external units, the serial voice interface, and the serial audio interface. THese drivers provide for the seam-less integration of these deices into C/SPOX programs running on the 'C40, without the need to program the 'C31. The Vortex's flexible I/O and memory architecture makes it easy for users with unique requirements to develop special ann-on boards for the Vortex Board. The host computer's bus, 'C40's memory bus, and 'C31's bus are brought out to connectors on the Vortex Board.

**COMPANY INFORMATION**

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ASPI Digital supplies the OEM with MPEG Audio Encoders, Acoustic Echo Cancellation products and DSP Platforms needed to integrate high quality algorithms in system-level products.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Quad 16-bit converters
- Fully differential analog inputs
- Programmable front-end gain
- Programmable sample rate generator
- Tracking anti-aliasing filters
- Concurrent sampling for multiple A/D boards
- Optional external sample rate and sync.

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C40, TMS320C30

**CPU:**

0

**Clock Speeds Available**

0.4MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

8MByte Global SRAM

**Expansion Options:**

Analog I/O daughter card

**Software Included:**

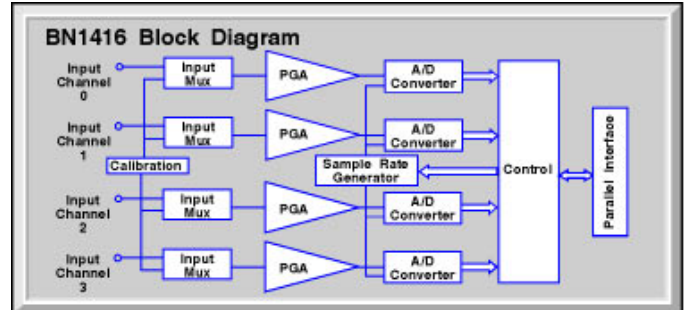
Function Library

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The BN1416 Analog Interface Module is designed to provide an instrumentation- quality analog interface for the Bridgenorth



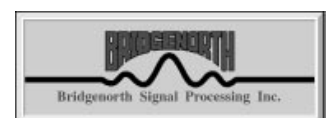
line of DSP processor boards. The 4 input channels can be set to 16-bit resolution at sample rates up to 100kHz or 12-bit resolution at rates up to 400kHz. The BN1416 is software-configurable with input gain settings from 1 to 100, and on-board sample rates from 8kHz to 400kHz. Input antia-aliasing filters track the full range of input sample rates. A digital interface connector provides signals to allow optional external clocking and support for concurrent sampling across several boards.

**COMPANY INFORMATION**

**Bridgenorth Signal Processing, Inc.**

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Bridgenorth Signal Processing, Inc. was established in 1987 to supply digital signal processing solutions for PC-based applications. Bridgenorth products are used both in development systems and in end products in a number of application areas. These include real-time applications such as vibration analysis, professional audio and speech, meteorology, sonar, laboratory testing, medical research and high speed control systems. All Bridgenorth DSP products are designed to provide maximum data throughput and to remove constraints imposed by the PC operating system and I/O bus.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- 32-bit TMS320C30 floating-point processor
- 8MByte SRAM memory capacity
- 32-bit I/O expansion interface
- Dual serial full-duplex serial I/O ports
- PC Interface function library

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available**

33-, 40MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

32-bit I/O port

**Software Included:**

Debugger,

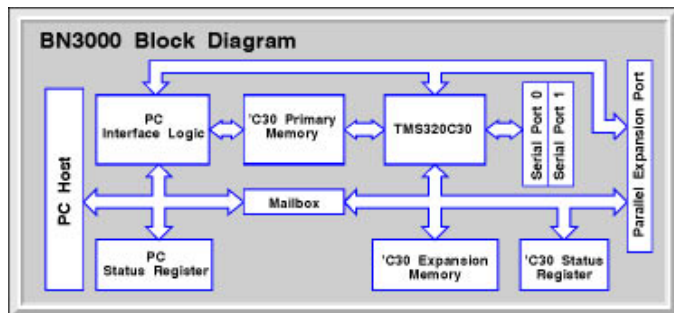
PC Interface Library

**Technical Support/Training Available:**

Technical support is available by phone, FAX, and email. Consulting services are also available for product development.

**PRODUCT DESCRIPTION**

The BN3000 Processor board is designed specifically for applications that require the speed and accuracy of a fast floating-point processor. The large on-board memory space,



direct parallel link to the analog interface module, and other on-board hardware resources provide an optimum system environment for demanding digital signal processing tasks. The base system comes with 2MBytes of SRAM and can be configured with up to 8MBytes of primary-bus SRAM. System expansion is possible through the 32-bit parallel I/O expansion bus and both serial ports. A PC-based debugger, sample programs and a library of interface routines are provided for software development and debugging on the 'C30 processor.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Dual 16-bit A/D converter
- Dual 16-bit D/A converter
- Fully differential analog inputs
- Programmable front-end gain
- Tracking anti-aliasing filters
- Programmable on-board sample rate generator
- BN4000, BN3000 compatible I/O interface

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C40, TMS320C30

**CPU:**

0

**Clock Speeds Available**

0.4MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

8MByte Global SRAM

**Expansion Options:**

Analog I/O daughter card

**Software Included:**

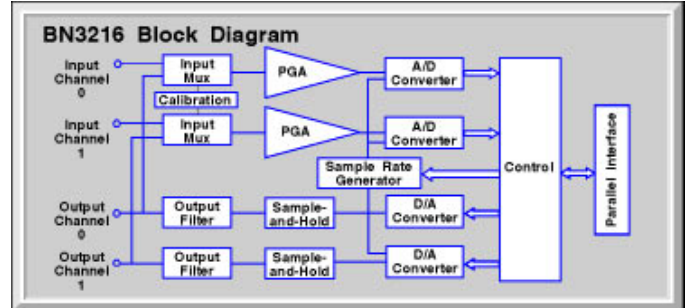
Function Library

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The BN3216 Analog Interface Module is designed to provide a two-channel I/O analog interface for the Bridgenorth line of DSP processor boards, including the 'C40, 'C30 and 'C25-based systems. The input channels can be set to 16-bit resolution at sample rates up to 100kHz or 12-bit resolution



at rates up to 400kHz. The output channels have 16-bit resolution at sample rates up to 400kHz. The BN3216 is software-configurable with input gain settings from 1 to 100, and on-board sample rates from 8kHz to 400kHz. Input antialiasing filters track the full range of input sample rates. Output reconstruction filters are user-configurable by changing component headers. A digital interface connector provides signals to allow optional external clocking and support for concurrent sampling across several boards.

**COMPANY INFORMATION**

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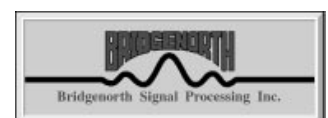
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Bridgenorth Signal Processing, Inc. was established in 1987 to supply digital signal processing solutions for PC-based applications. Bridgenorth products are used both in development systems and in end products in a number of application areas. These include real-time applications such as vibration analysis, professional audio and speech, meteorology, sonar, laboratory testing, medical research and high speed control systems. All Bridgenorth DSP products are designed to provide maximum data throughput and to remove constraints imposed by the PC operating system and I/O bus.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- 32-bit TMS320C40 processor
- 16MByte SRAM memory capacity
- 32-bit I/O expansion interface
- All 6 Comm ports available for system use
- PC Interface function library

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available**

40-, 50-, 60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

32-bit I/O expansion port

**Software Included:**

Debuggers, PC Interface Library

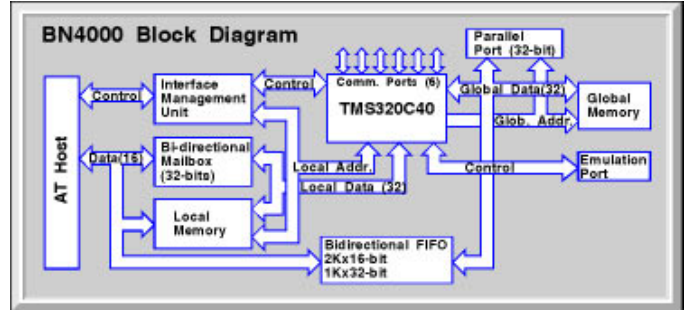
**Technical Support/Training Available:**

Technical support is available by phone, fax and email.

Consulting services are also available for product development.

**PRODUCT DESCRIPTION**

The BN4000 Processor board is designed for applications which require the fastest possible floating-point DSP operations in a parallel processing environment. Applications include real-time and high speed applications such as vibration analysis,



sonar, laboratory testing and high speed control systems. The hardware components which support these tasks include a large on-board memory capacity (16MBytes), six high-speed communication ports, a 32-bit bi-directional control register, a 4kByte bi-directional FIFO and a 32-bit parallel I/O expansion interface. The BN4000 can be used alone as a high speed processor or with one or more Bridgenorth analog interface modules to provide from 2 to 32 channels of 16-bit A/D and D/A capability. The BN4000 base system includes 1MByte of 0-wait state SRAM and includes an AT interface library and a debug monitor.

**COMPANY INFORMATION**

**Bridgenorth Signal Processing, Inc.**

P.O. Box 2470

Blaine, WA 98231 USA

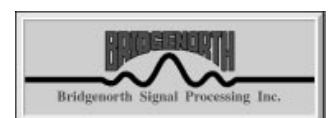
Tel: (604) 538-0003

Fax: (604) 535-9073

e-mail: info@bridgenorth.com

www: http://www.bridgenorth.com

Bridgenorth Signal Processing, Inc. was established in 1987 to supply digital signal processing solutions for PC-based applications. Bridgenorth products are used both in development systems and in end products in a number of application areas. These include real-time applications such as vibration analysis, professional audio and speech, meteorology, sonar, laboratory testing, medical research and high speed control systems.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- TMS320C32 DSP
- 386EX ChipPC
- 2MB Flash Memory
- 4MB SRAM for ChipPC
- 1.5MB SRAM for DSP
- Serial Ports, PC/104, JTAG
- Configurable DSP interface

**SPECIFICATIONS**

**Platforms Supported:**

Standalone

**Host Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

2

**Clock Speeds Available:**

60 MHz

**Board Size:**

8x, 9x, 0.5

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

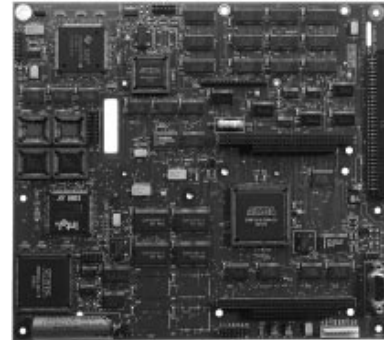
Analog I/O Daughtercards  
Digital I/O Daughtercards  
PC/104 Daughtercards

**Software Included:**

Debuggers  
Code Generation Tools  
Libraries

**Technical Support/Training:**

YES



**PRODUCT DESCRIPTION**

CEX-32386-0™, single board computer adds the digital signal processing of a 60 MHz Texas Instruments TMS320C32 floating point DSP to extend the capabilities of the 25 MHz Intel 386EX ChipPC. The board is configurable with 256K to 4MB of battery backed up SRAM for the 386EX processor and 128K to 1.5MB of 0-wait-state SRAM for the C32 processor. Also available is 256K to 2MB of FLASH memory for nonvolatile program storage. A C32 memory mapped interface is provided for customer specific applications. The interface consists of C32 I/O, interrupt and bus signals routed through an Altera CPLD and pinned out through a 64-pin connector. The CEX-32386-0™ has a LCD and keypad interface, two sets of PC/104 connectors, serial ports for both the 386EX and C32, and an Emulator port for the C32. This product is an excellent fit for embedded applications such as data logging, embedded web servers, medical monitors, custom controllers, audio and network processing, or any application with both signal and general processing requirements.

**COMPANY INFORMATION**

**Concur System Technologies**

2525 Wallingwood Dr., Ste. 804  
Austin, TX. 78746 USA  
Tel: (512) 306-0511  
Fax: (512) 306-0558  
e-mail: info@concursys.com  
www: http://www.concursys.com



DEVELOPMENT BOARDS





## FEATURES & BENEFITS

- Bus mastering PCI interface for real-time transfer
- 40MHz analog and digital acquisition
- 250MOPS C40 for added flexibility
- 350MIPs of image processing power using the F/64-RTP Module
- 16-bit digital input for dual-tap cameras
- Dual channel digital input for dual-tap cameras
- Digital input with digital I/O and analog output

## SPECIFICATIONS

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Digital I/O daughter card

**Technical Support/Training Available:**

YES

## PRODUCT DESCRIPTION

The F/64-PCI is a high performance image acquisition and processing board. Designed for high speed, high resolution and computationally intensive image processing algorithms, the F/64-PCI features an internal 80MBytes/sec communications bus which rapidly transfers images between several dedicated on-board processors. The F/64-PCI features four dedicated processors to accelerate image processing applications: C40 DSP, Histogram Processor, IP-Engine and the System Controller. Each processor is able to access image data independently permitting simultaneous processing. The F/64-RTP (Real-time Processor) module and the MDSP further extend the processing capabilities of the F/64-PCI. The F/64-RTP is an optional module that increases the image processing power of the F/64-PCI.

## COMPANY INFORMATION

**Coreco**

6969 Trans-Canada Hwy., Suite #142

St. Laurent, Quebec, H4T-1V8

Canada

Tel: (800) 361-4914 Tel: (514) 333-1301

Fax: (514) 333-1388

e-mail: [info@coreco.com](mailto:info@coreco.com)www: <http://www.coreco.com>

Coreco, Inc., a leading manufacturer of imaging and DSP products is committed to developing technologies to advance computer vision. The company develops, manufactures and markets the industry's most innovative computer vision products, DSP engines and imaging software, globally, to OEMs and developers serving the machine vision, medical and scientific imaging and signal processing markets.



**FEATURES & BENEFITS**

- Up to 4 TMS320C601 200MHz DSPs delivering 6400MIPS on a single board
- Single-slot PCI
- TI/EI and MVIP interface
- Up to 8MByte per DSP of 0 wait state SDRAM
- Up to 1MByte per DSP of 0 wait state SBSRAM
- 8MByte of 0 wait state shared arbitrated SDRAM
- Interface to PMC and IP modules

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C6x

**CPU:**

4

**Memory (DRAM/SRAM):**

DRAM

**Software Included:**

Debuggers

Code Generation tools

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The new Python/C6 is a powerful, C6x based quad processor for the PCI bus. It features TI/EI and MVIP interface, shared SDRAM, PMC and IP plug-in modules. The Python/C6 features an integrated I/O interface through the PMC and IP modules, offering more than 100 off the shelf I/O functions to increase system performance. Unique in architecture, the Python/C6 is ideally suited for a variety of applications including: telecommunications, radar, sonar, audio process control, industrial, embedded and image processing. Compact PCI and VME versions are scheduled for release in Q1, 1998. Coreco provides comprehensive software support and turnkey systems.

**COMPANY INFORMATION**

**Coreco**

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e-mail: info@coreco.com

www: http://www.coreco.com

Coreco, Inc., a leading manufacturer of imaging and DSP products is committed to developing technologies to advance computer vision. The company develops, manufactures and markets the industry's most innovative computer vision products, DSP engines and imaging software, globally, to OEMs and developers serving the machine vision, medical and scientific imaging and signal processing markets.



**FEATURES & BENEFITS**

- 50MHz TMS320C25-50
- 8 Analog Inputs, 2 Analog Outputs
- 200kHz maximum sampling rate
- Digital I/O Expansion
- Development Software
- Applications Software

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C2x

**CPU:**

1

**Clock Speeds Available:**

50 MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

Debuggers

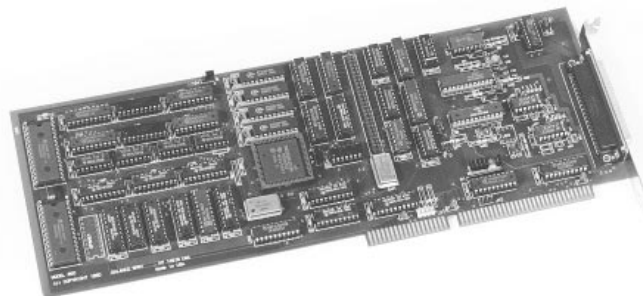
Code Generation Tools

**Expansion Options:**

Digital I/O daughter card

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The Model 250 is designed for real-time data acquisition and control applications. Software included with the Model 250 includes an assembler, debugger, FFT and digital filter examples, and signal and spectrum display. A data acquisition package providing record and playback as well as stimulus/response and pretriggering capabilities is also included.

**COMPANY INFORMATION**

**Dalanco Spry**

89 Westland Ave

Rochester, NY 14618 USA

Tel: (716) 473-3610

Fax: (716) 271-8380

e-mail: sales@dalanco.com

www: <http://www.dalanco.com>

Dalanco Spry provides DSP based boards, with accompanying development and applications software, for a wide variety of applications.

DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- 50MHz TMS320C31
- 512kBytes SRAM
- 4 Differential Analog Inputs, 2 Outputs
- Development Software
- Applications Software
- Low cost

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The Model 310B is designed for real-time data acquisition. It uses the TMS320C31 floating-point DSP. Software includes an assembler, debugger, applications examples, and the MODA data acquisition program.

**COMPANY INFORMATION****Dalanco Spry**

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www: <http://www.dalanco.com>

Dalanco Spry provides DSP based boards, with accompanying development and applications software, for a wide variety of applications.



**FEATURES & BENEFITS**

- 40 MIPS TMS320C5X, 384kBytes RAM
- 8 Analog Inputs, 2 Analog Outputs
- Analog Sampling Rate to 500kHz @ 12-bits
- Digital I/O Expansion
- Assembler, Debugger included
- Data Acquisition Program included

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

1

**Clock Speeds Available:**

80MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

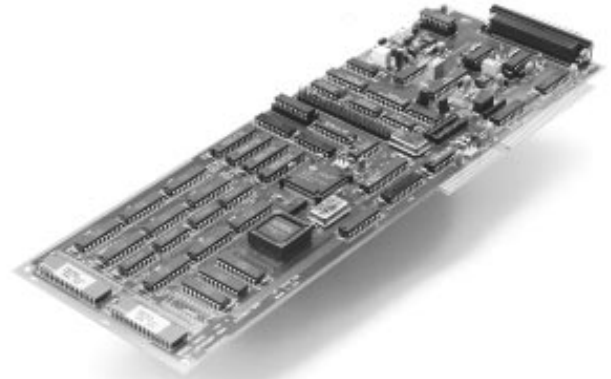
**Software Included:**

Debuggers

Code Generation Tools

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The Model 5000 is designed for real-time data acquisition and control applications requiring the computational capabilities of a fast fixed-point DSP. Software included with the Model 5000 includes an assembler, debugger, FFT and digital filter examples, and signal and spectrum display. A data acquisition package is also included which provides record and playback as well as stimulus/response and pretriggering capabilities.

**COMPANY INFORMATION**

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e-mail: sales@dalanco.com

www: <http://www.dalanco.com>

Dalanco Spry provides DSP based boards, with accompanying development and applications software, for a wide variety of applications.



**FEATURES & BENEFITS**

- 50MHz TMS320C32
- 256kBytes SRAM
- 512kBytes Flash memory for Boot Operation
- Digital I/O and DSP Serial Port Expansion
- Assembler, Debugger, Flash Memory Utilities
- Low cost

**SPECIFICATIONS**

**Platforms Supported:**

PC/104

**Host Supported:**

Windows 3.1

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

10 cm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Option:**

Digital I/O daughter card

DSP serial port

**Software Included:**

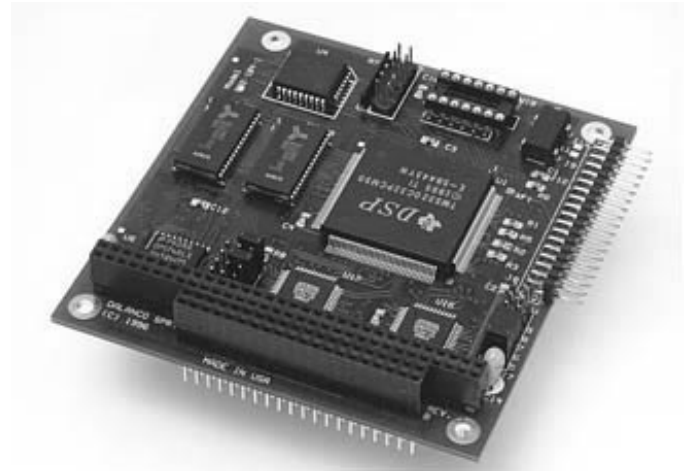
Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The Model C32-104 is designed for embedded applications requiring the computational capabilities of a floating-point DSP. It may be operated in one of 3 mode: as a PC/104 expansion board, as a standalone unit, or as the master of the PC/104 bus in a system with no host CPU. In this last mode, it may be programmed to directly control PC peripherals such as PC serial port and IDE hard drive controller boards, resulting in a low cost "DSP Computer" for high speed data acquisition and processing applications.

**COMPANY INFORMATION**

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Fax: (716) 271-8380

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Dalanco Spry provides DSP based boards, with accompanying development and applications software, for a wide variety of applications.

DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Memory on board :128 kw
- ADC input max 16 channel
- DAC output max 4 channel
- LCM keypad interface
- 4-Channel encoder interface
- 6-Channel PWM output
- Source level debugger

**SPECIFICATIONS****Platforms Supported:**

ISA

Stand-alone

**Host Supported:**

Windows 3.1

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C1x

TMS320C2x

TMS320C2xx

TMS320C5x

**Clock Speeds Available:**

57MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The DSP Control System Development kits for 'C14, 'C25, 'C5x, 'C240. are built with ADC, DAC, DIO communication port, as well as debugging environment.

**COMPANY INFORMATION****DEEMAX Technology, Inc.**

7F-1, No. 537, Sec, 2, Kuang-fu Rd.

Hsinchu, Taiwan R.O.C

Tel: 886 3 5619739

Fax: 886 3 5619963

e-mail: [deemax@shts.seed.net.tw](mailto:deemax@shts.seed.net.tw)www: <http://www.deemax.com.tw>



**FEATURES & BENEFITS**

- Floating point DSP (50/60MHz)
- Fast PC interface
- Low cost
- External bus
- Expandable memory
- High speed serial port
- Complete development system

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50-, 60MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

**Software Included:**

Debuggers

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

PC ISA Bus TMS320C31 based board, 32Kx32 SRAM (expandable to 128kx32, high-speed serial port, external bus (C31 address, data, control lines), assembler, linker, debugger, \$419.95, codec attachment board (DSP's serial port) 16-bit A/D and D/A, up to 48kHz sampling, demo software and drivers for DSP, \$129.95

**COMPANY INFORMATION**

**DiCon Lab, Inc.**

6423 NW 52nd Terrace

Gainesville, FL 32653 USA

Tel: (352) 372-6160

Fax: (352) 376-7215

e-mail: sales@diconlab.com

www: <http://www.diconlab.com>

The Digital Control Lab is a small company of highly trained individuals dedicated to generating low cost high performance DSP hardware and software solutions.



**FEATURES & BENEFITS**

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- Floating point dsp
- 2-channel A/D
- 2-channel D/A
- External bus
- Expandable SRAM
- Low cost
- Complete development system

**SPECIFICATIONS**

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**Platforms Supported:**

PC Para. Port

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**Board Size:**

6.5 x 4.5

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Custom add-ons

**Software Included:**

Debuggers

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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PC Parallel Port TMS320C32 based DSP Development System, TMS320C32- 50/60MHz, 32kx32 SRAM expandable to 128kx32, onboard codec (2 channel 16-bit A/D and D/A, 7-48kHz sampling), external bus (C32 address, data and control lines), assembler, linker and debugger, codec demo code and driver, 'C' library of DSP functions and numerous example DSP routines, \$389.95

**COMPANY INFORMATION**

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The Digital Control Lab is a small company of highly trained individuals dedicated to generating low cost high performance DSP hardware and software solutions.

**FEATURES & BENEFITS**

- Floating point DSP
- 8 I/O slots, 1 CPU slot
- SRAM, EPROM and EEPROM
- PC para. port interface, RS-232
- Stand alone operation
- Up to 16-ch. A/D in and 16-ch. D/A out
- Add your own custom board!

**SPECIFICATIONS****Platforms Supported:**

stand-alone

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

12 x 6.5

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

Custom Boards

**Software Included:**

Debuggers

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

TMS320C32 based motherboard with 9 I/O slots, high-speed serial port, C parallel port interface, S232 port, 2kx32 SRAM, 128k EPROM, 8kx32 EEPROM, 8 digital-in and 8 digital-out, 8-relay control, watchdog-timer control circuit, assembler, linker, debugger, 'C' DSP control library and example DSP code, 8 I/O slots, 1 main processor bus slot, \$600.00 optional I/O boards (up to 8 per back-plane) CS4231A I/O Board, 2 channel 16-bit A/D and D/A, 7-48kHz, +/- 12v in/out (adjustable), \$175.00 CEMEX I/O Board, 2-channels, 16-bit A/D and D/A, 7-48kHz sampling, mic phantom power supply and pre-amp (2-channels), 2-wire 4-20mA output (2-channels) your custom I/O card. Call us, we offer low cost alternatives.

**COMPANY INFORMATION****DiCon Lab, Inc.**

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The Digital Control Lab is a small company of highly trained individuals dedicated to generating low cost high performance DSP hardware and software solutions.

**FEATURES & BENEFITS**

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- Voice-processing algorithms
- Real-time DSP implementation
- Real-time systems
- Voice-processing applications
- Echo-canceller applications
- Speech coding and synthesis
- Telephony applications
- Modeling and simulation
- Compression algorithms systems
- Speech processing
- Turnkey systems
- Feasibility studies
- Design review

**SPECIFICATIONS**

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**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

**TMS320 Devices Supported:**

TMS320C32

**Board Size:**

Full card

**Expansion Options:**

PCI rate digital playback

**PRODUCT DESCRIPTION**

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PC PCI card, high speed digital signal generator (1-, 8-, 16- or 32-bit) and high speed digital sampler (1-, 8-, 16- and 32-bit) at rates up to 128MBytes/Sec.

**COMPANY INFORMATION**

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**DiCon Lab, Inc.**

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www: <http://www.diconlab.com>

The Digital Control Lab is a small company of highly trained individuals dedicated to generating low cost high performance DSP hardware and software solutions.



## FEATURES & BENEFITS

- 1600 MIPS performance
- 16 MB SDRAM/512 KB SBSRAM
- 4 MB FLASH EEPROM
- Embedded or busless operation
- 5V logic/power interface
- On-board 3.3V and 2.5V/1.8V generation
- PCI and ISA bus expansion

## SPECIFICATIONS

### Platforms Supported:

PC/104-Plus

### Host O/S Supported:

Windows NT

Solaris

VxWorks

### CPU:

1

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200

### Board Size:

3.77 in. x 3.55 in.

### Memory (DRAM/SRAM):

DRAM, SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

This 'C6201 accelerator board is a low cost, high performance design ideally suited for embedded applications. The small PC104-Plus form factor (3.77 in. x 3.55 in.) and a 5V logic/power interface allows easy integration into a number of embedded environments. Additionally, the stackable PC/104-Plus System allows integration of the accelerator with a vast array of available I/O. The board features a 200 MHz TMS320C6201 processor offering a peak performance of 1600 MIPS, and a peak data throughput of 800 MB/S. The processor is coupled to memory and I/O resources. The processor has access to 16 MB of private SDRAM and 512 KB of Shared SBSRAM. Four MB of FLASH EEPROM is available for Boot and User Code. The board contains a full-featured flexible I/O structure offering users access to a wide variety of commercially available interface boards. The board provides a M/S ISA interface and a M/T PCI interface supporting burst transfer rates of up to 132 MB/s. PCI slave resources include the boards SBSRAM, Flash EEPROM, and the 'C6201 Host port. Both of the processor's Multi-Channel Buffered Serial Ports (MCBSPs) are made available through board edge headers.

## COMPANY INFORMATION

### DNA Enterprises, Inc.

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[www.dnaent.com](http://www.dnaent.com)

DNA Enterprises combines over 15 years of DSP experience with a rigorous project management process to provide our customers with leading-edge products and design services.



**FEATURES & BENEFITS**

- 200 MHz TMS320C6201 DSP
- PCI Bus Host Interface
- JTAG Emulation via PCI Bus or via XDS-510
- PCI BUS Master/Slave Support
- Host Access To DSP Memory
- Expansion Connector
- Stereo Codec Audio Interface
- 512 KB of Synchronous Burst SRAM
- 32 MB of Synchronous DRAM

**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C6x

**CPU:**

1

**Clock Speeds Available:**

200 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM, DRAM

**Expansion Options:**

Expansion Connector

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

This PCI bus processor board is based on the 'C6201 DSP. Featuring a peak performance of 1600 MIPS, the versatility of this board provides an ideal platform for performing computationally intensive digital signal processing functions. The card is targeted at software and hardware development for a wide range of applications including broadband communications, speech/pattern recognition, digital video and wireless. The board has a 200 MHz 'C6201 DSP, SDRAM, SBSRAM, a stereo codec audio interface and a set of daughter card interface connectors. Host communications are accomplished via the PCI bus. The card can be configured as either a bus master or slave. An applications software loader and driver support for Windows 95 and Windows NT are included. Development software debugging and emulation can be performed using either the JTAG header on the card or through the PCI bus. The embedded JTAG interface via the PCI bus enables the card to be used with TI's 'C6x C Source Debugger operating on the host while the JTAG header alternatively allows use of the XDS-510. The daughter card concept enables developers to create or purchase various hardware adapter cards while maintaining a common set of software tools. Hardware for technologies such as xDSL, SONET, ATM and PCS microterminals can be easily adapted to this board using its daughter card interface.

**COMPANY INFORMATION****DNA Enterprises, Inc.**

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DNA Enterprises combines over 15 years of DSP and telecom experience with a rigorous project management process to provide our customers with leading-edge products and design services.





## FEATURES & BENEFITS

- 200 MHz TMS320C6201 DSP
- PCI BUS Host Interface
- JTAG Emulation via PCI Bus or via XDS-510
- PCI BUS Master/Slave Support
- T1/E1 Line Interface
- MVIP Telephony BUS Interface
- Handset Interface
- 256 MB of Synchronous Burst SRAM
- 8 MB of Synchronous DRAM

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host Supported:

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C6x

### CPU:

1

### Clock Speeds Available:

200 MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM, DRAM

### Expansion Options:

Expansion Connector

### Software Included:

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

This PCI bus processor board is based on the 200 MHz 'C6201 DSP. With its MVIP and T1/E1 interfaces, the card is ideally suited for the development and evaluation of telephony applications. The 1600 MIPS processing power of the board enables it to be used in a variety of multiple channel signal processing development areas including speech processing, fax/data, modem, protocol conversion and echo cancellation. The card incorporates a 200 MHz 'C6201 DSP, SBSRAM, SDRAM, a Mu-law/A-law handset interface, a T1/E1 interface, and an MVIP interface. Additionally, audio monitoring and testing of various telephone channels can be accomplished by transferring samples to and from the handset interface. Host communications are accomplished via the PCI bus. An applications software loader and driver support for Windows 95 and Windows NT are included. Development software debugging and emulation can be performed using either the JTAG header on the card or through the PCI bus. The embedded JTAG interface via the PCI bus enables the card to be used with TI's 'C6x C Source Debugger operating on the host while the JTAG header alternatively allows use of the XDS-510. Because of its flexibility and built-in interfaces, this card provides an ideal programming platform for the telephony software developer.

## COMPANY INFORMATION

### DNA Enterprises, Inc.

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DNA Enterprises combines over 15 years of DSP and telecom experience with a rigorous project management process to provide our customers with leading-edge products and design services.





## FEATURES & BENEFITS

- 5 BOPS Performance
- 1 or 2 Processor Configurations
- 32 MB 0 WS SDRAM per 'C80
- 40, 50, 60 MHz Operation
- PMC Module Expansion Site
- 480 MB/s Private I/O per 'C80
- VME64 M/S Interface With Block XFER

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Windows NT, Solaris

### MS320 Devices Supported:

TMS320C8x

### CPU:

2

### Clock Speeds Available:

40, 50, 60 MHz

### Board Size:

Full Card

### Expansion Options:

Analog I/O, Digital I/O, Coprocessor & RS-170/SVGA Video I/O Daughtercards

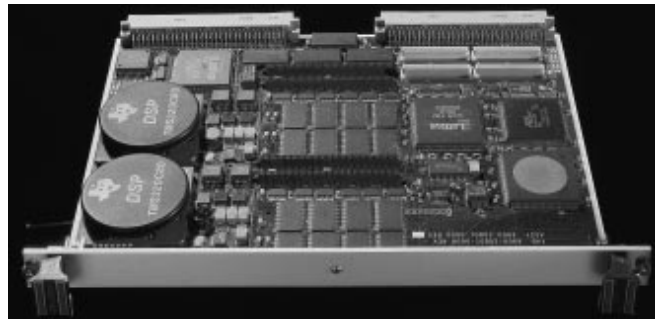
### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The model 4286 is a DSP accelerator board for the VME bus featuring up to two 60 MHz TMS320C80 Multimedia Video Processors. The architecture consists of twin processor cores coupled to the VME64 interface through a common global bus.

Each processor core contains a 'C80 processor coupled to private memory and I/O resources. Efficient data transfer and communication between the two processor cores is accomplished through the synchronous bi-directional FIFO



logic that couples the two processor cores and the PMC expansion site together. Each processor has access to three types of on board private and shared memory resources. Each processor core contains 32M bytes of private 0 WS SDRAM and 2M bytes of private Flash memory. 2M bytes of global bus resident SRAM are shared between both processor cores, the VME bus and PMC module site masters.

The model 4286 provides three types of I/O resources: a 32-bit PMC expansion site with 132 MB/sec throughput is attached to each processor core and the global bus, and provides high throughput industry standard I/O; the private MVPBus expansion interface provides each processor's 64-bit 480 MB/sec data port, transfer control and both video controller signals; finally, a full featured master/ slave VME64 interface is provided supporting 32- and 64-bit block transfers.

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## FEATURES & BENEFITS

- 6400 MIPS Performance
- 16 MB SDRAM/512 KB SBSRAM per 'C6201
- 256 KB DPSRAM per 'C6201
- 400 MB/S Bi-FIFO Coupled I/O per 'C6201
- Global Bus Master/Slave Expansion Port
- 1.6 GB/s Inter-processor Communication Facility
- Direct VME Master Access From Each 'C6201
- VME64 M/S Interface with Block Xfer

## SPECIFICATIONS

### Platforms Supported:

VME

VxWorks

### Host Supported:

Windows NT

Solaris

### TMS320 Devices Supported:

TMS320C6x

### CPU:

4

### Clock Speeds Available:

200 MHz

### Board Size:

Full Card

### Expansion Options:

High speed A/D, Four Channel, 65 MHz, 12 bit;  
 Audio Codec, 16 Channel, 22 KHz, 16 bit;  
 Digital Receiver/Demodulator, Quad Channel;  
 Narrowband Digital Receiver, 32 Channel;  
 T1/E1 Telecom Interface, 8 Channel, Full Duplex;  
 C40 Comm Port Interface, 8 Channel;  
 PMC Module Adapter, 3 site, PCI bridge;  
 Mix Module Adapter, Supports 3 Modules;  
 Raceway Adapter

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

This DSP accelerator board for the VME bus features up to four 200 Mhz TMS320C6201 processors, providing an aggregate performance of 6400 MIPS. The architecture consists of four identical processor cores coupled to the global bus through a dual port memory structure. Each processor core contains a 'C6201 processor coupled to private memory and I/O resources.

Each 'C6201 processor has access to five types of I/O resources: a 32-bit, BIFO coupled, daughterboard expansion port supporting up to 400 MB/sec of I/O; a 32 bit control interface allowing the processor random access to daughterboard resources; full McBSP connectivity to the daughterboard; and global bus expansion through a dual port memory structure. Each processor can also directly master the VME bus.

The global bus contains shared resources that are accessible from either the VME64 interface or any of the four processor cores. Each processing core can be accessed either through its dual port memory or the 'C6201 host port. The board boots from 8 MB of global bus resident FLASH memory and 2 MB of SRAM provides a shared memory space for data transfers. One MB of distributed DPSRAM supports high throughput block transfers between the VME Bus and any of the processor cores.

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## FEATURES & BENEFITS

- 40MHz (P3111) or 60MHz (P3112)
- On-module A/D/D/A converter, built-in filters
- 128kBytes (P3111)/512kBytes (P3112) OWS SRAM
- Up to 512kBytes EPROM for algorithm storage
- Full duplex serial port for voice data
- Large selection of ready-to-run algorithms

## SPECIFICATIONS

### Platforms Supported:

ISA

### TMS320 Devices Supported:

TMS320C3x

### CPU:

1

### Clock Speeds Available:

40/60MHz

### Board Size:

2.9-in. x 2-in.

### Memory (DRAM/SRAM):

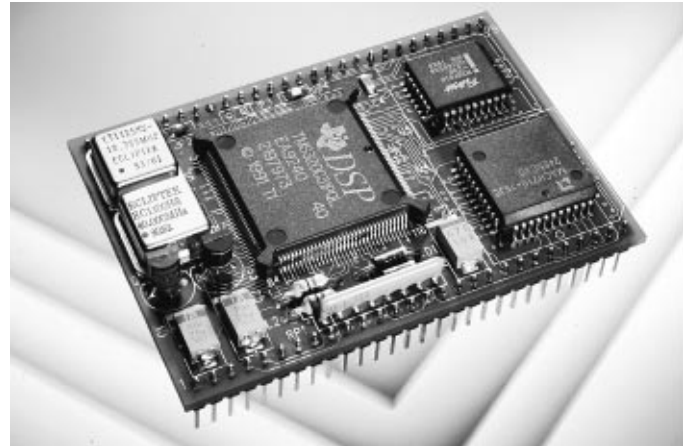
SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The Piranha 3111 or 3112 is an integrated plug-in module, based on the TMS320C31 processor. A self-contained hardware and software subsystem, it is ideal for DSP applications such as speech compression and fax/modems. It has one channel of analog I/O, and communicates with the motherboard through a serial interface. A large selection of voice-processing algorithms has been provided by DSP Software Engineering, including CELP and Low-



Delay CELP, ADPCM, LPC10e, LPC10e, A-law/u-law, and VSELP. Designed for mid-volume applications, potential users can evaluate the Piranha via the P31EVM evaluation platform where, using input from a taped source or telephone handset, several speech-coding algorithms can be selected for listening.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- Dual CH1840 DAA Analog Phone Line Interfaces
- Dual A/D-D/A Converters, 14 bits, 20 kHz
- Selectable clock sources for A/D-D/A converters
- Controls for Off-Hook and Interrupts
- Ring Indicator and Power Squelch Status
- Maskable Ring Indicator Interrupt
- FCC Part 68 Registered
- Several Software Packages available, including fax and modems

**SPECIFICATIONS****Platforms Supported:**

ISA

**TMS320 Devices Supported:**

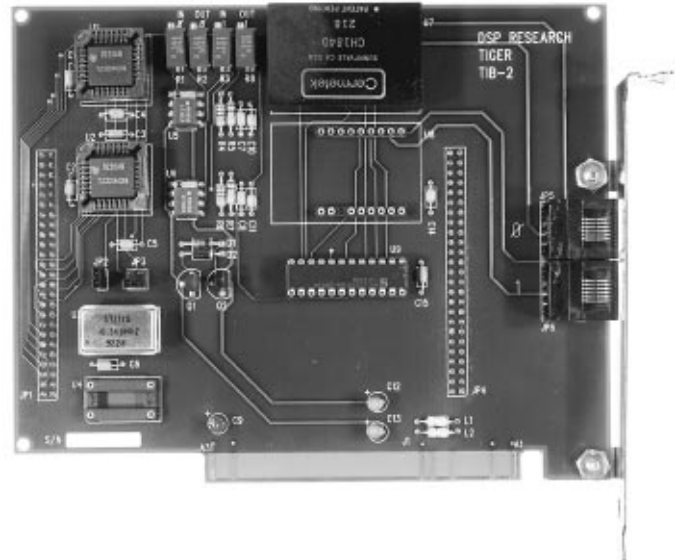
TMS320C3x

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER TIB is a daughter board for the TIGER 30, providing an interface from the TIGER 30 to two standard telephone lines. The TIGER TIB is suitable for developing DSP applications such as FAX modems, full-duplex modems up to V.34, DTMF-detection software, etc. Multi-line telephone software can be prototyped and debugged using the TIGER 30 and the TIGER TIB.

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**FEATURES & BENEFITS**

- 'C50/51/52/53/53sx running at up to 80MHz.
- Up to 256kBytes of OWS SRAM
- Up to 64kBytes of EPROM
- One channel of A/D-D/A (analog phone line)
- On-board UART for standalone applications
- Comprehensive development software

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

1

**Clock Speeds Available:**

up to 80MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

Debuggers

Code Generation tools

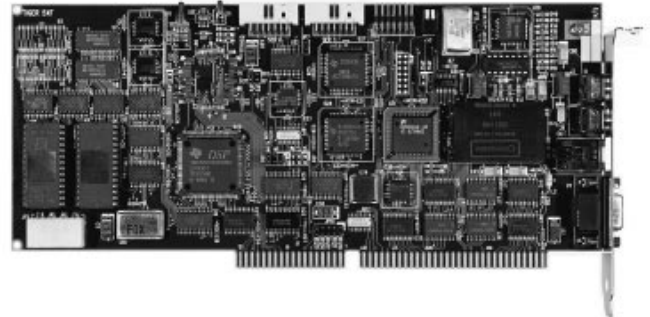
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 5XF is a PC plug-in board featuring a choice of TMS320C50/C51/C52/C53 processor. It is available in speeds of up to 80MHz for a full 40 MIPS of performance. A flexible host interface includes a debug port,



making the TIGER 5XF an ideal PC development board. The TIGER 5XF features both EPROM and a UART, making it also ideal for standalone fax/modem applications and development. Available software includes: TIGER QuickSTART Development Environment; C compiler, linker, assembler, and loader; Texas Instruments DB50 C source-level debugger or Code Composer. A wide variety of speech-compression algorithms, including LD-CELP, and modern algorithms, including V.32, are available from DSP Software Engineering.

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**FEATURES & BENEFITS**

- Up to 4MBytes OWS SRAM
- Up to 64MByte DRAM
- Two channels of analog I/O, with built-in filters
- On-board SCSI
- Two 100MByte/second 32-bit bus interfaces
- Converts to XDS510-compatible ICE with SmartPOD

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1 Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

40-, 50MHz

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O, Coprocessor daughter cards

**Software Included:**

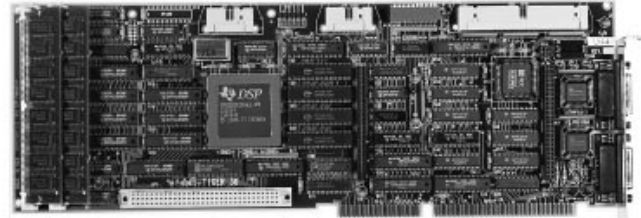
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 30 is a high-performance digital signal-processing board which runs at up to 50MHz, for 50-MFLOPS floating-point performance. With the TIGER co-processor daughterboard, performance is increased to 90 MFLOPS. Hardware expansion is easy and flexible, with two daughterboard connectors, one for memory or video subsystems, the other for I/O expansion or co-processor cards. Both expansion connectors give direct access to the 32-bit memory buses of the TMS320C30,



allowing for high-performance daughterboard designs. Included on the TIGER 30 are two A/D-D/A channels, ideal for control and speech-processing applications. With the optional two-line telephone interface, the TIGER 30 is perfect for fax and modem development. Also included on the board is a SCSI controller for high-bandwidth local storage. Comprehensive development software support includes the TIGER QuickSTART Software Development Environment, the TIGER PowerPack Math/DSP/Vector Library, and optimizing C/C++ compiler, operating system, and debugging options. DSP applications include DSPworks and QEDesign, Hypersignal, and ready-to-run vocoder/fax/modem algorithms. The TIGER 30 board, like all DSP Research 'C3x-based boards, easily upgrades to an XDS510-compatible ICE with the addition of the TIGER SmartPOD.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- 48MHz/48MFLOPS
- Four IP sites, hundreds of I/O options
- 512kBytes SRAM
- 4MBytes EDRAM
- 256kBytes EPROM
- PC or standalone operation, PC/104 support
- Extensive development software and libraries

**SPECIFICATIONS****Platforms Supported:**

ISA  
PC/104

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

48MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

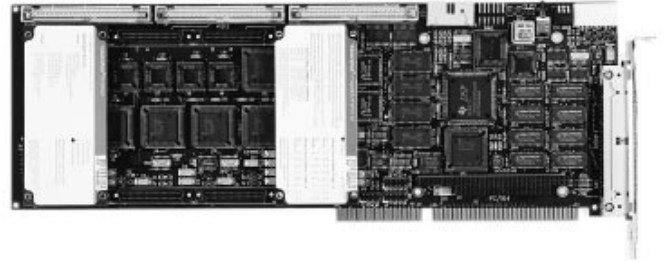
Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 31/IP is a high-performance DSP board that accepts up to four IndustryPack (IP) modules. There are several hundred IP modules available, for an almost



unlimited number of I/O options. The board can be used in a PC, or in standalone configurations with programs in EPROM. In addition, the TIGER 31/IP has a PC/104 bus that supports any standard PC/104 module, including 486 CPU modules. This makes it possible to build a high-performance compact PC-DSP product in a regular PC with standard tools. Development software support includes the TIGER QuickSTART Software Development Environment, the TIGER PowerPack Math/DSP/Vector Library, and comprehensive compiler, operating system, and debugging options. The TIGER 31/IP board, like all DSP Research 'C3x-based boards, easily upgrades to an XDS510-compatible ICE with the addition of the TIGER SmartPOD.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- TMS320C31 running at up to 60 MHz
- Up to 1M byte of OWS SRAM
- Up to 256 Fbytes GPROM
- Stereo 16-bit, 50kHz CD-quality analog I/O
- Telephone interface
- Standalone operation supported with EPROM
- Converts to XDS510-comp. ICE with SmartPOD
- Low-cost versions for OEM applications

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50-, 60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

1MByte Global SRAM

**Software Included:**

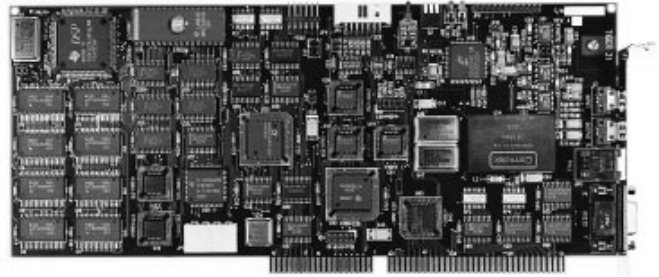
Debuggers

Code Generation tools

Libraries

**PRODUCT DESCRIPTION**

The TIGER 31/PC is a hardware/software development and application board for PC/AT systems or standalone operation. Based on the TMS320C31 processor, the TIGER 31/PC runs at up to 60 MHz, for a full 60-MFLOPS floating-point performance. It is ideally suited for multimedia application development, such as modem, fax, telephony, speech, and CD-quality audio applications.



A low-cost version is available for OEM applications. Input and output features include two channels of 16-bit, 50-kHz CD-quality analog I/O, with standard stereo mini-phone jacks for microphone and line-level input, and line output. For fax and modem applications, the TIGER 31/PC has a built-in standard analog telephone interface. The on-board RS-232 port can be used to configure the board to emulate a standard modem or fax machine. Comprehensive software support includes the TIGER QuickSTART Software Development Environment, TIGER PowerPack Math/DSP/Vector Library for the TMS320C3x, and comprehensive compiler and C source-level debugger options, including Code Composer. A wide range of telecom software is available from DSP Software Engineering.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Up to 512kBytes of OWS SRAM
- On-board A/D and D/A converter, with filters
- High speed serial port, up to 10Mbps
- C Compiler, Linker, Assembler, Loader
- X Window C Source Level Debugger
- Complete Software Support and Libraries
- Converts to emulator with TIGER SmartPOD

**SPECIFICATIONS**

**Platforms Supported:**

SBus

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1x

**Clock Speeds Available:**

40MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

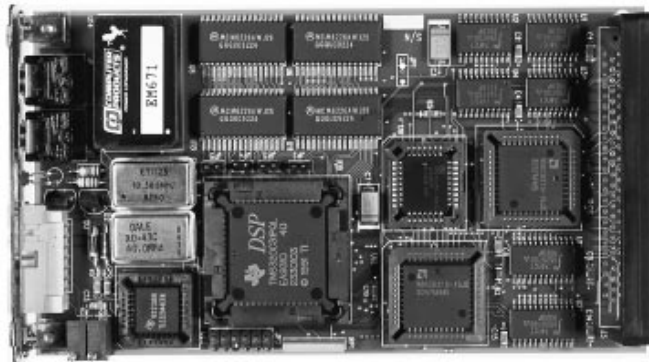
**Software Included:**

Debuggers

Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

TIGER 31/SBus is a co-processor board for SPARC systems, based on the TMS320C31 processor from Texas Instruments. It provides 40 MFLOPS of floating point performance for computationally intensive applications such as speech and image compression. It comes with a flexible development environment, yet is inexpensive enough to be used as an application board.

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**FEATURES & BENEFITS**

- Up to 60 MFLOPS of floating-point performance
- 256k of SRAM in two banks, 8-/16-/32-bit wide
- Stereo 16-bit, 50kHz CD-quality analog I/O
- Telephone interface
- Converts to XDS510-comp. ICE with SmartPOD
- Development software and algorithm supported

**SPECIFICATIONS**

**Platforms Supported:**

ISA, Stand-alone

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50-, 60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

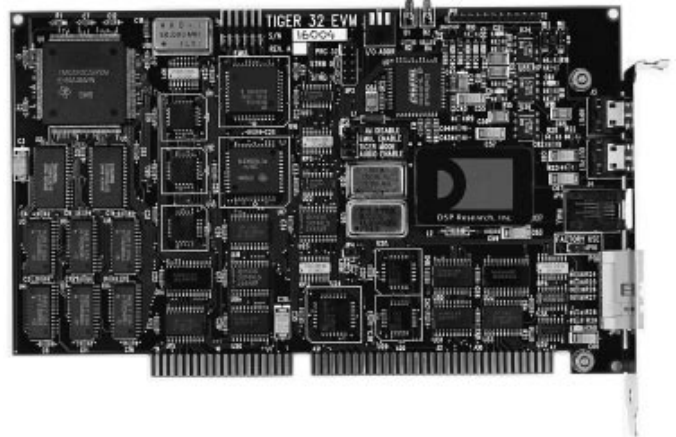
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 32 EVM is a low-cost multimedia board for PCs and compatibles. It is ideally suited for multimedia application development, such as modem, fax, telephony, speech, and CD-quality audio applications. Input and output features include two channels of 16-bit, 50-kHz CD-quality analog I/O, with standard stereo mini-phone jacks for microphone and line-level input, and line output. For fax and modem applications, the TIGER 32



EVM has a built-in standard analog telephone interface, FCC part 68 approved. For rapid software development, the TIGER 32 EVM Software Development Package includes the TIGER QuickSTART Software Development Environment, TIGER PowerPack Math/DSP/Vector Library for the TMS320C3x, and comprehensive compiler and C source-level debugger options, including Code Composer. A wide range of telecom software is available from DSP Software Engineering.

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**FEATURES & BENEFITS**

- 40- or 50MHz
- Up to 8M bytes of zero-wait-state static RAM
- DT-Connect interface for analog I/O or images
- Six 20MBytes/second parallel ports
- Extensive OS, compiler, and application support

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

40/50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

**Software Included:**

Debuggers

Code Generation tools

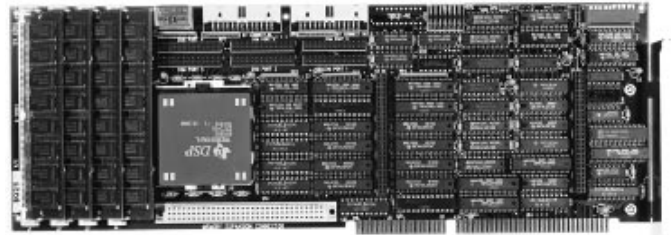
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 40, a PC plug-in board with one 'C40 processor running at 40 or 50MHz, provides up to 50-MFLOPS performance. Featuring a very flexible 16-bit host interface, it supports both bi-directional DMA and interrupts to the PC host. In addition, all of



the memory on the local bus is shared with the PC host for easy access. With all six 'C40 communication ports available on standard headers, full multiprocessing is derived by connection to other TIGER 40 or quad-processor TIGER 440 boards (see below). The TIGER 40 is ideally suited for hardware and software prototyping. Hardware expansion is easy and flexible, with two daughterboard connectors, one for memory or video subsystems, the other for I/O expansion or co-processor cards. Both expansion connectors give direct access to the 32-bit memory buses of the TMS320C40, allowing for high-performance daughterboard designs.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- TMS320C40 running at 40 or 50 MHz
- Up to 4 Mbyte of zero wait state static RAM
- Six High Speed Parallel Communication Ports
- Flexible SBus Interface
- Easy connections to other C40 boards, such as the TIGER 440
- Optimizing C/C++ Compiler, Linker, Assembler and Loader
- X Window C Source Level Debugger
- TIGER Power Pack Math/Vector/DSP Library
- Complete Software Support and Libraries
- SPOX 2.0 and Parallel C Operating Systems

**SPECIFICATIONS****Platforms Supported:**

SBus

**Host Supported:**

Solaris

SunOS

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

40/50MHz

**Board Size:**

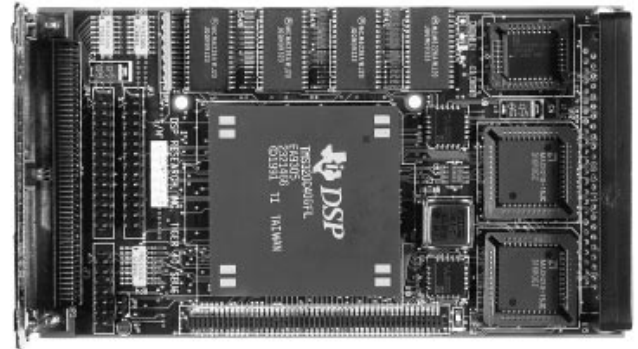
Full card

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 40/SBus is a co-processor board for SPARC systems, based on the TMS320C40 processor from Texas Instruments. It provides up to 50 MFLOPS of floating point performance for computationally intensive applications such as speech and image compression. It comes with a flexible development environment, yet is inexpensive enough to be used as an application or OEM board.

**COMPANY INFORMATION****DSP Research, Inc.**

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e-mail: [info@dspr.com](mailto:info@dspr.com)www: <http://www.dspr.com/products/t40s.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- TMS320C203 running at 40MIPS
- Up to 256kBytes OWS SRAM on-board
- Up to 256kBytes EPROM
- Stereo 16-bit 50kHz CD-quality analog I/O
- Telephone interface
- 16-bit ISA Bus interface with interrupt support
- On-chip UART for standalone applications
- Complete software solutions available

**SPECIFICATIONS****Platforms Supported:**

ISA

Stand-alone

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

**CPU:**

1x

**Clock Speeds Available:**

80MIPS

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

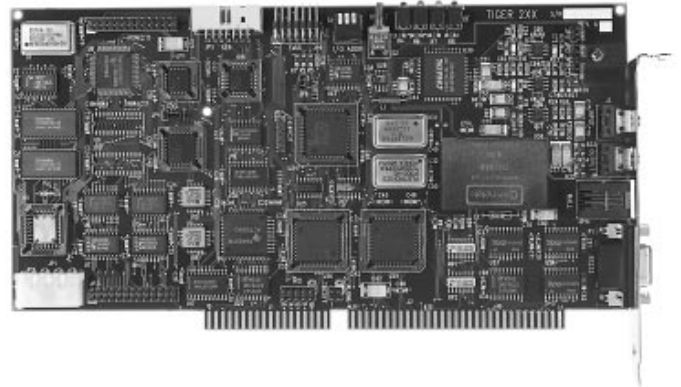
Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 203/PC plug-in board features a 'C203 processor and provides up to 40 MIPS of performance. A flexible PC-host interface includes a debug port, making the TIGER 203/PC an ideal PC development board. The board features EPROM and UART, making it ideal for stand-alone fax/modem applications.

**COMPANY INFORMATION****DSP Research, Inc.**

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www: <http://www.dSpr.com/products/t2xx.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- Four TMS320C40 processors running at 40 or 50 MHz
- Up to 16 Mbytes of zero wait state static RAM on-board
- Sixteen 20 Mbyte/s parallel ports connect to other 'C40 boards
- Unlimited number of boards in a processor array
- Host I/O and Boot Operation via TIGER 40/PC or TIGER 40/SBus
- Stand-alone operation outside PC, if desired
- SPOX 2.x or Parallel C Operating Systems
- Optimizing C Compiler, Linker, Assembler and Loader
- TIGER Multiprocessor Debugger for Microsoft Windows

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Clock Speeds Available:**

40/50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 440/PC is a co-processor board for PC ISA, compatible systems, or stand-alone operation. Based on four TMS320C40 processors from Texas Instruments, it provides 200 MFLOPS of floating point performance for computationally intensive applications. Connecting TIGER 440 boards together for unlimited size processor arrays is made possible via the 16 on-board communication ports.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- TMS320C542 running at 80MHz
- Up to 256kBytes OWS SRAM
- Up to 256kBytes EPROM
- Stereo 16-bit 50kHz CD-quality analog I/O
- Telephone interface
- Supports 'C542 parallel host port interface (HPI)
- On-board UART for standalone applications

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C54x

**CPU:**

1

**Clock Speeds Available:**

40MIPS

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

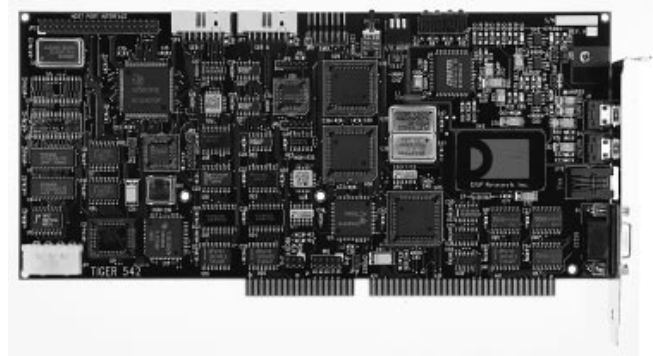
Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 542/PC is a PC plug-in board featuring a TMS320C542 processor. It is available in speeds of up to 80MHz for a full 40 MIPS of performance. The board supports the 'C542 8-bit parallel host port interface (HPI), allowing shared access of the 'C542 2k-word HPI



RAM. A flexible PC-host interface includes a debug port, making the TIGER 542/PC an ideal PC development board. The TIGER 542/PC features both EPROM and a UART, making it also ideal for standalone fax/modem applications and development. Input and output features include two channels of 16-bit, 50kHz CD-quality analog I/O, with standard stereo mini-phone jacks for microphone and line-level input, and line output. For fax and modem applications, the TIGER 542/PC has a built-in standard analog telephone interface. The on-board UART can be used for standalone modem and fax applications. A wide range of telecom software is available from DSP Software Engineering.

**COMPANY INFORMATION**

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- TMS320LC548 running at 80 MIPS
- Up to 256kBytes 1WS SRAM
- Up to 256kBytes EPROM
- Stereo 16-bit 5-kHz CD-quality analog I/O
- Telephone interface
- Supports 'C548 parallel host port interface (HPI)
- On-board UART for stand-alone applications

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C54x

**CPU:**

1

**Clock Speeds Available:**

80 MIPS

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

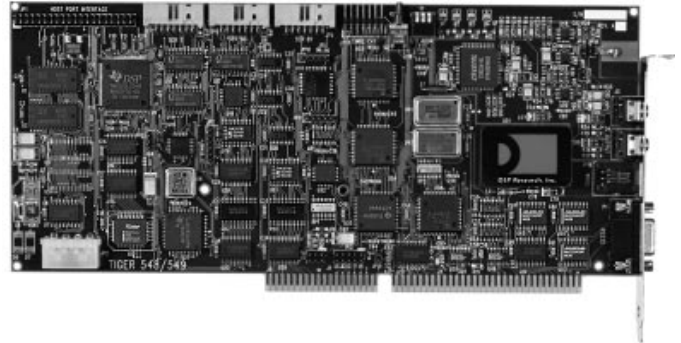
Debuggers, Codegeneration Tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 548 is a PC plug-in board featuring a TMS320LC548 processor. It is available in speeds offering up to 80 MIPS of performance. The board supports the 'C548 8-bit parallel host port interface (HPI), allowing shared access of the 'C548 2kword HPI



RAM. A flexible PC-host interface includes a debug port, making the TIGER 548 an ideal PC development board. The TIGER 548 features both EPROM and a UART, making it also ideal for stand-alone fax/modem applications and development. Input and output features include two channels of 16-bit, 50kHz CD-quality analog I/O, with standard stereo mini-phone jacks for microphone and line-level input, and line output. For fax and modem applications, the TIGER 548 has a built-in standard analog telephone interface. The on-board UART can be used for stand-alone modem and fax applications. A wide range of telecom software is available from DSP Software Engineering.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- TMS320VC549 running at 100 MIPS
- Up to 256kBytes 2WS SRAM
- Up to 256 kBytes EPROM
- Stereo 16-bit 50kHz CD-quality analog I/O
- Telephone interface
- Supports 'C549 parallel host port interface (HPI)
- On-board UART for stand-alone applications

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C54x

**CPU:**

1

**Clock Speeds Available:**

100 MIPS

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

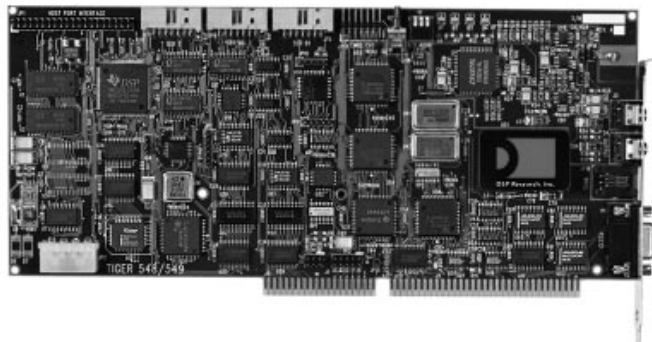
Debuggers, Codegeneration Tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TIGER 549 is a PC plug-in board featuring a TMS320VC549 processor. It is available in speeds offering up to 100 MIPS of performance. The board supports the 'C549 8-bit parallel host port interface (HPI), allowing shared access of the 'C549 2kword HPI RAM. A flexible



PC-host interface includes a debug port, making the TIGER 549 an ideal PC development board. The TIGER 549 features both EPROM and a UART, making it also ideal for stand-alone fax/modem applications and development. Input and output features include two channels of 16-bit, 50kHz CD-quality analog I/O, with standard stereo mini-phone jacks for microphone and line-level input, and line output. For fax and modem applications, the TIGER 549 has a built-in standard analog telephone interface. The on-board UART can be used for stand-alone modem and fax applications. A wide range of telecom software is available from DSP Software Engineering.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



DEVELOPMENT BOARDS

**FEATURES & BENEFITS:**

- TMS320C6201 running at 1600 MIPS
- Up to 1 Mbyte SBSRAM on-board; 128 kbytes of SRAM; 512 kbytes FLASH; and up to 16 Mbytes SDRAM
- Stereo 16-bit 50 kHz CD-quality analog I/O, plus telephone interface
- Supports 'C6201 16-bit parallel host port interface (HPI)
- On-board UART for fax/modem applications
- 32-bit, 33 MHz Master/Slave PCI Bus Interface
- MVIP Bus Interface with FMIC
- T1 or E1 interface
- On-board JTAG emulator hardware
- Complete Solution software/hardware bundles

**SPECIFICATIONS****Platforms Supported:**

PCI

**Host O/S Supported:**

Windows 3.11

Windows 95

Windows NT

**TMS320 Devices Supported:**

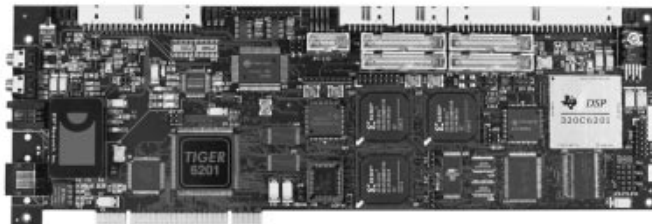
TMS320C6201

**CPU:**

1

**Clock Speeds Available:**

1600 MIPS

**PRODUCT DESCRIPTION**

The TIGER 6201/PCI plug-in board features a 'C6201 processor and provides up to 1600 MIPS of performance. A flexible PC-host interface includes a debug port, making the TIGER 6201/PCI an ideal PC development board. The board supports the 'C6201 host port interface (HPI), offering access to the entire 'C6201 memory map, and features FLASH and a UART, making it ideal for fax/modem applications.

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- On-board C31 running at 40MHz
- Up to 128kBytes words of OWS SRAM
- 16kBytes words of dual-port memory

**SPECIFICATIONS****Platforms Supported:**

ISA

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

40MHz

**Memory (DRAM/SRAM):**

SRAM

**PRODUCT DESCRIPTION**

The TIGER 'C31 Co-Processor is a daughterboard for the TIGER 30. It features an on-board TMS320C31 processor, effectively doubling the computational power of the TIGER system. Communication with the main 'C30 on the TIGER-30 is via dual-port SRAM.

**COMPANY INFORMATION****DSP Research, Inc.**

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





## FEATURES & BENEFITS

- On-board TMS320C31 processor providing 40 MFLOPS performance, and 8 kbytes of internal fast memory
- High speed 32-bit interface to DSP Board with interrupt support
- ANSI 4.40 Industry Standard AES/EBU serial digital audio interface
- Up to 32 kbytes of true dual port memory for communicating with the TIGER board
- Optional expansion memory, up to 128 kbytes
- 48, 44.1 and 32 kHz sample rates for professional audio, Compact Disk and Digital Audio Tape systems
- Connectors for optical, professional audio, consumer interfaces
- Comprehensive software support, including libraries and examples

## SPECIFICATIONS

### Platforms Supported:

ISA

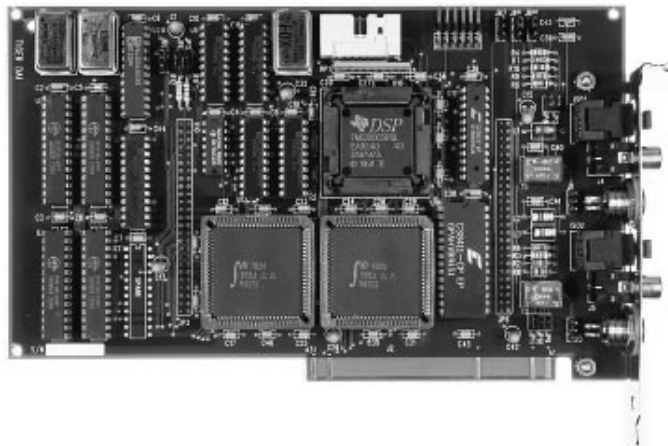
### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The TIGER Digital Audio Interface is a daughter-board for the TIGER 30/PC or the TIGER 40/PC that allows the TIGER board to interface to the AES/EBU standard digital audio interface. It features an on-board TMS320C31 processor for handling the interface and performing such tasks as down- and upsampling, effectively doubling the computational power of the TIGER system.

## COMPANY INFORMATION

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- Twelve TMS320C542 DSPs
- Industry standard MVIP interface
- Increases channel density
- Lowers per channel costs
- Applications Include: Base Stations, Voice over IP, Wireless local loop

**SPECIFICATIONS**

**Platforms Supported:**  
ISA (HPI, MVIP)

**Host Supported:**  
Windows 3.11  
Windows 95  
Windows NT  
UNIX  
DOS

**TMS320 Devices Supported:**  
TMS320C54x

**CPU:**  
12x

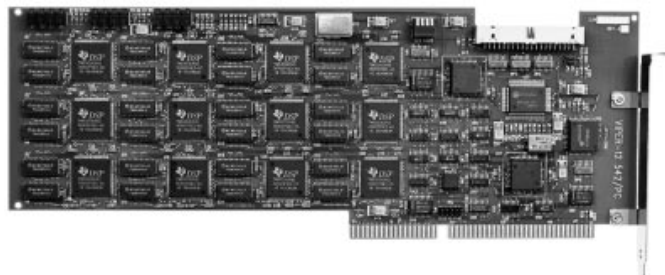
**Clock Speeds Available:**  
80MHz

**Board Size:**  
Full card

**Memory (DRAM/SRAM):**  
SRAM, 32k or 128k per processor

**Software Included:**  
Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**  
YES

**PRODUCT DESCRIPTION**

The VIPER-12 542/PC is a high density MVIP DSP resource board for computer telephony and telecommunications infrastructure applications. The VIPER-12 is an ideal DSP platform for applications such as wireless and cellular base stations, remote access servers, voice/modem/facsimile over ATM/Frame Relay, and satellite base stations. With twelve powerful DSPs, the VIPER-12 increases channel density and reduces costs of these applications. A wide range of telecom software is available from DSP Software Engineering, including IS-136, IS-641, G.728, G.729, G.723, G.711, G3 FAX, and G.165.

**COMPANY INFORMATION****DSP Research, Inc.**

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www: <http://www.dSpr.com/products/viper.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- Twelve TMS320LC548 DSPs
- Industry-standard MVIP interface
- Increases channel density
- Lowers per channel costs
- Applications include: Base stations, voice over IP, wireless local loop

**SPECIFICATIONS**

**Platforms Supported:**

ISA  
PCI  
HPI  
MVIP

**Host O/S Supported:**

Windows 3.x  
Windows 95  
Windows NT  
UNIX  
DOS

**TMS320 Devices Supported:**

TMS320C54x

**CPU:**

12x

**Clock Speeds Available:**

80 MIPS

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

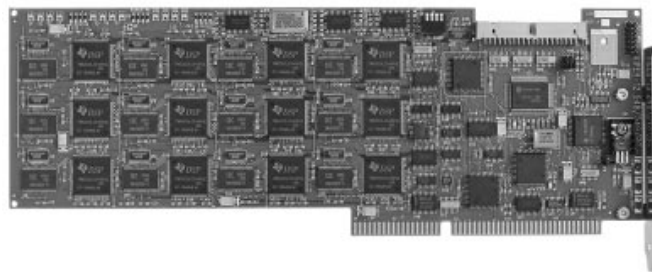
SRAM, 32k or 1Mb per processor

**Software Included:**

Debuggers  
Codegeneration Tools  
Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The VIPER-12 548/PC is a high-density MVIP DSP resource board for computer telephony and telecom infrastructure applications such as wireless and cellular base stations, voice over IP gateways, remote access servers, and satellite base stations. With twelve powerful DSPs, the VIPER-12 increases channel density and reduces costs of these applications. A wide range of telecom software is available from DSP Software Engineering, including IS-136, IS-641, G.728, G.729, G.723, G.711, G3 FAX, and G.165.

**COMPANY INFORMATION**

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Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- Twelve TMS320VC549 DSPs
- Industry-standard MVIP interface
- Increases channel density
- Lowers per channel costs
- Applications include: Base stations, voice over IP, wireless local loop

**SPECIFICATIONS**

**Platforms Supported:**

ISA  
PCI  
HPI  
MVIP

**Host O/S Supported:**

Windows 3.x  
Windows 95  
Windows NT  
UNIX  
DOS

**TMS320 Devices Supported:**

TMS320C54x

**CPU:**

12x

**Clock Speeds Available:**

100 MIPS

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

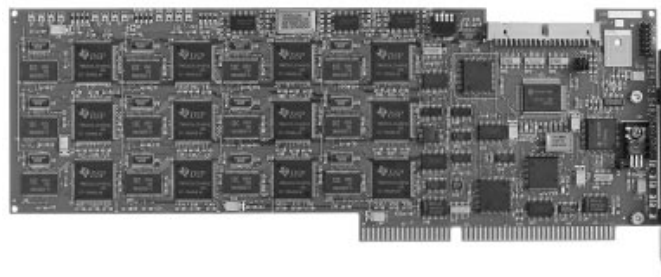
SRAM, 32k or 1Mb per processor

**Software Included:**

Debuggers  
Codegeneration Tools  
Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The VIPER-12 549/PC is a high-density MVIP DSP resource board for computer telephony and telecom infrastructure applications such as wireless and cellular base stations, voice over IP gateways, remote access servers, and satellite base stations. With twelve powerful DSPs, the VIPER-12 increases channel density and reduces costs of these applications. A wide range of telecom software is available from DSP Software Engineering, including IS-136, IS-641, G.728, G.729, G.723, G.711, G3 FAX, and G.165.

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<http://www.dSpr.com/products/vip549.htm>

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**FEATURES & BENEFITS**

- TMS320C6201 running at 1600 MIPS
- Up to 1 Mbyte SBSRAM on-board; 128 kbytes of SRAM; 512 kbytes optional FLASH; and up to 16 Mbytes SDRAM
- Supports 'C6201 16-bit parallel host port interface (HPI)
- 32-bit, 33 MHz Master/Slave PCI Bus Interface
- MVIP Bus Interface
- T1 or E1 interface
- On-board JTAG emulator hardware
- Complete Solution software/hardware bundles

**SPECIFICATIONS**

**Platforms Supported:**

PCI

**Host O/S Supported:**

Windows 3.11

Windows 95

Windows NT

UNIX

DOS

**TMS320 Devices Supported:**

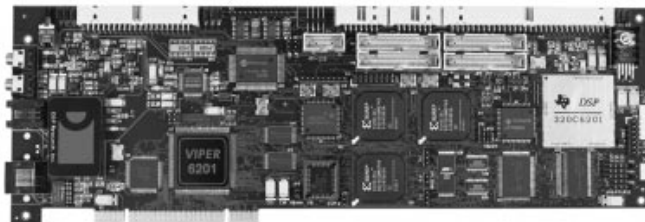
TMS320C6201

**CPU:**

1

**Clock Speeds Available:**

1600 MIPS



**PRODUCT DESCRIPTION**

The VIPER 6201/PCI is a high-density MVIP DSP resource board for computer telephony and telecommunications infrastructure applications such as wireless and cellular base stations, voice over IP gateways, remote access servers, and satellite base stations. With a powerful 1600 MIPS TMS320C6201 DSP on-board, the VIPER increases channel density and reduces costs of these applications. The VIPER features MVIP and/or T1/E1 interfaces for access to multiple 64 kbps data streams. For communications with the host PC, the board supports the 'C6201 host port interface (HPI), which offers shared access to the entire memory space of the 'C6201.

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**SPECIFICATIONS****Platforms Supported:**VME  
PCI PC**Host O/S Supported:**

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**External Memory:**

SRAM

**Expansion Options:**

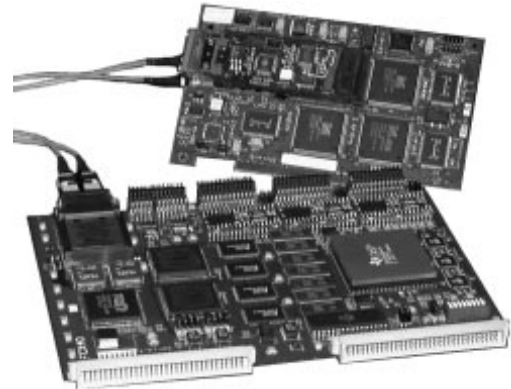
Fibre Channel

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The FCX40 Fibre Channel Controller is a full-speed — 200 Mbytes/sec — serial communications controller ideally suited for distributed and remote data acquisition and signal processing applications. Fibre Channel is the computer industry's fastest growing communication standard, which means the FCX40 can be easily connected to a wide range of standard computers and operating systems. The FCX40 has a dedicated TMS320C40 processor and high-performance quad port SRAM interface allowing simultaneous and continuous bidirectional communication between the 'C40 comm ports and Fiber interface. The FCX40 boots from Flash, comm port, or JTAG, and supports remote system boot and debugging. The FCX40 is available from stock now.

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[www.dspsystems.com](http://www.dspsystems.com)



**FEATURES & BENEFITS**

- Real-time development board for rapid control prototyping and hardware-in-the-loop simulation
- Base board for modular dSPACE systems
- TMS320C40/60MHz
- Up to 3MWords SRAM
- Comprehensive range of I/O boards available
- Fully programmable from MATLAB/Simulink
- Complete C software environment included
- Further processor boards connectable
- Comprehensive set of experiment tools

**SPECIFICATIONS**

**Host Supported:**

Windows 3.1, Windows 95, Windows NT

**Platforms Supported:**

ISA, Ethernet

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

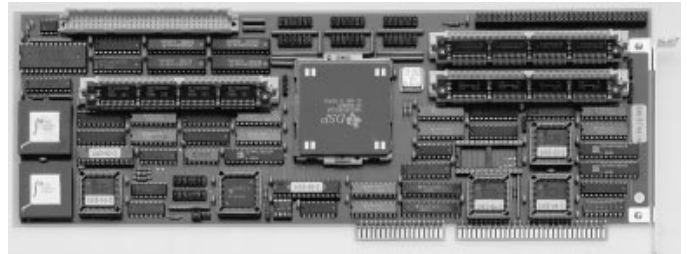
ECU Interface daughter card

**Software Included:**

Libraries, Loader, Driver

**Technical Support/Training Available:**

Support via telephone, email, or fax.



**PRODUCT DESCRIPTION**

The DS1003 DSP Board is the core of dSPACE's modular real-time systems. Its high-performance computing power meets the demands of applications in various fields, such as robotics, automotive, or drives. With the DS1003, you have the greatest possible flexibility in every respect. Via the on-board PHS-bus interface, you have access to the entire range of dSPACE I/O boards. This means you can adapt the system I/O precisely to your specific application. When you realize that you need more computing power, simply connect further DSP or Alpha boards. Increased memory requirements can be met with up to 3MWords on board. Programming the DS1003 board is easy with Simulink and dSPACE's Real-Time Interface. You can add and configure all I/O boards connected to the DS1003 within the Simulink environment without programming one line of code. Generating code, compiling and downloading it to the board is reduced to a single mouse click. For those programming directly in C or using code from other sources, basic C functions for initialization and I/O access are included. Debugger, compiler, and loader software help you to implement the code on the DS1003 board.

**COMPANY INFORMATION**

**dSPACE GmbH**

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www: <http://www.dspace.de>



DEVELOPMENT BOARDS





## FEATURES & BENEFITS

- Real-time development board for rapid control prototyping
- Cost-effective single-board solution
- TMS320C31/60MHz
- 128kWords SRAM
- 4- x A/D, 4- x D/A, digital/timing I/O
- Fully programmable from MATLAB/Simulink
- Complete C software environment included
- Comprehensive set of experiment tools

## SPECIFICATIONS

### Platforms Supported:

ISA, Ethernet

### Host Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C3x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Half Card

### Memory (DRAM/SRAM):

SRAM

### Software Included:

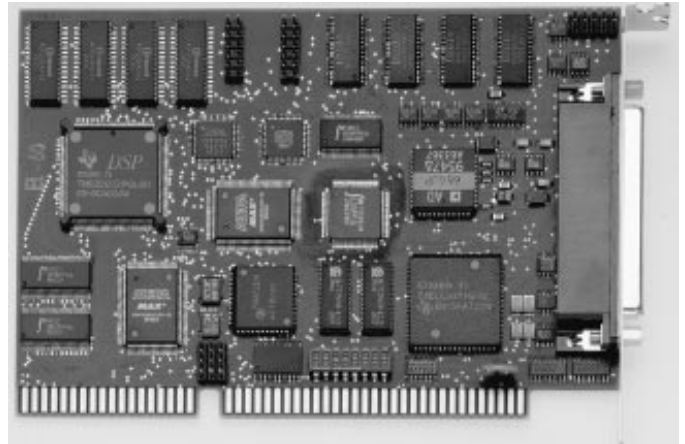
Libraries, Loader, Driver

### Technical Support/Training Available:

Support per telephone, email, or fax

## PRODUCT DESCRIPTION

All-in-one is the motto of the DS1102 DSP Controller Board. It combines the high computing performance of a TI TMS320C31 floating-point DSP with a set of I/O modules frequently required in control systems. It is therefore ideally



suited to cost-sensitive applications that have a limited number of inputs and outputs but still require fast computation. Typical applications are drive, automotive and robotics control, but customers from many other domains also can benefit from this powerful single-board solution. Programming the DS1102 board is easy with Simulink and dSPACE's Real-Time Interface. You can initialize and configure all on-board I/O modules graphically within the Simulink environment. Code generation, compiling, and downloading is reduced to a single mouse click. But even without the Real-Time Interface, putting the DS1102 board into operation is an easy task with the C software environment included, which is complemented by debugger, compiler, and loader software. Any application running on the DS1102 can be fully controlled by the dSPACE experiment software, including the COCKPIT instrument panel, the TRACE data acquisition tool, and various tools for test automation.

## COMPANY INFORMATION

### dSPACE GmbH

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**FEATURES & BENEFITS**

- Floating Point TMS320C31-50
- Zero wait-state 512K byte SRAM
- Flash for booting standalone
- Quad A/D, D/A UART, TTL board available
- On-board 14-bit A/D and D/A
- All DSP signals are brought out to headers
- Low price \$499

**SPECIFICATIONS****Platforms Supported:**

Standalone  
PC Parallel

**Host Supported:**

Windows 3.1  
Windows 95  
DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

4 x 5 x .4

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card  
Digital I/O daughter card

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Standalone board with 50MHz Floating point TMS320C31, 512kbytes of SRAM and 512kbytes Flash and 14-bit A/D and D/A. All DSP signals are brought out to headers for daughter cards. It can boot from Flash and has a MPSD debugger connector. See DSP Tools QUAD board for a daughter board with four 16-bit 100kHz A/D's and D/A's plus a UART and TTL I/O. The low price, \$499, makes it a good choice for serious embedded DSP applications.

**COMPANY INFORMATION****DSP Tools, Inc.**

1131 Betts Trail Way  
Potomac, MD 20854-5537 USA  
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www: <http://www.dsptools.com>

DSP Tools designs and manufactures DSP boards, DSP software and Windows Software. Low cost and quick turn-around engineering are our speciality.

**FEATURES & BENEFITS**

- Very Low cost \$299
- Floating Point TMS320C31
- Zero wait-state SRAM
- FLASH for standalone boot
- 14-bit A/D and D/A
- PC parallel port interface
- Software included

**SPECIFICATIONS****Platforms Supported:**

Standalone  
PC parallel

**Host Supported:**

Windows 3.1  
Windows 95  
DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

33MHz

**Board Size:**

4 x 5 x .4

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

This board is 4 x 5 inches with a TMS320C31-33 128kbytes of SRAM, 128kbytes of Flash, 14-bit A/D and D/A and a PC parallel port interface. It is very low priced at \$299 so it is widely used by universities and for embedding in products. It can boot from its Flash for stand-alone applications.

**COMPANY INFORMATION****DSP Tools, Inc.**

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DSP Tools designs and manufactures DSP boards, DSP software and Windows Software. Low cost and quick turn-around engineering are our speciality.

**FEATURES & BENEFITS**

---

- PC/104 bus
- Floating point DSP
- TTL I/O
- Small size

**SPECIFICATIONS**

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**Platforms Supported:**

PC/104

**Host Supported:**

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

3.5 x 3.5 x 0.625

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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Floating point TMS320C31 DSP board for the PC/104 bus. The board includes the DSP, SRAM and 16-bits of TTL I/O.

**COMPANY INFORMATION**

---

**DSP Tools, Inc.**

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DSP Tools designs and manufactures DSP boards, DSP software and Windows Software. Low cost and quick turn-around engineering are our speciality.

**FEATURES & BENEFITS**

---

- Fast PCI bus interface
- Two 16-bit, 200kHz A/D converters
- Two 16-bit 200kHz D/A converters
- 8 TTL inputs
- 8 TTL outputs

**SPECIFICATIONS**

---

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

---

The PCI-31 board plugs into the PCI bus of a PC and contains a 50MHz floating point TMS320C31 DSP, 512Kbytes for SRAM, two 16-bit 200kHz A/D converters, two 16-bit 200kHz D/A converters, 8 TTL inputs and 8 TTL outputs. The PCI bus interface is very fast containing FIFO's and mailboxes in each direction. The fast bus mastering interface means that one or more PCI-31 boards may be used as a co-processors in a PC.

**COMPANY INFORMATION**

---

**DSP Tools, Inc.**

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DSP Tools designs and manufactures DSP boards, DSP software and Windows Software. Low cost and quick turn-around engineering are our speciality.



**FEATURES & BENEFITS**

- 4 fast 16-bit A/D converters
- 4 fast 16-bit D/A converters
- 1 RS-232 serial port and UART
- 8 TTL Inputs
- 8 TTL outputs

**SPECIFICATIONS**

**Platforms Supported:**

Standalone

**Host Supported:**

Windows 3.1

Windows 95

DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

0

**Clock Speeds Available:**

50MHz

**Board Size:**

4 x 5 x 0.8

**Software Included:**

Analog I/O daughter card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The DSP Tools QUAD board contains four 16-bit 100kHz A/D converters, four 16-bit 100 khz D/A converters, one RS-232 serial port with UART and 8 TTL inputs and outputs. It is designed for use with the DT31-HI board.

**COMPANY INFORMATION**

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DSP Tools designs and manufactures DSP boards, DSP software and Windows Software. Low cost and quick turn-around engineering are our speciality.



**FEATURES & BENEFITS**

- Multiple video sources
- TMS320C25 for accelerated image processing
- Multiple boards can be active in a single PC
- Sampling up to 24MHz
- Menu-driven software, C libraries, or DLL

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C2x

**CPU:**

1

**Clock Speeds Available:**

40MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Option:**

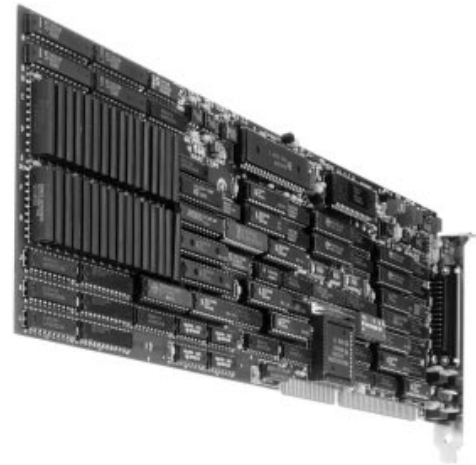
Analog I/O daughter card  
Digital I/O daughter card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The 4MEG VIDEO Model 10 is a lower-cost alternative to the Model 12. The Model 10 provides most of the functionality of the Model 12 and features the same easy integration to almost any video source, such as analog, digital, line-scan high-resolution, and high-frame rate cameras. An on-board TMS320C25 provides accelerated processing. For ease of use,



for image acquisition format parameters are software programmable. Single or sequential images may be captured at rates up to 24MHz. Boards are configured with 1- or 4MBytes of memory. External trigger signals are available to synchronize external events. 4MIP software provides a user-friendly point-and-click interface. 4MOBJIPL software is a library for programmers. Image-processing routines for the TMS320C25 are provided with both EPIX software packages. Most of the 8kword program memory (optionally 32kword) on the TMS320C25 is available for custom program development.

**COMPANY INFORMATION**

**EPIX Incorporated**

381 Lexington Drive  
Buffalo Grove, IL. 60089 USA  
Tel: (847) 465-1818  
Fax: (847) 465-1919  
e-mail: [epix@epixinc.com](mailto:epix@epixinc.com)  
www: <http://www.epixinc.com/epix>





**FEATURES & BENEFITS**

- Multiple video sources
- TMS320C25 accelerated image processing
- Multiple boards can be active in a single PC
- Sampling rates up to 50MHz
- Menu-driven software, C libraries, or DLL

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The 4MEG VIDEO Model 12 provides a flexible image processing platform for system integrators, OEMs, VARs, and imaging researchers. Images can be captured from most video sources, such as analog, digital, line-scan, high-resolution, and high-frame rate cameras. An on-board TMS320C25



provides accelerated processing. For ease of use, image acquisition format parameters are software programmable. Single or sequential images may be captured at rates up to 50MHz. Standard boards are configured with up to 256MBytes of memory. External trigger signals are available to synchronize external events. 4MIP software provides a user-friendly point-and-click interface. 4MOBJIPL software is a library for programmers. Image-processing routines for the TMS320C25 are provided with both EPIX software packages. Most of the 32kword program memory on the TMS320C25 is available for custom program development.

**COMPANY INFORMATION**

**EPIX Incorporated**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Multiple video sources
- Two TMS320C40 digital signal processors
- Independent processor control
- Image-processing software
- Single-processor version available

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

50MHz

**Software Included:**

Debuggers

Libraries

**Expansion Options**

Analog I/O daughter card

Digital I/O daughter card

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

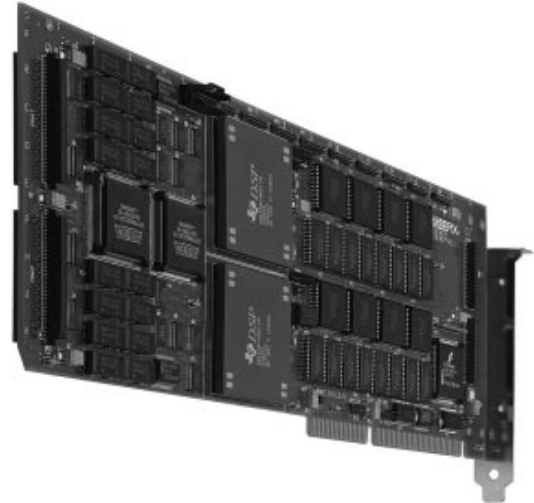
SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The COC402 enhances the processing capabilities of the 4MEG VIDEO Model 12. The two-board combination merges image acquisition and display from the Model 12 with



the processing power of two TMS320C40 DSPs on the COC402. The COC402 features a unique architecture designed to allow program execution at maximum speed. Each processor has 1MBytes of zero-wait-state (SRAM), and 4MBytes of image memory (DRAM). Ten comm ports are brought to external connectors for multiple-board communication. Each DSP may be programmed independently, allowing easy software development without concern for memory contention or arbitration. Three levels of software support are available. The non-programmer can point-and-click with 4MIP to execute image-processing operations. Programmers can use the 4MOBJIPL library of processing routines to develop custom programs and shorten development time. For the most efficient program results, TI's development tools may be used.

**COMPANY INFORMATION****EPIX Incorporated**

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## FEATURES & BENEFITS

- Embedded 50MHz TMS320C40
- Real-Time control of 64 I/O signals
- 50sec resolution
- Programmable I/O hardware
- A32/D32 VME Interface

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Windows 3.1  
 Windows 95  
 Windows NT  
 Solaris

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available

50MHz

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I/O daughter card  
 Digital I/O daughter card

### Software Included:

Debuggers  
 Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

EWA's Timing and Control Unit (TCU) provides a physical link between real-time software and deterministic hardware signals. The TCU is based on a 50MHz TMS320C40 and allows real-time software to schedule signals with 50sec resolution. The 'C40 schedules events by setting bits in a 32-bit wide Time-Slice-RAM (TSR) which contains an address location for each real-time clock cycle. A large SRAM-based FPGA steps through the TSR reading, in which events are set for the current clock cycle and translating them into output signals routed to the P2 connector. The translation can be as simple as a pass through or as complex as an encryption algorithm, and is programmed into the FPGA using PC or UNIX based tools. A pair of COM ports interconnect the 'C40 and FPGA for less time critical communications. Input signals can be sent from the P2 connector to the FPGA for conditioning outputs or to be sent to the 'C40 via a COM port. Software applications are downloaded to the TCU via the VME bus or stored in ROM. The TCU serves both as a development platform and an end item.

## COMPANY INFORMATION

### EWA

3 Eves Drive, Suite 316  
 Marlton, NJ 08053  
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 e-mail: apastore@ewa.com

EWA is a total Texas Instruments DSP solutions provider serving the private and government sectors with engineering services, training and COTS hardware and software products.



**FEATURES & BENEFITS**

- Unlimited free email support with each product and one day free training at hema on purchase of one complete system.
- Up to 2x4MBytes zero-wait-state SRAM onboard
- Up to 32MBytes fast DRAM and/or CAN piggyback
- 2 expansion connectors for hema ASPM modules
- 4 simultaneous sampling ADCs up to 1,2MS/s each
- Up to 16 A/D channels using 4:1 mux per ADC
- 4 DACs with 16Bit@100kHz output update rate
- Master and Slave capability for compact PCI bus

**SPECIFICATIONS**

**Platforms Supported:**

CompactPCI

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

233mm x 160mm x 20mm

**External Memory:**

SRAM  
FLASH

**Expansion Options:**

DRAM, A/D, D/A, CAN, RS232

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

State-of-the-art TMS320C44 processor node for industrial proven CompactPCI bus. Also in industry there is a demand for an easy-to-use host interface for hard realtime applications. Due to the CPCI bus it is possible to build up industrial systems which consist of a CPCI CPU board combined with a powerfull DSP node. A standard CPCI CPU board is housed in the system slot of the CPCI bus. It provides a comfortable platform for rapid development and application user interfaces under W95/NT. The cPCI-DSP4 is designed to work in a peripheral slot. The cPCI-DSP4 comes with 8 dig. I/Os on board and can be equipped with up to two hema ASPM modules. The ASPM1 module provides 4 simultaneous sampling ADCs (altern. 16Bit@250kS/s, 14Bit@800kS/s or 12Bit@1,2MS/s) and 4 DACs with 16Bit@100kHz. Further modules are planned. Additionally the hema cPCI-DSP4 board is a bridge between the CPCI bus and the hema LINKBUS-II backplane. Any number of processing nodes can be wired through the backplane with ComPort cables to build up scalable multiprocessor systems. Other hardware such as frame grabber, CAN module, SCSI or RS422-Link are available. With the hema DSPCAN1 module it is possible to integrate a hema DSP system into a CAN network. For software development we support the TI ANSI C compiler, host-I/O, CAN and DSP libraries. The cPCI-DSP4 is supported by the hema HIPE and LabWindows.

**COMPANY INFORMATION**

**hema Elektronik GmbH**

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www.hema.de

German company founded in 1978 — our name stands for industrial proven standalone systems. We develop and manufacture innovative products on a high quality level.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- TMS320C4x ComPort to RS-422 Link interface
- Reliable serial host connection for C4x
- Up to 20M bit/s and cable lengths up to 20m
- 2 or 6 ComPort to RS-422 interfaces
- Supports TA2 and TPP2 host adapter
- Reset of external processor nodes
- Power supply 5V, 0, 5A

**SPECIFICATIONS**

**TMS320 Devices Supported:**

TMS320C4x

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

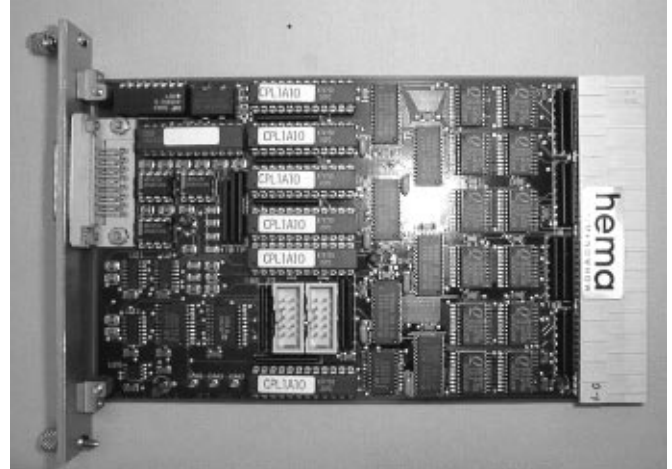
Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**Board Size:**

160 x 100 x 20 mm

**Technical Support/Training:**

YES  
Unlimited free email support with each product and one day free training at hema on purchase of one complete system.



**PRODUCT DESCRIPTION**

The CPL1 C4x ComPort to RS-422-Link adapter provides communication between a hema DSP system and a host system during program development and for user interface. Together with a host adapter board like the hema TA2 (ISA to RS-422 Link adapter) or hema TPP2 (parallel port to RS-422 Link adapter) the CPL1 can be used for program download and host-I/O. Each ComPort can be used bi-directional. On the other hand, the CPL1 board can be used to facilitate mixed systems of TMS320C4x DSPs and INMOS Transputers. It works as a fully transparent interface which does the conversion of C4x ComPorts to Transputer Links. Printed manual included.

**COMPANY INFORMATION**

**hema Elektronik GmbH**

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www: http://www.hema.de

German company founded in 1978, our name stands for industrial proven standalone systems. We develop and manufacture innovative products on a high quality level.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Low cost, single ComPort to RS-422 interface
- Reliable serial host connection for C4x system
- Up to 20M bit/s and cable lengths up to 20m
- Supports TA2 and TPP2 host adapter
- Reset of external processor nodes
- Small board format 85 x 40 mm
- Power supply 5V, 0,5A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

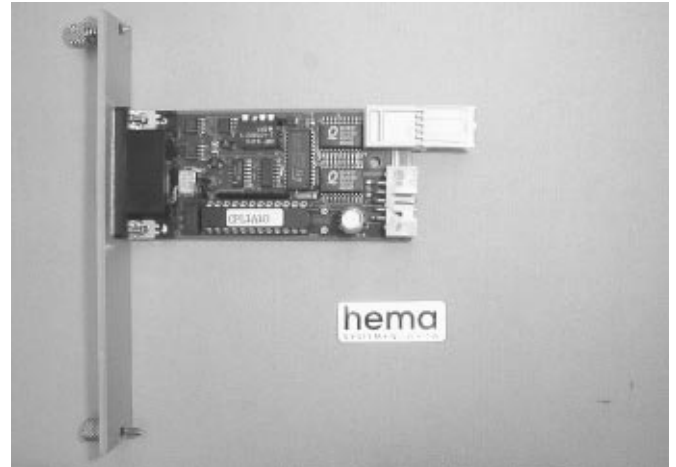
TMS320C4x

**Board Size:**

85 x 40 x 17 mm

**Technical Support/Training:**

YES  
Unlimited free email support with each product and one day free training at hema on purchase of one complete system.



**PRODUCT DESCRIPTION**

The low cost single C4x ComPort to RS-422-Link adapter provides communication between a hema DSP system and a host system during program development and for user interface. Together with a host adapter board like the hema TA2 (ISA to RS-422 Link adapter) or hema TPP2 (parallel port to RS-422 Link adapter) the CPL2 can be used for program download and host-I/O. On the other hand, the CPL2 board can be used to facilitate mixed systems of TMS320C4x DSPs and INMOS Transputers. It works as a fully transparent interface which does the conversion of C4x ComPorts to Transputer Links. Printed manual included.

**COMPANY INFORMATION**

**hema Elektronik GmbH**

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German company founded in 1978, our name stands for industrial proven standalone systems. We develop and manufacture innovative products on a high quality level.



DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Up to 2x1M bytes zero-wait-state SRAM onboard
- Up to 32M bytes fast-page-mode DRAM piggyback
- Expansion connector for customized modules
- 2 ComPorts serialized for host connection
- 4 ComPorts at LINKBUS-II backplane available
- JTAG daisy chain via the backplane
- Power supply 5 V, 1.5 A

**SPECIFICATIONS****Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60 MHz

**Board Size:**

160 x 100 x 20 mm

**Expansion Options:**

DRAM, CAN, RS-232

**Technical Support/Training:**

YES

Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

Single TMS320C40 board with low cost host interface onboard for program download and host-I/O. With the computing node DSP1 it is possible to solve industrial applications in the area of image or signal processing: motor control, machine control, quality control, simulation and test beds. hema DSP systems can be standalone or host based. Any number of processing nodes can be wired via the LINKBUS-II backplane with ComPort cables. Additional hardware as frame grabber, CAN module and several interfaces to the host via SCSI or RS-422-Link are available. JTAG is wired to a connector at the front plate and can be used for low level XDS510 debugging. For easy software development we support the TI compiler, the hema host-I/O Library and the Sinectonalysis DSP libraries for signal and image processing. Printed manual included. Examples and Test programs in C on disk included.

**COMPANY INFORMATION****hema Elektronik GmbH**

Roentgenstr. 31  
Aalen, D. 73431  
Germany

**hema**  
ELEKTRONIK GMBH



**FEATURES & BENEFITS**

- Up to 2x4M bytes zero-wait-state SRAM onboard
- Up to 32M bytes fast-page-mode DRAM piggyback
- Expansion connector for customized modules
- TIMERx and IIOFx LEDs on front panel
- 6 ComPorts at LINKBUS-II backplane available
- JTAG daisy chain via the backplane
- Power supply 5 V, 1 A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINK-BUS-II

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60 MHz

**Board Size:**

160 x 100 x 20 mm

**Expansion Options:**

DRAM, CAN, RS-232

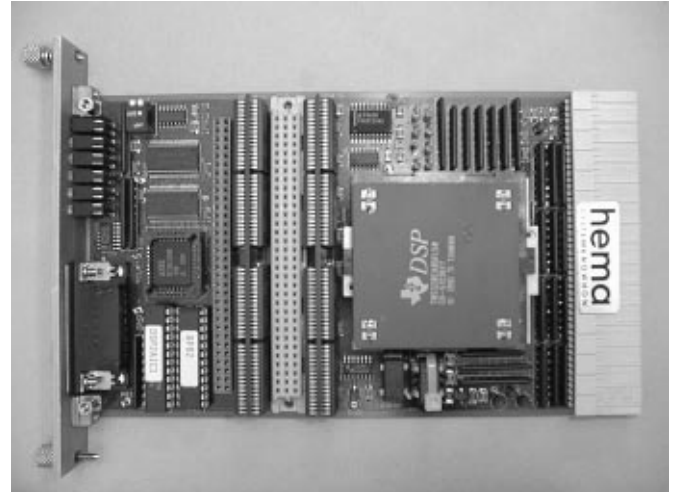
**Technical Support/Training:**

YES

Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

Single TMS320C40 board suitable for multiprocessor networks combined with hema LINKBUS-II backplane. With the computing node DSP2 it is possible to solve industrial



applications in the area of image or signal processing: motor control, machine control, quality control, simulation and test beds. hema DSP systems can be standalone or host based. Any number of processing nodes can be wired via the LINKBUS-II backplane with ComPort cables. Additional hardware as frame grabber, CAN module and several interfaces to the host via SCSI or RS-422-Link are available. JTAG is wired to a connector at the front plate and can be used for low level XDS510 debugging. For easy software development we support the TI compiler, the hema host-I/O Library and the Sinectonalysis DSP libraries for signal and image processing. Printed manual included. Examples and Test programs in C on disk included.

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www: <http://www.hema.de>

German company founded in 1978, our name stands for industrial proven standalone systems. We develop and manufacture innovative products on a high quality level.





**FEATURES & BENEFITS**

- Up to 4x4M bytes zero-wait-state SRAM onboard
- Up to 32M bytes fast-page-mode DRAM or CAN
- Expansion connector for customized modules
- TIMERx and IIOFx LEDs on front panel
- 6 ComPorts at LINKBUS-II backplane available
- JTAG daisy chain via the backplane
- Power supply 5 V, 1.8 A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60 MHz

**Board Size:**

160 x 100 x 20 mm

**Expansion Options:**

DRAM, CAN, RS-232

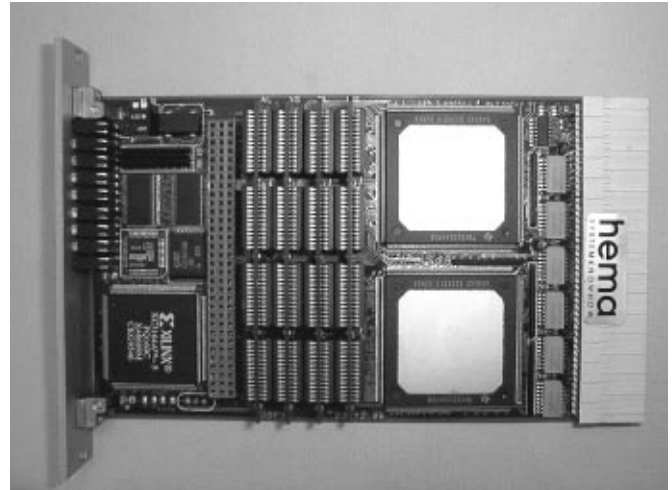
**Technical Support/Training:**

YES

Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

Low cost dual TMS320C44 processor node. With the computing node DSP3 it is possible to solve industrial applications in the area of image or signal processing: motor control, machine control, quality control, simulation and test



beds. hema DSP systems can be standalone or host based. Any number of processing nodes can be wired via the LINKBUS-II backplane with ComPort cables. Additional hardware as frame grabber, CAN module and several interfaces to the host via SCSI or RS-422-Link are available. JTAG is wired to a connector at the front plate and can be used for low level XDS510 debugging. The DSP3 board supports a CAN piggyback module at the expansion connector. With the hema DSPCAN1 module it is possible to integrate a hema DSP system for quality assurance into an existing CAN network. For easy software development we support the TI compiler, the hema host-I/O Library and the Sinectonalysis DSP libraries for signal and image processing. Printed manual included. Examples and Test programs in C on disk included.

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**FEATURES & BENEFITS**

- Opto isolated 1M bit/s CAN Bus interface
- Piggyback module for DSP3
- Optional with 16M bytes fast DRAM for C4x
- 128K bytes up to 1M bytes Flash memory
- 4K bit serial EEPROM onboard
- 32K byte SRAM onboard
- Power supply 5V, 1A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

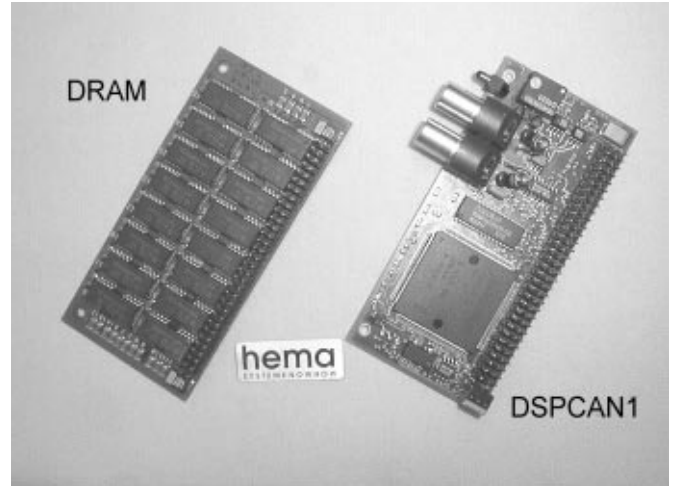
160 x 100 x 20 mm

**Technical Support/Training:**

YES  
Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

For our DSP image processing and quality assurance systems we have developed a CAN piggyback unit. With the hema DSPCAN1 module it is possible to integrate a hema DSP system into an existing CAN network. On the other hand, the DSPCAN1 combined with a hema CAN-32 I/O module we can add digital I/O to our DSP system. The DSPCAN1 module is based on the Siemens Microcontroller SAB80C167CR-LM and offers an opto isolated CAN-BUS interface. 32K byte SRAM and 128K byte (up to 1024K byte) FLASH memory are used for C167 program code and



data. In systems without host connection the system boot code can be stored in the FLASH memory. Any configuration data (like CAN-IDs) can be stored in a 4K bit serial EEPROM. The communication to the DSP system is performed via an interrupt capable register interface. For standard applications a C167 driver program is available, which is serving the interface to the DSP system. As the C167 can be booted from the DSP system it is very easy to replace the driver software. Printed manual included. Examples and Test programs in C on disk included.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Opto isolated 1M bit/s CAN Bus interface
- Add on board for DSP1, DSP2, DSP3
- Optional with 16M bytes fast DRAM for C4x
- 128K bytes up to 1M byte Flash memory
- 4K bit serial EEPROM onboard
- Optional RS-232 interface
- Power supply 5V, 1A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
 DSP1,DSP2,DSP3

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

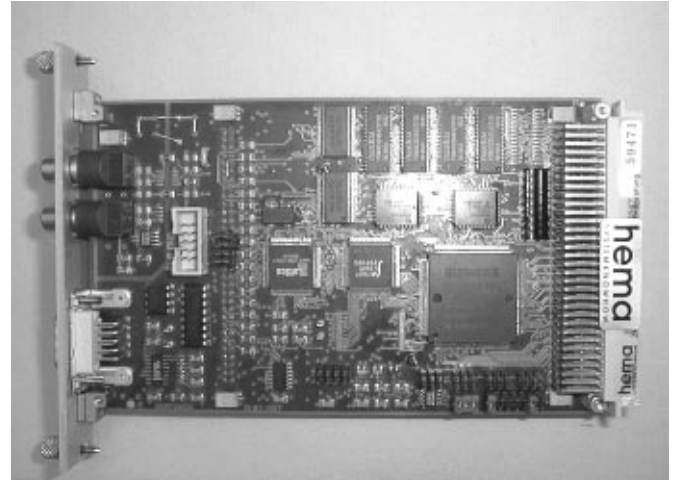
160 x 100 x 20 mm

**Technical Support/Training:**

YES  
 Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

For our DSP image processing and quality assurance systems we have developed a CAN bus interface board. With the hema DSPCAN2 it is possible to integrate a hema DSP system into an existing CAN network. On the other hand, the DSPCAN2 combined with a hema CAN-32 I/O module we can add digital I/O to our DSP system. The DSPCAN2 is based on the Siemens Microcontroller SAB80C167CR-LM and offers an opto isolated CAN-BUS interface (optionally RS-232-interface). 32K byte SRAM and 128K byte (up to 1024K byte) FLASH memory are used for C167 program code and data.



In systems without host connection the system boot code can be stored in the FLASH memory. Any configuration data (like CAN-IDs) can be stored in a 4K bit serial EEPROM. The communication to the DSP system is performed via an interrupt capable register interface. For standard applications a C167 driver program is available, which is serving the interface to the DSP system. As the C167 can be booted from the DSP system it is very easy to replace the driver software. Printed manual included. Examples and Test programs in C on disk included.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- FAST SCSI-2 interface with 25 MIPS Controller
- Up to 10M bytes/s synchronous data rate
- Up to 7 additional devices supported
- Programmable active termination
- Filing system or host-I/O firmware onboard
- Disconnect/Reconnect feature supported
- Power supply 5 V, 1 A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1, Windows 95, Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

160 x 100 x 20 mm

**Expansion Options:**

Customized modules

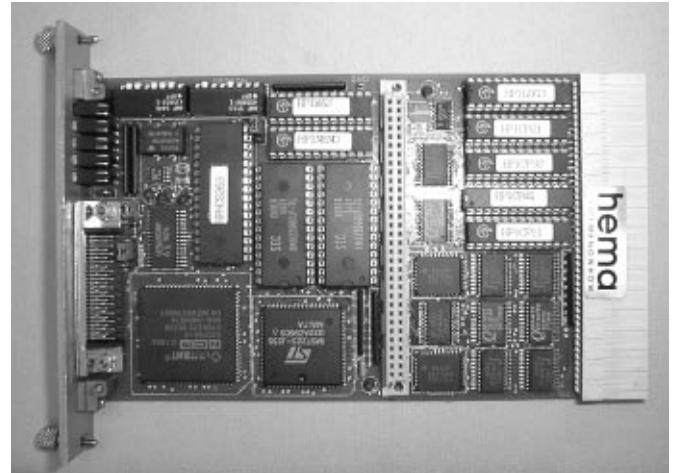
**Technical Support/Training:**

YES

Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

Intelligent FAST-SCSI-II Interface for stand alone data loggers and high speed host communication. The HPSI1 board is directly compatible to C4x ComPorts and can be connected via LINKBUS-II backplane to a hema DSP board. Due to the onboard Controller and resident firmware the HPSI1 can be used for file-I/O or host-I/O with very few software amount. All SCSI actions are done by the board itself and no additional CPU resources of the attached DSP system are required. The HPSI1 ComPort Interface is FIFO buffered with one bi-directional ComPort or two unidirectional ComPorts. For example



the HPSI1 can be used to boot a standalone DSP system from a SCSI HD or floppy drive. Combined with a hard disk a fast subsystem for video cutting can be build. Otherwise the HPSI1 can be used to connect a DSP system via SCSI bus to a host system with standard SCSI adapter. This allows to build a real-time quality assurance system with preprocessing video data on the external DSPs and graphic output on the host. The HPSI1 is available with three firmware versions onboard: HPSI1/drv provides standard SCSI routines, initiator/target mode and disconnect/reconnect, HPSI1/hfs provides a UNIX style filing system, HPSI1/hcs provides routines for host communication via a standard SCSI interface. Printed manual included. Examples and test programs in C on disk included.

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DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Solid rock backplane for 19" housing
- 3 slots for DSP products, each 4 PU and 3 HU
- 6 ComPorts on each slot available
- Free cabling for best fitting topology
- Coded ComPort cables and connectors
- Backplanes can be stacked for large systems
- C4x IIOF signals at backplane available

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

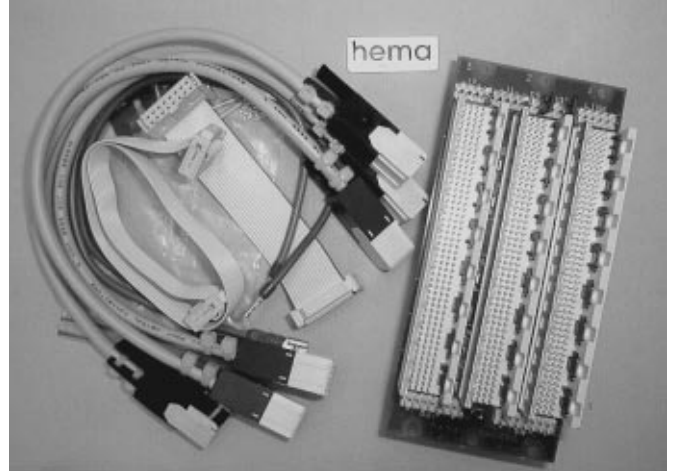
128 x 58 x 41 mm

**Technical Support/Training:**

YES  
Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

Mounted in a 19" rack, the hema LINKBUS-II backplane is designed for use in rough industrial environment. It offers 3 slots for hema DSP processor and interface boards with 160 mm x 100 mm Euroformat. At the high quality 192 pin connector of each slot, up to 6 ComPorts are available. At the rear of the backplane hema ComPort cables can be plugged in to connect the DSP boards via ComPorts. To prevent the user from connecting input with input and output with output, the cable connectors are coded. Any number of backplane modules with 3 slots each can be connected for larger systems.



The backplane provides power and reset to the plug in boards. With the hema backplane the power of C4x multiprocessing is unleashed. Due to the point to point processor communication with 20M bytes/s per ComPort the limitations of a conventional bus system are history. Thanks to the free ComPort cabling it is possible to realize a topology that fits best to the system requirements. Printed manual included.

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**FEATURES & BENEFITS**

- FIFO buffered ISA to RS-422-Link host adapter
- Reliable serial host connection for C4x system
- Up to 20M bit/s and cable lengths up to 20m
- Additional slow link
- TTL link for low cost DSP1 host connection
- Supports CPL1 and CPL2 ComPort interfaces
- Power supply 5V, 0.3A

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 DOS, OS/2

**TMS320 Devices Supported:**

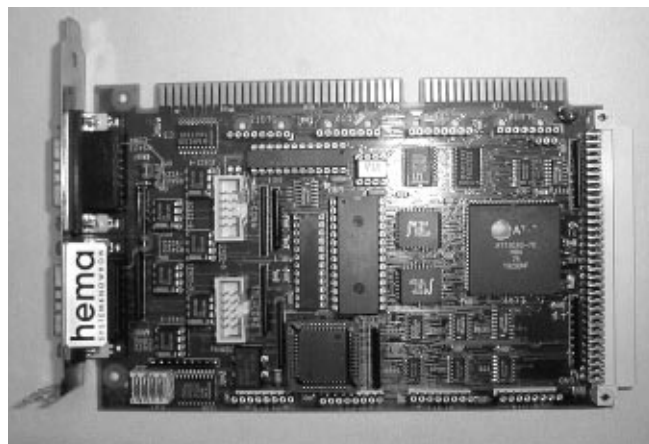
TMS320C4x

**Board Size:**

175 x 108 x 19 mm

**Technical Support/Training:**

YES  
 Unlimited free email support with each product and one day free training at hema on purchase of one complete system.



**PRODUCT DESCRIPTION**

Fast, FIFO buffered ISA to RS-422-Link host adapter used for host communication with hema DSP nodes. Together with a hema interface board like CPL1 or CPL2 it is used for program download and host-I/O. The serial RS-422 Link between a PC and C4x system provides a reliable connection with transfer rates up to 20 M bit/s and cable lengths up to 20m. The TA2 is a IBM AT ISA Bus board and requires one ISA slot. Printed manual included.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Low cost PC parallel port to RS-422 interface
- Reliable serial host connection for C4x system
- Up to 20M bit/s and cable lengths up to 20m
- Supports CPL1 and CPL2 ComPort interfaces
- No PC slot required
- Small board format 85 x 40 mm
- Power supply 5V, 0,5A

**SPECIFICATIONS**

**Platforms Supported:**

PC Printer Port

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

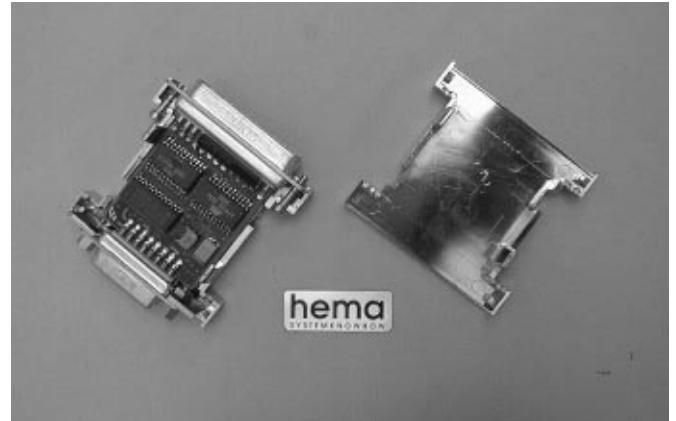
**Board Size:**

85 x 14 x 13 mm

**Technical Support/Training:**

YES

Unlimited free email support with each product and one day free training at hema on purchase of one complete system.



**PRODUCT DESCRIPTION**

Low cost parallel port to RS-422-Link host adapter used for host communication with hema DSP nodes. Together with a hema interface board like CPL1 or CPL2 it is used for program download and host-I/O. The serial RS-422 Link between a PC and C4x system provides a reliable connection with transfer rates up to 20M bit/s and cable lengths up to 20m. Printed manual included.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Framegrabber for matrix and line scan cameras
- Black/white or RGB color cameras supported
- Analog or digital camera input
- Up to 4 cameras, external or internal clock
- External or internal trigger capability
- Synchronization between multiple boards
- Power supply 5 V, 1.3 A

**SPECIFICATIONS**

**Platforms Supported:**

Standalone  
LINKBUS-II

**Host Supported:**

Windows 3.1, Windows 95, Windows NT,  
DOS, OS/2

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

160 x 100 x 20 mm

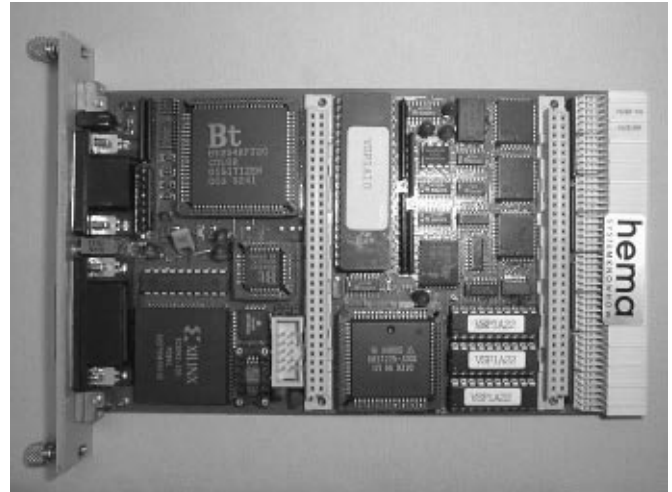
**Technical Support/Training:**

YES.

Unlimited free email support with each product and one day free training at hema on purchase of one complete system.

**PRODUCT DESCRIPTION**

Together with the hema VSP1 frame grabber it is possible to connect almost any camera to a C4x system for industrial applications in the area of image processing and quality control. Analog or digital cameras of almost any supplier are supported. Due to the field programmable logic on-board, special camera or trigger signals can be generated or processed, e.g., flash control, frame or line trigger, synchronization of multiple cameras or boards. The data stream from the camera is digitized and converted to ComPort compatible signals. Via the backplane, the data is wired to one or multiple C4x. Using the broadcasting feature, one camera can be connected to up to six processors, which receive the image in parallel and compute the required algorithms independently. Resolutions up to 5000 x 5000 pixel for matrix cameras



and up to 8000 pixel for line scan cameras are supported. To reduce the data amount and communication overhead a region of interest window within the image can be programmed by the attached DSP system. With a 4:1 analog video multiplexer it is possible to select one of four SW cameras. The color version includes a 2:1 analog video multiplexer. For software development we support the TI compiler, the hema host-I/O Library and the Sinectonanalysis DSP libraries for signal and image processing. Printed manual included. Examples in C on disk.

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**FEATURES & BENEFITS**

- 16-bit PC/104 stack through board, no ISA bus
- Provides single grand-daughter module slot
- 2 Comports on buffered connectors
- Jumper selectable reset directions for flexibility
- Can slave to HEPC2104 power down feature
- PC/104 DSP systems gain HUNT I/O access
- One of our tools for integrating system solutions

**SPECIFICATIONS****Platforms Supported:**

PC/104

**Host Supported::**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C40

**Board Size:**

Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEBASE104 is a PC/104 format card that interfaces a Hunt Engineering grand-daughter module to two uni-directional 'C4x' comports. Intended for use with the HEPC2014 PC/104 format 'C44 DSP' card providing access to the wide range of grand-daughter format I/O modules. The HEBASE104 has jumper selectable reset directions on its comport connectors. This is only possible because it has no dedicated comport connections or C4x DSP. Comport direction is jumper selectable. The HEPC2104 requests the direction change after reset, LED's indicating success. This is only possible because there is no dedicated C4x comport connection. The power-down feature of the HEPC2014 is supported allowing connection to a HEPC2104 that uses power down. The power-control signal from the HEPC2104 is cabled to a connector on the HEBASE104. FE, TS are switched that control the connection of the modules power planes to the power inputs to the card. This power input is taken from the PC/104 connectors, but can also be supplied via the optional power connector on the HEBASE104. The HEBASE104 can be reset by the master system or can support remote booting using the Hunt Engineering UDP reset.

**COMPANY INFORMATION****Hunt Engineering**

Chestnut Court, Burton Row

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www: <http://www.hunteng.co.uk>

Hunt Engineering is dedicated to supplying single and multiprocessor DSP solutions. Our areas of expertise include imaging, parallel processing and industrial applications.

To provide the highest levels of support this board can only be supplied as part of a Hunt Engineering system.

*HUNT ENGINEERING*





## FEATURES & BENEFITS

- 2 TIM-40 slots, no host interface
- 4 Comports per TIM-40 available externally
- 14-way JTAG connection for debugging tools
- Multiple boards JTAG chain supported
- JTAG connects to all TIM-40s
- Ideal for use with Hunt Engineering TIM-40s
- Ideal for remote and embedded applications

## SPECIFICATIONS

### TMS320 Devices Supported:

TMS320C4x

### Platforms Supported:

Stand-alone

### Host Supported:

Windows 3.1, Windows NT, Solaris

### Board Size:

4.2", 7.5"

### Expansion Options:

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

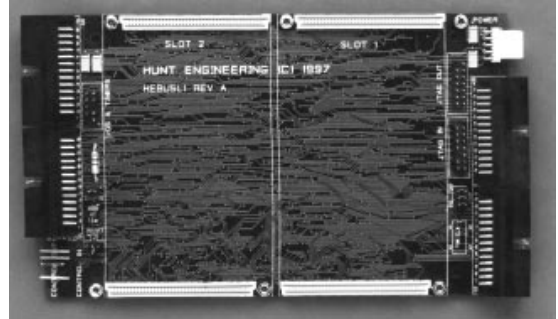
2 TIM-40 slots

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEBUSL1 is a bussless, embedded card with 2 TIM-40 slots and no host connection. The TIM-40 slots are arranged so that multiple-slot-sized modules can be fitted. Its compact size (4.2" x 7.5") makes it ideal for embedding Hunt Engineering TIM-40s. Connectivity is provided to allow the interconnection of multiple boards (either all HEBUSL1s or an HEBUSL1 with other Hunt Engineering boards). This includes control signals, JTAG signals and comport connections. Buffered connections are provided for some of the IIOF pins of the TIM-40s, also buffered timer pins for use with Hunt Engineering data acquisition modules. Reset for



the TIM-40s can be selected to be from another master Hunt Engineering Motherboard, auto power-up, and special "UDP reset" feature of Hunt Engineering communications TIM-40s. All comport connections on the HEV40-4 are buffered to ensure reliability. The second generation of Hunt Engineering comport buffering is used, providing increased performance and decreased power consumption over the first-generation scheme. The Hunt Engineering API software provides consistent driver support and a consistent interface between our hardware, third-party software and the user application. Software support for unix (SunOS 4.1.x and Solaris 2.x) For PC-on-VME such as from XYCOM; WIN NT/3.1/95 and DOS)

## COMPANY INFORMATION

### Hunt Engineering

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www: <http://www.hunteng.co.uk>

Hunt Engineering is dedicated to supplying single and multiprocessor DSP solutions. Our areas of expertise include imaging, parallel processing and industrial applications.

To provide the highest levels of support this board can only be supplied as part of a Hunt Engineering system.

**HUNT ENGINEERING**



**FEATURES & BENEFITS**

- Framestore 1Kx1K (8-bit), or 512x512 (24-bit)
- SW support for PAL/NTSC/SECAM grabbing
- Composite, Y/C, (non) interlaced RGB may be captured
- On-module TMS320C4x processor
- Local Bus: 4- or 16MByte of fast-page-mode DRAM
- Global Bus: 1MByte VRAM (framestore)
- 4 useable C44 comports and JTAG connection

**SPECIFICATIONS**

**Platforms Supported::**

VME, ISA  
PCI PC, Stand-alone

**Host Supported:**

Windows 3.1, Windows 95  
Windows NT, Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

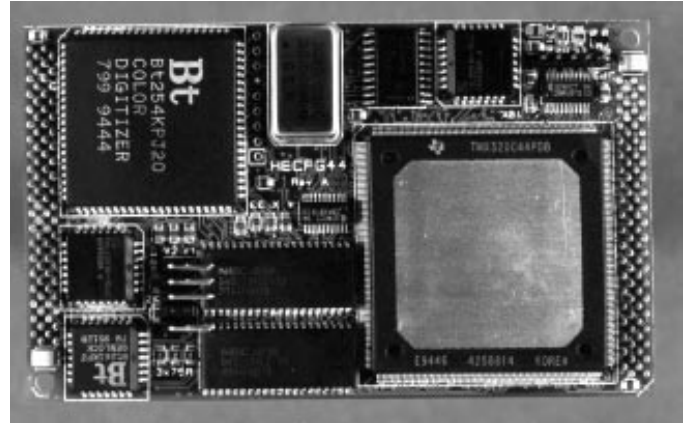
Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HC(C)FG44 is a TIM-40 framegrabber module that has an on-board TMS320C44 processor. The processor has 4- or 16MByte of fast-page-mode DRAM on its local bus. The framestore is 1MByte in size, and may be used as 1024x1024 pixels that are 8-bit wide, or as 512x512 pixels that are 24-bit wide. The framestore is located on the TMS320C44 processor's global bus. The module is a size 1 TIM-40 module. After minimal software configuration hardware is used to capture images into the framestore. The image data may then be processed by the TMS320C44 processor. Composite, Y/C,



interlaced, non interlaced RGB and monochrome video inputs can be captured. On-board, the HECFG44 carries an IDROM. The processor clock comes from an on-board Xtal oscillator, enabling mixed speed TMS320C4x networks. The pixel clock used for digitizing is derived from a separate user changeable Xtal. The JTAG port is used for debugging. Hunt Engineering motherboards are designed in such a way that a whole system, consisting of any set of motherboards and TIM-40 modules, can be controlled by one and the same JTAG port.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- To provide the highest levels of support this board can only be supplied as part of a HUNT ENGINEERING system.
- High performance PCI bus interface
- PCI bus can access 2 HW emulated comports
- PCI "master mode" (PCI DMA) support
- All circuitry required to run JTAG based code
- Single TIM-40 slot, all six comm ports available
- Front panel connectors for comm ports 1 and 4
- API SW support for DOS, WIN3.1/95/NT, VxWorks

**SPECIFICATIONS**

**Platforms Supported:**

cPCI

**Host O/S Supported:**

Windows 3.1, Windows 95, Windows NT, Solaris, VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

3U

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard

**Software Included:**

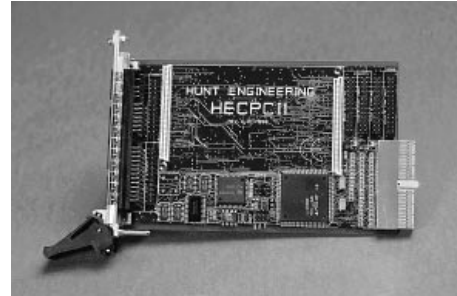
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HECPCI1 is a 3U Compact PCI card with one TIM-40 slot. Control signals, JTAG and comm ports provide



connectivity between the HECPCI1 and other HUNT ENGINEERING boards. Host Comport A has the option of using a PCI "Master mode" transfer giving high performance access using DMA like transfers to and from the PC memory. JTAG Master circuitry allows for use of the debugger software available from HUNT ENGINEERING for the HECPCI1. This allows for debugging of this card or a local slave card. All comm port connections are buffered using second generation of HUNT ENGINEERING comm port buffers which provide increased performance and decreased power consumption. Buffered connections are provided for some of the IIOF pins of the TIM-40, also a buffered timer pin for use with HUNT ENGINEERING data acquisition modules. Reset for the TIM-40s and Host comports can be selected to be from this host interface, another master HUNT ENGINEERING Motherboard, Auto power-up, and special "UDP reset" feature of HUNT ENGINEERING communications TIM-40s.

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We design and manufacture 'C4x and 'C6x based products as tools to help build supportable system solutions. Wide experience in range of industrial COTS applications.



DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- Granddaughter for HETBASEIO HETBASEIO4
- Interfaces to Comport on HETBASE module
- 4 ch. 16-bit A/D at 100Ksps, or 8ch at 50Ksps
- Choice of differential or Single ended I/Ps.
- Input filters with parameters selectable
- Internal/external sample clock, at DC-100 KHz
- Multiple modules can use common clocks

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone  
PC/104

### Host Supported:

Windows 3.1, Windows 95  
Windows NT, Solaris

### TMS320 Devices Supported:

TMS320C40

### Board Size:

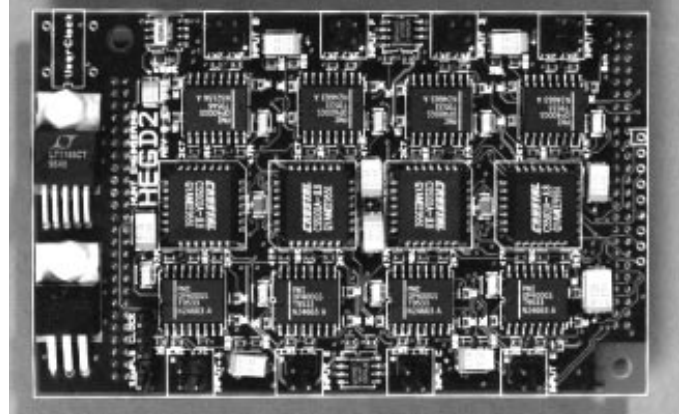
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEGD2 uses 4 separate CS5101A 16-bit A/Ds, to provide multiple channels of A/D interfaced via the HETBASEIO or HETBASE104 to a 'C4x comport interface. The use of a common internal or external clock provides wide flexibility of sampling modes. Multiple modules can be interconnected to ensure simultaneous sampling. Choice of 4 simultaneously-sampled channels at 100Ksps, or 8 channels at 50Ksps, where two groups of 4 channels are alternately sampled. Each group of 4 is sampled simultaneously, half of the sample clock apart from the other. For each enabled channel a sample clock edge will cause a 16-bit value to be



sent in the bottom 16-bits of a comport word. The top 16-bits is used to identify the channels number. The comport must be guaranteed to read the data at all times to prevent data loss. The inputs are separate connectors which input to the CS5101A via a protection buffer and filter. The Granddaughter module is 4.0" x 2.5" and is mounted above the TIM-40 with a board to board spacing of 0.2". The maximum height of components above the grand-daughter module is 19mm, making the combination of motherboard plus HETBASEIO plus HEGD2 38mm

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## FEATURES & BENEFITS

- Grand-daughter module for HETBASEIO HETBASEIO4
- Interfaces to the Comport output on HETBASE module
- 16ch. simultaneous 12-bit A/D mux from 3 MHz A/D
- Input range +/-2.5V
- Internal or external sample clock. (DC-3Mhz)
- Connecting more channels reduces sampling rate
- Multiple modules can use common clocks

## SPECIFICATIONS

### TMS320 Devices Supported:

TMS320C40

### Platforms Supported:

VME

ISA

PCI PC

### Host Supported:

Windows 3.1

Windows 95

Windows NT

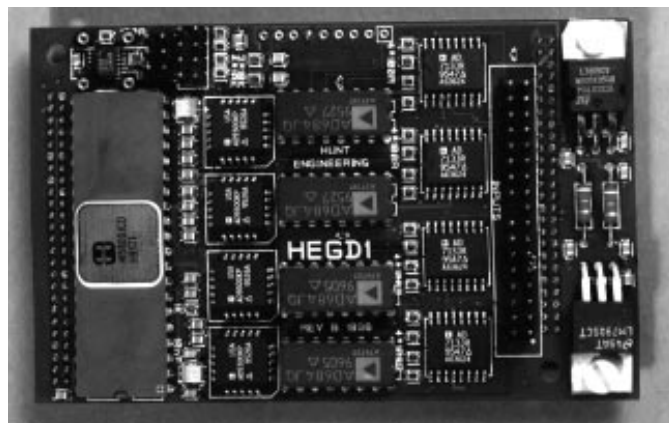
Solaris

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEGD1 uses a single Harris HI5800 12-bit A/D. 16 separate sample and hold amplifiers provide multiple channels of A/D interfaced via the HETBASEIO or HEBASE104 to a 'C4x comport interface. A common internal or external clock provides wide flexibility of sampling modes. Multiple modules can be interconnected ensuring simultaneous sampling. Number of channels is selected, using jumpers, to be 1,2,4,8 or 16. There is a multiplexing overhead and the sampling rate per-channel is reduced as more channels are used i.e. maximum sample rates of 1ch @ 3Msps, 2ch. @1Msps each, 4ch @ 600Ksps each, 8ch @ 333Ksps each or 16ch @ 176Ksps each. For each enabled channel a sample clock edge will cause a 16-bit value to be sent to the comport. The bottom 12-bits



will be the sample value and the upper bits contain information about the channel number and A/D status. There are 2 samples packed into each 'C4x word. a comport word. The comport must be guaranteed to read the data at all times to prevent data loss. The inputs are on a standard IDC connector with alternate ground cores. The inputs to the module are protected by unity gain protection buffers.

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## FEATURES & BENEFITS

- Grand-daughter for HETBASEIO and HETBASE104
- Interfaces to comports on HETBASE module
- 2 channels of RS-232
- Jumper selection of most popular Baud rates
- One of our tools for integrating system solutions

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone

### Host Supported:

Windows 3.1, Windows 95  
Windows NT, Solaris

### TMS320 Devices Supported

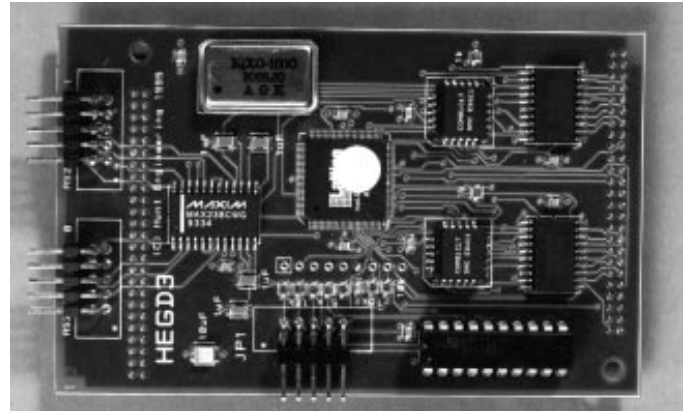
TMS320C40

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEGD3 uses 2 separate COM81C17 UART's, to provide 2 channels of RS-232 interfaced via the HETBASEIO to 'C4x comports. UART programming is performed by hardware from on-board PROM when CONFIG is de-asserted. Simply send characters into the input comport of the HETBASEIO to transmit and read received characters from the output comport. Characters are sent to, and received from, the HEGD3 as 32-bit words where the bottom byte only is used as data. This suits the range of 'C4x C Compilers that store characters as 32-bit values. Bit 8 is used to identify the channel number. The comport must be guaranteed to read the data at all times to prevent data loss. The grand-daughter module is 4.0" x 2.5" and is mounted above the TIM-40 with a board to board spacing of 0.2". The maximum height of components above the grand-daughter module is 6mm, making the combination of motherboard plus HETBASEIO plus HEGD3 24mm.



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**FEATURES & BENEFITS**

- Grand-daughter for HETBASEIO HETBASEIO4
- Interfaces to both comports one HETBASE module
- 6x 20-bit I/P channels and 6x 20-bit O/P channel
- Input data registered on rising or falling
- One of our tools for integrating system solutions

**SPECIFICATIONS**

**Platforms Supported:**

VME, ISA  
PCI PC, Stand-alone, PC/104

**Host Supported:**

Windows 3.1, Windows 95  
Windows NT, Solaris

**TMS320 Devices Supported:**

TMS320C40

**Board Size:**

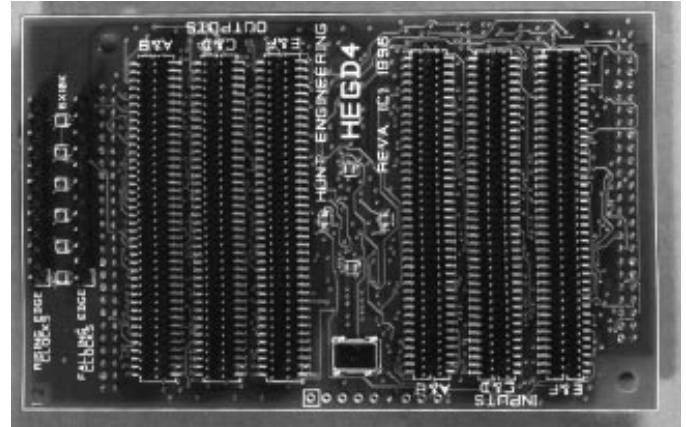
Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEGD4 interfaces high speed and high density digital I/O via the HETBASEIO or HEBASE104 to 'C4x comports. Data written to the HEGD4 has the bottom 20-bits registered and applied to the output connector, with other bits in the 'C4x word identifying which channel the data is for. Each input channel has a choice of using a falling edge clock input or a rising edge clock input. When either is received, the input data for that channel is registered and queued for output to the HETBASEIO or HEBASE104. The Grand-daughter module is 4.0" x 2.5" and is mounted above the TIM-40 with a board to board spacing of 0.2". The maximum height of components above the grand-daughter module is 6mm, making the combination of motherboard plus HETBASEIO or HEBASE104 plus HEGD4 35mm.



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## FEATURES & BENEFITS

- Granddaughter for HETBASEIO and HETBASEIO4
- Interfaces to Comport input BASE module
- 4-ch, of 16-bit D/A at 230Ksamples/sec/channel
- Output filters with selectable parameters
- Choice of internal or external sample clock
- Multiple modules can use common clocks

## SPECIFICATIONS

### TMS320 Devices Supported:

TMS320C4x

### Platforms Supported:

VME

ISA

PCI PC

Stand-alone

TIM-40

### Host Supported:

Windows 3.1, Windows 95

Windows NT, Solaris

### Board Size:

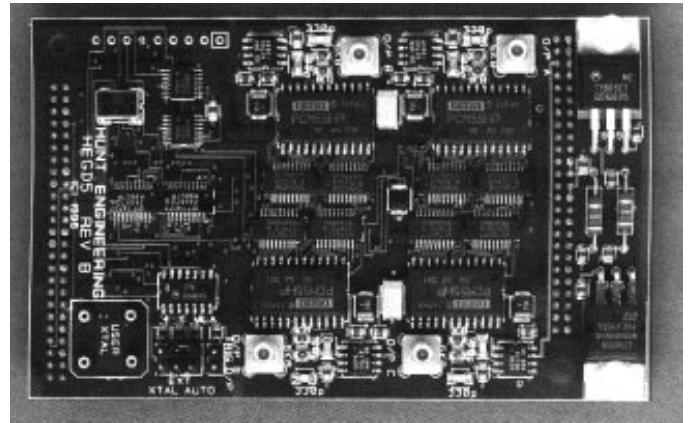
4.0" x 2.5"

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEGD5 uses 4 separate Burr Brown PCM55HP 16-bit D/As, providing multiple channels of D/A interfaced via the HETBASEIO or HETBASEIO4 to a 'C4x comport interface. A common internal or external clock provides flexible sampling modes. Multiple modules can be interconnected to ensure simultaneous sampling. The Comport sends the HETBASEIO or HETBASEIO4, words containing one sample, along with a channel identifier for that data. After each sample clock, the HEGD5 will read samples from the HETBASEIO or HETBASEIO4 and latch them ready for the channels identified in the data. The next sample clock will apply the new values to the D/As. In this way, some or all of the channels can be



updated, and a channel that has not received an update for this sample clock will continue to use its previous sample value, thus preventing unpredictable output behavior. The outputs are separate SMB connectors which are connected to the D/As via a protection buffer and filter. The "grand-daughter module" is 4.0" x 2.5" and is mounted above the TIM-40 with a board spacing of 0.2". The maximum height of components above the granddaughter module is 25mm, making the combination of motherboard plus HETBASEIO or HETBASEIO4 plus HEGD5 43mm.

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## FEATURES & BENEFITS

- Area or Linescan Digital camera interface
- Grand daughter module for Base format board
- 8/16/32-bit camera data, packed into 32-bit word
- Programmable Region of interest selection
- Programmable camera timing generator
- RS-422 digital I/O bits for mode selection
- No onboard processor required

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone  
TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris

### TMS320 Devices Supported:

TMS320C4x

### Board Size:

4.0" x 2.5"

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEGD6 is a Grand-daughter module for connecting digital cameras to Hunt Engineering TIM-40 modules. It is used in conjunction with a base module providing Grand-daughter sockets. There are several RS-422 I/O connectors to accommodate a wide range of digital cameras. Single or multiple cameras can input 8/16/32-bit data, providing timing signals are common. The data can be presented to the base module as; one pixel per 32-bit word, 2 pixels/word or 4 pixels/word. The packing method, pixel rate and region of interest govern the data bandwidth from the HEGD6. If the bandwidth of the base module (e.g. 10MB/sec for HETBASEIO) is exceeded then a red LED will indicate data is being lost. The timing signals commonly required by cameras (pixel clock, linesync, integration time, framesync etc.) can be provided by a software programmable timing generator on the HEGD6. This is programmed using the input FIFO of the Grand-daughter module. Many digital cameras, (e.g. from Dalsa) can be interfaced with the HEGD6. A Xilinx FPGA and optional components enable semi-custom versions to provide different options for the control I/Os, or logical use of the control signals.

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**FEATURES & BENEFITS**

- Bi-dir fibre optic comms, TAXI format data
- Granddaughter for HETBASE10 and HETBASE104
- Remotely booting enabled using UDP reset
- No onboard processor required
- Packet, single word and block modes
- One of our tools for integrating System Solutions

**SPECIFICATIONS**

**Platforms Supported:**

VME  
ISA  
PCI PC  
Stand-alone

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
Solaris

**TMS320 Devices Supported:**

TMS320C40

**Board Size:**

Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEGD7 is a Granddaughter module for fibre-optic data communications between Hunt Engineering TIM-40 modules. Used with a base module providing grand-daughter sockets. It connects two unidirectional optical fibers to the I/O busses of the grand-daughter connectors. Data streams can be presented in pair, or ring topology. The HEGD7 can be used to connect two clusters of processing modules providing communications between I/O and processing modules. HEGD7 provides long-distance communication, electrical isolation or both. The standard version of the HEGD7 pair provide a 10db power budget, allowing the calculation of

maximum distance using the losses of the fibre chosen and any connectors used in the system. Distant clusters of processors can be remotely booted over the fibre using the UDP reset. There is no processor on the HEGD7, transfer of the onboard data in AMD TAXI format, is controlled by two FPGAs. ST connectors with optical wavelength 1320nm are standard. Options are available. Modes selected by jumper. Packet mode: START and STOP guarantee that packet received is 256 words. Single word mode: No START or STOP. General purpose link for remote booting. BLOCK mode: Sending can be blocked by remote HEGD7 to provide flow control.

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DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Bi-dir 50R Co-Ax comms, TAXI format data
- Grand-daughter board for HETBASEIO and HETBASE104
- Remotely booting enabled using UDP reset
- No onboard processor required
- Supports blocking and non-blocking modes
- One of our tools for integrating system solutions

**SPECIFICATIONS****Platforms Supported:**

VME  
ISA  
PCI PC  
Stand-alone

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
Solaris

**TMS320 Devices Supported:**

TMS320C40

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEGD8 is master and slave pair of grand-daughter modules for data communications using 50R co-axial cable between Hunt Engineering modules. It is used in conjunction with a base module that accepts grand-daughter modules. Two clusters of processing modules can be connected, providing communications between I/O and processing modules. Medium-distance communication over a single cable is provided. Distant clusters of processors can be remotely booted using the UDP reset. There is no onboard processor. Transfer of the onboard data in AMD TAXI format, is controlled by two FPGAs. The Master HEGD8 modulates a 40MHz carrier with its TAXI data, while the Slave transmits at baseband. Power splitters and active filters provide recovery of the correct data channel at the receivers, allowing true duplex

use of the cable at 10Mbaud. SMB connectors are provided for connection of the cable, which should be chosen to give losses of less than 15db over a bandwidth of 1- to 60MHz. The HEGD8 operates in a single-word mode, with no START or STOP control sequences. This provides a general purpose link for remote booting. Blocking and non-blocking modes can be selected by jumper, choosing whether flow control is required for the particular application.

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**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

**Board Size:**

Full card

**Expansion Options:**

4 TIM-40 slots

**Software Included:**

Code Generation tools

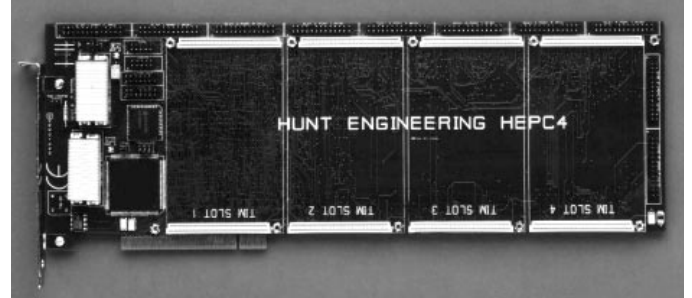
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEPC4 is a full-length PCI plug in card that has four TIM-40 slots for plug in modules. It is the same height as an ISA board, which exceeds the height specified in the PCI specification. Connectivity is provided to allow the HEPC4 to connect to other Hunt Engineering boards. This includes control signals, JTAG and comport connections. Both Host comports have individual reset outputs so they can be used to connect to separate C4x systems or to the same one. Host Comport A has the option of using a PCI Master mode transfer giving high performance access using DMA like transfers to and from the PC memory. JTAG Master circuitry allows for use of the debugger software available from Hunt Engineering for the HEPC4. This allows for debugging of this card or a local slave card. All comport connections on the HEPC4 are buffered to ensure reliability. The second generation of Hunt Engineering comport buffering is used, providing increased performance and decreased power consumption over the first-generation scheme. Reset for the TIM-40s and Host comports can be selected to be from this host interface, another master Hunt Engineering Motherboard, auto power-up, and special UDP reset feature.

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## FEATURES & BENEFITS

- High performance 16-bit ISA board with 4 TIM
- At least two Comports/ TIM-40 available
- Two hardware emulated, FIFO based comports
- All JTAG circuitry to run Debug software
- Can be used as link to external 'C4x resources
- Supported by Hunt API software for DOS and Windows
- One of many tools used in Hunt Engineering systems

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C4x

### Board Size:

Full card

### Expansion Options:

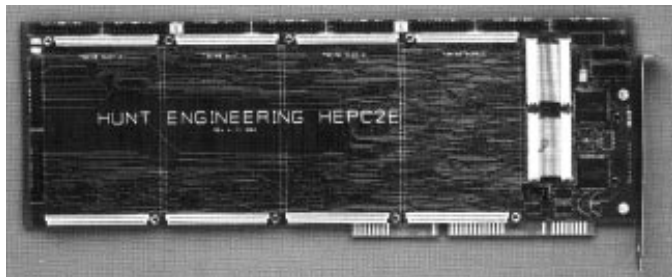
4 TIM-40 slots

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEPC2E is an IBM AT form factor plug in card that has four TIM-40 slots for plug in modules, which are arranged so that multiple-slot-sized modules can be fitted. Connectivity is provided to allow the interconnection of multiple boards (either all HEPC2Es or an HEPC2E with other Hunt Engineering boards). This includes control signals, JTAG signals and comport connections. All comport connections on the HEPC2E are buffered to ensure reliability. The second generation of Hunt Engineering comport buffering is used providing increased performance and decreased power consumption over the first-generation scheme. Connections are provided for buffered connection to some of the IIOF



and timer pins of the TIM-40s, allowing easy use of those resources if required by the system. The reset source for the TIM-40s and Host comports can be provided by this host interface, another master Hunt Engineering Motherboard, an auto power-up circuit ( for use with ROM booting) or the UDP reset feature supported by Hunt Engineering communications TIM-40s. The Hunt Engineering API software provides consistent driver support and a consistent interface between our hardware, third-party software and the user application. A version is available without the PC/ISA bus interface. (HEP40E)

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## FEATURES & BENEFITS

- High performance 16-bit ISA interface
- One UW emulated 'C4x comport from ISAbus
- 60MHz C44 with up to 2MBytes Ows SRAM
- Options for booting from Flash Global SRAM
- Power down mode controlled from ISA bus
- Stackable, with common control & power down
- Can be a link adapter to an external 'C4x

## SPECIFICATIONS

### Platforms Supported:

PC/104

### Host Supported

Windows 3.1, Windows 95

Windows NT, Solaris

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

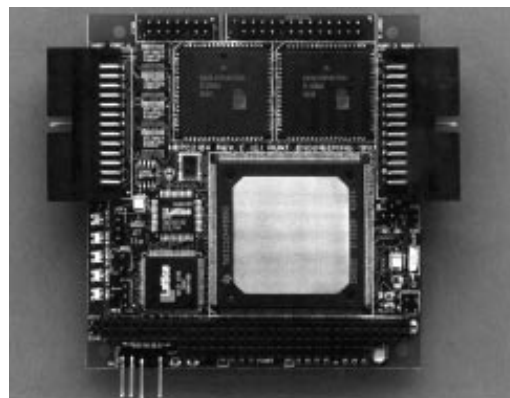
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEPC2104 is a 16-bit PC104 format card, that implements an interface between ISA bus and standard Hunt Engineering 'C4x Comport and control connectors. The ISA interface is fully compatible with Comport A of the popular HEPC2E. There is a TMS320C44 processor with up to 2MBytes of zero-wait-state SRAM and a TIM-40 compliant ID-ROM. Four comports are connected to buffered comport connectors, allowing connection to other Hunt Engineering boards. Global SRAM can be replaced with Flash ROM, from which the 'C44 can be booted, or simply use as non-volatile storage. Power-down mode, controlled from ISA bus, uses



FETs to isolate the power plane of the C44 and memory. All comports on the HEPC2104 are buffered to ensure reliability. Second-generation Hunt Engineering comport buffering is used, providing increased performance and decreased power consumption over the first-generation scheme. Buffered connections are provided for some of the IIOF pins of the 'C44, also one buffered timer pin for use with Hunt Engineering data acquisition modules. Reset for the 'C44 and Host comport can be selected to be from this host interface, another master Hunt Engineering Motherboard or Auto power-up.

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To provide the highest levels of support this board can only be supplied as part of a Hunt Engineering system.

**HUNT ENGINEERING**



**FEATURES & BENEFITS**

- High performance, half length PCI card
- Two hardware emulated, FIFO based comports
- All JTAG circuitry to run Debug software
- Size one TIM-40 slot. Six comports available
- Can be used as link to external C4x resources
- Supported by Hunt API software for DOS and Windows
- One of many tools used in Hunt Engineering system

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 Solaris

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

Half card

**Expansion Options:**

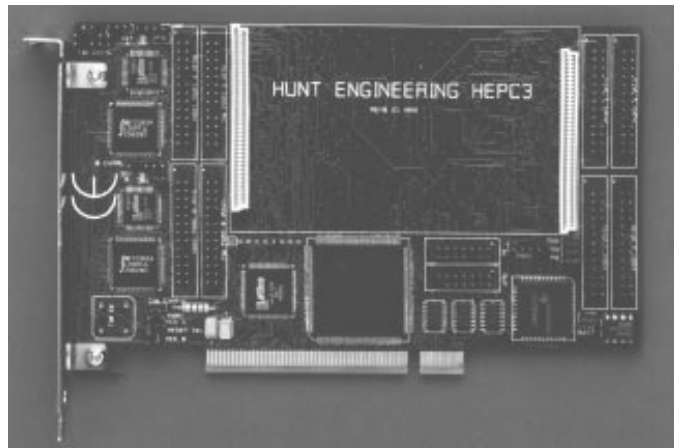
1 TIM-40 slot

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEPC3 is a half-length PCI plug-in card that has one TIM-40 slot for plug in modules. Connectivity is provided to allow the HEPC3 to connect to other Hunt Engineering boards. This includes control signals, JTAG and comport connections. Both host comports have individual reset outputs so they can be used to connect to separate C4x systems, or to the same one. Host Comport A has the option of using a PCI "Master mode" transfer giving high performance access using DMA-like transfers to and from the PC memory JTAG Master circuitry allows for use of the debugger software available from Hunt Engineering for the HEPC3. This allows



for debugging of this card or a local slave card. All comport connections on the HEPC3 are buffered to ensure reliability. Second-generation Hunt Engineering comport buffering is used, providing increased performance and decreased power consumption over the previous generation. The Hunt Engineering API software provides consistent driver support and a consistent interface between our hardware, third-party software and the user application.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Four TMS320C44 processors at 60MHz
- Each processor has 0.5MByte SRAM on local bus
- Six TMS320C44 comports externally accessible
- At least 1 external comport from each 'C40
- JTAG connection to all four 'C40s
- Zero-wait-state SRAM
- Size 1 TIM-40

**SPECIFICATIONS**

**Platforms Supported:**

- VME
- ISA
- PCI PC
- Stand-alone

**Host Supported:**

- Windows 3.1
- Windows 95
- Windows NT
- Solaris

**TMS320 Devices Supported:**

- TMS320C4x

**CPU:**

- 4

**Clock Speeds Available:**

- 60MHz

**Board Size:**

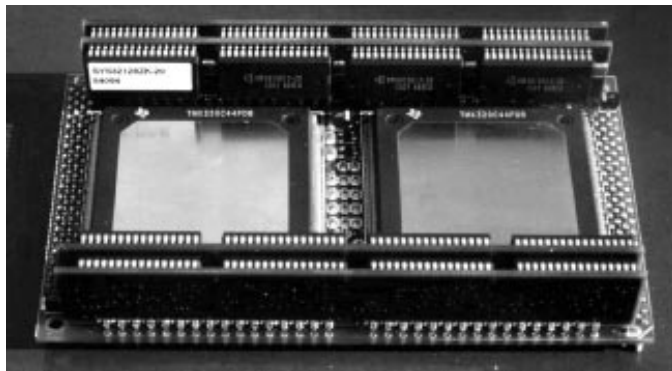
- Full card

**Technical Support/Training Available:**

- YES

**PRODUCT DESCRIPTION**

The HEQUAD is a TIM-40 module, and has four TMS320C44 processors, each having 0.5MByte SRAM on its local bus. The module is ideally suited for computing-power hungry applications that need only little memory to run. The 0.5MByte of SRAM for each processor is sufficient for many



DSP applications. The module is a size 1 TIM-40 module. The JTAG port is used for debugging. In any system, with any number of processors, the JTAG allows debugging access to each individual processor in the system. There are several debugging tools available to take advantage of the JTAG's features. The HEQUAD derives the processor clock from the motherboard. The TMS320C44 is a 275MOPS and 50MFLOPS rated DSP processor from Texas Instruments. It has the unique feature of 4 comports, each of which can transfer data at 20MByte/sec. VIPTIM Size 2 Video and Image Processing TIM-40

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## FEATURES & BENEFITS

- 1 HW emulated, 'C4x comport connected to SBUS
- All circuitry required to run JTAG based code
- HW on board for debug SW eg Code Composer
- Device use DVMA for 'C4x Comport accesses
- Ideal for use with Hunt Engineering TIM-40s
- An external link adapter to 'C4x resource

## SPECIFICATIONS

### Platforms Supported:

VME, ISA  
PCI PC, Stand-alone

### Host Supported:

Solaris  
SunOS

### TMS320 Devices Supported:

TMS320C40

### Board Size:

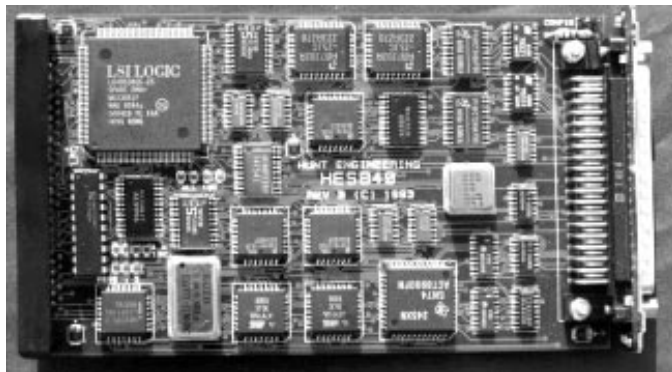
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HESB40 is a single width SBus plug in card for use with workstations such as the Sun Microsystems range of Sparcstations. The HESB40 has no 'C4x processors, but provides an interface between the SBus and an external resource of TIM-40s such as those offered by the Hunt Engineering Pizza Box. It provides all control signals and a single Comport interface to allow direct connection with other Hunt Engineering products using the cable set provided. The comport connection on the HESB40 is buffered to ensure reliability. The second generation of Hunt Engineering comport buffering is used, providing increased performance and decreased power consumption over the first generation scheme. UNIX drivers are provided in loadable form for SunOS 4.1x, for sun4c and sun 4m 4.1.x, and Solaris 2.x for sun4c, sun4m and sun4u.



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**FEATURES & BENEFITS**

- One TMS320C40 processor at 50MHz
- Up to 16MByte local DRAM, 16M byte global DRAM
- Fast page mode DRAM.
- J3 option can connect global bus to motherboard
- 6 useable 'C40 comports & JTAG connection
- Size 1 TIM-40

**SPECIFICATIONS**

**Platforms Supported:**

- VME
- ISA
- PCI PC
- Stand-alone
- TIM-40

**Host Supported:**

- Windows 3.1
- Windows 95
- Windows NT
- Solaris

**TMS320 Devices Supported:**

- TMS320C4x

**Clock Speeds Available:**

- 50MHz

**Technical Support/Training Available:**

- YES

**PRODUCT DESCRIPTION**

The HET40 is a TIM-40 module, and has one TMS320C40 processor. The module can have up to 16MByte DRAM on its local bus, and 16MByte DRAM on its global bus, for a maximum of 32MByte DRAM. Optionally, a J3 connector may be fitted, which allows the global bus to access (shared memory on) the motherboard. The DRAM used is fast page mode DRAM. The module is a size 1 TIM-40 module. The JTAG port is used for debugging. In any system, with any number of processors, the JTAG allows debugging access to each individual processor in the system. There are several



debugging tools available to take advantage of the JTAG's features. The HET40 derives the processor clock from the motherboard. The TMS320C40 is a 275MOPS and 50MFLOPS rated DSP processor (50MHz version) from Texas Instruments. It has the unique feature of 6 comports, each of which can transfer data at 20MByte/sec.

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- One TMS320C40 processor at 50- or 60MHz
- 4MByte EDRAM on both local and global busses
- Virtually zero wait state EDRAM
- J3 optional can connector global bus to motherboard
- 6 useable 'C40 comports & JTAG connection
- Size 1 TIM-40
- One of the tools we use to integrate System S

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

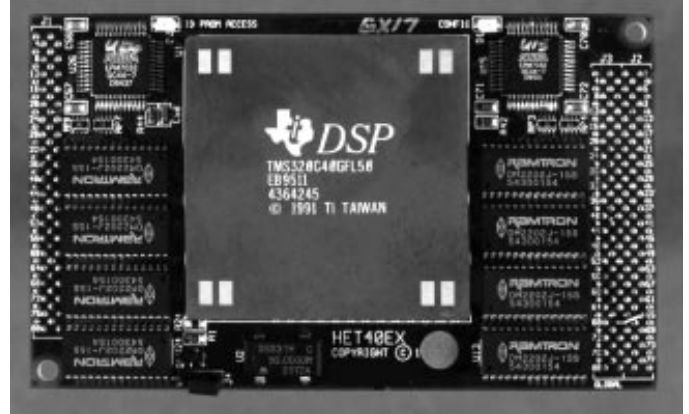
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HET40E is a TIM-40 module, and has one TMS320C40 processor. The module has 4MByte EDRAM on its local bus, and 4MByte EDRAM on its global bus, for a total of 8MByte EDRAM. Optionally, a J3 connector may be fitted, which allows the global bus to access (shared memory on) the motherboard. The EDRAM is a virtually zero-wait-state EDRAM. The module is a size 1 TIM-40 module. The JTAG port is used for debugging. In any system, with any number



of processors, the JTAG allows debugging access to each individual processor in the system. There are several debugging tools available to take advantage of the JTAG's features. The HET40E derives the processor clock from the motherboard. The TMS320C40 is a 275MOPS and 50MFLOPS rated DSP processor (50MHz version) from Texas Instruments. It has the unique feature of 6 comports, each of which can transfer data at 20MByte/sec.

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**FEATURES & BENEFITS**

- One TMS320C40 processor at 50MHz
- 1MByte SRAM local, 4-16MBytes DRAM global
- HET38=equal 32M loc SRAM, 6M global DRAM/SRAM
- Zero-wait-state SRAM, fast-page-mode DRAM
- J3 option can connect global bus to motherboard
- 6 useable 'C40 comports & JTAG connection
- HET40SD equal Size 1 TIM-40, HET38 equal Size 2 TIM

**SPECIFICATIONS****Platforms Supported:**

VME, ISA  
PCI PC, Stand-alone

**Host Supported:**

Windows 3.1, Windows 95  
Windows NT, Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HET40SD is a TIM-40 with one TMS320C40 processor. There is 1MByte SRAM on its local bus, and 4- or 16MByte DRAM on its global bus, a maximum of 5 or 17M byte mixed memory. Optionally, a J3 connector may be fitted, which allows the global bus to access (shared memory on) the motherboard. The SRAM used is zero-wait-state SRAM, the DRAM is fast-page-mode DRAM. The module is a size 1 TIM-40 module. The HET38 is a size 2 TIM-40 with one C40 processor. The module has 32MBytes of DRAM on its local



bus, 4MBytes of DRAM on its global bus and a further 2MBytes of SRAM on its global bus. The JTAG port is used for debugging. In any system, with any number of processors, the JTAG allows debugging access to each individual processor in the system. There are several debugging tools available to take advantage of the JTAG's features. The HET40SD and HET38 derive the processor clock from the motherboard. The TMS320C40 is a 275MOPS and 50MFLOPS rated DSP processor (50MHz version) from Texas Instruments. It has the unique feature of 6 comports, each of which can transfer data at 20MByte/sec.

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DEVELOPMENT BOARDS

## FEATURES & BENEFITS

- 'C40 processor at 50- or 60MHz
- Up to 4MBytes of no-wait-state SRAM on each Bus
- Connection to the "optional" J3 (Global bus)
- 6 useable 'C40 Comports.,JTAG connection to 'C40
- ID ROM conforming to the TIM-40 Specification

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone  
TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

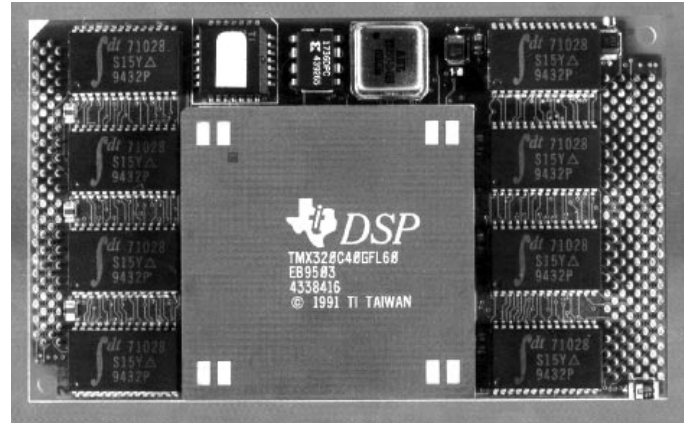
SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HET40SX is a TIM-40 Module with a 'C40 and up to 8MBytes of no-wait-state SRAM. It is a size 1 TIM-40 module. The JTAG port is used for debugging processors individually in any size of system, and enables the use of the



debugging/emulation tools for the 'C40. The ID ROM gives all information required to configure and use the HET40SX and is accessible by software. The HET40SX derives its processor clock from an on board Xtal oscillator enabling mixed speed networks to be used. It can however use the 'Broadcast' TIM clock as provided by the Motherboard if required. The 'C40 is a 330MOPS and 60MFLOPS rated DSP processor from Texas Instruments that has the unique feature of 6 Comports each of which are rated at 20MBytes/sec.

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**FEATURES & BENEFITS**

- TIM-40 with no 'C40 processor
- Connects 6 comports to 3 Transputers links
- Standard Transputers link cable connections
- Differential RS-422 Transputers/links
- TIM-40 connected to Transputers reset out
- 6 useable 'C40 comports
- Uses normal comport/link access SW

**SPECIFICATIONS**

**Platforms Supported:**

- VME
- ISA
- PCI PC
- Stand-alone

**Host Supported:**

- Windows 3.1
- Windows 95
- Windows NT
- Solaris

**Board Size:**

- Full card

**Technical Support/Training Available:**

- YES



**PRODUCT DESCRIPTION**

The HET403tl/dtl is a TIM-40 Module that does not have a 'C40, but interfaces the TIM-40's comports to Transputers/links. The half-duplex comports are fixed in their reset direction and are combined in pairs to provide full duplex communication on the Transputers/links. It is a size 1 TIM-40 module. The HET403tl/dtl derives its' Transputers/link clock from an on board Xtal oscillator. No other clocks are required by this module. The communications speed on the links is governed by the C011 Transputers/link speed.

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## FEATURES & BENEFITS

- TIM-40 with no 'C40 processor
- Interfaces Stereo CODEC to TIM-40 Comport 3
- Controlled from a second comport
- Uses AD1848 Audio CODEC
- 48kHz maximum sampling rate
- Two 16-bit input ch. and two 16-bit output ch.
- Normal Comport access software can be used

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris

### Board Size:

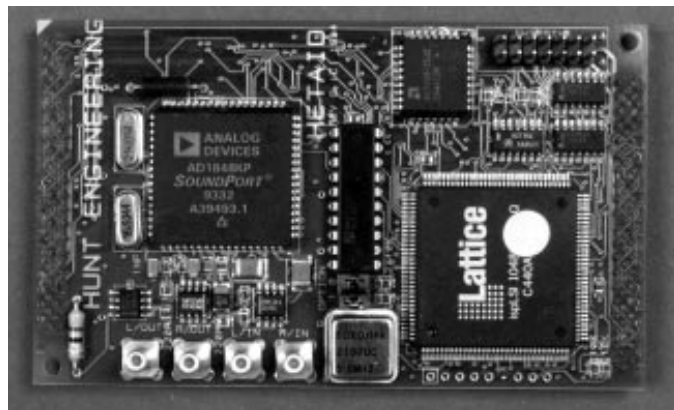
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Granddaughter module for use with HETBASEIO or HEBASE104 Interfaces to both data comports of the HETBASEIO or HEBASE104 6x 20-bit I/P channels and 6x 20-bit O/P channels. Input data registered on rising or falling edge clocks. The HEGD4 interfaces high speed and high-density digital I/O via the HETBASEIO or HEBASE104 to 'C4x comports. Data written to the HEGD4 has the bottom 20-bits registered and applied to the output connector, with other bits in the 'C4x word identifying which channel the data is for. Each input channel has a choice of using a falling edge clock input or a rising edge clock input. When either is received, the input data for that channel is



registered and queued for output to the HETBASEIO or HEBASE104. The Grand-daughter module is 4.0" x 2.5" and is mounted above the TIM-40 with a board to board spacing of 0.2". The maximum height of components above the grand-daughter module is 6mm, making the combination of motherboard plus HETBASEIO or HEBASE104 plus HEGD4 35mm.

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## FEATURES & BENEFITS

- TIM-40 with no 'C40 processor
- Interfaces to Comport 3 of the TIM-40
- Up to 8MBytes, comport programmed Flash ROM
- Programmable disable jumper-safety feature
- Flash contents can be booted over comport
- Use normal comport link software and control
- One of many tools used in Hunt Engineering system

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris

### TMS320 Devices Supported:

TMS320C40

### Board Size:

Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HETFLASH is a TIM-40 Module that does not have a 'C40, but interfaces the TIM-40 Comport 3 to Flash ROM. This can be programmed and re-programmed by writing to the Comport, example software provided. If enabled, the HETFLASH will boot a network of processors upon reset. The HETFLASH is fully supported on all Hunt Engineering Motherboards. Example code is supplied for 3L parallel C and features in Hunt Engineering Server/Loader and provide easy programming support. The HETFLASH is a size 1 TIM-40 module.

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## FEATURES & BENEFITS

- Size 2 TIM-40 with concurrent Video capture and display
- SRAM framestore, near OWS C44 access to video
- 4 SW mux mono video in, external clock capability
- RGB outputs, choice of Sync for flexibility
- 1024-pixel x 1024-line framestore, 4 split option
- Framestore packing options at different addresses
- TTL I/O for camera control. 4 overlay planes

## SPECIFICATIONS

### Platforms Supported:

VME, ISA  
PCI PC, Stand-alone

### Host Supported:

Windows 3.1, Windows 95  
Windows NT, Solaris

### MS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

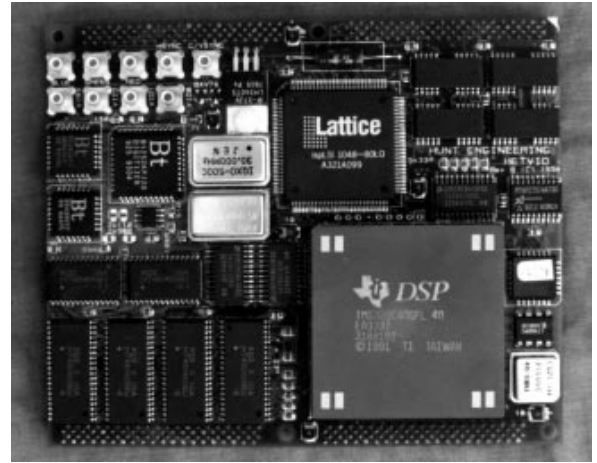
50MHz

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HETVIO2 is a video I/O module that allows the concurrent acquisition and display of multiple images, while maximizing the bandwidth available for C44 access to the video data. Software-programmable video-capture parameters allow the flexible capturing of virtually any analogue monochrome video signal. Four-to-one software multiplexing of the camera source allows the use of multiple cameras. A novel "rotating" capture mode allows successive images to be automatically captured into the next 512x512 quadrant of the framestore, allowing double-buffering techniques to be used with near zero overheads. Display is provided by a software-programmable pixel clock, timing generator and RAMDAC, allowing the



captured image, the processed image or even both to be displayed in a format that is independent from the capture format. Up to 4 overlay planes can be used for the addition of colour markers and text to the displayed image. A hardware cursor avoids the need to erase and redraw the cursor shape. The choice of access modes for the framestore allow for the efficient processing of the video data (one pixel per C44 word) and the efficient copying and storage of the data (4 pixels per C44 word).

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**FEATURES & BENEFITS**

- 6U VME Slave card with 4 TIM-40 slots
- Memory mapped interface between C4x comport
- At least two Comports/ TIM-40 available
- All JTAG circuitry to run Debug software
- Can be used as link to external 'C4x resources
- Supported by Hunt API software for DOS and Windows
- One of many tools used in Hunt Engineering

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

Full card

**Expansion Options:**

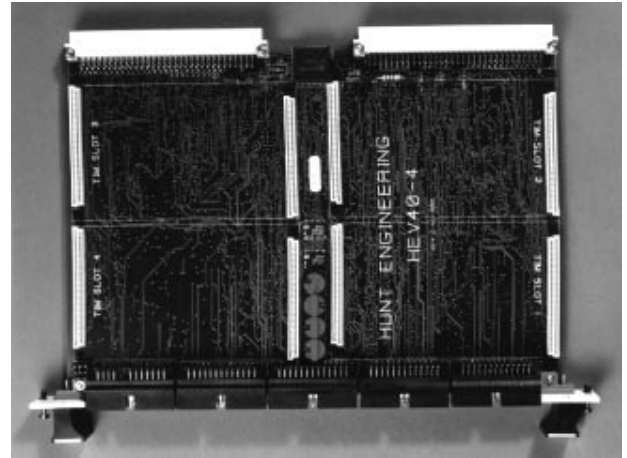
4 TIM-40 slots

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HEV40-4 is a non-extended (160mmx223mm) VME slave plug in card that has four TIM-40 slots. The slots are arranged to accommodate size 1- or 2 TIM-40s. Connectivity is provided to allow the interconnection of multiple boards (either all HEV40-4s or an HEV40-4 with other Hunt Engineering boards). This includes control signals, JTAG signals and comport connections. All comport connections on the HEV40-4 are buffered to ensure reliability. The second generation of Hunt Engineering comport buffering is used, providing increased performance and decreased power consumption over the first-generation scheme. JTAG Master



circuitry enables use of the debugger software available from Hunt Engineering for the HEV40-4, allowing debugging of this card or a number of local slaves. The Hunt Engineering API software provides consistent driver support and a consistent interface between our hardware, third-party software and the user application. Software support for UNIX (SunOS 4.1.x and Solaris 2.x) For PC-on-VME such as from XYCOM; WIN NT/3.1/95 and DOS). A version is available without the VME bus interface (HET40C-4).

**COMPANY INFORMATION****Hunt Engineering**

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**HUNT ENGINEERING**



## FEATURES & BENEFITS

- Become a 'C6x user in one day.
- Assess the 'C6x development tools.
- Assess the 'C6x hardware.
- Assess memory trade-offs.
- Develop and test before committing.
- Re-use development tools in final system.
- Explore the 'C6x in a supported environment

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1, Windows 95, Windows NT,  
Solaris, VxWorks

### CPU:

1

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM, SDRAM, SBSRAM, ASRAM & Flash

### Expansion Options:

Analog I-O Daughtercard  
Digital I-O Daughtercard

### Software Included:

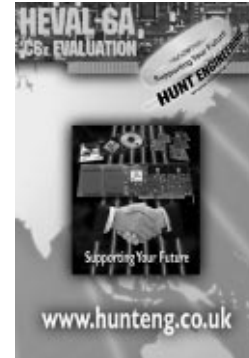
Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEVAL-6A is a sensible first step towards 'C6x system solutions and includes; HEPC6 ISA card with Rev2 200MHz single C6201, 8MB SDRAM, 512KB SBSRAM, 256KB ASRAM, 512K FLASH. 2 GDI/O sites, Telecomms mezzanine site, JTAG, TI Tools, server loader, Go DSP's Code Composer, API, and Self teach



course. All the tools you need to be a 'C6x user in a day. The HEVAL-6A was developed to satisfy engineers needs to explore the remarkable features of the 'C6x family of processors and the new Software tools. The Self Teach Course takes the user through each step of the investigation. The HEVAL-6A is the precursor to a family of products offering Multiprocessing support around a Hardware ring architecture that can mix our 'C4x, 'C6x and IO products. The I/O modules are compatible with the existing Granddaughter modules that form part of the, 'C4x range (44 products). The system is expandable as memory manufacturers catch up with the TI technology. As engineers, this was the board we needed to build to investigate the 'C6x. It is the essential first step to determining how to make the most of the revolutionary performance. This knowledge has helped us develop our architecture for the future and avoid the pitfalls of the shared memory or common bus arrangements.

## COMPANY INFORMATION

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We design and manufacture 'C4x and 'C6x based products as tools to help build supportable system solutions. Wide experience in range of industrial COTS applications.





**FEATURES & BENEFITS**

- Two TMS320C40 processors at 60MHz
- Each processors has 0.5MByte OWS local SRAM
- Six TMS320C40 comports externally accessible
- At least 1 external comport from each 'C40
- JTAG connection to both TMS320C40's
- Size 1 TIM-40

**SPECIFICATIONS**

**Platforms Supported:**

VME  
ISA  
PCI PC  
Stand-alone

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60MHz

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HETWIN is a TIM-40 module, and has two TMS320C44 processors, each having 512kByte SRAM on its local bus. The module is well suited for computing-power hungry applications that need only little memory to run. The 0.5MByte of SRAM for each processor is sufficient for many DSP applications. The module is a size 1 TIM-40 module. The JTAG port is used for debugging. In any system, with any number of processors, the JTAG allows debugging access to each individual processor in the system. There are several



debugging tools available to take advantage of the JTAG's features. The HETWIN derives the processor clock from the motherboard. The TMS320C40 is a 275MOPS and 50MFLOPS rated DSP processor from Texas Instruments. It has the unique feature of 4 comports, each of which can transfer data at 20MByte/sec.

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Two TMS320C44 processors at 50- or 60MHz
- Each processors has 2MByte OWS local SRAM
- Six TMS320C44 comports externally accessible
- At least 1 external comprt from each 'C40
- JTAG connection to both TMS320C44's
- Size 1 TIM-40

**SPECIFICATIONS**

**Platforms Supported:**

VME  
ISA  
PCI PC  
Stand-alone

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT  
Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60MHz

**Board Size:**

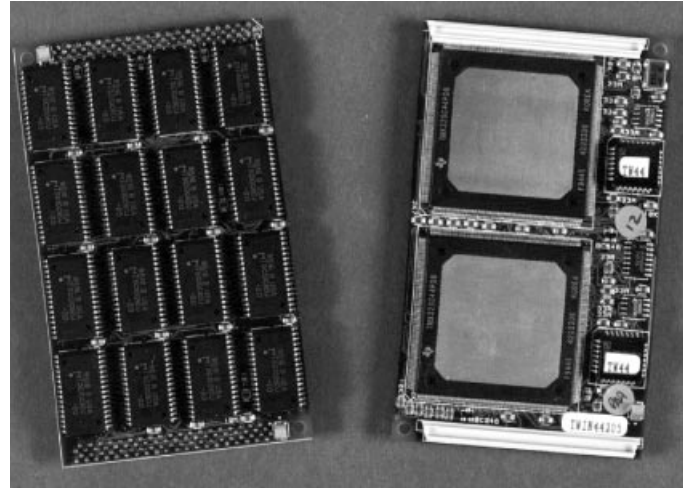
Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HETWIN-C44 is a TIM-40 module, and has two TMS320C44 processors, each having up to 2MByte SRAM on its local bus, and up to 2MByte on its global bus. The module is ideally suited for computing-power hungry applications that need a medium amount of memory to run. The module is a size 1 TIM-40 module. The JTAG port is used for debugging. In any system, with any number of



processors, the JTAG allows debugging access to each individual processor in the system. There are several debugging tools available to take advantage of the JTAG's features. The HETWIN-C44 derives the processor clock from the motherboard. The TMS320C44 is a 275MOPS and 50MFLOPS rated DSP processor from Texas Instruments (50MHz version). It has the unique feature of 4 comports, each of which can transfer data at 20MByte/sec.

**COMPANY INFORMATION**

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## FEATURES & BENEFITS

- Two TMS320C44 processors at 50MHz
- Virtually zero wait state EDRAM
- 2MByte EDRAM on each Local & Global bus
- 6 'C44 Comports available, 3 from each 'C44
- Comport from each 'C44 are cross connected
- JTAG connection to both 'C44s
- One TIM-40 spec ID ROM per processor

## SPECIFICATIONS

### Platforms Supported:

VME,ISA,PCI PC  
Stand-alone,TIM-40

### Host Supported:

Windows 3.1,Windows 95  
Windows NT,Solaris

### TMS320 Devices Supported:

TMS320C4x

### CPU:

2

### Clock Speeds Available:

50MHz

### Board Size:

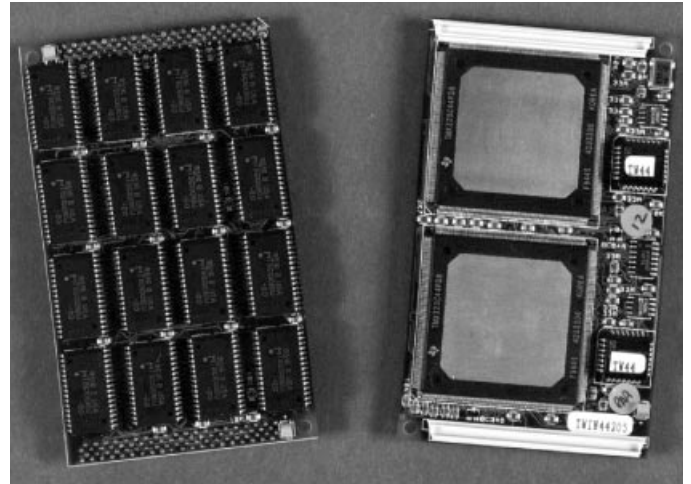
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HETWIN-C44E is a TIM-40 Module that has two 'C44s with 4MBytes of no-wait-state EDRAM each. It is a size 1 TIM-40 module. The JTAG port is used for debugging processors in any size of system, when used on an appropriate Hunt Engineering motherboard, with software such as Code Composer. The ID ROMs give all information required to configure and use the HETWIN-C44E and is accessible by software. The HETWIN-C44E derives its' processor clock from an on board Xtal oscillator enabling mixed speed networks



to be used. It can however use the 'Broadcast' TIM clock as provided by the Motherboard if required. The 'C44 is a 275MOPS and 50MFLOPS rated DSP processor from Texas Instruments that has the unique feature of 4 comports each of which can transfer data at 20MBytes/sec. One of the tools designed to integrate the elements of Hunt Engineering systems solutions.

## COMPANY INFORMATION

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## FEATURES & BENEFITS

- Size 2 TIM-40 with 'C40 at 40 or 50MHz
- ID ROM plus 1MByte SRAM or 4MByte DRAM
- Global bus made available for prototyping
- 2.4" by 3.7" of available prototyping space
- Photo area for IDC or soldered connections
- Ideal for low volume "custom" products
- One of our tools for integrating system solutions

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
Stand-alone

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

50MHz

### Board Size:

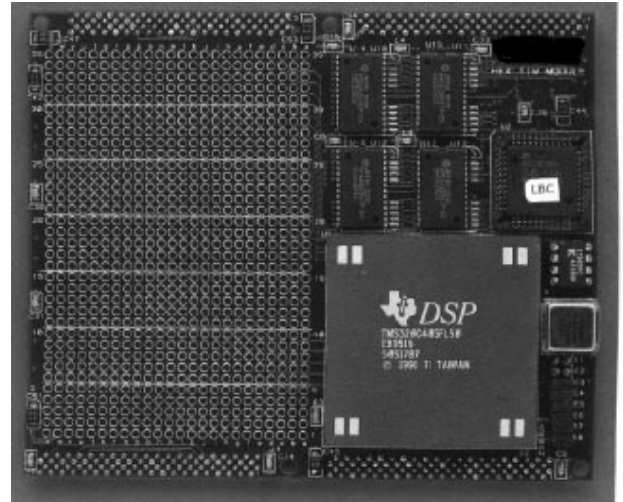
Full card

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEXTIM is a TIM-40 Module that has a 'C40 and some local memory, but provides the 'C40s global bus for user defined circuitry. It is a size 2 TIM-40 module, with a large proportion of its area available for prototyping. All of the "normal" TIM-40 connections are connected to the C40. The HEXTIM provides a means to utilize the 'C40 in the TIM-40 format,



for fast prototyping. The "custom" design can be done by Hunt Engineering or the customer. Either way, if required, Hunt Engineering can produce production standard boards after prototyping is complete. Alternatively, the HEXTIM can be used for low-volume production where requirements allow. The 0.1" pitch holes can be soldered or can use re-useable insulation displacement technology if preferred. The C40 uses an on board Xtal oscillator.

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**FEATURES & BENEFITS**

- Size 2 TIM-40 with 'C40 processor at 48MHz
- ID ROM plus 1MByte SRAM or 4MBytes DRAM
- Global bus mapped to IndustryPack slot
- Wide range of IndustryPack modules available
- Functions include analog and digital I/O
- One of our tools for integrating system solutions

**SPECIFICATIONS**

**Platforms Supported:**

VME, ISA  
PCI PC, Stand-alone

**Host Supported:**

Windows 3.1, Windows 95  
Windows NT, Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

48MHz

**Board Size:**

Full card

**Expansion Options:**

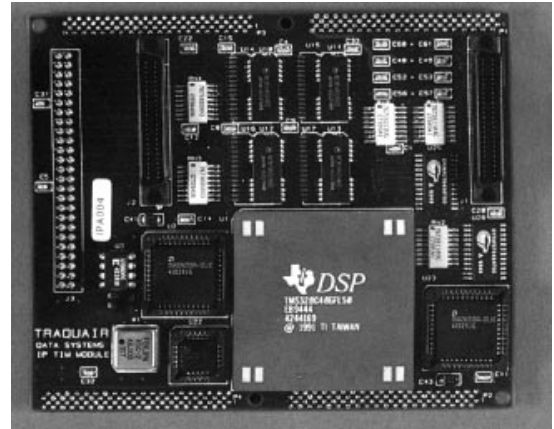
Analog I/O daughter card  
Digital I/O daughter card  
IPackModules

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The IPackTIM is a TIM-40 Module that has a 'C40 and some local memory and provides an industry standard interface memory mapped to the 'C40s global bus. It is a size 2 TIM-40 module, which accepts a standard IndustryPack single height module, providing access to a wide range of I/O modules from the C40. All of the "normal" TIM-40 connections are



connected to the C40. IndustryPack is a trademark of Greenspring Computers, and is a widely accepted standard for memory mapped I/O modules. The single-height modules supported by the IPackTIM measure 1.8" by 3.9". The list of IndustryPack modules is ever growing, and already includes many A/D and D/A modules as well as RS-232, other digital I/O options and stepper motor controllers / quadrature encoders. Call for the latest list of supported modules. The C40 uses an on board Xtal oscillator at 48MHz, so that the 8MHz IndustryPack clock can be derived from it.

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Maximum framestore of 1024x1024 pixels
- Process 8-bit images/colour elements of RGB
- Software-programmable HW convolution engine
- On-module 'C40 processor
- 4MByte of fast page mode DRAM on local bus
- 3 separate 1MByte VRAM banks on global bus
- Six useable 'C40 comports and JTAG connection

**SPECIFICATIONS**

**Platforms Supported:**

VME, ISA, PCI PC, Stand-alone

**Host Supported:**

Windows 3.1, Windows 95, Windows NT, Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

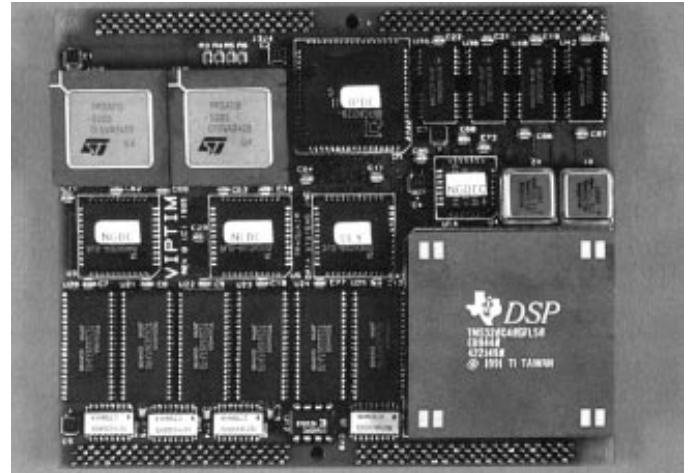
Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The VIPTIM is a video and image processing TIM-40 module that has a 'C40 processor on-board. The VIPTIM's 'C40 has 4MByte fast-page-mode DRAM on its local bus, and 3 banks of VRAM, each 1MByte in size, on its global bus. The framestore is 1024x1024 pixels at maximum, and has 8-bit pixels. The results can be stored at 16-bit resolution. The VIPTIM is intended for processing 8-bit images or 8-bit colour components of RGB images. Numerous filter operations on a convolution kernel are supported. The kernel can be up to 7x6 or 14x3 in size. Larger kernels can be achieved with multiple passes. Processing is performed at 12.5MPixels/sec.



The VIPTIM is a size 2 TIM-40 module. After a minimal software configuration the 'C40 is free to be used as a general system resource. On-board the VIPTIM carries an IDROM. The processor clock is derived from an on-board Xtal oscillator, enabling mixed speed 'C4x networks. The JTAG port is used for debugging. The Hunt Engineering motherboard are designed in such a way that a whole system, consisting of any set of motherboards and TIM-40 modules, can be controlled by one and the same JTAG port.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- Flexible hardware platform
- Longer hardware life cycle
- For development of different algorithms
- 3 composite/1 SVHS video input
- 1 composite/1 SVHS video output
- Selectable audio in-, outputs
- MVIP, IOM-1, IOM-2 interface

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1, Windows 95, Windows NT, OS2

### TMS320 Devices Supported:

TMS320C8x

### CPU:

1

### Clock Speeds Available:

50MHz

### Board Size:

264 x 122 x16mm

### Memory (DRAM/SRAM):

DRAM

### Expansion Options:

NIC with: MVIP, IOM-1 or IOM-2

### Software Included:

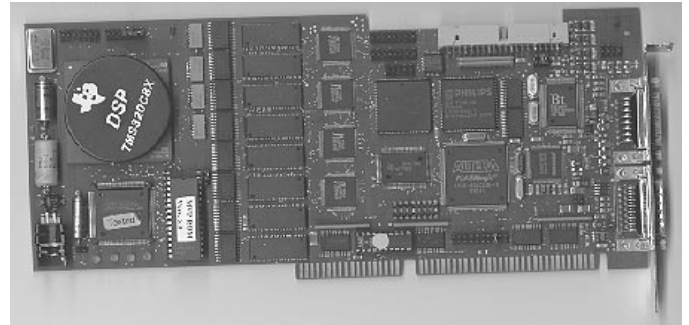
H.320 Library, H.320 API

### Technical Support/Training Available:

Standard startup support included.  
Additional support on request.

## PRODUCT DESCRIPTION

The Codec Board Universal A4 is compatible with international videoconferencing services and H.320 ISDN videophones. Central basis of this PC/ISA plug in board is



the TMS320C8x. The Universal A4 consists all necessary analog audio/video (PAL/NTSC) interfaces. A MVIP, IOM-1 or IOM-2 bus is available for the connection to the network interface card. The PC/ISA bus is used for: loading of H.320 codes, controlling of the codec board and transportation of MPEG-1, or JPEG files. This board is available as a part of the H.320 Software Development Kit, too (see under category Application Software Development Tools). Additionally IAT offers a MDK (Manufacturing Development Kit). It consists of: Codec Board Universal A4, device driver, demo application for BOM, layout, netlist, CPLD equations, support. This development platform is optimally suited for visual communication applications in vertical markets, e.g. Tele-Medicine, Tele-Service, Tele-Security.

## COMPANY INFORMATION

### IAT AG

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IAT is a internationally group of companies on the stock exchange; the parent company is IAT Multimedia, INC., USA. IAT AG and IAT Deutschland GmbH are affiliates of the group.



THE ELECTRONIC MEETING



**FEATURES & BENEFITS**

- Flexible hardware platform
- Longer hardware life cycle
- For development of different algorithms
- ISDN 1 SO on board
- Interface: MVIP, IOM-2
- Selectable video and audio interfaces
- Data interface: ITU-T.123 via MLP and HLMP

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C8x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

220 x 107 x 15mm

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

NIC: MVIP or IOM-2

**Software Included:**

H.320 Library, H.320 API

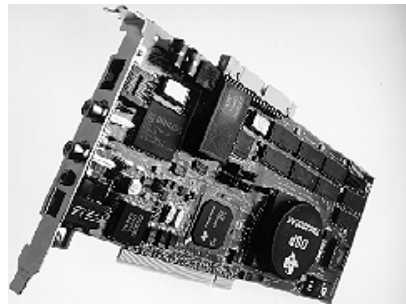
**Technical Support/Training Available:**

Standard startup support included.

Additional support on request.

**PRODUCT DESCRIPTION**

The multimedia platform Wonderboard80 is compatible with international video-conferencing services and H.320 ISDN videophones. The central basis of this PC/PCI plug-and-play



board is the TMS320C8x. It consists following interfaces: ISDN Basic Rate S0-Interface, stereo line in/out, stereo microphone in, stereo headphone out, Composite/SVHS video input, MVIP, IOM-2, PCI DirectDraw facility, low-cost ASIC for PCI, DPRAM and I/O controlling. This board is available as a part of the H.320 Software Development Kit, too (see under category Application Software Development Tools). Additionally IAT offers a MDK (Manufacturing Development Kit). It consists of: Wonderboard80, device driver, demo application for videoconferencing, schematics, components library, BOM, layout, netlist and support. The multimedia platform Wonderboard80 is optimally suited for office communication as well as visual communication applications in vertical markets, e.g. Tele-Medizine, Tele-Service, Tele-Security. Hardware requirements: PC with PCI slot, NTSC or PAL camera and audio source

**COMPANY INFORMATION**

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THE ELECTRONIC MEETING

**FEATURES & BENEFITS**

- Three, 2.5 MHz, 16-bit analog inputs
- 60 MHz C44 processor
- TIM-40 plug-in module

**SPECIFICATIONS****Platforms Supported:**

TIM-40

**Host O/S Supported:**Windows 95  
Windows NT**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

50mm x 100mm x 2cm

**Memory (DRAM/SRAM):**

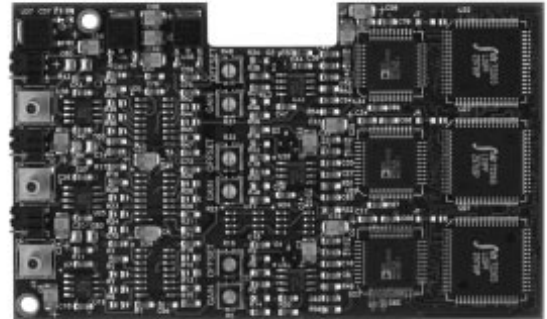
SRAM

**Expansion Options:**

Analog I-O Daughtercard

**Software Included:**Debuggers  
Code Generation Tools  
Libraries**Technical Support/Training Available:**

NO

**PRODUCT DESCRIPTION**

TIM-40 compliant, high Speed, Low Distortion Analog Input Module. Capable of bursts of 4k samples at rates to 3 MHz or, when combined with the SCSI4x and a fast SCSI drive, enormous amounts of GAP FREE data can be logged at up to 10 Mybytes/sec.

**COMPANY INFORMATION****Innovative Integration, Inc.**

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Westlake Village, CA 91362 USA

Tel: (818) 865-6150

Fax: (818) 879-1770

e-mail: techsprt@innovative-dsp.com

www.innovative-dsp.com

Manufacturers of DSP-accelerated data acquisition products and DSP development boards/tools. ISA, PCI, cPCI and stand-alone busses. Full Windows support.





**FEATURES & BENEFITS**

- 40-60MHz with floating point
- 132MByte/sec, 32-bit Plug-and-Play interface
- 128k-512kBytes onboard OWS SRAM
- 2kb bidirectional FIFO
- MPSD debugger interface
- Instrument-grade analog I/O
- 1.5Mbaud synchronous serial port

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O daughter cards, SCSI

**Software Included:**

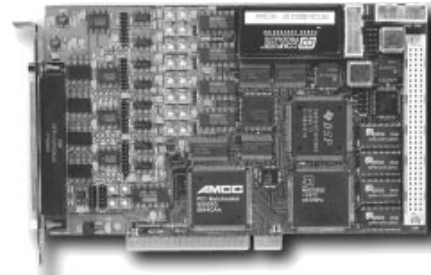
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The ADC64 heralds a new era in PC-based data acquisition. Bringing together for the first time a low-cost, high-performance DSP core, a dazzling array of analog and digital I/O with screaming fast 132MByte/sec PCI bus



performance, the ADC64 is THE value platform for next-generation, intelligent data acquisition system designs. The ADC64 features an I/O mix perfect for a wide range of applications in data logging, process control and audio processing. Features include eight channels of 16-bit, instrumentation-grade analog input with -120 dB/decade tunable anti-alias filters and programmable gain (x 1,2,4,8) capable of sampling at any rate up to 200k samples/sec (optional 200kHz A/D's are available). Each A/D channel may optionally be multiplexed either 8:1 (single-ended) or 4:1 (differential) allowing acquisition from up to 64-channels using a single card. The board also provides two channels of 16-bit, instrumentation-grade analog output running at up to 200kHz per channel. Sixteen bits of high-drive digital I/O are also on-card.

**COMPANY INFORMATION**

**Innovative Integration, Inc.**

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- 40-60MHz with floating point
- 128k - 512kBytes onboard OWS SRAM
- 32-Byte bidirectional FIFO
- MPSD debugger interface
- 15Mbaud synchronous serial port
- Instrument-grade analog
- Eight 100 or 200kHz, 16-bit A/D channels

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O daughter cards, SCSI

**Software Included:**

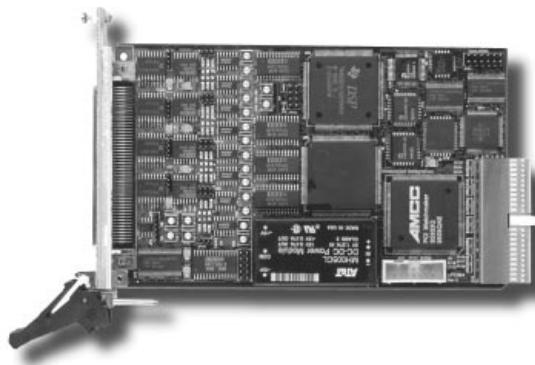
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The cADC64 is a Compact PCI bus-version of the popular ADC64 supercontroller. It brings together for the first time a low-cost, high-performance DSP core, a dazzling array of analog and digital I/O with screaming fast 132MByte/sec PCI



bus performance. The cADC64 is THE value platform for factory-ready, intelligent data acquisition system designs. The cADC64 features an I/O mix perfect for a wide range of applications in data logging, process control and audio processing. Features include eight channels of 16-bit, instrumentation-grade analog input with -120 dB/decade tunable anti-alias filters and programmable gain (x 1,2,4,8) capable of sampling at any rate up to 200k samples/sec (optional 200kHz A/D's are available). Each A/D channel may optionally be multiplexed either 8:1 (single-ended) or 4:1 (differential) allowing acquisition from up to 64-channels using a single card. The board also provides two channels of 16-bit, instrumentation-grade analog output running at up to 200kHz per channel. Sixteen bits of high-drive digital I/O are also on-card.

**COMPANY INFORMATION**

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.





**FEATURES & BENEFITS**

- 6U Compact PCI form factor
- Onboard 60 MHz C44 DSP
- Three M44BUS module expansion sites
- 132 MB/sec bus interface
- Windows 95/NT software

**SPECIFICATIONS**

**Platforms Supported:**

Compact PCI

**Host O/S Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

320mm x 100mm x 2cm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Audio, motion, communications

**Software Included:**

Debuggers, Code Generation Tools, Libraries

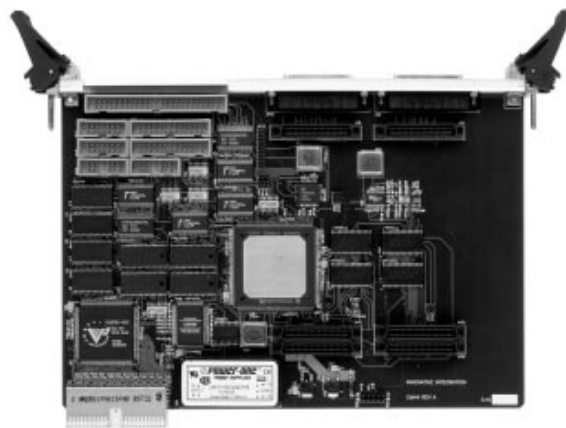
**Technical Support/Training Available:**

YES

Onsite training at Westlake Village, CA facility

**PRODUCT DESCRIPTION**

The cM44 is a CompactPCI-bus based, flexible I/O engine featuring a high-performance DSP and dual M44 I/O sites. The dual I/O sites allow the cM44 enough flexibility to handle myriad data acquisition, control and communications applications. Available M44 I/O modules include a 2.5 MHz 16-bit A/D, multi-channel 16-bit A/D and D/A, motion control, digital I/O and soon more to follow including professional audio processing and telephony. The



cM44 carries three 16-bit timer channels and a digitally controlled frequency synthesizer generating a high-resolution (0.01 Hz) timebase for triggering, external triggering and task pacing. External channel multiplexing and sample/hold cards for expansion up to 64 channels are also available. An on-board Texas Instruments TMS320C44 floating point DSP provides up to 60 MFLOPS of computational power, six DMA channels and four interprocessor communication ports. The 'C44 acts as the data collection and processing engine for the cM44 and provides high-speed data transfer under CPU or DMA control over the communication ports or the CompactPCI-bus to other Innovative cards such as the cM62 or the cADC64 to form powerful signal processing systems. System expansion using multiple cM44 cards is supported using either the high-speed communication ports or a CompactPCI-bus to swap data.

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Manufacturers of DSP-accelerated data acquisition products and DSP development boards/tools. ISA, PCI, cPCI and stand-alone busses. Full Windows support.





**FEATURES & BENEFITS**

- 166 MIPS processor
- 132 Mb/sec Compact PCI bus form factor
- Expandable user-configurable I/O
- 100 Mb/sec comm links to Quatro62 or M62
- Ruggedized

**SPECIFICATIONS**

**Platforms Supported:**

Compact PCI

**Host O/S Supported:**

Windows 95, Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

320mm x 100mm x 2 cm

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Three M44BUS I/O sites

**Software Included:**

Debuggers, Code Generation Tools, Libraries

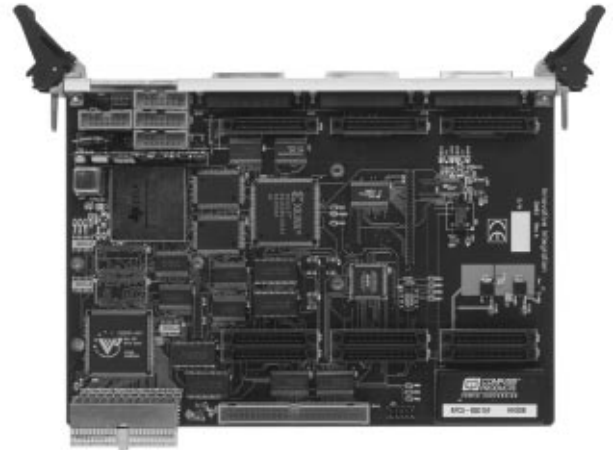
**Technical Support/Training Available:**

YES

Onsite training at Westlake Village, CA facility

**PRODUCT DESCRIPTION**

The cM62 is a breakthrough in DSP technology. The cM62 is based on Texas Instruments revolutionary new



TMS320C6201 digital signal processor. The cM62 is capable of sustained computational throughput of 1600 MIPS! With single-chip processing power in excess of 15 times that of any other single DSP, the 'C6201 has redefined the DSP landscape and enabled access to an application performance plateau previously unreachable with anything but the largest of super expensive massively parallel computing systems. The cM62 complements the 'C6201's blazing speed with the modularity of Innovative's M44 I/O expansion sites. The cM62's three I/O sites leverage the cM62's elegant design in a modular format, and provide access to Innovative's M44 I/O cards supporting video, telephony, motion control, data acquisition and more.

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DEVELOPMENT BOARDS





**FEATURES & BENEFITS**

- Three, 100 MHz analog outputs
- Onboard 60 MHz C44 DSP
- TIM-40 compliant module

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

50mm x 100mm x 2 cm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

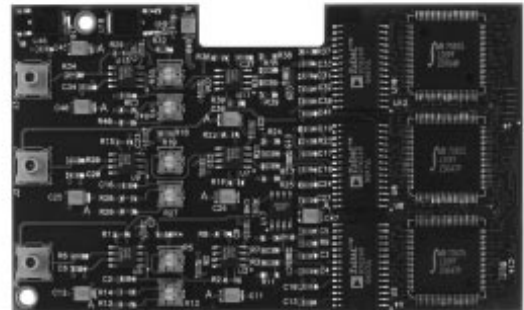
Analog I/O Daughtercard

**Software Included:**

Debuggers  
Code Generation Tools  
Libraries

**Technical Support/Training Available:**

NO



**PRODUCT DESCRIPTION**

TIM-40 compliant, high Speed, Low Distortion Analog Output Module. Capable of repetitively playing bursts of 16k samples at up to 40 MHz, or when combined with the SCSI4x and a fast SCSI drive, enormous amounts of GAP FREE data can be played at up to 10 Mbytes/sec.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Three, 40 MHz analog input channels
- Onboard 60 MHz C44 processor
- TIM-40 compliant module

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

50 mm x 100 mm x 2 cm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

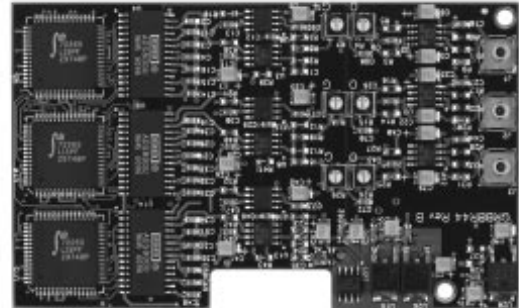
Analog I-O Daughtercard

**Software Included:**

Debuggers  
Code Generation Tools  
Libraries

**Technical Support/Training Available:**

NO



**PRODUCT DESCRIPTION**

TIM-40 compliant, Ultra-High Speed Analog Input Module. Ultra high speed, plug in module capable of capturing bursts of up to 16k samples from up to three analog input channels simultaneously at up to 40 MSPS. Two or three GRABBER44s may be added to a PC44 or PCI44 respectively, with a common clock, allowing 40 MHz synchronized data acquisition on up to 9 channels.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Onboard, 60 MHz C44 processor
- Two M44BUS expansion sites
- 132 Mb/sec PCI bus interface
- Half-size card
- Windows 95/NT support

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows 95, Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

Half Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Motion, audio, communications

**Software Included:**

Debuggers, Code Generation Tools, Libraries

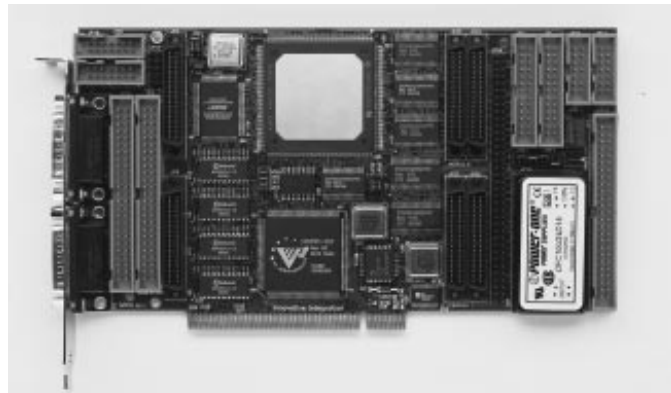
**Technical Support/Training Available:**

YES

Onsite training at Westlake Village, CA facility

**PRODUCT DESCRIPTION**

The M44 is a PCI-bus based, flexible I/O engine featuring a high-performance DSP and dual M44 specific I/O sites. The dual I/O sites allow the M44 enough flexibility to handle myriad data acquisition, control and communications applications. Available M44 I/O modules include a 2.5 MHz 16-bit A/D; multi-channel 16-bit A/D and D/A; motion control; digital I/O and soon more to follow



including professional audio processing and telephony. The M44 carries three 16-bit timer channels and a digitally controlled frequency synthesizer generating a high-resolution (0.01 Hz) timebase for triggering, external triggering and task pacing. External channel multiplexing and sample/hold cards for expansion up to 64 channels are also available. An on-board Texas Instruments TMS320C44 floating point DSP provides up to 60 MFLOPS of computational power, six DMA channels and four interprocessor communication ports. The 'C44 acts as the data collection and processing engine for the M44 and provides high-speed data transfer under CPU or DMA control over the communication ports or the PCI bus to other Innovative cards such as the PCI6201 or the PCI44 to form powerful signal processing systems. System expansion using multiple M44 cards is supported using either the high-speed communication ports or a PCI bus to swap data.

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Manufacturers of DSP-accelerated data acquisition products and DSP development boards/tools. ISA, PCI, cPCI and stand-alone busses. Full Windows support.





**FEATURES & BENEFITS**

- 1600 MIPS DSP
- 16 MB SDRAM
- Module I/O sites
- Multiple 100 MB/sec com ports
- Connectivity to other Quatro62 or M62 boards
- 132 MB/sec PCI bus interface

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

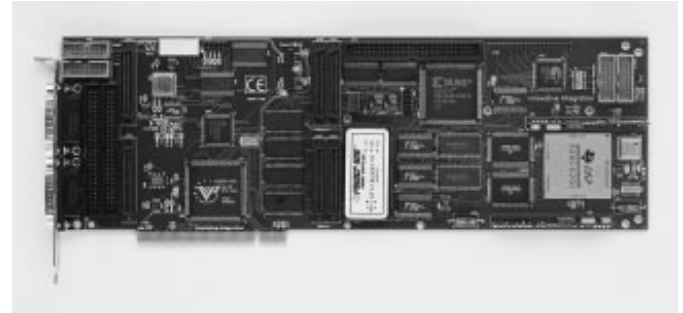
Full Card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Analog I-O Daughtercard  
Digital I-O Daughtercard  
Motion control, telephony



**PRODUCT DESCRIPTION**

The M62 is a breakthrough in DSP technology. The M62 is based on Texas Instruments revolutionary new TMS320C6201 digital signal processor. The M62 is capable of sustained computational throughput of 1600 MIPS! With single-chip processing power in excess of 15 times that of any other single DSP, the 'C6201 has redefined the DSP landscape and enabled access to an application performance plateau previously unreachable with anything but the largest of super expensive massively parallel computing systems. The M62 complements the 'C6201's blazing speed with the modularity of Innovative's M44 I/O expansion sites. The M62's dual I/O sites leverage the M62's elegant design in a modular format, and provide access to Innovative's M44 I/O cards supporting video, telephony, motion control, data acquisition and more.

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**FEATURES & BENEFITS**

- 40-,50- or 60MHz
- 128k - 2MBytes onboard OWS SRAM
- 128k - 2MBytes onboard OWS SRAM
- 256k - 1MBytes onboard 3 WS SRAM
- 4 kb onboard Dual Port SRAM
- MPSD debugger interface
- Instrument-grade analog

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

60MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O daughter cards, SCSI3x, and more

**Software Included:**

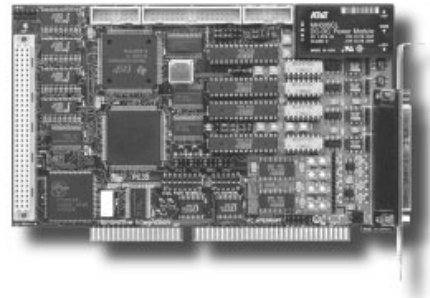
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PC32 is the premier DSP card for price vs. performance. The high performance 32-bit Floating point TMS320C32 DSP is coupled with full-featured analog and digital peripherals to form a complete DSP-based data acquisition and control system for the PC/AT on a single card. Whether your application is data acquisition, process control or audio



processing, the PC32 is the most cost-effective DSP platform available. The PC32 features the high performance Texas Instruments TMS320C32 32-bit floating point DSP capable of up to 60MFLOPs/30MIPs. On-chip peripherals include two 32-bit counter/timers, two flexible DMA controllers, 15 prioritized interrupts, and much more. The 'C32 has a huge memory range of 16Mwords total with on-chip memory control for wait states and bus sizing. Memory on the PC32 may be expanded up to 2 MBytes zero-wait-state and 1MByte, three-wait-state memory for an optimal mix of performance, size and cost.

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.





**FEATURES & BENEFITS**

- One to three 40- or 50MHz TMS320C44 hardware floating point
- Two TIM-40 processor/expansion sites
- 256k - 4MBytes local processor SRAM
- 256k - 4MBytes onboard global SRAM
- 16kb onboard dual port RAM
- Instrument-grade 16-bit analog I/O
- 32-bit bidirectional digital I/O port

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O daughter cards, SCSI

**Software Included:**

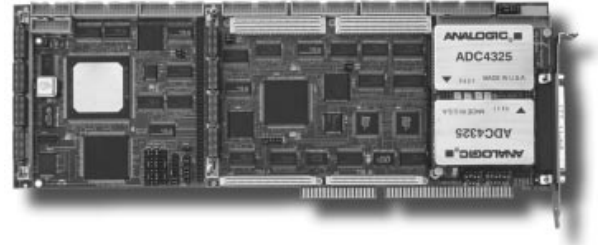
Debuggers, Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PC44 is an ultra-high performance ISA bus DSP coprocessor card based around the Texas Instruments TMS320C44, integrating all the processor and I/O hardware necessary to perform the most demanding data acquisition,



control and signal processing tasks. Its user-scalable parallel processing features, coupled with high-quality analog I/O and high-speed digital interfaces, make for phenomenal performance and push the PC44 to the top of the price/performance heap in ISA-compatible DSP processor cards. The PC44 implements maximum inter-processor connectivity by implementing a fully-shared global memory interface which allows up to three processors to share as much as 4MBytes of zero-wait-state SRAM and 32MBytes of near-zero-wait-state EDRAM, as well as the entire peripheral complement of analog and digital interface hardware. The shared-memory scheme plus 'C44 comm port connections delivers as much as 180MBytes/sec of interprocessor communications bandwidth, the highest in the 'C4x processor card industry. TIM40 standard processor modules allow for industry-standard processor upgrades. A high-speed dual-port memory ISA bus interface keeps data flowing to and from the host.

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**FEATURES & BENEFITS**

- Full speed 40-80MHz
- 40MIPS sustained performance
- 256kb wait-state onboard SRAM
- 4kb onboard Dual Port RAM
- Dual, 200kHz, 16-bit analog inputs
- Four 16-bit counter/timers
- 10Mbaud synchronous transceiver

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

1

**Clock Speeds Available:**

80MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

DSP link connector

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PC50 is a high performance, IBM PC plug-in coprocessor featuring the Texas Instruments low-cost TMS320C5x DSP processor. The PC50 is ideally suited for tasks such as demanding digital signal processing, real time control, telephone and audio signal manipulation and other computationally intensive data acquisition/reduction tasks. Use the PC50 to collect and analyze high speed analog signals for data collectors or generate servo controls with analog or digital outputs. The TMS320C50 DSP processor meets all of the requirements for high-speed, real-time applications: 40MIPS of processing power, hardware multiplier/accumulator, two on-chip synchronous serial ports, 16 prioritized zero-overhead interrupts and much more. The C50 has special hardware support for real-time filters and control algorithms. The PC50 communicates with the IBM AT via a high-speed dual-port memory arrangement which allows access to all PC50 memory and peripherals from the IBM PC.

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.





**FEATURES & BENEFITS**

- 33-, 40- or 50MHz processor
- 128kByte-2MByte onboard SRAM
- 8kByte onboard Dual Port RAM
- MPSD Debugger Interface
- Up to 16MByte external DRAM
- DSP-Link compatible hardware interface
- Two, 2Mbaud serial channels

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3xd

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O daughter cards

**Software Included:**

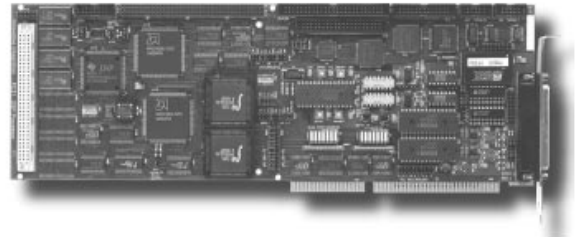
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PC31 is a high performance, IBM PC plug-in co-processor featuring the TMS320C31 DSP processor and a large complement of on-board peripherals. The PC31 is ideally suited for tasks such as demanding analog signal processing,



real-time control, audio signal manipulation and other computational intensive data acquisition/reduction tasks. The PC31 features a huge 16Mword x 32-bit memory space to support high-speed data collecting and has phenomenal floating-point performance, ideal for complex analog or digital servo control. The PC31 communicates with an IBM PC via a high-speed, dual-port memory arrangement which allows access to all PC31 memory and peripherals from an IBM PC. Multiple PC31s may be installed in a single PC, mapped into different I/O and memory spaces, as required. The PC31 is the ideal solution for applications involving high-speed analog acquisition from a large number of analog channels under non-deterministic operating systems such as Windows. The PC31 may be integrated with most 3XBUS and all PC31BUS peripheral cards. Use the MEM31 memory expansion board and/or our GRABBER31 card to address large, scale/high-frequency digitizing applications.

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.







**FEATURES & BENEFITS**

- 40-,50- or 60MHz with hardware floating point
- 40MByte/sec, 32-bit Plug-and-Plug
- 128k - 2MBytes onboard 0 WS SRAM
- 128k - 2MBytes onboard 3 WS SRAM
- 8kBytes onboard Dual Port SRAM
- MPSD debugger interface
- Instrumentation-grade analog I/O

**SPECIFICATIONS**

**TMS320 Devices Supported:**

TMS320C3x

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95  
Windows NT

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

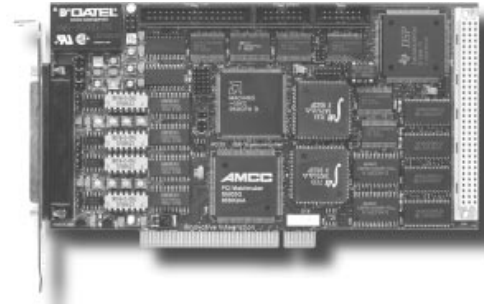
Analog I/O daughter card  
Digital I/O daughter card  
SCSI

**Software Included:**

Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The PCI32 extends to the PCI bus the legacy of the PC32 as the most cost-effective DSP platform. Bringing together for the first time a low-cost, high-performance DSP core, analog and digital I/O with screaming-fast 132MByte/sec PCI bus performance, the PCI32 is THE value platform for next-generation DSP system designs. The PCI32 features the high performance Texas Instruments TMS320C32 32-bit Floating point DSP capable of up to 60MFLOPs/ 30MIPs. On-chip peripherals include two 32-bit counter/timers, two flexible DMA controllers, 15 prioritized interrupts, and much more. The 'C32 has a huge memory range of 16Mwords total with on-chip memory control for wait states and bus sizing. Memory on the PCI32 may be expanded up to 2Mbytes zero-wait-plus 2MBytes of one-wait-state memory for an optimal mix performance, size and cost.

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.





**FEATURES & BENEFITS**

- Most powerful PCI-compatible DSP board
- 132MByte/sec DSP-PC transfer rate
- ANSI C and assembler development software
- 3 TIM-40 compatible processor/expansion
- 1 to 3 C4x processors
- Up to 4 Mword global EDRAM
- Multi-processor JTAG debugger interface

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Industry Pack Modules

3 TIM SITES

**Software Included:**

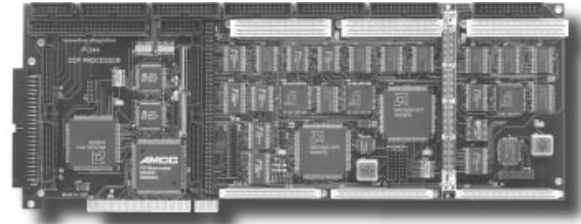
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PCI44 is the fastest, most flexible C4x system available: Not in MFLOPs, MIPs or conventional raw DSP power, but in the overall system performance achieved by making the processors work in concert with one another. Ordinary, dumb TIM-carrier cards waste DSP resources by providing inadequate connectivity so data is constantly shuttling around the card loads



of busy work for expensive DSPs. By contrast, every architectural feature on the PCI44 allows efficient task and data sharing and processor synchronization so that all the processors are working together in concert and more meaningful work is accomplished. The PCI44 is an expandable DSP platform capable of up to 600MOPs/150MFLOPs serviced by a high-performance PCI interface to the host platform. Up to three industry-standard TIM40 modules may be used on the PCI44 along with two IndustryPak I/O modules to provide a highly configurable system suitable for a wide range of signal processing and data analysis tasks. Multiple PCI44 cards may be connected using high-speed COM ports capable of 20MBytes/sec for larger multiprocessor systems.

**COMPANY INFORMATION**

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- 6400 MIPS processing power
- Multiple 100 MB/sec ports
- Connectivity to M62 or other Quatro62s
- Low cost
- Onboard OS
- 132 MB/sec PCI bus interface

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

4

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

100 Mb/sec comm link to M62

**Software Included:**

Debuggers  
Code Generation Tools  
Libraries

**Technical Support/Training Available:**

YES  
Onsite training at Westlake Village, CA facility

**PRODUCT DESCRIPTION**

The Quatro62 is a breakthrough in DSP technology. The Quatro62 is based on Texas Instruments revolutionary new TMS320C6201 digital signal processor. The Quatro62 is capable of sustained total computational throughput of 6400 MIPS! With single-chip processing power in excess of 15 times that of any other single DSP, the 'C6201 has redefined the DSP landscape and enabled access to an application performance plateau previously unreachable with anything but the largest of super expensive massively parallel computing systems. The Quatro62's 16-bit, 200 Mbyte/sec FIFO inter-board communications interface, leverage the Quatro62's elegant design to provide access to Innovative's other 'C6201 boards adding additional modular I/O, supporting video, telephony, motion control, data acquisition and more.

**COMPANY INFORMATION**

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Manufacturers of DSP-accelerated data acquisition products and DSP development boards/tools. ISA, PCI, cPCI and stand-alone busses. Full Windows support.





**FEATURES & BENEFITS**

- 33-, 40-, 50MHz with hardware floating point
- Self-contained, full-feature computer
- Small, 160 x 100 mm 3U Eurocard size
- Low power (<3 Watt)
- MPSD Debugger interface
- 128k-512kBytes onboard EPROM
- 128k-2MBytes onboard SRAM

**SPECIFICATIONS**

**Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

3.95 x 6.30

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O, Digital I/O daughter cards, SCSI

**Software Included:**

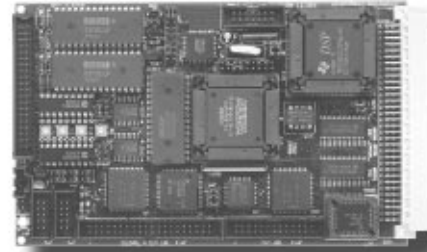
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SBC31 is a high performance stand-alone processor card featuring the Texas Instruments TMS320C31 DSP processor. The SBC31 is ideally suited for tasks such as demanding digital signal processing, real-time control, video and audio



signal manipulation and other computational intensive data acquisition/reduction tasks. The card's embeddable design allows it to be built into completely self-contained systems, free of any tether to a development PC. The 32-bit TMS320C31 DSP processor meets all of the requirements for high-speed, real-time applications, and the SBC31 marries it to a high speed bus containing an assortment of standard peripherals perfectly suited to embedded control and signal processing applications. Sixteen channels of analog input, four channels of output, 48-bits of digital I/O, 5 counter/timers, and a real time clock provide all the hardware you need to do real time interfacing, all on one card. The SBC31 is also compatible with all of Innovative's 3XBUS peripheral cards for additional real world connectivity.

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.





**FEATURES & BENEFITS**

- 40-, 50-, or 60MHz with hardware floating point
- 32k-2MBytes onboard OWS SRAM
- 256k-1MBytes 3 WS battery-backed SRAM
- Two 115Kbit RS-232 ports. RS-485/422 option
- Watchdog timer and reset controller
- 15Mbaud synchronous serial port
- Instrumentation-grade analog

**SPECIFICATIONS**

**Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

160 x 100 mm

**Expansion Options:**

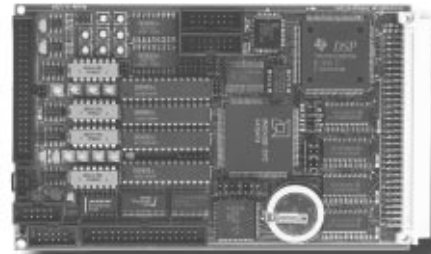
Analog I/O daughter card  
Digital I/O daughter card  
SCSI daughter card

**Software Included:**

Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The SBC32 is high performance, low-cost stand-alone processor card featuring the Texas Instruments TMS320C32 DSP processor. The SBC32 is ideally suited to cost sensitive, processor intensive signal processing, real time control, and data acquisition applications. The card's embeddable design allows it to be built in to completely self-contained systems, free of any tether to a development PC. The 32-bit TMS320C32 DSP processor meets all requirements for high-speed, real-time applications, and the SBC32 marries it to a high-speed bus contained an assortment of standard peripherals perfectly suited to embedded control and signal processing applications.

**COMPANY INFORMATION**

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Innovative Integration manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Embeddable, stand-alone board
- Small form factor
- 100 MIPs performance
- Expandable, modular I/O

**SPECIFICATIONS**

**Platforms Supported:**

Standalone

**Host O/S Supported:**

Windows 95, Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C54x

**Clock Speeds Available:**

100MHz

**Board Size:**

100mm x 160mm x 2 cm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Two M44BUS I/O sites

**Software Included:**

Debuggers, Code Generation Tools, Libraries

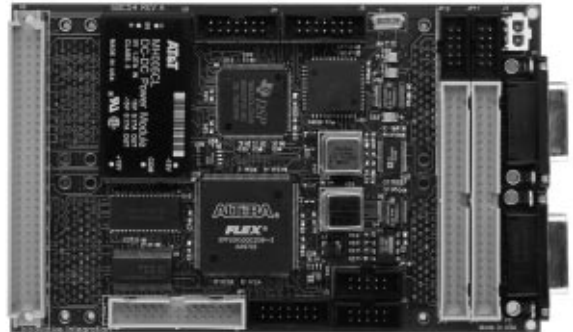
**Technical Support/Training Available:**

YES

Onsite training at Westlake Village, CA facility

**PRODUCT DESCRIPTION**

The SBC54 is a high-performance, fixed point, stand-alone DSP card featuring dual plug-in sites for interchangeable, modular I/O. This single board computer is perfect for a wide variety of remote, battery powered field applications requiring powerful data collection coupled with on-board processing. The interchangeable I/O modules, listed on the



M44 I/O modules page, allow you to configure the I/O combination that is right for your application. Further, the modular platform allows for the design of custom peripherals at low cost to perfectly suit your needs for special projects requiring modules other than those available. Both I/O sites also feature a high-resolution (0.01 Hz) programmable timebase capable of sampling at virtually any desired frequency, in lieu of an external trigger source. The two I/O module sites can be populated with a variety of analog and digital I/O modules. The card is intended for stand-alone operation and has all features necessary to run completely self-contained. This supercontroller card features the Texas Instruments TMS320C548 or TMS320C549 (when available) DSP processor operating at up to 100 MIPS. The SBC54 is also well-suited for remote, battery powered functions with its single supply (9-18 volts) and low power modes. The SBC54 also has a shut-down mode for optimal power conservation.

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Manufacturers of DSP-accelerated data acquisition products and DSP development boards/tools. ISA, PCI, cPCI and stand-alone busses. Full Windows support.



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Fully embeddable processor
- 1600 MIPS DSP
- Modular M44BUS I/O sites
- 16 MB SDRAM
- 128 KB SRAM
- Onboard serial and digital I/O

**SPECIFICATIONS**

**Platforms Supported:**

Standalone

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

100mm x 100mm x 2.0cm

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

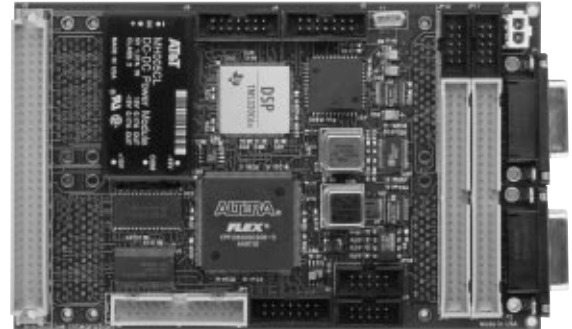
Analog I-O Daughtercard  
Digital I-O Daughtercard  
Motion, audio, telephony

**Software Included:**

Debuggers  
Code Generation Tools  
Libraries

**Technical Support/Training Available:**

YES  
Onsite training available at Westlake Village, CA site



**PRODUCT DESCRIPTION**

The SBC62 is a breakthrough in DSP technology. The SBC62 is based on Texas Instruments revolutionary new TMS320C6201 digital signal processor. The SBC62 is capable of sustained computational throughput of 1600 MIPS! With single-chip processing power in excess of 15 times that of any other single DSP, the 'C6201 has redefined the DSP landscape and enabled access to an application performance plateau previously unreachable with anything but the largest of super expensive massively parallel computing systems. The SBC62 complements the 'C6201's blazing speed with the modularity of Innovative's M44 I/O expansion sites. The M62's dual I/O sites leverage the M62's elegant design in a modular format, and provide access to Innovative's M44 I/O cards supporting video, telephony, motion control, data acquisition and more.

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DEVELOPMENT BOARDS



DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- 1 TIM-40 Slot
- 1 TMS320C44 processor
- 100M bytes/s Analog Interface
- Up to 2M bytes of Static RAM
- Up to 64M bytes of Dynamic RAM
- 3 non-buffered and 2 TTL-buffered Comports
- On-board XDS-510 compatible JTAG Controller

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 MS-DOS

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O Daughtercard  
 TIM-40

**Software Included:**

Debuggers  
 Code Generation Tools  
 Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Full size PCI card with one TMS320C44 DSP processor and one TIM-40 slot. Has high-speed analogue interface ADM-Connect with transfer rate up to 100M bytes/s which can be connected with analogue I/O daughter cards.

**COMPANY INFORMATION**

**Instrumental Systems Corporation**

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Development, manufacturing and marketing of innovative DSP products. Offers DSP boards based on the 'C3x, 'C4x, 'C5x and 'C620x devices for PC/AT ISA, PCI and VME bus.





**FEATURES & BENEFITS**

- 100M bytes/s Transfer Rate Analog Interface
- Up to 2M bytes of Static RAM
- Up to 256K bytes of Synchronous Burst SRAM
- Up to 16M bytes of Synchronous DRAM
- 2 Serial Ports (T1/E1)
- 64K bytes Dual Port RAM Host Interface
- On-board XDS-510 compatible JTAG Controller

**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**TMS320 Devices Supported:**

TMS320C6x

**CPU:**

1

**Clock Speeds Available:**

200 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O Daughtercard

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Full size PCI card with one TMX320C6201 DSP processor. The board has high-speed analogue interface ADM-Connect with transfer rate up to 100M bytes/s which can be connected with analogue I/O daughter cards.

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**FEATURES & BENEFITS**

- 8-bit ADC with sampling rate up to 40 MHz
- 50 MFLOPS @ 50 MHz Clock
- Up to 512 KB 0-ws SRAM
- Identity ROM

**SPECIFICATIONS****Platforms Supported:**

TIM-40 Module

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50 MHz

**Board Size:**

107 x 65 x 15 mm

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

TIM-40 module (size 1) incorporating TMS320C40 processor and capable of 8-bit analog to digital conversion at sampling rate up to 40 MHz. Module has input programmable amplifier with gain range 42 dB and control nonlinearity less than 1 dB. ADC has 1Kx32 FIFO with 4 samples packed in single 32-bit output. A/D conversion has SNR not less than 46 dB and THD less than -50 dB (at 10 MHz).

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**FEATURES & BENEFITS**

- 3 TIM-40 Slots
- PCI rev.2.1 Compliant
- 6 Non-buffered Comports
- 4 TTL-buffered Comports
- 2 Buffered Comports Host Interface
- On-board XDS-510 Compatible JTAG Controller

**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

8MB Global SRAM

**Expansion Options:**

TIM-40

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Full size PCI card with three TIM-40 slots. Its sites are available for any combination of size one or two TIM-40 modules.

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**FEATURES & BENEFITS**

- TMS320C44 Processor
- Size 1 TIM-40 Module
- 60 MFLOPS @ 60 MHz Clock
- Up to 12M bytes Total 0-ws SRAM
- Identity ROM

**SPECIFICATIONS****Platforms Supported:**

TIM-40 module

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60 MHz

**Board Size:**

107 x 65 x 10 mm

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Single size TIM-40 module incorporating TMS320C44 DSP processor. The module can be configured with up to 4M bytes of 0 wait state SRAM on local and with up to 8M bytes of 0 wait state SRAM on global bus of processor and has an IDROM for software identification/configuration purpose.

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Development, manufacturing and marketing of innovative DSP products. Offers DSP boards based on the 'C3x, 'C4x, 'C5x and 'C620x devices for PC/AT ISA, PCI and VME bus.



**FEATURES & BENEFITS**

- 12-bit ADC with sampling rate up to 30 MHz
- Digital Down Converter (DDC)
- 50 MFLOPS @ 50 MHz Clock
- Up to 512 KB 0-ws SRAM
- Identity ROM

**SPECIFICATIONS****Platforms Supported:**

TIM-40 Module

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50 MHz

**Board Size:**

107 x 130 x 15 mm

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Double size TIM-40 module with TMS320C40 processor and capable of 12-bit analog to digital conversion at sampling rate up to 30 MHz. Module has input programmable amplifier with gain 0.40 dB and 1Kx32 FIFO. ADC has input range +/- 1V and SINAD not less than 60 dB (at 10 MHz). Single chip DDC for IF to baseband processing has frequency selectivity less than 0.006 Hz and decimation from 64 to 131,072.

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Development, manufacturing and marketing of innovative DSP products. Offers DSP boards based on the 'C3x, 'C4x, 'C5x and 'C620x devices for PC/AT ISA, PCI and VME bus.





## FEATURES & BENEFITS

- 2 TMS320C44 Processors
- Size 1 TIM-40 Module
- 120 MFLOPS @ 60 MHz Clock
- Up to 8M bytes Total 0-ws SRAM
- Identity ROM

## SPECIFICATIONS

### Platforms Supported:

TIM-40 module

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
MS-DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

2

### Clock Speeds Available:

60 MHz

### Board Size:

107 x 65 x 10 mm

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Single size TIM-40 module incorporating two Texas Instruments' TMS320C44 DSP processors. The module can be configured with up to 2M bytes of 0 wait state SRAM on each bus of each processor and each processor has an IDROM for software identification/configuration purpose.

## COMPANY INFORMATION

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Development, manufacturing and marketing of innovative DSP products. Offers DSP boards based on the 'C3x, 'C4x, 'C5x and 'C620x devices for PC/AT ISA, PCI and VME bus.





**FEATURES & BENEFITS**

- 32-bit floating point 'C3x DSP
- Built-in analog I/O
- Memory and expansion I/O
- Extensive software support

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Expansion Options:**

Emulator

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The KC3x/PC series ISA bus plug-in cards are development and applications boards using 'C3x floating point DSP processors. Each board includes processor and 256k SRAM, expandable on-board or with addition of memory expansion daughterboards. As well as built-in analog I/O and communications interface the KC3x series includes a telephone interface for developing fax/modem and telephony applications. The KC3x series is supported by a wide range of development tools both from TI and third-party software vendors. To aid in application development a number of software tools are available for filter and algorithm design, real-time DSP, acoustic DSP, spectrum analysis and real-time measurement and control. The KC3x series also comes in the form of EVMs Package and Emulator systems. These are comprised of the appropriate hardware and software for the customer application and are ideal for evaluating the 'C3x and for project development.

DEVELOPMENT BOARDS

**COMPANY INFORMATION**

**Kane Computing**

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Kane Computing is a provider of high performance computing hardware for industrial and military applications, specializing in C.O.T.S DSP solutions.





DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- 40MIPS DSP
- Built-in analog I/O
- 'C50, 'C51, 'C52 and 'C53 processor
- Compiler and library support

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

1

**Clock Speeds Available:**

80MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Emulators

**Software Included:**

Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Based on a high performance C50/51/52/53 DSP from Texas Instruments KC5xPC series provides up to 40MIPS performance for computationally intensive algorithms to support the design and testing of telecommunications and modem applications. Designed with a 16-bit ISA bus, the KC5xPC series plugs into a host PC or conversely it can be used as a stand alone development module by making use of a standard 5Volt connector and sockets for up to 128kByte EPROM. An impressive hardware specification includes 14-bit ADC and DAC, 64KB or 256KB SRAM, RS-232 serial port, RJ-11 analogue telephone interface, emulator (JTAG) connector and on board Test Bus Connector (TBC). Software support is not neglected with SPOX2.0 operating system, optimized C Compiler, debuggers and DOS and Windows support library for all on-board devices.

**COMPANY INFORMATION**

**Kane Computing**

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www: <http://www.azure.com/kanecomputing>

Kane Computing is a provider of high performance computing hardware for industrial and military applications, specializing in C.O.T.S DSP solutions.







## FEATURES & BENEFITS

- Combines DSP and control
- Can convert to stand-alone operation
- ISA bus or PC/104 host interface options
- Four Industry Pack sites

## SPECIFICATIONS

### Platforms Supported:

ISA

PC/104

### Host Supported:

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C3x

### CPU:

1

### Clock Speeds Available:

48MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Industry Pack

### Software Included:

Debuggers

Code Generation tools

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The KC31/IP is an ISA bus plug-in development and applications board for the 'C31 floating point DSP and includes sites for up to four Industry Pack (IP) modules, providing 48MFLOPS of floating point performance for DSP and control applications which require flexible I/O options. Each board includes 48MHz TMS320C31, up to 512KBytes SRAM, 4MBytes EDRAM and up to 256KBytes of EPROM. It also has PC/104 bus connectors for other I/O or alternative CPU interface. A complete software support package is also available.

## COMPANY INFORMATION

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Kane Computing is a provider of high performance computing hardware for industrial and military applications, specializing in C.O.T.S DSP solutions.



**FEATURES & BENEFITS**

- Mono, dual or quad 'C44
- Single slot PCI interface
- Local and global SRAM
- Software development tools

**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95

Windows NT

**MS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocesor daughter card

Ind Pack

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The KC44PCI series is a new single slot PCI board with up to four TMS320C44 DSPs and 24MByte of zero-wait-state SRAM. As well as providing up to 200MFLOPS/1BOPS (Billion Operations per Second) the board (KC44PCI series) supports master mode and burst mode host communications at up to 132MBytes/second. Unique features include direct access to all of the DSPs from the PCI interface to allow distribution of data concurrently to all four processors for fast parallel processing. Other very useful features are reprogrammable cross-port switch to configure the comms ports on the KC44PCI series and pack/unpack circuitry to reformat pixel data when used as a co-processor for image processing systems.

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**FEATURES & BENEFITS**

- Can convert to stand-alone operation
- 16-bit ISA interface with interrupt and debug
- Wide variety of speech compression algorithms

**SPECIFICATIONS**

**Platforms Supported:**

ISA  
Stand-alone

**Host Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

**CPU:**

1

**Clock Speeds Available:**

80MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansions Options:**

Emulator

**Software Included:**

Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The KC203/PC plug-in board features a 'C203 processor and provides up to 40MIPS performance. A flexible PC-host interface includes a debug port, making the KC203/PC and ideal PC development board. The board supports EPROM and on-chip UART, making it ideal for stand-alone fax/modem applications. The board also includes 16-bit, 50kHz CD quality analogue input and output, on-board UART for stand alone fax/modem applications and up to 256kBytes SRAM and 256kBytes EPROM. Complete software development packages are available including compilers, debuggers and example programs.

DEVELOPMENT BOARDS

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Support C542 8-bit parallel HPI
- Can convert to stand-alone operation
- 16-bit ISA interface with interrupt and debug
- 16-bit stereo I/O

**SPECIFICATIONS**

**Platforms Supported:**

ISA

Stand-alone

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C54x

**CPU:**

1

**Clock Speeds Available:**

80MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Emulators

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The KC542/PC plug-in board features a 'C542 processor and provides up to 40MIPS performance. A flexible PC-host interface includes a debug port, making the KC542/PC an ideal PC development board. The board support the 'C542 host port interface (HPI), offering shared access of the 'C542 HPI RAM, and features EPROM and UART, making it ideal for stand-alone fax modem applications. The board also includes 16-bit, 50 KHz CD quality analogue input and output, on-board UART for stand alone fax/modem applications and up to 256kBytes SRAM and 256kBytes EPROM. Complete software development packages are available including compilers, debuggers and example programs.

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**FEATURES & BENEFITS**

- Sbus plug-in card
- Either 'C31 or 'C40 processor
- Analog I/O
- Compilers library support

**SPECIFICATIONS****Platforms Supported:**

SUN

**Host Supported:**

Solaris

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50-, 60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Emulator

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Featuring either the 'C31 or 'C40 32-bit floating point DSP processor and high performance SRAM, the KCSbus series makes the ideal DSP development and application board. The KCSbus series card is backed by optimizing compilers and development libraries. If the 'C40 version is supplied, then all six communications ports are available for external connection to other 'C40 boards supplied by Kane Computing.

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**FEATURES & BENEFITS**

- Eight TIM sites
- Front panel comms ports
- JTAG debugging
- 100MBytes/sec databus
- Comms port patch headers

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

VXI

**TMS320 Devices Supported:**

TMS320C40

**Software Included:**

8 x TIM-4

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SMT301 VXI TIM motherboard provides eight TIM sites in two banks of four. Each site is connected to its neighbor by a double pipe. All other comms ports are routed to a link patch area which allows additional interconnections between TIM sites and/or off-board via front panel or VME bus 'C40 link interfaces. All of board interfaces are buffered. Global resources include Dual Port RAM (1MBytes expandable) and a bi-directional FIFO. The DRAM allows communication to and from the VME bus and the FIFO is used to communicate via a 100MBytes per second bus interface to the VXI bus. The SMT301 was specifically designed for use with the SMT306 Neural Processing Tim and SMT311 FFT Processing TIM, but can be used with any of the wide range of compute TIMs (DRAM, SRAM, EDRAM), image processing TIM's, graphics TIMs and I/O TIMs available from Kane Computing.

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## FEATURES & BENEFITS

- Two 16-bit RISC based Neural Instruction Set
- Capable of processing - of 64k Neurons
- Capable of processing - 128k Synapse Connections
- Up to 80Minterconnects per second

## SPECIFICATIONS

### Platforms Supported:

TIM

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

50MHz

### Board Size:

107 x 63.5mm

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

By using two Neural Instruction Set Processors, (NSPs), in conjunction with the TMS320C40 the SMT306 achieves a balance of computational performance and data transfer bandwidth. Each NiSP device offers a peak computation rate of 40Minterconnects/sec allowing the potential to build real-time systems using the significant advantages offered by neural network techniques. The module uses a 50MHz TMS320C40 capable of 50MFLOPs peak performance with 1MByte of zero-wait-state SRAM on both local and global buses. On each bus are two 16k word dual port RAMs and a NSP device. These dual port RAMs provide storage of Neuron values during execution rate of the chosen network and may be interleaved to maintain the maximum execution rate of the NSP. By using this method the 'C40 can be preparing new neuron values for processing whilst the NSP is processing an existing set. The mechanism allows for rapid network training and evaluation.

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## FEATURES & BENEFITS

- 2D 512x512 real FFT in 23msec.
- 1k complex FFT in 80us
- Includes SHARP LH9124 DSP chip sets
- DSP algorithms coded into hardware

## SPECIFICATIONS

### Platforms Supported:

VME  
ISA  
PCI PC  
SUN

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

50MHz

### Board Size:

63.5 x 107mm

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The SMT311 is a specially-designed TIM-40 for applying Fast Fourier Transforms to data, very quickly! The module features the SHARP LH9124 DSP coupled with the LH9130 Address Generator. Control for all of these is provided from the 'C44 via a FIFO and FPGA arrangement. The 'C44 sends commands (function codes and data flow commands) to the FIFO which are then sent to the 9124 under FPGA control. The FIFO can be flushed at any time by the 'C44. Data for processing by the Sharp is passed to one of two input/output memories. In addition, the SHARP has three other directly accessible memories, two processing banks and a bank for storing memory coefficients. It is the unique architecture that enables the fast processing speeds to be achieved.

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**FEATURES & BENEFITS**

- Converts DSK to development platform
- Protects your investment in your DSK
- Adds SRAM and High Spec CODEC to DSK
- Provides prototyping area
- Comprehensive documentation and software

**SPECIFICATIONS****TMS320 Devices Supported:**

TMS320C3x

**PRODUCT DESCRIPTION**

The Super DSK-C3 is the ideal solution for the first time users, who have evaluated the potential of digital signal processing with Texas Instruments DSP Starter Kit (DSK), and now want to start serious development and design of real-time signal processing applications. Each kit includes a high quality expansion board with 256k SRAM, CD quality stereo CODECs, digital I/O, prototyping area, flash ROM, LEDs and connections to plug your existing DSK into. Software includes quick start software drivers, demonstration/test software and flash memory program. Documentation includes user instructions, block diagrams, memory maps, switch settings, circuit explanations and experiments/operation examples.

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## FEATURES & BENEFITS

- Four I/O daughter module sites
- TMS320C44 processor
- 4 communication ports to the front panel/P2
- Up to 4MBytes OWS SRAM
- JTAG on the front panel
- VME D32 slave interface

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris  
VxWorks

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Daughter Module sites for I/O

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

This carrier board offers a cost-effective solution to multiple channel I/O applications utilizing VMEbus. The DBV41 has four I/O daughter module sites, shared SRAM, and an on-board TMS320C44 DSP. The global SRAM can be supplied either as a block of 0.5MBytes zero wait state or as 2MBytes zero-wait-state and is shared between the processor and the VMEbus. Local SRAM can also be supplied as 0.5MBytes zero wait state or 2MBytes zero wait state as required. The modular nature of this product allows it to be used as a stand-alone DSP solution or as an intelligent I/O node in multiple-processor environments. The four communication ports are routed to the front panel and to the P2 connector to provide communication port I/O for TMS320C44 clusters. The I/O daughter module sites also allow access to LSI's range of analog and digital I/O.

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Loughborough Sound Images is a leading provider of DSP board level products including TMS320C6x, C8x, C4x, and C3x on PC/PCI, PMC and VME platforms.



**FEATURES & BENEFITS**

- 6U VMEbus board with slave interface
- Supports up to four TIM-40-compliant sites
- 12 uncommitted buffered communication ports
- Real-time I/O expansion via dBEX32 interface
- VME P2 interface for system expansion

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

8

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Expansion Options:**

TIM sites, dBEX

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The DBV44 is designed to be able to closely match the requirements of the OEM user by supporting a broad range of system-level interfaces and by providing a high degree of customization. The board provides from one to four processing modules; 12 uncommitted, buffered, external communication ports; a real-time I/O expansion bus an IEEE 1149.1 emulation port; application-specific ports; and a VMEbus slave interface. Each of the DBV44's four TMS320C4x module sites has access to six TMS320C4x communication ports. A highly versatile, high-performance, multi-processing architecture is provided through a combination of pre-defined and user-defined link interconnects.

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## FEATURES & BENEFITS

- VME64 master/slave interface
- Shared memory accessible by all TMS320C40s
- Two on-board 60MHz TMS320C40s
- Capacity for two TIM-40 modules
- Up to 4MBytes of SRAM per on-board DSP
- 12 uncommitted communication ports
- Broadcast write facility

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Windows 3.1

Windows 95

Windows NT

Solaris

VxWorks

### TMS320 Devices Supported:

TMS320C4x

### CPU:

2

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM and optional DRAM up to 64MBytes

### Expansion Options:

TIM Sites, Dbex

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The DBV46 is a 6U VME64 carrier board allowing a quad TMS320C4x, shared-memory architecture to be implemented on a single 6U VME board. The carrier board itself contains two on-board TMS320C40 processing nodes with a capacity for two additional TMS320C4x processing nodes to be added utilizing TIM-40 modules. In addition to local SRAM, the processors may access shared resources, including PEROM and up to 64MBytes of DRAM, via a shared bus. Real-time I/O is handled by a mezzanine module that allows connection to a variety of analog and digital functions via the dBEX expansion bus.

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**FEATURES & BENEFITS**

- TMS320C40 processor
- Up to 12MB EDRAM
- Six 20MBytes/sec parallel communication port
- PEROM for bootstrapping and identity
- Bulk data storage module

**SPECIFICATIONS****Platforms Supported:**

TIM-40 Module  
PC  
VME

**Host Supported:**

Windows 95  
Windows NT  
Solaris  
VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

EDRAM

**Expansion Options:**

TIM Connectors

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

On-module memory consists of three separate banks of 32-bit wide EDRAM, two on the local memory port and one on the global memory port. Each bank can contain 4MB EDRAM, giving a maximum of 12MByte of memory. The module incorporates a 32-bit global memory expansion interface, through which it is possible to expand the memory and I/O capabilities off-module. This facility is ideal for memory-intensive applications or for bulk memory interprocessor communications. A global connector provides access to shared resources.

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## FEATURES & BENEFITS

- TMS320C40 processor provides up to 60MFLOPS
- 1.5MBytes OWS SRAM
- Six 20MBytes/sec parallel communication port
- PEROM for bootstrapping and identity

## SPECIFICATIONS

### Platforms Supported:

VME  
PC  
TIM Module

### Host Supported:

Windows 95  
Windows NT  
Solaris  
VxWorks

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

On-module memory consists of three separate banks of 32-bit wide SRAM, two on the local memory port and one on the global memory port. Each bank can contain 32k x 32 or 128k x 32 of SRAM, giving a maximum of 384K words of zero-wait-state memory. The module incorporates a 32-bit global memory expansion interface, through which it is possible to expand the memory and I/O capabilities off-module. This facility is ideal for memory-intensive applications or for inter-processor communications. A global connector provides access to shared resources.

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## FEATURES & BENEFITS

- Single TMS320C44 provides up to 60MFLOPS
- Up to 8MBytes OWS SRAM
- Single-width TIM-40 Module format
- Global expansion bus connector
- Four 20MBytes/sec parallel comms ports

## SPECIFICATIONS

### Platforms Supported:

TIM-40 Module

### Host Supported:

Windows 95

Windows NT

Solaris

VxWorks

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

TIM Connectors

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

On-module memory consists of four separate banks of 32-bit wide SRAM, two on the TMS320C44's local bus and two on the global bus. Each bank can contain 128k x 32 or 512k x 32 zero wait state SRAM. Two variants of the MDC44S are therefore available, offering 512k x 32 zero-wait-state SRAM and 2048K x 32 zero-wait-state SRAM, respectively. The module incorporates a 32-bit global memory expansion interface, through which it is possible to expand the memory and I/O capabilities off-module. A key feature of the module is its ability to run independently from a host by booting from the on-module ROM. The ROM also allows multi-processing operating systems to identify the module and its processing and/or memory capabilities. The module uses PEROM that provides facilities for programming from the TMS320C44 and which is ideal for storing system-configuration information. MDC44S can be used to form the heart of many systems built using LSI's carrier boards and I/O peripherals. Its memory capacity and speed make it suitable for most general-purpose and signal-processing tasks, where as the diversity of TMS320C4x processing modules available from LSI makes it easy to plug together an optimized solution.

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## FEATURES & BENEFITS

- Two TMS320C44 processors
- Up to 120MFLOPS (60MIPS)
- Up to 4MBytes OWS SRAM per processor
- Single-width TIM-40 Module
- Six offboard 20MBytes/sec communications ports
- Global expansion connector

## SPECIFICATIONS

### Platforms Supported:

VME  
PC  
TIM-40 Module

### TMS320 Devices Supported:

TMS320C4x

### CPU:

2

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

TIM Connectors

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The MDC44T provides two TMS320C44 DSPs that deliver unprecedented performance from a single-width TIM-40 module. It is ideally suited for use in applications requiring maximum processor density with fast local memory stores. One of the four 20MBytes/sec communication ports on each of the TMS320C44s are interconnected. This allows high-bandwidth communication between the two processors. The remaining three ports from each processor are routed off-module via the top and bottom connectors. Each of the processors has access to the local and global banks of memory which are either 128k x 32 words or 512k x 32 words, depending on requirements. Optimum performance can therefore be achieved while access is provided to significant amounts of fast local memory for data and programs. As with other TMS320C4x modules from LSI, the MDC44T is able to run independently from the host by booting from on its on-module PEROM. The ROM also allows multiple-processing operating systems to identify the module and its functionality for dynamic-load sharing.

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## FEATURES & BENEFITS

- TMS320C32 DSP running at 60MHz
- Flexible memory and I/O options
- Two daughter module sites for flexible I/O
- DSPLINK2 interface for further I/O expansion
- MatLab Real-Time Workshop compatible

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C3x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Half card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Daughter Modules, DSPLINK

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

LSI's PC/C32 product range realizes the potential of the TMS320C32 by delivering the time-to-market and ease-of-use advantages of an off-the-shelf floating-point DSP system at the cost of a fixed-point DSP system. The design also offers a high degree of flexibility in its configuration, offering a significant build-down capability for OEMs. The PC/C32 has been specified and designed with high-volume production in mind. The PC/C32 is a PC/AT half-length board with up to 512k x 32 zero-wait-state SRAM, plus flexible memory options that allow for partial de-population of both memory size and width. The minimum PC/C32 memory configuration is 32k x 16 zero-wait-state SRAM. Additionally, there are two sites for LSI's range of I/O daughter modules, offering a flexible off-the-shelf I/O capability to address most DSP applications with a single-slot PC plug-in board implementation. The board is designed for easy installation, having no physical links to set. Extensive software support is provided for the PC/C32, including MS-DOS and Windows DLL Host Libraries, a Windows C Source Debugger, C DSP cross-compiler tools, plus support from a wide range of DSP operating system and other application software packages.

## COMPANY INFORMATION

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Loughborough Sound Images is a leading provider of DSP board level products including TMS320C6x, C8x, C4x, and C3x on PC/PCI, PMC and VME platforms.





## FEATURES & BENEFITS

- Dual 60MHz TMS320C44 processors
- Up to 4MByte OWS SRAM per processor
- Up to 64MByte SDRAM (synchronous DRAM)
- PMC module sites for I/O
- High-speed PCI interface

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host Supported:

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C4x

### CPU:

2

### Clock Speeds Available:

60MHz

### Board Size

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

PMC, DSPLINK

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The PCI/C42 provides two on-board TMS320C44 processors coupled to a shared bus/memory architecture. Various I/O options are provided including DSPLINK, LSI's parallel expansion bus and a PMC site (PCI Mezzanine Card - IEEE1386.1) The product can function as either an intelligent I/O server for larger C4x based DSP systems, or as a closely integrated, single-slot DSP and I/O solution. Each processor has two banks of OWS SRAM provided on it's local and global buses and these may be used for either program or data storage. Additionally, the global bus has buffered access onto the PCI/C42's shared bus. Resources available on the shared bus include SDRAM up to 64MByte, the PMC site and the PC's host interface. The shared bus is controlled by an intelligent arbiter which is configured to give I/O transfers the highest priority with all other shared bus accesses operating on a round-robin basis. The PCI/C42 range includes a vast range of software support packages operating under Windows NT or 95. Development tools include host communication libraries for data passing between the PC and the DSP card, code download, C and assembler level debuggers and a highly-optimized C level cross-compiler for the DSP.

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## FEATURES & BENEFITS

- Up to 240MFLOPS
- Up to 4MBytes Ows SRAM per processor
- Up to 512kBytes 1ws shared memory
- 132MBytes/sec peak transfer rate
- Comprehensive multi-processor support available

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT

### TMS320 Devices Supported:

TMS320C4x

### CPU:

4

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

DSPLINK

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The PCI/C44 provides shared access for any processor to both the PCI Local Bus interface and shared SRAM. Offering a high-speed I/O bus, the PCI Local Bus is ideally complemented by the provision of shared memory which is ideal for the passing of small data packets between processors or for storing global system variables. Larger inter-processor transfers may be efficiently completed using the TMS320C4x communications ports. Access to both SRAM and the PCI local bus is arbiter controlled on a round-robin basis, including a LOCK instruction whereby a single processor can gain exclusive control. A wide variety of analog and digital I/O is available on the standard parallel expansion port of DSPLINK2, opening the way to a wide variety of focused applications. Additionally, the high-speed PCI interface allows data to be transferred at rates to meet the requirements of high-performance applications.

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DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Second generation C80 board
- Designed for imaging OEM applications
- 50MHz TMS320C80 processor
- .8, 32, or 64MBytes Ows SDRAM memory
- Optimized PCI interface
- Comprehensive software support
- Expansion module site

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C8x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SDRAM

**Expansion Options:**

I/O Module Site for video capture, display or other applications

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PCI/C81 is the ideal board for high performance imaging, video and similar applications. By combining state of the art performance, flexible I/O and careful cost optimizations, it fits perfectly into a wide range of OEM requirements. The board provides a 50MHz TMS320C80 processor. On-board memory includes up to 64MBytes of zero wait state SDRAM, and 512kBytes of Flash memory for boot code, built-in-test (BIT) code, and user programs. The full 32-bit PCI interface allows fast data transfers and direct access to other PCI boards, providing transfer rates of 132MBytes/sec (peak) and 100MBytes/sec (sustained). The TMS320C80 can access the PCI interface and external PCI bus either directly or via a bi-directional FIFO interface running at the full 400MBytes/sec speed of the TMS320C80 bus, maximizing overall PCI performance. DirectDraw is supported, allowing video display on the host. The board features an I/O Expansion Module Site which is designed to allow video or other I/O data to be easily interfaced. For register or random memory access (such as VRAM), the full TMS320C80 bus is available to a module; in addition, a bidirectional FIFO gives a 400MBytes/sec transfer speed to or from the TMS320C80.

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## FEATURES & BENEFITS

- Single 200MHz TMS320C6201: 1600MIPs/400MMAC
- MVIP and SCBus interfaces for CTI application
- DM site for analog I/O up to 200kHz at 16-bits
- High speed PCI interface
- .256KBytes Ows SBSRAM
- .16MBytes 1ws SDRAM

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host Supported:

Windows 95  
Windows NT

### TMS320 Devices Supported:

TMS320C6x

### CPU:

1

### Clock Speeds Available:

200MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

256KBytes, 16MBytes SDRAM

### Expansion Options:

MVIP, SCBus and Daughter Module Site

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The C6201 is supported by various external memories including SBSRAM, SDRAM and Flash memory. The SBSRAM is used for program storage, or frequently used variables, where data accesses need to have consistently high performance no matter what size of the data fetch is. The SDRAM provides up to 16MBytes of bulk store for larger data sets such as images or pre-recorded data. This memory operates in burst modes and is ideally suited to reading or writing large blocks of data. The flash memory provides an area of non-volatile memory for boot code storage. The PCI/C6200's I/O capability is provided through three primary I/O interfaces: MVIP, SCBus and the daughter module site. SCBus and MVIP are time-division-multiplexed buses that are ideally suited for carrying telephone call data. These interfaces are provided using the Mitel FMIC chip for MVIP, and the VLSI SC4000 interface for SCBus. Both of these are routed to the C6201's serial ports and have a maximum call carrying capacity of 512 channels with the ability to simultaneously access up to 128 bi-directional channels. The daughter module site can be equipped with an LSI I/O module providing sample rates of up to 200kHz with a resolution of 16-bits.

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**FEATURES & BENEFITS**

- Dual 60MHz TMS320C44 processors
- 1MByte OWS SRAM per processor
- PMC module form factor
- High speed PCI interface

**SPECIFICATIONS**

**Platforms Supported:**

PMC Module

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

2MBytes SRAM

**Expansion Options:**

PMC PN4

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The PMC/C42 provides two on-board TMS320C44 processors on a single size IEEE1386.1 compliant PMC module. Each processor has two banks of OWS SRAM provided on it's local and global buses and these may be used for either program or data storage. Additionally the global bus has buffered access onto the PMC/C42's shared bus. This shared bus is then connected to a PCI bridge to provide the PCI connection to the host carrier board. This forms the primary mechanism for host to PMC/C42 data transfer. The shared bus of the PMC/C42 is controlled by an on-board arbiter and this grants access to the various resources on the bus on a round-robin basis. As an additional feature any resource that can master the shared bus, i.e. a C44 or the host, can read or write directly into either of the C44 processors global memory directly. This creates a pseudo shared-memory style architecture for the C44's global memories. The PMC/C42 support includes a vast range of software packages operating under Windows NT or 95. Development tools include host communication libraries for data passing between the PC and the DSP card, code download, C and assembler level debuggers and a C compiler.

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DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Four TIM-40 sites
- PC interface for each site
- Comprehensive software development tools
- DSPLINK2 peripheral I/O bus
- Shared memory

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1

Windows 95

Windows NT

**CPU:**

8

**TMS320 Devices Supported:**

TMS320C4x

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

TIM Sites, DSPLINK

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The QPC/C40S is an ISA plug-in board for parallel DSP and parallel-processing application development and implementation. The board can be configured with up to four single-width TMS320C4x processor nodes as required. Two TMS320C4x 20M bytes/sec communication ports from each of the four module sites are dedicated to module interconnection in a ring topology. Remaining communication ports from each site are accessible via a header (or are routed between module sites). This allows for additional on or off-board processor interconnections. A PC/AT-compatible I/O mapped interface is provided between TIM site A and the PC system. All TIM Module sites are connected to a high speed shared bus for host or interprocessor communication. The 32-bit, 33M bytes/sec DSPLINK2 interface allows off-board peripheral I/O expansion from a range of multichannel analog and digital I/O interface boards.

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Loughborough Sound Images is a leading provider of DSP board level products including TMS320C6x, C4x, C8x and C3x on PC/PCI, PMC, Compact PCI and VME platforms.



**FEATURES & BENEFITS**

- PCI board for capture, processing and display
- Scalable for increased performance
- Programmable color/mono, analog/dig. capture
- Comprehensive, optimized C imaging libraries
- Multiple datapaths on and off-board
- Custom ASIC for pixel formatting and I/O
- Custom ASIC for neighborhood operations

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows NT, DOS

**TMS320 Devices Supported:**

TMS320C8x

**Clock Speeds Available**

50MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Coprocessor daughter card

**Software Included:**

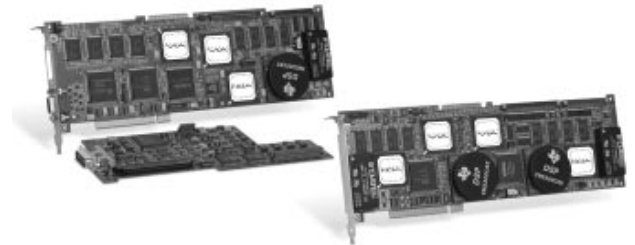
Libraries

**Technical Support/Training Available:**

Contact Matrox for information on training.

**PRODUCT DESCRIPTION**

Matrox Genesis is a fully programmable PCI imaging solution for OEMs and integrators who build or retrofit real-time machine vision, medical imaging, and image analysis systems. The Main Board integrates acquisition, processing and display, with scalable processing achieved by adding up to 6 companion Processor Boards. A Matrox Genesis processing node is based on the Texas Instruments' TMS320C80 DSP, Matrox neighborhood operations



accelerator and video interface ASICs, and 64MB SDRAM. The Main Board Grab Module captures from virtually any color/monochrome, analog or digital video device including 1K x 1K, line-scan, triggered, RS-170/CCIR, and RGB cameras; multitap cameras (time multiplexed or parallel streams); and custom designed devices. Acquisition features include: up to 140MHz sampling, simultaneous capture and processing of up to 4 video streams, up to 32-bit wide 30 MHz TTL digital acquisition (32-bit RS-422 optional). Matrox's custom integrated display offers up to 1600 x 1200 resolution at an 85 Hz refresh rate and dual WRAM frame buffers for non-destructive overlay. Programming Matrox Genesis Main and Processor boards is easily accomplished using either the board specific 'C' library or platform independent Matrox Imaging Library (MIL). Both are designed to automatically make use of on-board accelerators and offer hundreds of high-level imaging functions. For custom C80 development, Matrox offers a developer's tool kit.

**COMPANY INFORMATION**

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The Matrox Imaging Products Group provides board-level solutions for machine vision, medical imaging and image analysis systems. Products include PCI frame grabbers, image processors and software.



DEVELOPMENT BOARDS





## FEATURES & BENEFITS

- 60 MFLOPS C31 DSP
- Up to 1Mx32 Ows SRAM
- Shared-bus architecture
- SIOX/PIOX daughtercard options
- UECM emulator daughtercard
- Emulates external TI DSPs vi pod
- TI HLL Debuggers and GO DSP Code Composer IDE

## SPECIFICATIONS

### Platforms Supported:

ISA PC

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### CPU:

1

### TMS320 Devices Supported:

TMS320C3x

### Clock Speeds Available:

60MHz

### Board Size:

Half Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

UECM emulation daughtercard

### Software Included:

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

TORNADO-31 is a universal evaluation platform for TI C31 DSP, and emulator for all TI DSPs. It features a modular system architecture, high-performance ISA-bus host i/f, sites for SIOX and PIOX I/O expansion daughtercards and site for UECM emulation daughtercard. UECM delivers emulation for both TORNADO-31 on-board C31 DSP and any external TI DSP via optional buffer pod. A broad selection of SIOX/PIOX AD/DA, I/O and coprocessor daughtercards is available.

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MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.



**FEATURES & BENEFITS**

- 60 MFLOPS C32 DSP
- 2 banks of 128Kx32 0ws SRAM
- High-performance host ISA-bus i/f
- On-board shared-bus architecture
- On-board emulator
- Site for SIOX daughtercard
- Low cost

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1

Windows 95

Windows NT

DOS

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

60MHz

**Board Size:**

Half Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

TORNADO-32L is the lowest cost DSP systems for PCs with up to 256KW 0ws on-board SRAM, shared-bus architecture, high-performance ISA-bus host I/F, on-board emulation facility and site for SIOX I/O daughtercard module. A wide selection of TORNADO-3x/54x/6x compatible SIOX I/O daughtercards is available.

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## FEATURES & BENEFITS

- Two 60MFLOPS C40 DSPs
- Global shared 1Mx32 SRAM
- Local 1Mx32 SRAM and 1Mx8 EPROM per DSP
- Global shared bus architecture
- Two sites for PIOX daughtercards
- Site for UECM emulator daughtercard
- UECM emulates on-board and external DSPs

## SPECIFICATIONS

### Platforms Supported:

ISA PC

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### CPU:

2

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

UECM emulator daughtercard

### Software Included:

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

TORNADO-40D is a high performance dual-C40 DSP systems for PC. It features up to 3MW 0ws on-board SRAM, global shared-bus architecture, high-performance ISA-bus host I/F, two sites for PIOX I/O daughtercard modules, 8KW DPRAM between L-buses of C40 DSPs, and site for UECM emulator daughtercard. A wide selection of TORNADO-3x/54x/4x/6x compatible PIOX AD/DA/IO/coprocessor daughtercards is available. UECM allows emulation of both on-board DSPs and any external TI DSP.

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DEVELOPMENT BOARDS

## FEATURES & BENEFITS

- 1600MIPS C6201 DSP
- 256Kx32 SBSRAM on board
- On-board shared bus architecture
- SIOX and PIOX daughtercards
- UECM daughtercard module
- Emulation of on-board and external DSPs
- High-performance host i/f

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### CPU:

1

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200

### Board Size:

Half Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

UECM emulation daughtercard

### Software Included:

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

TORNADO-62 is both a universal evaluation platform for C6201 DSP and an emulator for all TI DSPs.

TORNADO-62 features modular system architecture with sites for SIOX and PIOX I/O expansion daughtercards and site for UECM universal emulation control module. A broad selection of AD/DA SIOX/PIOX daughtercards is available. TORNADO-62/UECM are supported by TI and GoDSP development tools.

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MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.





## FEATURES & BENEFITS

- 40 MIPS C542 DSP
- 128KW Ovs SRAM (P+D)
- Shared bus architecture
- High-performance host ISA-bus i/f
- On-board emulator
- Sites for SIOX (2) and PIOX daughtercards
- Low cost

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### TMS320 Devices Supported:

TMS320C54x

### Clock Speeds Available:

40MHz

### Board Size:

Half Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

### Software Included:

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

TORNADO-542L is the lowest cost DSP systems for PC with up to 128KW Ovs on-board SRAM, shared-bus architecture, high-performance ISA-bus host I/F, on-board emulation facility and sites for SIOX and PIOX I/O daughtercard modules. A wide selection of TORNADO-3x/54x/6x compatible SIOX I/O daughtercard is available.

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MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.





## FEATURES & BENEFITS

- C548/C549 66–100MIPS DSP
- 2x128Kx16 SRAM (P+D)
- Two sites for SIOX daughtercards
- One site for PIOX daughtercards
- Optional UECM emulation daughtercard
- Emulation of on-board DSP via UECM
- Emulation of external DSP via UECM and pod

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1

Windows 95

DOS

### CPU:

1

### TMS320 Devices Supported:

TMS320C54x

### Board Size:

Half Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

### Software Included:

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

TORNADO-548 is a universal evaluation platform for TI C54x DSPs and emulator for all TI DSPs. It features modular system architecture and allows installation of daughtercards with serial SIOX I/F, parallel PIOX-16 I/F and UECM universal emulation control module with optional pod.

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MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.



**FEATURES & BENEFITS**

- 60MFLOPS C31 DSP
- 128KW Ovs SRAM and 1MB EPROM
- Dual-channel 10MBPS USART
- 115kbaud RS232C and 10MBPS RS422 I/F
- Sites for SIOX and PIOX daughtercards
- Watchdog timer
- On-board 10-bit I/O

**SPECIFICATIONS****Platforms Supported:**

Standalone

**Host O/S Supported:**

DOS

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

60MHz

**Board Size:**

110mm x 75mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

TORNADO-E31 is a standalone DSP controller with on-board dual-channel 0MBPS USART, I/O sites for SIOX and PIOX daughtercards. A variety of TORNADO-3x/4x/54x/6x compatible AD/DA/IO/coprocessor daughtercards are available.

**COMPANY INFORMATION****MicroLAB Systems Ltd.**

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 Fax: +7-(095)-485-6332  
 e-mail: mlabsys@online.ru

MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.



**FEATURES & BENEFITS**

- 1600 MIPS C6201 DSP
- 128KW SBSRAM and 1MB EPROM
- Dual-channel 10MBPS USART
- 115 kBaud RS232C and 10MBPS RS422 I/F
- Sites for SIOX and PIOX daughtercards
- Host access to DSP HPI
- On-board 8-bit I/O

**SPECIFICATIONS****Platforms Supported:**

Standalone

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

180mm x 130mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

TORNADO-E62 is a very-high performance standalone DSP controller with on-board dual-channel 10MBPS USART, I/O sites for SIOX and PIOX daughtercards. A variety of TORNADO-3x/4x/54x/6x compatible AD/DA/IO/coprocessor daughtercards are available.

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MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.



**FEATURES & BENEFITS**

- 66–100MIPS C548/C549 DSP
- 2x128Kx16 SRAM (P+D)
- Dual-channel 10MBPS USART
- 115 kBaud RS232C and 10MPBS RS422 I/F
- Sites for SIOX and PIOX daughtercards
- Watchdog timer
- 8 bit I/O

**SPECIFICATIONS****Platforms Supported:**

Standalone

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C54x

**Clock Speeds Available:**

66

**Board Size:**

110mm x 75mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

TORNADO-E548 is a standalone DSP controller with on-board, dual-channel 10MBPS USART, I/O sites for SIOX and PIOX daughtercards. A variety of TORNADO-3x/4x/54x/6x compatible AD/DA/IO/coprocessor daughtercards are available.

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MicroLAB Systems was organized as a company for instrumentation and development tools. We offer a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughtercards.



## FEATURES & BENEFITS

- 40-, 50-, or 60MHz operation
- Four levels of ruggedization available
- 100MBytes/sec expansion interface/processor
- 16MBytes SRAM and 65 MBytes DRAM daughter cards
- Optional Harvard memory architecture
- Network based debugger
- SPOX, Vx Works support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Solaris

HP-UX

### TMS320 Devices Supported:

TMS320C4x

### CPU:

4

### Clock Speeds Available:

60MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

Third party cards

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The MZ 7772-4 is four-processor TMS320C40 6U DSP board for the VMEbus providing an aggregate of 240MFLOP. Each 'C40 has six 20MByte/sec communication ports and a six-channel DMA coprocessor. Two ports from each 'C40 are routed to the front panel, providing 160MByte/sec of data I/O. A 100MByte/sec expansion interface is provided for each processor, for a total of 400MByte/sec of memory or I/O expansion. The MZ 7772 VMEbus interface is a VME64 master/slave implementation that supports 50MByte/sec VMEbus block transfers. Each DSP can be directly linked to as much as 2MBytes of zero wait-state SRAM. In addition to the 2MBytes per DSP of SRAM on the board's Global Bus shared data or instructions, the MZ 7772 features 2MBytes of flash EEPROM and 1kByte of nonvolatile RAM for system configuration data. As an option, the MZ 7772 can include a daughter card, with as much as 2MByte of SRAM or 8MByte per DSP of DRAM, or a custom I/O subsystem. The MZ 7772 is supported by excellent development tools, including the Mizar Multiuser/Multiboard DSP network debugger. The MZ7772 runs SPOX.

## COMPANY INFORMATION

### Mizar, Inc.

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Fax: (972) 277-4666

e-mail: info@mizarinc.com

### Mizar International

Unit 46A

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United Kingdom

Tel & Fax: ++44 01425 613709



## FEATURES & BENEFITS

- 40-, 50-, or 60MHz
- Available in four levels of ruggedization
- 100MByte/sec expansion interface per processor
- Optional Harvard memory architecture
- 16MByte SRAM/64MByte DRAM daughter cards
- Network based debugger
- Supports SPOX, and VxWorks

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Solaris

HP-UX

### TMS320 Devices Supported:

TMS320C4x

### CPU:

8

### Clock Speeds Available:

60MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

Third-party cards

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The MZ 7772-8 is an eight processor TMS320C40 6U DSP board for the VMEbus providing an aggregate of 480MFLOP. Each 'C40 has six 20MByte/sec communication ports and a six-channel DMA coprocessor. Two ports from each 'C40 are routed to the front panel, providing 160MByte/sec of data I/O. A 100MByte/sec expansion interface is provided for each processor, for a total of 800MByte/sec of memory or I/O expansion. The MZ 7772 VMEbus interface is a VME64 master/slave implementation that supports 50MByte/sec VMEbus block transfers. Each DSP can be directly linked to as much as 2MBytes of zero wait-state SRAM. In addition to the 2MBytes per DSP of SRAM on the board's Global Bus shared data or instructions, the MZ 7772 features 2MBytes of flash EEPROM and 1kBytes of nonvolatile RAM for system configuration data. As an option, the MZ 7772 can include a daughter card, with as much as 2MBytes of SRAM or 8MBytes per DSP of DRAM per DSP, or a custom I/O subsystem. The MZ 7772 is supported by excellent development tools, including the Mizar Multiuser/Multiboard DSP network debugger. The MZ7772 runs SPOX.

## COMPANY INFORMATION

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**FEATURES & BENEFITS**

- PC/104 form-factor (3.6" x 3.8")
- TMS320C5x 40 MHz (optional 57 or 80 MHz)
- 4 A/D channels, 10-bit, 2µs conversion rate
- 2 D/A channels, one 10-bit, one 8-bit
- 256kBytes SRAM, 256kBytes Flash
- 2kBytes dual-port RAM for access to host bus
- Also operates in standalone configuration

**SPECIFICATIONS**

**Platforms Supported:**

PC/104  
Standalone

**Host Supported:**

Windows 3.1  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

1

**Clock Speeds Available:**

40-, 57-, 80MHz

**Board Size:**

3.6 x 3.8 x 0.6

**Memory (DRAM/SRAM):**

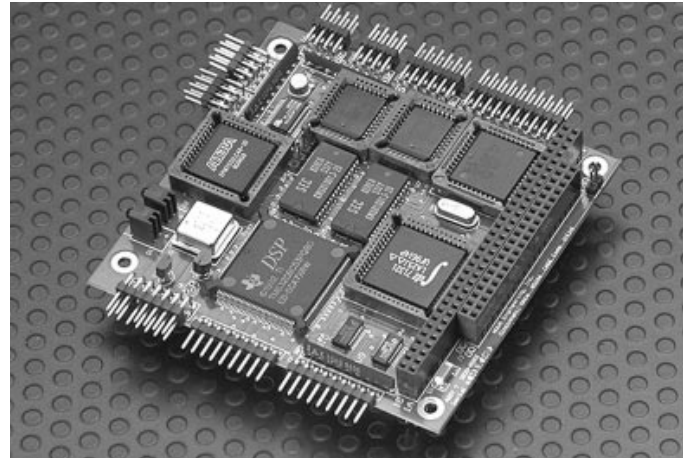
SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The Starburst 104C5x PC/104 module, optimized for baseband signal processing, contains a 40MHz (57- or 80MHz optional) TMS320C5x and an analog I/O section which includes four 10-bit A/D channels (500kHz), one 10-bit D/A channel, and one 8-bit D/A channel. 128kwords (16-bits wide) of zero wait state static RAM and 128kwords of on-board



Flash memory provide a mechanism for boot-loading user application code to program memory. A serial communications controller provides two independent serial channels that support a variety of industry-standard synchronous and asynchronous communications protocols. A high-speed synchronous serial port operates at up to 11.5Mbps while two universal synchronous/ asynchronous serial ports operate at up to 4.1Mbps with modem-control signals. Digital I/O is also contained on the Starburst 104C5x which is accessible from the host processor.

**COMPANY INFORMATION**

**Nova Engineering, Inc.**

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Nova provides design and analysis for hardware and software development for a wide array of electronic systems, possessing particular expertise with the 'C3x, 'C5x and 'C54x DSP's.



DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- PC/104 form-factor (3.6" x 3.8")
- TMS320C31 32MHz (optional 50- or 60MHz)
- 4 A/D channels, 10-bit, 2µs conversion rate
- 2 D/A channels, one 10-bit, one 8-bit
- 512kBytes SRAM, 512kBytes Flash
- 2kBytes dual-port RAM for access to host bus
- Also operates in standalone configuration

## SPECIFICATIONS

### Platforms Supported:

PC/104

Standalone

### Host Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C3x

### CPU:

1

### Clock Speeds Available:

32-, 50-, 60MHz

### Board Size:

3.6 x 3.8 x 0.6

### Memory (DRAM/SRAM):

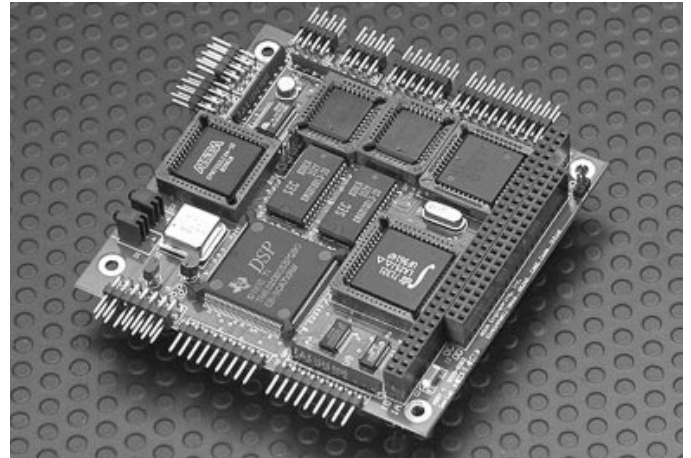
SRAM

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The Starburst 104C31 PC/104 module, optimized for baseband signal processing, contains a 32MHz (50- or 60MHz optional) TMS320C31 and an analog I/O section which includes four 10-bit A/D channels (500kHz), one 10-bit D/A channel, and one 8-bit D/A channel. 128kwords (32-bits wide) of zero wait-state static RAM and 512kBytes of on-board Flash



memory provide a mechanism for boot-loading user application code to program memory. A serial communications controller provides two independent serial channels that support a variety of industry-standard synchronous and asynchronous communications protocols. A high-speed synchronous serial port operates at up to 11.5Mbps while two universal synchronous/asynchronous serial ports operate at up to 4.1Mbps with modem-control signals. Digital I/O is also contained on the Starburst 104C31 which is accessible from the host processor.

## COMPANY INFORMATION

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Nova provides design and analysis for hardware and software development for a wide array of electronic systems, possessing particular expertise with the 'C3x, 'C5x and 'C54x DSP's.





**FEATURES & BENEFITS**

- TMS320C31 DSP with up to 60MFLOP
- Flash-EPROM with resident file-system
- Various interfaces for many applications
- All important pins are wired to connectors
- Micro-line™ bus with a lot of expansions
- Application examples, tool handling files
- Reconfigurable FPGA with JTAG interface

**SPECIFICATIONS**

**Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

33, 40, 50, 60MHz

**Board Size:**

98 x 66 x 20mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Option:**

Analog I/O daughter card

Digital I/O daughter card

Relay Board, IEEE1394 Board

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The C31CPU is a very flexible and space-saving DSP-System with an excellent price/performance ratio. The micro-line® bus enables a wide range of expansion possibilities like the micro-line® SC1394-1995 High Performance Serial Communication Interface, analog I/O ADC board AD4-612, link communication board SC20, power switching relay board REL20 etc, as well as different carrier boards. Apart from this, the micro-line® bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP, thus you have full access to all functions of the DSP. An uneraseable installed file-system in the flash-EPROM (128K Byte or 512K Byte) manages up to 63 user programs and enables an easy to handle download system for the C31CPU via the RS232 interface. An up-to-date FPGA with JTAG interface (IEEE 1149.1) guarantees an easily reconfigurable system. The available software packages of the C31CPU cover C and C++ compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software, application examples and real-time-operating-systems. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier platform Power Supply or on the PC Carrier Board PC-CAR1-7. Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

**COMPANY INFORMATION**

**Orsys GmbH**

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**FEATURES & BENEFITS**

- TMS320C32 DSP with up to 60MFLOPS
- Flash-EPROM with resident file-system
- Various interfaces for many applications
- All important pins are wired to connectors
- Wide range of expansion possibilities
- Application examples, files for tool handling
- Reconfigurable FPGA with JTAG interface

**SPECIFICATIONS****Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 3.1, Windows 95, Windows NT, MS-DOS

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

40-, 50-, 60MHz

**Board Size:**

98x66x20mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O &amp; Digital I/O daughter card

Relay Board, IEEE 1394 Board

**Software Included:**

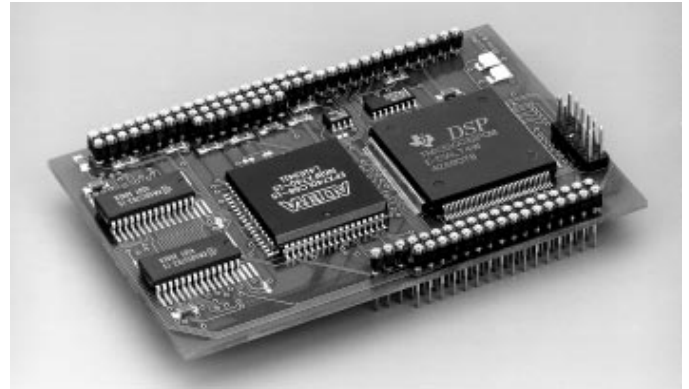
Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The C32CPU is a low-cost and space-saving DSP-System with an excellent price/performance ratio. The micro-line® bus enables a wide range of expansion possibilities like the micro-line® SC1394-1995 High-Performance Serial Communication Interface, analog I/O ADC Board AD4-612, link communication board SC20, power switching relay board



REL20 etc, as well as different carrier boards. Apart from this the micro-line® bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP, thus you have full access to all functions of the DSP. An uneraseable installed file-system in the flash-EPROM (128kByte or 512kByte) manages up to 63 user programs and enables an easy-to-handle download system for the C32CPU via the RS-232 interface. An up-to-date FPGA with JTAG interface (IEEE 1149.1) guarantees an easily reconfigurable system. The available software packages of the C32CPU cover C and C++ compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software, application examples and real-time operating-systems. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier platform Power Supply or on the PC Carrier Board PC-CAR1-7. Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

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**FEATURES & BENEFITS**

- TMS320C44 DSP with up to 60MFLOPS
- Flash-EPROM with resident file-system
- Various interfaces for many applications
- All important pins are wired to connectors
- 4 high-speed TMS320C44 COM-ports available
- Application examples, files for tool handling
- Reconfigurable FPGA with JTAG-Interface

**SPECIFICATIONS****TMS320 Devices Supported:**

TMS320C4x

**Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**Clock Speeds Available:**

40-, 50-, 60MHz

**Board Size:**

98x72x20mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Relay Board, IEEE 1394 Board

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The C44CPU is a very flexible, powerful and space-saving floating-point DSP-system with an excellent price/performance ratio. The Micro-Line™ bus enables a wide range of expansion possibilities like the Micro-Line™ SC1394-1995 High Performance Serial Communication Interface, analog I/O ADC Board AD4- 612, link communication board SC20, power switching relay board REL20 etc, as well as different carrier boards. Apart from this the Micro-Line™ bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP, thus you have full access to all functions of the DSP. An uneraseable installed file-system in the Flash-EPROM (128K byte or 512kByte) manages up to 63 user programs and enables an easy to handle download system for the C44CPU via the RS-232 interface. An up-to-date FPGA with JTAG interface (IEEE 1149.1) guarantees an easily reconfigurable system. The available software packages of the C44CPU cover C and C++ compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software, application examples and real-time operating systems. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier Power Supply or on the PC Carrier Board PC-CAR1-7.

Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

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## FEATURES & BENEFITS

- Low-cost, fixed point DSP with up to 40MIPS
- Flash-EPROM with resident file-system
- Various interfaces for many applications
- All important pins are wired to connectors
- Wide range of expansion possibilities
- Application examples, files for tool handling
- Complete software packages available

## SPECIFICATIONS

### Platforms Supported:

Stand-alone

### Host Supported:

Windows 3.1, Windows 95, Windows NT, MS-DOS

### TMS320 Devices Supported:

TMS320C2xx

### Clock Speeds Available:

40-, 57-, 80MHz

### Board Size:

98x66x20mm

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I/O & Digital I/O daughter card

Relay Board, IEEE 1394 Board

### Software Included:

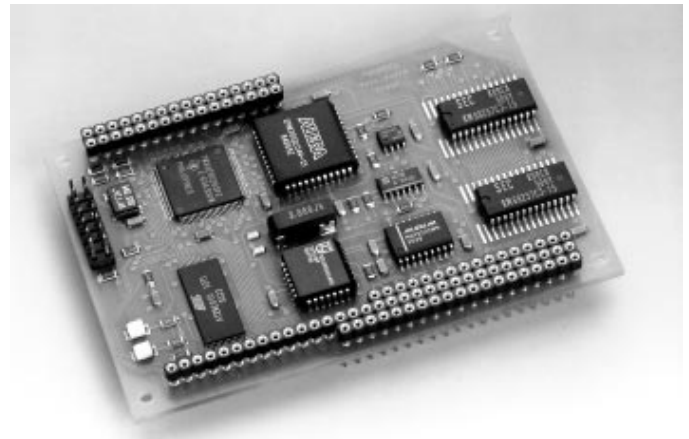
Debuggers, Code Generation tools, Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The C203CPU is a very flexible, very low-cost and space-saving DSP-System with an outstanding price/performance ratio. The micro-line® bus enables a wide range of expansion possibilities like the micro-line® SC1394-1995 High Performance Serial Communication Interface, analog



I/O ADC Board AD4-612, link communication board SC20, power switching relay board REL20 etc, as well as different carrier boards. Apart from this, the micro-line® bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP, thus you have full access to all functions of the DSP. An uneraseable installed file-system in the Flash-EPROM (128K byte or 512kByte) manages up to 63 user programs and enables an easy to handle download system for the C203CPU via the RS-232 interface. The available software packages of the C203CPU cover C and C++ compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software and application examples. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier platform Power Supply or on the PC Carrier Board PC-CAR1-7. Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

## COMPANY INFORMATION

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## FEATURES & BENEFITS

- TMS320C6201 DSP with up to 1600MIPS
- Flash-EPROM with resident file-system
- Various, interfaces for many applications
- Wide range of expansion possibilities
- All important pins are wired to connectors
- Application examples, files for tool handling
- Reconfigurable FPGA with JTAG-Interface

## SPECIFICATIONS

### Platforms Supported:

Stand-alone

### Host Supported:

Windows 3.1

Windows 95

Windows NT

MS-DOS

### TMS320 Devices Supported:

TMS320C6201

### Clock Speeds Available:

200-, 100MHz

### Board Size:

3.85 x 2.83 x 0.78 in

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I/O daughter card

Digital I/O daughter card

Relay Board, IEEE 1394 Board

### Software Included:

Debuggers

Code Generation tools

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

ORSYS introduces the micro-line® C6201CPU, with the TMS320C6201, the fastest fixed-point DSP in the world. It's a very flexible and space-saving fixed-point DSP-system with an excellent price/performance ratio. The micro-line® bus enables a wide range of expansion possibilities like micro-line® SC1394-1995 High Performance Serial Communication Interface, analog I/O ADC Board AD4-612, link communication board SC20, power switching relay board REL20 etc, as well as different carrier boards. Apart from this the micro-line® bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP, thus you have full access to all functions of the DSP. An uneraseable installed file-system in the Flash-EPROM (128kByte or 512kByte) manages up to 63 user programs and enables an easy to handle download system. An up-to-date FPGA with JTAG interface (IEEE 1149.1) guarantees an easily reconfigurable system. The available software packages of the C6201CPU cover C compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software, application examples and real-time operating systems. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier Power Supply or on the PC Carrier Board PC-CAR1-7. Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

## COMPANY INFORMATION

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**FEATURES & BENEFITS**

- TMS320F206 DSP with up to 40MIPS
- Also ideal as a prototyping-platform
- Flash-EEPROM with resident file-system
- All important pins are wired to connectors
- Wide range of expansion possibilities
- Application examples, files for tool handling
- Complete software packages available

**SPECIFICATIONS****Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**TMS320 Devices Supported:**

TMS320C2xx

**Clock Speeds Available:**

40-, 57-, 80MHz

**Board Size:**

98x66x20mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Relay Board, IEEE 1394 Board

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The F206CPU is a very flexible, low-cost and space-saving DSP-System with an excellent price/performance ratio. The micro-line® bus enables a wide range of expansion possibilities like the micro-line® SC1394-1995 High Performance Serial Communication Interface, analog I/O ADC Board AD4-612, link communication board SC20,, power switching relay board REL20 etc, as well as different carrier boards. Apart from this, the micro-line® bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP; thus, you have full access to all functions of the DSP. An uneraseable installed file-system in the Flash-EEPROM (128kByte or 512kByte) manages up to 63 user programs and enables an easy to handle download system for the F206CPU via the RS-232 interface. The large processor- internal flash and RAM of the TMS320F206 provides very fast program execution. The available software packages of the F206CPU cover C and C++ compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software and application examples. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier platform Power Supply or on the PC Carrier Board PC-CAR1-7. Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

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**FEATURES & BENEFITS**

- TMS320F240 DSP with up to 40MIPS
- Also ideal as a prototyping-platform
- Flash-EEPROM with resident file-system
- All important pins are wired to connectors
- Wide range of expansion possibilities
- Application examples, files for tool handling
- Complete software packages available

**SPECIFICATIONS****Platforms Supported:**

Stand-alone

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**TMS320 Devices Supported:**

TMS320C2xx

**Clock Speeds Available:**

20-, 40MHz

**Board Size:**

98x66x20mm

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Relay Board, IEEE 1394 Board

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The F240CPU is a very flexible, low-cost and space-saving DSP-Controller System with an excellent price/performance ratio. The micro-line® bus enables a wide range of expansion possibilities like the micro-line® SC1394-1995 High Performance Serial Communication Interface, analog I/O ADC Board AD4-612, link communication board SC20, power switching relay board REL20 etc, as well as different carrier boards. Apart from this the micro-line® bus is also an excellent universal interface for any custom-specific application. It enables direct connection to every necessary pin of the DSP, thus you have full access to all functions of the DSP. An uneraseable installed file-system in the Flash-EEPROM (128K byte or 512kByte) manages up to 63 user programs and enables an easy to handle download system for the F240CPU via the RS-232 interface. The processor-internal flash of the TMS320F240 provides very fast program execution. The available software packages of the F240CPU cover C and C++ compiler, assembler, linker, symbolic C-source debugger, libraries, filter design software and application examples. All ORSYS xxCPU-boards can be run either on the stand-alone system carrier platform Power Supply or on the PC Carrier Board PC-CAR1-7. Furthermore the board can also be designed as a stand-alone processor in a planned hardware-system, as if it were a big IC.

**COMPANY INFORMATION****Orsys GmbH**

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www: <http://www.orsys.de>

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

Many

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Digital I/O daughter card

**Software Included:**

Code Generation tools

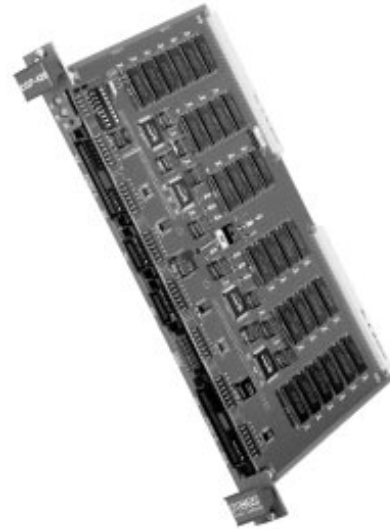
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The DSP-428 integrates a shared-memory based MAXbus video interface with two 320C40 DSP processors (expandable to four or more) to form a powerful real-time video signal processing structure. The DSP-428 supports both the 10MHz and 20MHz MAXbus pixel clock systems, and is capable of 8-, 16- or 24-bit/pixel image acquisition and analysis. Frame size can be any from 1x1 to 1024x1024. Two simultaneous ROIs can be defined and continuously updated. Frame sequencing and selective frame acquisition are supported. The ImageFlow software environment is supported, and two C function libraries are provided to speed application development.

**COMPANY INFORMATION****PCM Systems Corp.**

6693 Sierra Lane

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www: <http://www.pcmsystems.com>

PCM Systems Corp. specializes in top-speed systems for processing fast real-time data streams. Products include board-level systems combining vector and scalar processors.



**FEATURES & BENEFITS**

---

- Compatible with VSP-91 and DSP-449

**SPECIFICATIONS**

---

**Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

Many

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Clock Speeds Available**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

**Software Included:**

Code Generation tools

Libraries

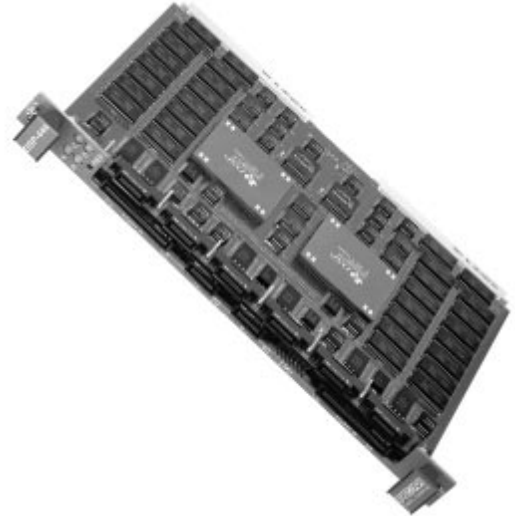
**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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The quad-320C40 DSP-444 is a high-speed signal processing board with advanced architecture for very fast real-time data streams. Each on-board processor has large blocks of private memory, and also has access to a large memory pool that is



shared among the processors. 36-bit FIFO-buffered parallel ports are provided on the front panel to make it easy to route data into and out of the system, and also to integrate with processors on other boards. Each port can handle data as fast as 50MBytes/sec. Software development tools and function libraries are included.

**COMPANY INFORMATION**

---

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PCM Systems Corp. specializes in top-speed systems for processing fast real-time data streams. Products include board-level systems combining vector and scalar processors.



**FEATURES & BENEFITS**

- Especially suited for fast FFT-intensive apps

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

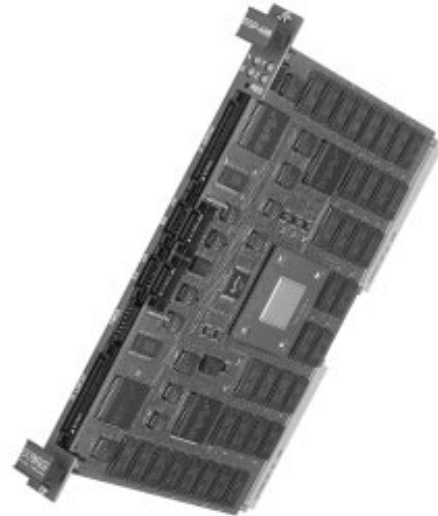
**Software Included:**

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The DSP-449 combines two TI 320C40 scalar DSP processors with the Sharp 9124 vector processor to form a very fast signal-processing system for high-speed FFT-intensive DSP applications. The three processors are interconnected through shared memory to minimize data movement while performing array operations with both processor types. FIFO-buffered, 36-bit parallel ports on the front panel make it easy to route user data into and out of the system. Software development tools and function libraries are included.

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PCM Systems Corp. specializes in top-speed systems for processing fast real-time data streams. Products include board-level systems combining vector and scalar processors.



**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 Solaris  
 Many

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

4

**Clock Speeds Available**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

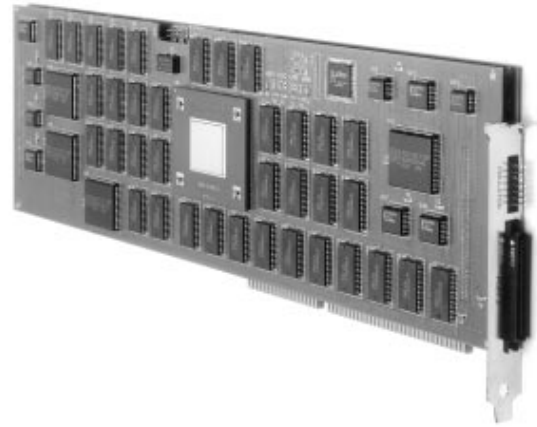
Analog I/O daughter card  
 Digital I/O daughter card  
 Coprocessor daughter card

**Software Included:**

Code Generation tools  
 Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The quad-320C40 DSPCI-444 is a high-speed signal processing board with advanced architecture for very fast real-time data streams. Each on-board processor has large blocks of private memory, and also has access to a large memory pool that is shared among the processors. 36-bit FIFO-buffered parallel ports are provided on the front panel to make it easy to route data into and out of the system, and also to integrate with processors on other boards. Each port can handle data as fast as 50MBytes/sec. Software development tools and function libraries are included.

**COMPANY INFORMATION**

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PCM Systems Corp. specializes in top-speed systems for processing fast real-time data streams. Products include board-level systems combining vector and scalar processors.



DEVELOPMENT BOARDS





**FEATURES & BENEFITS**

- Especially well suited for FFT-intensive apps

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

Many

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

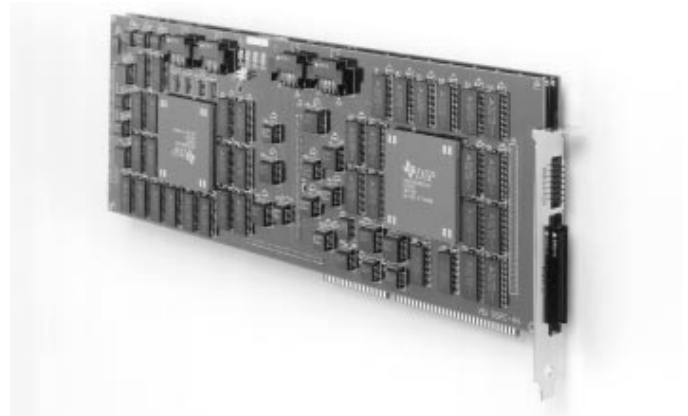
**Software Included:**

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The DSPCI-449 combines two TI 320C40 scalar DSP processors with the Sharp 9124 vector processor to form a very fast signal-processing system for high-speed FFT-intensive DSP applications. The three processors are interconnected through shared memory to minimize data movement while performing array operations with both processor types. FIFO-buffered, 36-bit parallel ports on the front panel make it easy to route user data into and out of the system. Software development tools and function libraries are included.

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PCM Systems Corp. specializes in top-speed systems for processing fast real-time data streams. Products include board-level systems combining vector and scalar processors.



DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Fastest available system for FFT operations

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available**

50MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

Coprocessor daughter card

**Software Included:**

Code Generation tools

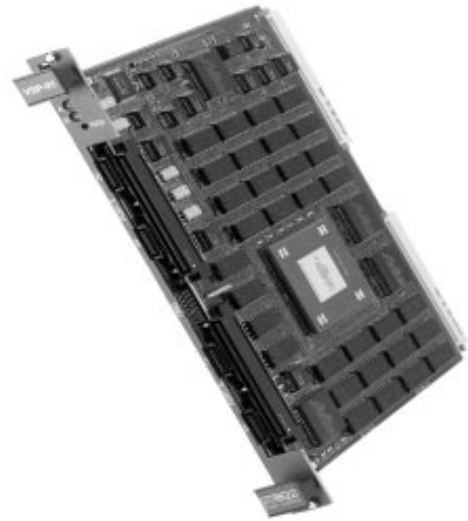
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The VSP-91 combines the TI 320C40 scalar processor with the Sharp 9124 vector processor in a tightly-coupled, shared-memory architecture for performing intensive math operations on high-speed data streams. A variety of interconnection mechanisms between the two processors and their several memory blocks are provided so that user data can



be routed through the system in the most advantageous manner. Vector processor input and output memory are both directly accessible by the on-board 320C40 processor. Even more speed can be attained by cascading two or more VSP-91 boards. Pre-programmed libraries and software development tools are included.

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PCM Systems Corp. specializes in top-speed systems for processing fast real-time data streams. Products include board-level systems combining vector and scalar processors.





## FEATURES & BENEFITS

- Complete Analog I/O for DSP
- 18-bit Resolution
- 200 kHz Sample Rate
- Sample Clock Generator
- Anti-Aliasing Filters
- FIFO Buffers
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

MIX Module

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C6x

### Clock Speeds Available:

200 kHz

### Board Size:

Half Card

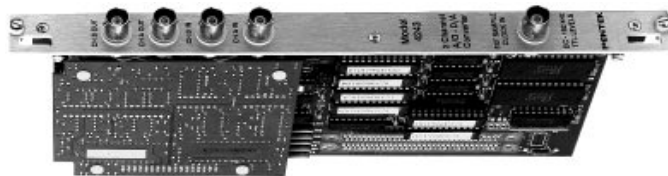
### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4243 is a dual-channel, 18-bit A/D and D/A converter MIX module with input and output low pass filters. It may be attached as one of three daughtercards to any of Pentek's many MIX baseboards which feature from one to eight 'C3x, 'C4x, or 'C6x DSPs. The direct connection between the DSP and the module over the 32-bit parallel MIX data and address bus ensures a fast, dedicated data path to maximize transfers and avoid system bottlenecks. The 18-bit resolution of the Model 4243 is ideal for even the most demanding speech and audio applications. Sampling rates of the A/D converters can be varied over a range from 153 kHz to 200 kHz, and the associated low pass anti-aliasing filter cutoffs set from 1 kHz to 20 kHz. At the output, the rate of D/A conversion and the bandpass of the associated low pass smoothing filters can both be varied over corresponding ranges. To maintain constant sample rate while allowing block transfers over the MIX bus, a 16k sample FIFO is provided for the input A/D and another for the output D/A. Interrupts are provided for full, half-full and empty FIFO conditions for efficient DMA transfers to the DSP.

## COMPANY INFORMATION

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.



## FEATURES & BENEFITS

- 16 Channels A/D and D/A
- 48 kHz Sampling - 16 bit Accuracy
- Programmable Input Gain
- Programmable Attenuation
- Built-in Sigma Delta Antialiasing
- Sample Clock Generator
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

MIX Module

### Host O/S Supported:

Windows 95  
Windows NT  
Solaris 2.x

### TMS320 Devices Supported:

TMS320C3x  
TMS320C4x  
TMS320C6x

### Clock Speeds Available:

50 kHz

### Board Size:

Half Card

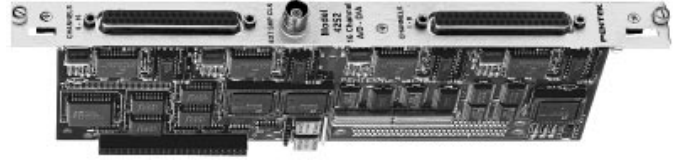
### Software Included:

Debuggers  
Code Generation Tools

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs and documentation



## PRODUCT DESCRIPTION

Model 4252 is specifically designed for digital audio use, providing sixteen individual analog inputs and outputs with 16-bit resolution. Preset sampling rates can be chosen under program control for the common digital audio applications, including 44.1 kHz for CD, 48 kHz for DAT and 8 kHz for digital telecommunications. Any other sampling rate from 4 kHz to 50 kHz can be derived from the internal clock or provided externally. Due to the sigma-delta conversion technique employed, all channels are sampled simultaneously with virtually zero phase delay between channels. Provisions are included for synchronizing the sampling clocks of multiple modules. The data converters provide greater than 80 dB dynamic range at both input and output. For telecommunications applications built-in  $\mu$ -law and A-law companding can be selected at input and output. The sigma-delta converters include digital low pass filtering of all A/D inputs to prevent aliasing. These linear-phase filters track the sampling rate and exhibit extremely sharp rolloffs and flat passband response. Matching filters are provided at each D/A output to remove sampling components. Input gain and output attenuation are included. Gain and attenuation changes are timed at zero crossings to prevent switching noise.

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www.pentek.com

Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.



**FEATURES & BENEFITS**

- 32 Analog Outputs
- 12-bit Resolution
- 100 kHz Max Sampling Rate
- FIFO Data Buffering
- Sample Clock Generator
- Extensive Software Support

**SPECIFICATIONS**

**Platforms Supported:**

MIX Module

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C6x

**Board Size:**

Half Card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



**PRODUCT DESCRIPTION**

Model 4253 produces 32 separate analog outputs from digital data. These analog signals, available at front panel connectors, may be used to test crosstalk in multichannel telecommunications systems, or to excite a structure at multiple locations for modal analysis. Multiple acoustic signals may be produced to test sonar hydrophones, or a variety of signals to drive process control servos. Often these D/A converters serve as the outputs of a multichannel arbitrary function generation system. The data fed to the module over the MIX bus may have been processed in the MIX subsystem and generated from stored digital data blocks. 32 simultaneous analog output signals can be produced by stacking a 4253 module on a processor baseboard. When added to a Model 4284 'C40 MIX Baseboard, these channels can serve as the analog outputs for any source on the VMEbus. Sample rates to 100 kHz on each channel can be utilized, even when all channels are active. D/A conversion is to 12-bit resolution. Harmonic, spurious and crosstalk distortion specifications are all under 55 dB below full scale. The output amplifiers are capable of driving low impedance loads.

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.



**FEATURES & BENEFITS**

- 50 MFLOPS
- TMS320C40 DSP
- MIX Mezzanine Module
- 5 Front Panel Comm Ports
- MIX Master and Slave
- Up to 3 MB SRAM
- Extensive software support

**SPECIFICATIONS**

**Platforms Supported:**

MIX Module

**Host O/S Supported:**

Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

50MHz

**Board Size:**

Half Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard, Digital receivers, E1/T1, SCSI

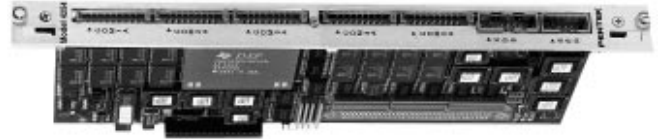
**Software Included:**

Debuggers, Code Generation Tools, Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



**PRODUCT DESCRIPTION**

Model 4254 is a TMS320C40 Co-processor MIX expansion module. MIX is a non-proprietary mezzanine standard developed by Intel for joining high-performance, real-time board products. When used in a MIX sub-system, the Model 4254 provides an additional 50 MFLOPS of processing power. When used with Pentek Models 420x MIX Baseboards, the MIX bus master capabilities of the Model 4254 can be used to move data to and from other MIX modules. The Model 4200 MIX Baseboard allows the Model 4254 to conduct full master operation for both VMEbus and VSBbus. Five 20 MB/sec comm ports are brought out to front panel connectors for connection to a wide range of peripheral devices and other 'C40 processor products.

**COMPANY INFORMATION**

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Pentek develops and manufactures modular, open architecture, high performance, board level products and software for DSP, data acquisition and digital receivers.

DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- 100 MFLOPS
- Dual 50 MHz TMS320C40s
- MIX Mezzanine Module
- 10 Front Panel Comm Ports
- MIX Master and Slave
- Up to 5 MB SRAM
- Extensive software support

## SPECIFICATIONS

### Platforms Supported:

MIX Module

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

2

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

50MHz

### Board Size:

Half Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard  
Digital I-O Daughtercard  
Coprocessor Daughtercard  
Digital receivers, E1/T1, SCSI

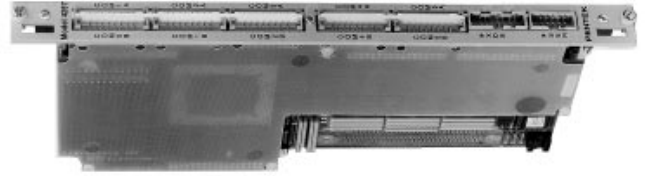
### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4257 is a dual 'C40 co-processor MIX expansion module. MIX is a non-proprietary mezzanine standard developed by Intel for joining high-performance, real-time board products. When used in a MIX sub-system, the Model 4257 provides an additional 100 MFLOPS of processing power. When used with Pentek Models 420x MIX Baseboards, the MIX bus master capabilities of the Model 4257 can be used to move data to and from other MIX modules. The Model 4200 MIX Baseboard allows the Model 4257 to conduct full master operation for both VMEbus and VSBbus. Each 'C40 features six comm ports for high speed communication with other devices or other 'C40 processors. Each port is capable of 20 MB/sec asynchronous bidirectional transfer for maximum communication flexibility. Five of these comm ports from each processor are brought out to front panel connectors, while the sixth one is connected between processors.

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Pentek develops and manufactures modular, open architecture, high performance, board level products and software for DSP, data acquisition and digital receivers.



## FEATURES & BENEFITS

- 20 MB/sec Data Rates
- Two Front Panel 'C40 Comm Ports
- NCR 53C770 Intelligent Controller
- RS-232 Serial Port
- Dual FIFO Data Buffers
- 1 MB Dual Access SRAM Buffer
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

MIX Module

### Host O/S Supported:

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C6x

### Board Size:

Half Card

### External Memory:

SRAM

### Software Included:

Debuggers

Code Generation Tools

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4260 is a SCSI-2 controller for very high-speed data streaming, high-capacity memory buffering, and very fast communication to other SCSI subsystems. 16-bit wide or 8-bit narrow modes are supported, with peak transfer rate of 20 Mbytes/s. Direct connection to low cost, high capacity disk drives is supported with software device drivers. Since all transfers take place locally over either the MIX bus or the front panel comm ports, full host bus bandwidth is maintained. A local 256k x 32 dual-access SRAM provides efficient and convenient staging for input and output data. The SRAM appears as a memory-mapped resource to any MIX bus master, including all Pentek MIX baseboards and 'C40 DSP processor MIX modules. Front panel 'C40 input and output comm port interfaces provide direct bidirectional links between the Model 4260 and Pentek 'C40 DSP boards or other 'C40 comm port peripherals such as A/D and D/A converters, digital receivers, TAXI adapters, and others. Data from these DSP boards or peripherals can be streamed directly to disk or tape. Pentek's Model 4958 FTL File Transfer Language offers a file management system which supports SCSI devices, data acquisition, and signal analysis MIX subsystems.

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.





## FEATURES & BENEFITS

- 16 Channels A/D and D/A
- Direct 'C40 Comm Port I/O
- 48 kHz Max Sampling Rate
- 16-bit Accuracy
- Sigma Delta Anti-Aliasing
- Sample Clock Generator
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

MIX Module

### Host O/S Supported:

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C6x

TMS320C8x

### Board Size:

Half Card

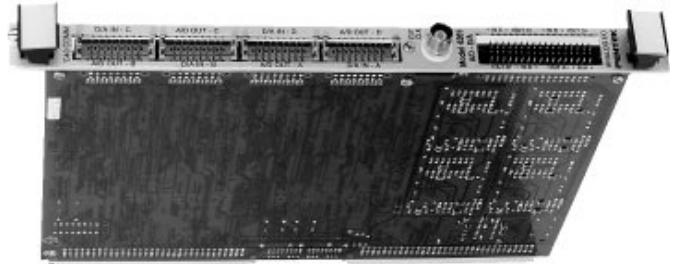
### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4265 is a 16-channel A/D and D/A converter for digital audio applications. Sampled input and output data are tailored to directly interface with the communications ports of the Texas Instruments TMS320C40 DSP. Front panel comm ports connect directly to all of Pentek's 'C40 DSP products. The Model 4265 contains four identical four-channel groups of 16-bit A/D conversion and 16-bit D/A conversion. Two 'C40 comm port interfaces are included in each group. Programmable gain amplifiers at the A/D inputs and programmable attenuators at the D/A outputs may be set individually for each channel. The 16-bit sigma-delta A/Ds provide inherent anti-aliasing digital filtering with sharp cutoff characteristics and linear phase response. The sigma-delta D/As provide oversampled output smoothing filters with linear phase response. The cutoff frequency of the sigma-delta A/D and D/A converters tracks the sampling rate at a fixed ratio of 45%, ideal for most applications. The sampling rate for each group is determined by a local programmable divider driven from two socketed DIP crystal oscillators, an external TTL clock, or an optional programmable frequency synthesizer.

## COMPANY INFORMATION

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.

# PENTEK



## FEATURES & BENEFITS

- 100 MFLOPS
- 6 Front Panel Comm Ports
- Dozens of comm port peripherals
- 4 MB Zero-Wait Global SRAM
- 4 MB Zero-Wait Local SRAM
- VMEbus Slave Interface
- Extensive software support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

2

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

Digital receivers, E1/T1, SCSI

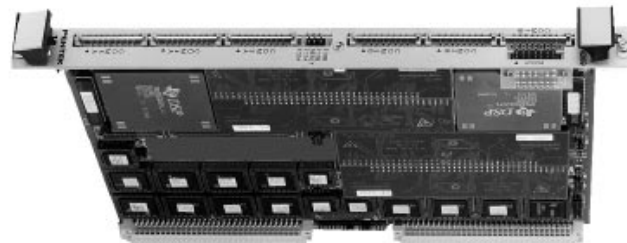
### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support, on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4269 incorporates two Texas Instruments TMS320C40s in a standard 6U single slot VMEbus board with a complete VMEbus slave interface. It features six front panel 'C40 comm ports compatible with a wide range of data acquisition, digital receiver, high speed recording and telecom interfaces. A total of 2 to 4 Mbytes of shared global SRAM is accessible by both 'C40s and the VMEbus by addressing the space allocated for the desired SRAM. This resource simplifies all applications by minimizing the data moves required by less powerful architectures. Zero-wait access is provided between each 'C40 and its own global SRAM, and both 'C40s can be executing from their own global SRAMs simultaneously. Both local and global 'C40 busses can operate at full speed with zero-wait-state performance. A private 1 or 2 Mbyte Local SRAM for each 'C40 maximizes the use of its dual bus architecture and its ability to conduct data and program cycles in parallel on the two busses.

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## FEATURES & BENEFITS

- 200 MFLOPS
- 12 Front Panel Comm Ports
- Compatible with MIX I/O Modules
- 8 MB Shared Global SRAM
- 8 MB Local SRAM
- VME Slave Interface
- Extensive software support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

4

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard, Digital I-O  
Daughtercard, Coprocessor Daughtercard,  
Digital receivers, E1/T1

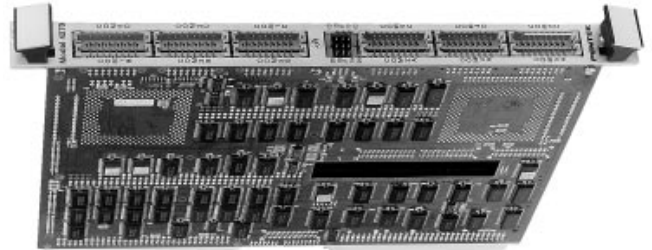
### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support, on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4270 is a Quad TMS320C40 VME Board designed to relieve the bottlenecks associated with the movement of data which often erode the real-time performance of DSP designs. Model 4270 incorporates four Texas Instruments TMS320C40s in a standard 6U single slot VMEbus board with a complete VMEbus slave interface and a MIX mezzanine bus master interface. The Model 4270 includes a total of 4 to 8 Mbytes of local SRAM and twelve front panel 'C40 comm ports compatible with a wide range of data acquisition, digital receiver, high speed recording and telecom interfaces. A total of 4 or 8 Mbytes of Shared Global SRAM is accessible by all four 'C40s, the MIX mezzanine bus, and the VMEbus simply by addressing the space allocated for the desired SRAM. This resource simplifies all applications by minimizing the data moves required by less powerful architectures. Zero-wait-state access is provided between each 'C40 and its own global SRAM, and all four 'C40s can be executing from their own global SRAMs simultaneously. Both local and global 'C40 busses can operate at full speed with zero-wait performance.

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**FEATURES & BENEFITS**

- 10 or 20 MHz A/D
- 12 or 14 bit Resolution
- 512K Sample Data Buffer
- 'C40 Comm Port Output
- Sample Clock Generator
- MIX Mezzanine Module
- Extensive Software Support

**SPECIFICATIONS**

**Platforms Supported:**

MIX Module

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C6x

**Software Included:**

Debuggers

Code Generation Tools

Libraries

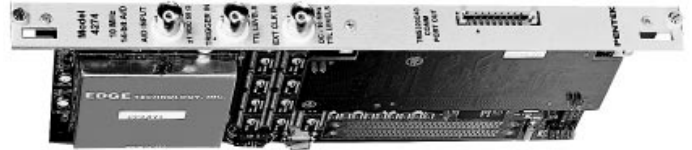
**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

This high-performance A/D converter MIX module with extremely deep on-board memory serves as ideal front end for wideband data acquisition and signal



analysis systems. The dual output capability, using either the 32-bit MIX bus or the 8-bit TMS320C40 front panel comm port, supports many different signal processing requirements and architectures. The heart of the unit is an integrated sample-and-hold amplifier and A/D converter delivering 14-bit resolution at a 10 MHz sampling rate. An input overload condition is detected and latched so that the processor may be warned of a data block of compromised integrity. 12-bit 10 MHz or 20 MHz versions are optionally available. Two 256k x 16-bit data buffers have been arranged in a "swinging buffer" configuration. One buffer is connected to accept data from the A/D converter at a 10 MHz maximum data rate. The second buffer is available to provide sequential samples to the MIX interface, or the front panel 'C40 comm port and behaves like a FIFO (first-in-first-out) memory. When both buffers have completed their operation cycles, the buffers may be configured to automatically swap for the next cycle. This arrangement supports two completely independent data rates for the A/D converter and the output interface.

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- 32 Channels of 16-bit A/D
- 100 kHz Max Sample Rate
- Simultaneous Sample and Hold
- Sigma-Delta Anti-Aliasing Filters
- Sample Clock Generator
- Ideal for Sonar Applications
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

MIX Module

### Host O/S Supported:

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C6x

### Software Included:

Debuggers

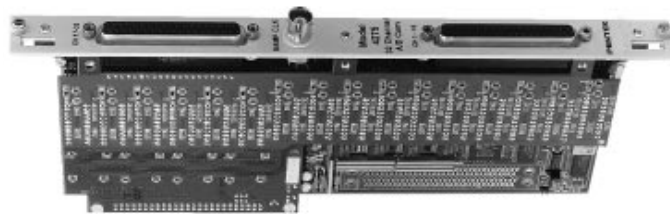
Code Generation Tools

Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 4275 is a 32-channel A/D converter MIX module. It features 32 individual sigma-delta A/D converters with 16-bit resolution, sampling rates to 100 kHz and built-in signal conditioning. Each of the 32 inputs is buffered by an amplifier stage providing  $\pm 5.0$  V full scale input voltage range. Front panel DB-37 connectors provide a convenient method for attaching signal inputs via flat ribbon cable or discrete wiring harnesses. Following the amplifier section are 32 A/D converters, one for each input signal. These converters utilize sigma-delta technology incorporating both the sample-and-hold function and a powerful digital filtering scheme. The digital filtering section performs the anti-aliasing functions, thereby eliminating the need for separate, external low pass filters in most applications. Another major benefit is the linear phase response of these filters, very useful for processing multisensor array signals such as those found in sonar applications, or on-line machine monitoring. Signal-to-noise performance of these converters is 90 dB with peak spurious components better than 90 dB below full scale for signal bandwidths up to 45 kHz.

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**FEATURES & BENEFITS**

- 100 MFLOPS Horsepower
- Dual TMS32C31 DSPs
- 16-bit Accuracy — 48 kHz Rate
- 2 Channels of A/D and D/A
- 3 MB Local and Global SRAM
- VME Slave Interface
- Extensive software support

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX**CPU:**

2

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

50MHz

**Board Size:**

Full Card

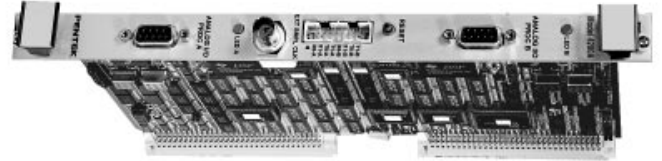
**Memory (DRAM/SRAM):**

SRAM

**Software Included:**Debuggers  
Code Generation Tools  
Libraries**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support, on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 4280A incorporates two Texas Instruments TMS320C31 floating-point DSPs operating at 50 MHz and providing 100 MFLOPS of processing power. In addition, Model 4280A provides four channels of analog I/O to offer a single-slot analog in/analog out solution to DSP problems. Each 'C31 is equipped with a 2-channel 16-bit delta-sigma A/D and D/A converter capable of sampling at up to 48 kHz. The converters include integral input amplifiers, output attenuators, and anti-aliasing digital filters. These linear phase filters track the sampling rate and exhibit extremely sharp rolloffs and flat passband response. Due to the delta-sigma conversion technique employed, all channels may be sampled simultaneously with virtually zero phase delay. Each 'C31 is equipped with a local 1 Mbyte SRAM, and a 32 kbyte EPROM. A shared global 1 MB SRAM is accessible by both 'C31s and by the VMEbus. The shared global SRAM is ideal for downloading programs and data from the VMEbus. Each 'C31 can execute simultaneously from its local SRAM, processing analog inputs and outputs completely independent of the other processor. The shared global SRAM is ideal for inter-processor communication and for passing data to and from the VMEbus.

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**FEATURES & BENEFITS**

- 40 MFLOPS
- Accepts 3 MIX Mezzanine Module
- 8 MB Shared DRAM
- 256 kB Zero-wait SRAM
- Front Panel Serial Ports
- VMEbus Master and Slave
- Extensive software support

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

40MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard, Digital receiver, E1/T1, SCSI

**Software Included:**

Debuggers, Code Generation Tools, Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



**PRODUCT DESCRIPTION**

Serving as the basic platform on which to configure a custom VMEbus MIX sub-system, the Model 4283 incorporates the TMS320C30 to act as a controller and perform high-speed signal processing. Although the Model 4283 has enough power to operate standalone in many applications, its speed and flexibility are enhanced by adding MIX modules. A wide variety of analog I/O MIX expansion modules are available to provide various speed, resolution and multichannel capabilities. A/D and D/A resolution can be as high as 18 bits at 200 kHz, or 14 bits at 20 MHz. Other MIX modules include SCSI interfaces, E1/T1 telecom interfaces, time code readers, and parallel and serial I/O functions. The Model 4283 has both master and slave VMEbus capabilities. As a bus master it can read from and write to the entire 32-bit address space of the VMEbus, thus accessing any external slave device. The Model 4283 can also generate and respond to interrupts. A 1, 4 or 8 MB dual-access DRAM provides an extremely powerful structure for passing data and programs between the 'C30 and the VMEbus.

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- Up to 480 MFLOPS
- 8 Front Panel Comm Ports
- 32 MB Local and Global SRAM
- Up to 64 MB DRAM
- PMC and MIX Mezzanines
- RACEway and VSB Interface
- VME64 Master and Slave

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX

### CPU:

8

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

DRAM

### Expansion Options:

Analog I-O Daughtercard  
 Digital I-O Daughtercard  
 Coprocessor Daughtercard  
 Digital receivers, E1/T1, SCSI

### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES  
 Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

The Model 4285 has a scalable architecture up to eight 60 MHz 'C40 DSPs providing 480 MFLOPS, 16 MB of local SRAM, and 16 MB of global SRAM. Each 'C40 has full simultaneous zero-wait access to both local and global SRAMs. In addition, each 'C40 can access a 1 MB board global SRAM with one wait-state access. A VME64 interface provides bus master access for all eight 'C40s and slave access to the board global SRAM. An optional MIX mezzanine interface allows access to any three of Pentek's dozens of MIX mezzanine modules including A/D, D/A, SCSI, digital receivers, and PCM telecom interfaces. An optional PMC interface supports up to two PCI bus mezzanine modules. Other features include optional VSB interface, eight 20 MByte/sec front panel communication ports, 512-kB Flash memory per processor, an XDS-510 emulator connector, and a suite of comprehensive software development tools for MS-DOS, Sun UNIX, and HP UNIX workstations.

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**FEATURES & BENEFITS**

- Dual 60 MHz 'C80 DSPs
- Interprocessor FIFOs
- 480 MB/sec I/O Bus
- Dual 32 MB Synch DRAM
- VME64 Master and Slave Interface
- PMC Module Site
- Global SRAM and EEPROM

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95, Windows NT, Solaris 2.x

**CPU:**

2

**TMS320 Devices Supported:**

TMS320C8x

**Clock Speeds Available:**

60 MHz

**Board Size:**

Full Card

**External Memory:**

SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard, Video, Digital I/O

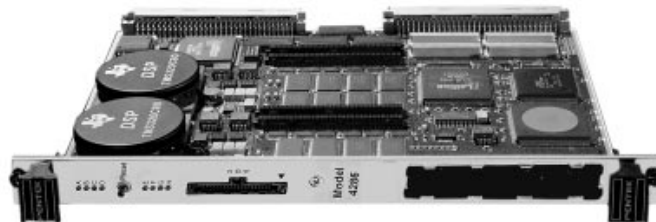
**Software Included:**

Debuggers, Code Generation Tools, Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

The Pentek 4286 is a DSP accelerator VME board featuring up to two TMS320C80s arranged as twin processor cores connected to a common global bus interface. Efficient data transfer and communication between the two processor cores is accomplished through the BIFO interface logic that couples the two processor cores and the PMC expansion interface. The 4286 provides three types of I/O resources: a 32-bit PMC expansion site with 132 MB/sec throughput is attached to each processor core and provides high-throughput industry standard I/O; the MVPbus expansion interface offers daughter boards access to each processor's 64-bit, 480 MB/sec data port and control logic; finally, a master/slave VME64 interface is provided which supports 32- and 64-bit block transfers. Each processor core combines a 'C80 processor with 32 MB of Synchronous DRAM, MVPbus TM expansion interface, a FIFO connection to the PMC expansion interface and the other processor core, and a connection to the board's global bus. Processor cores are tightly coupled via a 2 x 4k x 32 Synchronous BIFO that facilitates efficient, high throughput data transfers and communications between the processors, and the processors and the PMC expansion site.

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## FEATURES & BENEFITS

- Four 200 MHz TMS320C6201s
- 400 MB/sec I/O Mezzanines
- 400 MB/sec Interproc FIFOs
- 4 x 512kB Sync Burst SRAM
- 4 x 16 MB DRAM
- 4 x 256 kB Dual Port SRAM
- VME64 Master and Slave

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 5.2

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard, Digital Receivers

### Software Included:

Debuggers, Code Generation Tools, Libraries

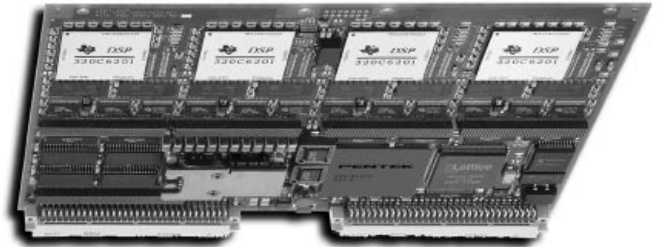
### Technical Support/Training Available:

YES

Applications development staff experienced in real time DSP, digital receivers, data acquisition and recording.

## PRODUCT DESCRIPTION

Model 4290 incorporates four TMS320C6201s in a single-slot 6U VMEbus board to deliver up to 6400 MIPS



of processing power and a wealth of high-speed interface options. Each of the four identical 'C6201 processor nodes features powerful memory and FIFO resources. The Sync Burst SRAM delivers zero-wait state performance for maximum utilization of the 'C6201 data bus at 800 MB/sec. The Sync DRAM provides a large, fast 16 MB work space operating at transfer rates of 400 MB/sec. The 256 kB Dual Port SRAM allows the 'C6201 to efficiently move data between the node and VMEbus. Connecting each processor node is a 1k x 32 BI-FIFO, supporting bi-directional block transfers at rates up to 400 MB/sec minimize data. All four 'C6201s can directly utilize the VME64 master interface to become full VMEbus masters. For extremely high-speed, 32-bit parallel data peripherals such as wideband A/D converters, each of the four mezzanine BI-FIFOs deliver up to 400 MB/sec for input or output streams directly to each 'C6201. Mezzanine board functions include multichannel wide- and narrowband digital receivers, data acquisition subsystems, PCM telecom interfaces for T1/E1, multi-channel codecs, high-speed A/D and D/A converters, a PMC carrier, 'C40 comm port interfaces, and high-speed digital I/O.

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**FEATURES & BENEFITS**

- 8 Channels of A/D and D/A
- 'C40 Comm Port Interfaces
- 16-bit Resolution
- 250 kHz Max Sampling Rates
- FIFO Buffers — Trigger Modes
- 4 Sample Clock Generators
- Extensive Software Support

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C6x

TMS320C8x

**Software Included:**

Debuggers

Code Generation Tools

Libraries

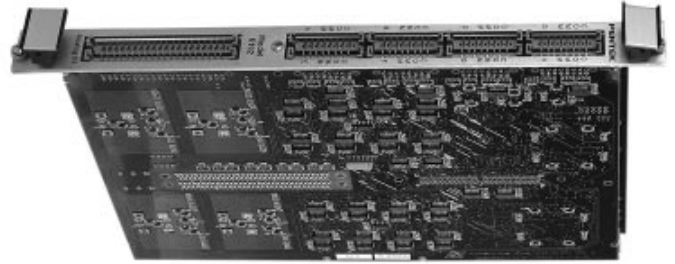
**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6102 is a high-performance 8-channel A/D and D/A converter for VMEbus data acquisition, control, and DSP applications. Model 6102 offers differential



inputs, 16-bit resolution and sampling frequencies to 250 kHz. Digitized data is stored in independent 16k sample FIFOs. Digital I/O data can be delivered to the VMEbus, the MIX bus, or to front panel 'C40-compatible comm ports. Each of the eight comm ports supports a pair of converters, with four comm ports for A/Ds and four for D/As. The VMEbus and MIX bus have full-memory, mapped slave access to all data FIFOs, interrupt controls, sample rate generators, and control registers. All input and output FIFOs can be configured under software control to interrupt the MIX bus or VMEbus on full, half-full and empty conditions. The sampling clock can be supplied from one of four internal sample rate generators, or an external TTL sampling clock. Sampling rates up to 250 kHz for all converters are supported. The Model 6102 is ideal for real-time process control applications where latency and loop delay must be minimized.

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**FEATURES & BENEFITS**

- 8 A/D Converters
- 'C40 Comm Port Interfaces
- 14-bit Resolution
- 2 MHz Max Sampling Rate
- FIFO Buffers - Trigger Modes
- 4 Sample Clock Generators
- Extensive Software Support

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C6x

TMS320C8x

**Software Included:**

Debuggers, Code Generation Tools, Libraries

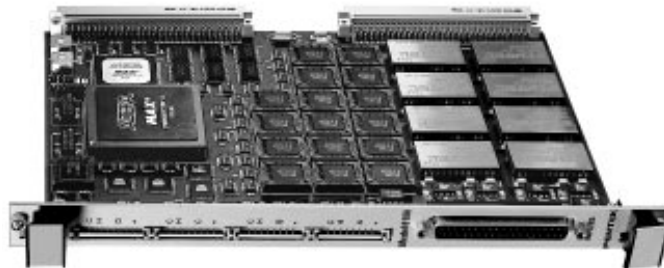
**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6106 is a high-performance, 8-channel A/D converter for VMEbus data acquisition, control, and DSP applications. Model 6106 offers 14-bit resolution, 2 MHz maximum sampling rate, and optional differential inputs. Digitized data is stored in eight independent 16k sample FIFOs. Output data can be delivered to the VMEbus, or to



four front panel 'C40-compatible comm ports. Each comm port delivers data for two A/D channels. Alternately, the comm port associated with channels 1 and 2 can be programmed to deliver data for all channels. The VMEbus interface provides full memory-mapped access to all FIFOs, interrupt controls, sample rate generators, status registers, and control registers. The FIFOs can be configured under software control to interrupt the VMEbus on full, half-full, and not empty conditions. The sampling clock can be supplied from one of four internal sample rate generators, or an external TTL sampling clock. The internal generators include programmable dividers to support four different sampling rates, one for each pair of A/Ds. A front panel TTL trigger input allows data collection to be initiated by positive- or negative-edge transitions, or gated by logic levels. A programmable sample counter interrupts the VMEbus after 2 to 256 samples have been collected.

**COMPANY INFORMATION****Pentek, Inc.**

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.

**FEATURES & BENEFITS**

- 8 A/D Converters
- 'C40 Comm Port Interfaces
- 12-bit Resolution
- 20 MHz Max Sample Rate
- FIFO Buffers - Trigger Modes
- 4 Sample Clock Generators
- Extensive Software Support

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C6x

TMS320C8x

**Software Included:**

Debuggers, Code Generation Tools, Libraries

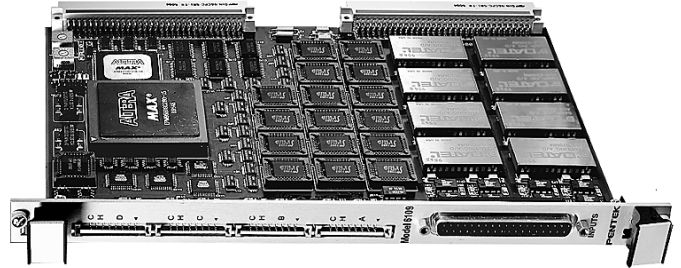
**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6109 is a high-performance 8-channel A/D converter for VMEbus data acquisition, control, and DSP applications. Model 6109 offers 12-bit resolution and 20 MHz maximum sampling rate. Digitized data is stored in eight independent 16 ksample FIFOs. Output data can be delivered to the VMEbus, or to four front panel 'C40-



compatible comm ports. Each comm port delivers data for two A/D channels. Alternately, the comm port associated with channels 1 and 2 can be programmed to deliver data for all channels. The VMEbus interface provides full memory-mapped access to all FIFOs, interrupt controls, sample rate generators, status registers, and control registers. The FIFOs can be configured under software control to interrupt the VMEbus on full, half-full, and not empty conditions. The sampling clock can be supplied from one of four internal sample rate generators, or an external TTL sampling clock. The internal generators include programmable dividers to support four different sampling rates, one for each pair of A/Ds. A front panel TTL trigger input allows data collection to be initiated by positive- or negative-edge transitions, or gated by logic levels. A programmable sample counter interrupts the VMEbus after 2 to 256 samples have been collected.

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**FEATURES & BENEFITS**

- Extends 'C40 Comm Ports
- 12.5 MB/sec Transfer Rates
- Two Full-Duplex Channels
- Over 1 km with fiber optic cables
- Hardware Flow Control
- Isolates Noise Source Pickup
- Compatible with All Pentek 'C40s

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

**Board Size:**

Full Card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

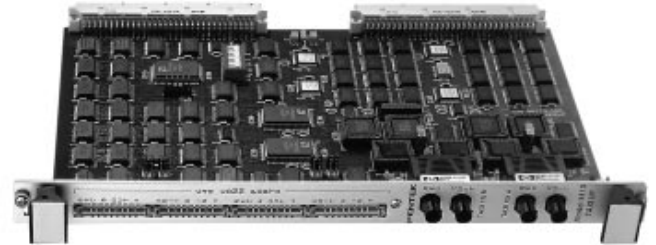
**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6110 is a 6U VMEbus board which allows high-speed long distance connections between Pentek 'C40



DSP processor products and 'C40-compatible peripherals, such as Pentek data converters, telecom interfaces, SCSI controllers and other products. Model 6110 uses high-performance 1300 nm fiber optic transmitters and receivers, which accommodate low-cost fiber optic cable with ST coaxial connectors. The use of optical links eliminates ground loops and noise. Data rates up to 12.5 MB/sec are supported. The receive channel features a 1 ksample FIFO to provide an elastic store for the receiving comm port. Typically, one Model 6110 is installed in each of two VME card cages which may be physically separated by as much as several kilometers. On the transmit side, output data from one 'C40 comm port is connected to the input comm port of the 6110. In the receiving card cage, the comm port output of the 6110 is connected to an input comm port of a 'C40 device. Note that one of the VMEbus devices can be a comm port based peripheral without a 'C40 processor. With a transmit and receive cable pair is installed between two Model 6110s, bidirectional flow control is supported.

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## FEATURES & BENEFITS

- Fibre Channel Interface
- Four 'C40 Comm Ports
- Pentek Parallel Bus
- FPDP Interface
- G-Link Interface
- PMC Module Site
- Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x, HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

50 MHz

### Board Size:

Full Card

### Expansion Options:

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard, PMC Module Site

### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

The Model 6310 Intelligent Multilink Adapter is a single slot 6U VME board which supports a rich variety of very high speed industry standard interfaces. The board includes a 60 MHz Texas Instrument TMS320C40 DSP for control of the interfaces and for optional signal processing or data formatting. Four 'C40 comm ports are optionally brought to VMEbus P2. A Tachyon<sup>®</sup> interface chip supports data formatting and low level protocols for the optional copper Fibre Channel interface using a standard DB-9 front panel connector. An optional PMC module can be attached to the Model 6310 to incorporate the many telecom and networking interfaces now provided in this format as well as RACEway (up to 160 MB/sec) and VSB (up to 40 MB/sec) interfaces. A Pentek front panel parallel bus is available for connection to Pentek digital receivers or high-speed A/D converters. An optional FPDP transmit or receiver interface is also available for high speed industry standard I/O. Two G-Link interface modules can be installed as options to provide two transmit channels, two receive channels or a full duplex link.

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**FEATURES & BENEFITS**

- 2 A/D Channels
- 16-Bit Resolution
- 250 kHz Max Sampling Rate
- Front End for Digital Receivers
- Anti-Aliasing Filters
- Dual Parallel Digital Outputs

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

TMS320C8x

**Clock Speeds Available:**

250 KHz

**Board Size:**

Full Card

**Software Included:**

Debuggers

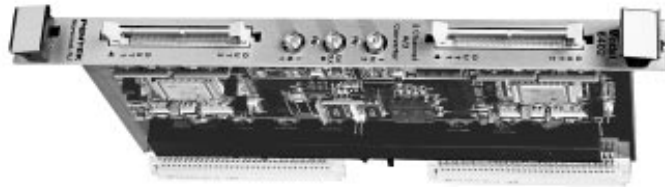
Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6402 is a dual channel 16-bit A/D converter board which operates at a sampling rate of 250 kHz. This single slot VMEbus board accepts  $\pm 5.0$  V full scale analog input signals from front panel SMA connectors with 100-kohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. The oscillator clock is in a standard DIP package and is easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillator and the external clock is made with an on-board jumper. Digitized data from both channels is available on each of two front panel TTL, ECL or FPDIP connectors. Among its other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

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**FEATURES & BENEFITS**

- 2 Channel A/D Converter
- 14-bit Resolution
- 10 MHz Max Sampling Rate
- Anti-Aliasing Filters
- Dual Digital Parallel Outputs
- Front End for Digital Receivers
- Front End for 6099 Memory Buffer

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

TMS320C8x

**Clock Speeds Available:**

10 MHz

**Board Size:**

Full Card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6410 is a dual channel 14-bit, high-speed A/D converter board which operates at a sampling rate of 10 MHz. This single slot VMEbus board accepts  $\pm 1.0$  V full scale analog input signals from front panel SMA connectors with 50-kohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. The oscillator clock is in a standard DIP package and is easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillator and the external clock is made with an on-board jumper. Digitized data from both channels is available on each of two front panel TTL, ECL or FPDP connectors. Among its other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

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**FEATURES & BENEFITS**

- 2 Channel A/D Converter
- 16-bit Resolution
- 10 MHz Max Sampling Rate
- Anti-Aliasing Filters
- Dual Digital Parallel Outputs
- Front End for Digital Receivers
- Front End for 6099 Memory Buffer

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

TMS320C8x

**Clock Speeds Available:**

10 MHz

**Board Size:**

Full Card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



**PRODUCT DESCRIPTION**

Model 6410-016 is a dual channel 16-bit, high-speed A/D converter board which operates at a sampling rate of 10 MHz. This single slot VMEbus board accepts  $\pm 1.0$  V full scale analog input signals from front panel SMA connectors with 50-kohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. The oscillator clock is in a standard DIP package and is easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillator and the external clock is made with an on-board jumper. Digitized data from both channels is available on each of two front panel TTL or FPDP connectors. Among its other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- 2 Channel A/D Converter
- 12-bit Resolution
- 41 MHz Max Sampling Rate
- Anti-Aliasing Filters
- Dual Digital Parallel Outputs
- Front End for Digital Receivers
- Front End for 6099 Memory Buffer

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

### TMS320 Devices Supported:

TMS320C4x

TMS320C6x

TMS320C8x

### CPU:

0

### Clock Speeds Available:

41 MHz

### Board Size:

Full Card

### Software Included:

Debuggers

Code Generation Tools

Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



## PRODUCT DESCRIPTION

Model 6441 is a dual channel 12-bit, high-speed A/D converter board which operates at a sampling rate of 41 MHz. This single slot VMEbus board accepts  $\pm 1.0$  V full scale analog input signals from front panel SMA connectors with 50-ohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. The oscillator clock is in a standard DIP package and is easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillator and the external clock is made with an on-board jumper. Digitized data from both channels are available on each of two front panel TTL, ECL or FPDP connectors. Among it's other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

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**FEATURES & BENEFITS**

- 2 Channel A/D Converter
- 12-bit Resolution
- 65 MHz Max Sampling Rate
- Anti-Aliasing Filters
- Dual Digital Parallel Outputs
- Front End for Digital Receivers
- Front End for 6099 Memory Buffer

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

TMS320C8x

**Clock Speeds Available:**

65 MHz

**Board Size:**

Full Card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



**PRODUCT DESCRIPTION**

Model 6465 is a dual channel 12-bit, high-speed A/D converter board which operates at a sampling rate of 65 MHz. This single slot VMEbus board accepts  $\pm 1.0$  V full scale analog input signals from front panel SMA connectors with 50-kohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. The oscillator clock is in a standard DIP package and is easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillator and the external clock is made with an on-board jumper. Digitized data from both channels are available on each of two front panel ECL connectors. Among its other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

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**FEATURES & BENEFITS**

- 2 Channel A/D Converter
- 10-bit Resolution
- 70 MHz Max Sampling Rate
- Anti-Aliasing Filters
- Dual Digital Parallel Outputs
- Front End for Digital Receivers
- Front End for 6099 Memory Buffer

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

TMS320C8x

**Clock Speeds Available:**

70 MHz

**Board Size:**

Full Card

**Software Included:**

Debuggers

Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

Model 6472 is a dual channel 10-bit, high-speed A/D converter board which operates at a sampling rate of up to 70 MHz. This single slot VMEbus board accepts  $\pm 1.0$  V full scale analog input signals from front panel SMA connectors with 50-ohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. 25, 50 and 70 MHz oscillator clocks are in standard DIP packages and are easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillators and the external clock is made with on-board jumpers. Digitized data from both channels are available on each of two front panel ECL connectors. Among its other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

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## FEATURES & BENEFITS

- Four Wideband Channels
- Dual 12-bit A/D Inputs
- Bandwidths to 20 MHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

70 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

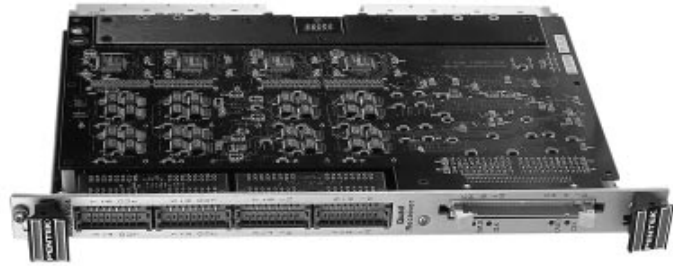
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6504 is a 4 channel wideband digital receiver VME board. It accepts 2 channels of digitized data at sampling rates up to 50 MHz. Parallel digital input data samples



from 2 sources are accepted on a front panel multi-pin connector compatible with a wide variety of Pentek A/D boards. Each receiver channel can accept data from either of the 2 input channels. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 50 MHz / N, where N = 2 to 64. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing is available to provide 16-bit I and Q samples in a single 32-bit word. Another set of front panel 'C40 comm ports can be used for receiver tuning control from the DSP processor.

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## FEATURES & BENEFITS

- Four Wideband Channels
- Four 12-bit A/D Inputs
- Bandwidths to 20 MHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

70 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

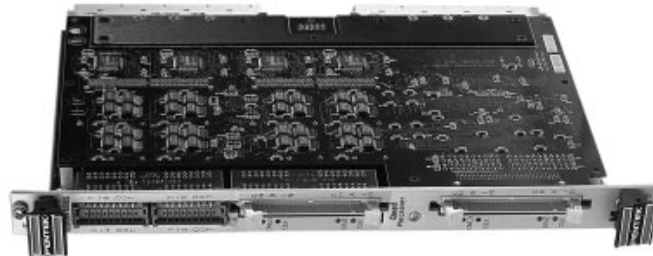
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6505 is a 4 channel wideband digital receiver VME board. It accepts 4 channels of digitized data at sampling rates up to 50 MHz. Parallel digital input data



samples from 4 sources are accepted on front panel multi-pin connectors compatible with a wide variety of Pentek A/D boards. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 50 MHz / N, where N = 2 to 64. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing is available to provide 16-bit I and Q samples in a single 32-bit word. This board provides an effective way to create powerful digital signal processing and analysis systems for selected frequency bands.

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## FEATURES & BENEFITS

- Eight Narrowband Channels
- Two 16-bit A/D Inputs
- Bandwidths to 1 MHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

70 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6508 is an 8 channel narrowband digital receiver VME board. It accepts 2 channels of digitized data at sampling rates up to 70 MHz. Parallel digital input data



samples from 2 sources are accepted on a front panel multipin connector compatible with a wide variety of Pentek A/D boards. Each receiver channel can accept data from either of the 2 input channels. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 70 MHz / N, where N = 64 to 131,072. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing is available to provide 16-bit I and Q samples in a single 32-bit word. Another set of front panel 'C40 comm ports can be used for receiver tuning control from the DSP processor.

## COMPANY INFORMATION

### Pentek, Inc.

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.





## FEATURES & BENEFITS

- Eight Narrowband Channels
- Two 12-bit A/D Inputs
- Bandwidths to 1 MHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

70 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

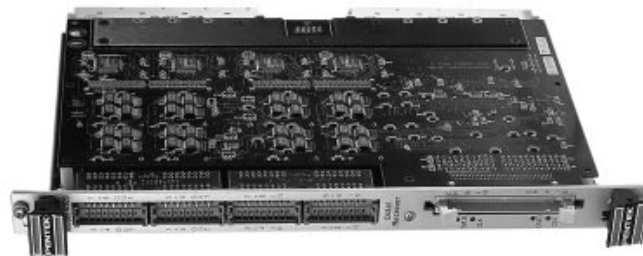
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6509 is an 8 channel narrowband digital receiver VME board. It accepts 2 channels of digitized data at sampling rates up to 70 MHz. Parallel digital input data samples from 2 sources are accepted on a front panel multipin connector compatible with a wide variety of



Pentek A/D boards. Each receiver channel can accept data from either of the 2 input channels. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 70 MHz / N, where N = 64 to 65,536. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing is available to provide 16-bit I and Q samples in a single 32-bit word. Another set of front panel 'C40 comm ports can be used for receiver tuning control from the DSP processor.

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## FEATURES & BENEFITS

- Eight Narrowband Channels
- Four 16-bit A/D Inputs
- Bandwidths to 600 kHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

50 MHz

### Board Size:

Full Card

### Software Included:

Debuggers  
Code Generation Tools  
Libraries

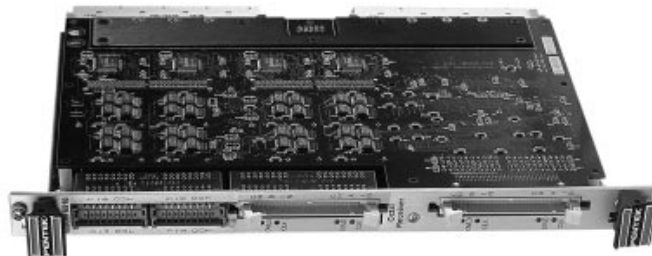
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6510 is an 8 channel narrowband digital receiver VME board. It accepts 4 channels of digitized data at



sampling rates up to 50 MHz. Parallel digital input data samples from 4 sources are accepted on a front panel multipin connector compatible with a wide variety of Pentek A/D boards. Each input channel can provide data to up to 4 of the 8 digital receivers. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 50 MHz / N, where N = 64 to 65,536. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing is available to provide 16-bit I and Q samples in a single 32-bit word.

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## FEATURES & BENEFITS

- 16 Narrowband Channels
- Two 16-bit A/D Inputs
- Bandwidths to 1 MHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

70 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6514 is a 16 channel narrowband digital receiver VME board. It accepts 2 channels of digitized data at sampling rates up to 70 MHz. Parallel digital input data samples from 2 sources are accepted on a front panel



multipin connector compatible with a wide variety of Pentek A/D boards. Each receiver channel can accept data from either of the 2 input channels. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 70 MHz / N, where N = 64 to 131,072. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing options are available to provide 2 16-bit samples in a single 32-bit word. Another set of front panel 'C40 comm ports can be used for receiver tuning control from the DSP processor.

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## FEATURES & BENEFITS

- 16 Narrowband Channels
- Four 16-bit A/D Inputs
- Bandwidths to 600 kHz
- FIFO Data Buffering
- 'C40 Comm Port Interface
- Tunable Center Frequency
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

50 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

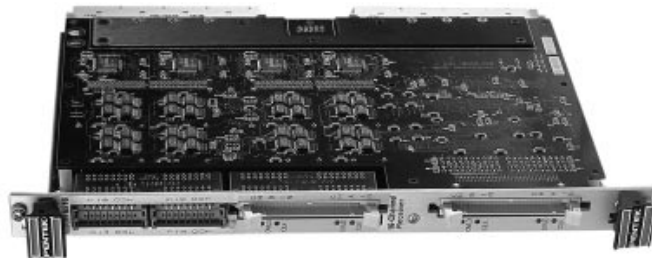
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6516 is a 16 channel narrowband digital receiver VME board. It accepts 4 channels of digitized data at sampling rates up to 50 MHz. Parallel digital input data



samples from 4 sources are accepted on a front panel multipin connector compatible with a wide variety of Pentek A/D boards. Each input channel can provide data to up to 8 of the 16 digital receivers. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 50 MHz / N, where N = 64 to 131,072. The board utilizes highly integrated digital receiver chips containing a tunable digital oscillator, a mixer and a tunable low pass output filter. Receiver tuning, filter and FIFO control in each section is independently programmable over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing options are available to provide 2 16-bit samples in a single 32-bit word.

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.



**FEATURES & BENEFITS**

- 2 Channel A/D Converter
- 14-bit Resolution
- 20 MHz Max Sampling Rate
- Anti-Aliasing Filters
- Dual Digital Parallel Outputs
- Front End for Digital Receivers
- Front End for 6099 Memory Buffer

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host O/S Supported:**

Windows 95

Windows NT

Solaris 2.x

HP-UX, D-UNIX

**TMS320 Devices Supported:**

TMS320C4x

TMS320C6x

TMS320C8x

**Clock Speeds Available:**

20 MHz

**Board Size:**

Full Card

**Software Included:**

Debuggers

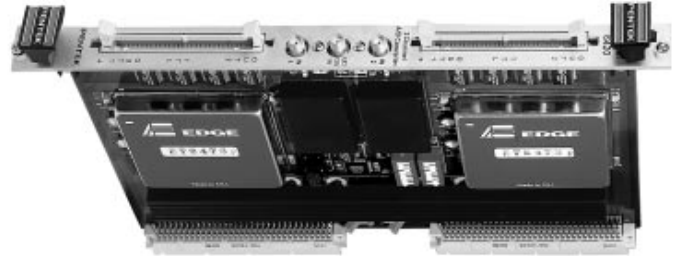
Code Generation Tools

Libraries

**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.



**PRODUCT DESCRIPTION**

Model 6420 is a dual channel 14-bit, high-speed A/D converter board which operates at a sampling rate of 20 MHz. This single slot VMEbus board accepts  $\pm 1.0$  V full scale analog input signals from front panel SMA connectors with 50-kohm input termination. Buffer amplifiers then deliver the signals to low pass anti-aliasing filters, which restrict input bandwidth to approximately 40% of the sampling rate. For systems in which the input signals are already band limited, the on-board anti-aliasing filters can be bypassed. The two channels are identical and operate from the same sample clock. The oscillator clock is in a standard DIP package and is easily replaceable by the user for special frequency requirements. An external sample clock can also be supplied through a front panel SMA connector. Selection between the internal oscillator and the external clock is made with an on-board jumper. Digitized data from both channels are available on each of two front panel TTL or FPDP connectors. Among its other uses, this model is intended as a front end for Pentek's Digital Receivers, the Model 6099 Buffer Memory, and the Model 6310 Multilink Adapter.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- 32 Tunable Narrowband Channels
- Four 14-bit or three 16-bit A/D Inputs
- Beamforming Applications
- Programmable Filter
- 'C40 Comm Port Interface
- Demodulation Hardware Included
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

VME

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

70 MHz

### Board Size:

Full Card

### Software Included:

Debuggers, Code Generation Tools, Libraries

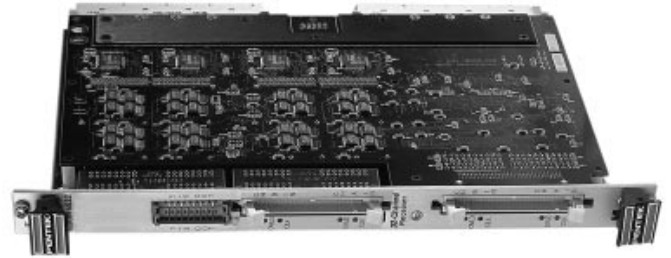
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 6532 is a 32 channel narrowband digital receiver VME board. It accepts 4 channels of digitized data at sampling rates up to 50 MHz. Parallel digital input data samples from 4 sources are accepted on a front panel multipin connector compatible with a wide variety of



Pentek A/D boards. Each of the 32 receivers can independently select any one of the four input sources. Each receiver performs frequency down conversion, lowpass filtering, and decimation of the sampled output. Real and complex modes are supported with an output bandwidth = 50 MHz / N, where N = 64 to 65,536. On-board FPGAs and a 'C40 processor provide flexible data multiplexing as well as preprocessing tasks including summation of multiple channels for beamforming applications. Receiver tuning, filter and multiplexing control in each section is independently programmable by the 'C40 or over the VMEbus providing extremely flexible and agile operation. The receiver output signals are delivered through the VME interface or front panel 'C40 comm ports for implementing DSP functions on Pentek's 'C40 and 'C6x DSP processor boards. Data packing options are available to provide 2 16-bit samples in a single 32-bit word.

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## FEATURES & BENEFITS

- 60 MFLOP Co-Processor
- PCI Mezzanine Card for VME
- Dual 512kB Zero Wait SRAMs
- Four 20 MB/sec Comm Ports
- Compatible with Comm Port Peripherals
- 132 MB/sec PCI Bus
- Extensive Software Support

## SPECIFICATIONS

### Platforms Supported:

PMC Module

### Host O/S Supported:

Windows 95, Windows NT, Solaris 2.x,  
HP-UX, D-UNIX

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60 MHz

### Board Size:

Half Card

### External Memory:

SRAM

### Software Included:

Debuggers, Code Generation Tools, Libraries

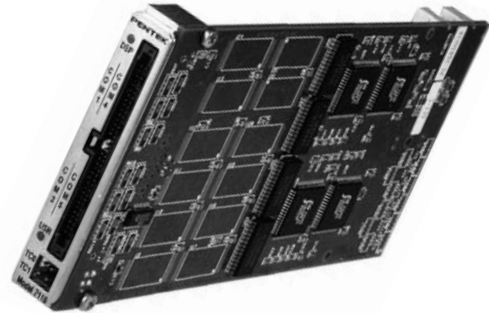
### Technical Support/Training Available:

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

## PRODUCT DESCRIPTION

Model 7110 is a single 'C44 processor PMC (PCI Mezzanine Card) module for digital signal processing. It can be attached to any VMEbus baseboard (made by



Pentek or others) equipped with a PMC interface, to function as a coprocessor to the processor on the baseboard. It can also be used as a high-speed gate-way to other 'C40 or 'C44 VME boards through its four 20 MB/sec front panel comm ports. The PMC module employs a Texas Instruments TMS320C44 DSP processor operating at 50 MHz, or optionally, at 60 MHz. Both local and global buses of the 'C44 are equipped with 512 kB of zero wait-state SRAM, which supports full utilization of its dual bus architecture and delivers 50 MFLOPS processing power. A nonvolatile 512 kB flash EEPROM is provided on the local bus and contains factory-supplied boot code. The PCI interface includes two DMA channels, supports master and slave transfers, and contains four bidirectional FIFO buffers for zero-wait-state burst operation. These FIFOs provide for extremely efficient implementation of the block transfers supported by the 'C44 and the PCI controller and achieve the full 132 Mbyte/sec PCI data transfer rate.

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Pentek manufactures a modular line of high-performance, board level products and software for real-time DSP, data acquisition and digital radio systems.

**FEATURES & BENEFITS**

- Dual 60 MHz 'C80 DSPs
- Interprocessor Bi—BIFO
- Dual 16 MB Synch DRAM
- Four 2 MB Video RAM
- Complete PCI M/T Interface
- Video Interfaces
- Dual Port SRAM

**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows 95, Windows NT, Solaris 2.x

**CPU:**

2

**TMS320 Devices Supported:**

TMS320C8x

**Clock Speeds Available:**

60 MHz

**Board Size:**

Full Card

**External Memory:**

DRAM

**Expansion Options:**

Digital I-O Daughtercard

**Software Included:**

Debuggers, Code Generation Tools

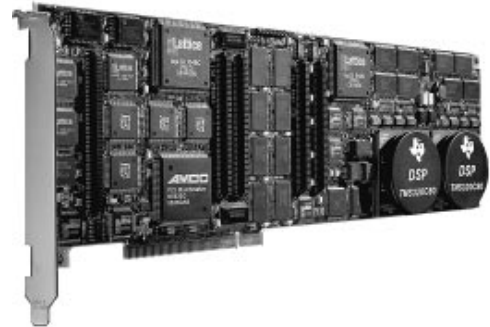
**Technical Support/Training Available:**

YES

Application engineers provide hardware and software support; on-line searchable Knowledgebase for FAQs, latest revs, and documentation.

**PRODUCT DESCRIPTION**

The Pentek Model 7280 is a DSP accelerator for the PCI Bus featuring two TMS320C80 arranged as twin processor



cores connected to a common PCI interface. Efficient data transfer and communication between the two processor cores is accomplished through the BIFO interface logic that couples the two together. The twin BIFO/Dual Port SRAM interface which connects the processors to the PCI controller, minimizes data collisions, increasing the effective processing power of the architecture. Additional I/O is provided via the expansion interface attached to the serial port of the two VRAM banks of memory on each processor. The interface, which also provides access to both sets of video controller signals of the 'C80, allows the board to support multiple video standards, including but not limited to RS-170, NTSC, PAL, RGB and digital camera. Each processor core includes 16 MB of synchronous DRAM, twin 2 MB Video RAM banks (each with 360 MB/sec of I/O), and 0.5 MB of Flash memory. The processor cores are tightly coupled via a 2 x 512k x 64 synchronous BIFO that facilitates efficient, high throughput data transfers and communications between the processors.

**COMPANY INFORMATION****Pentek, Inc.**

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**FEATURES & BENEFITS**

- Parallel DSP Processor @ 2BOPS
- Multi-board configuration
- Optional NTSC/PAL capture module
- Flexible SVGA display
- Concurrent audio/video processing
- 32MByte DRAM, 4MByte VRAM
- Sample application source code

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows NT

**TMS320 Devices Supported:**

TMS320C8x

**Clock Speeds Available:**

40MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

DRAM

**Expansion Options:**

Video capture daughter card

**Software Included:**

Debuggers

Code Generation tools

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Precision Digital Images' Precision MX is a single PCI plug-in card for the PC which brings real-time DSP image processing to the desktop. Precision MX provides integrated video capture, image processing and display with comprehensive software support in one high-performance product. PDI's revolutionary multi-board driver allows for the simultaneous operation of several Precision MX boards in a single system. Implementation of multiple 'C80 digital signal processors in a single system yields increased power in either a parallel or pipelined architecture. The TMS320C80 supports a variety of parallel-processing configurations that facilitate a wide range of multimedia and other applications requiring high processing speeds. Applications include image processing, two-dimensional, three-dimensional, and virtual reality graphics, digital audio and video compression, and telecommunications.

**COMPANY INFORMATION**

**Precision Digital Images**

8520 154th Ave. NE, Bldg. N

Redmond, WA 98052 USA

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Fax: (425) 867-9177

e-mail: rfrierson@precisionimages.com

www: <http://www.precisionimages.com>

Since 1992, PDI has been a leader in the digital imaging arena. Providing the most optimized solutions for the medical, scientific and industrial markets.



DEVELOPMENT BOARDS

**FEATURES & BENEFITS**

- Full development support available
- TMS320C80 for 2 BOPs performance
- Graphics processor and multi-layer display
- Excellent expansion capabilities
- Software includes X11R6 and Primalib library
- Very fast VME64 bus interface
- 32Mb SDRAM, 512kb shared SRAM, 1Mb flash
- Four serial channels

**SPECIFICATIONS****Platforms Supported:**

VME

**Host O/S Supported:**

Windows NT

Solaris 2.5

Various

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C8x

**Clock Speeds Available:**

50MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

32Mb SDRAM, 512kb SRAM

**Expansion Options:**

Analog I-O Daughtercard

Digital I-O Daughtercard

Various

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The C.A.T. provides a single slot solution to a wide range of demanding VME-based graphics and image processing applications. The C.A.T. combines exceptional graphics performance with a flexible expandable design that allows a number of display and I/O daughterboards to be used. The C.A.T. uses the powerful TMS320C80 chip with its RISC processor core and four integral DSP processors to deliver superb X performance along with real-time data processing functions such as radar tracking, video windows, and radar compression. Scan conversion can be performed by the TMS320C80 or externally by one of Primagraphics' family of Vantage cards. A simple upgrade path for existing customers is provided through the use of Primalib, the X Window System and PARIS (Primagraphics Advanced Radar Interface Software). Display daughterboards allow up to four layers with digital switching and mixing. The C.A.T. can host two application daughterboards for system expansion (e.g. video, radar input). The C.A.T. has a VME64 interface, and is supplied with BIT and monitor software in flash memory. Daughterboards available include: radar polar store, video grabber, 2k x 2k high-resolution display controller, single and dual 1600 x 1280 display controller.

**COMPANY INFORMATION****Primagraphics Ltd.**

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Litlington, Nr. Royston

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Tel: +44 1763 852222

Fax: +44 1763 853324

e-mail: sales@primag.co.uk

<http://www.primag.co.uk/catidx.html>

Primagraphics is a specialist graphics and image handling solutions provider, designing and manufacturing high-performance systems for specific customer requirements.

**FEATURES & BENEFITS**

- 40MFLOP peak performance
- Up to 2MBytes/sec. Transfer over ISA bus
- Integrated with several I/O options
- Supports block I/O type transfers
- Memory expansion up to 2MBytes SRAM or 16MBytes DRAM

**SPECIFICATIONS****Platforms Supported:**

ISA

**Host Supported:**

DOS

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

33, 40MHz

**Board Size:**

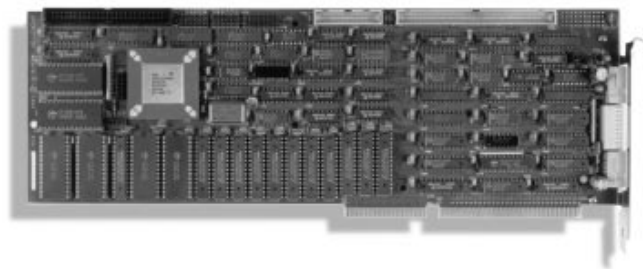
Full card with ISA form factor

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SPIRIT-30 AT/ISA, using a TMS320C30 DSP, provides a robust, low-cost platform for real-time signal processing and applications acceleration. The board has a high-speed peripheral port and two serial interfaces, and is expandable to 2MBytes of SRAM. For larger storage capacity, 16MBytes of DRAM can be added. Unlike systems based on a dual-port host interface, the SPIRIT-30 AT/ISA allows full 16-bit access to its entire SRAM memory via a set of registers in the I/O address space of the PC host. The host has the capability to reset, interrupt, enable/disable, read status, and control SPIRIT-30 operations via a control register. Similarly, the SPIRIT-30 can interrupt the host. A wide range of tools is available for rapid prototyping and implementation of applications on the SPIRIT-30 AT/ISA. This includes a run-time library, a debugger, optimized signal processing design software and optimized DSP libraries.

**COMPANY INFORMATION****RadiSys Corp., DSP Division**

2 Wells Ave.

Newton, MA 02159-3208 USA

Tel: (800) 628-6502

Fax: (617) 235-2531

e-mail: [info@radisys.com](mailto:info@radisys.com)www: [http://www.radisys.com/products/dsp/sp30\\_isa.html](http://www.radisys.com/products/dsp/sp30_isa.html)**RadiSys**



**FEATURES & BENEFITS**

- 32-bit TMS320C32 floating point DSP
- RS-232 Interface
- 8-, 16-, or 32-bit addressability
- Memory extension up to 2M bytes SRAM

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

DOS

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C32

**CPU:**

1

**Clock Speeds Available:**

40MHz

**Board Size:**

Half AT/ISA

**Memory (DRAM/SRAM):**

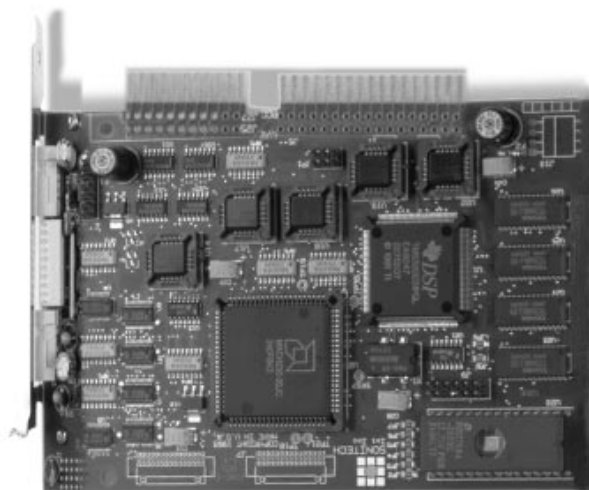
SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SPIRIT-32 AT/ISA is a high performance DSP board for a wide range of embedded applications in control, acoustics, telecommunication, and instrumentation. Off the main memory bus is a zero wait-state SRAM memory, Flash PROM, and an RS-232 interface. An MPSD emulator port and PEC (processor expansion connector) also are brought out from the main bus. The PEC features two timers, two interrupts, and two software controllable I/O flag lines. Unlike systems based on a dual-port host interface, the SPIRIT-32 allows full 16bit access to SRAM memory via a set of registers in the I/O address space on the PC host. This allows the use



of string I/O instructions which execute faster than DMA on most PC machines. RadiSys' run time library (RTL) provides a high level interface that eliminates the need for the user to directly deal with assembly programming for the hardware interface. The host has the capability to reset, interrupt, enable/disable, read status, and control SPIRIT-32 operations via a control register. Similarly, the SPIRIT-32 can interrupt the host via one of four interrupt levels. Various memory configurations are available. The SRAM is expandable to 2MBytes of zero wait-state.

**RadiSys Corporation**

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www: <http://www.radisys.com>

RadiSys designs and manufactures a wide range of standard and custom embedded and stand-alone products, including TI DSP-based data and signal processing solutions.

**RadiSys**



**FEATURES & BENEFITS**

- Low latency A/D (< 23 µsec.)
- 8 Ch. A/D, 8 Ch. D/A, 12-Bit
- 60MFLOP floating-point DSP
- Simultaneous sampling
- I/O Bus expansion
- Digital I/O Bus
- RS-232 and high speed serial interface

**SPECIFICATIONS**

**Platforms Supported:**

Stand-alone

**TMS320 Devices Supported:**

TMS320C32

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

8.6 x 4 inches

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SPiRiT-32 E88 is a high-performance, integrated I/O and DSP system specifically designed for embedded applications with very low latency requirements and demanding control/feedback processing algorithms. The SPiRiT-32 E88 features 8 channels of A/D and 8 channels of D/A simultaneously sampled at up to 20kHz. The A/D front-end offers a 2-pole Butterworth anti-aliasing filter per channel and sample and hold. The D/A section offers 12bit resolution and a 1-pole smoothing filter. A/D data is transferred to the DSP processor, via DMA, without intervention by the DSP processor. This unique design maximizes the cycles available for processing by reducing the number of cycles required for data acquisition. The digital I/O on the SPiRiT-32 E88 includes 8 inputs and 8 outputs, a DSP timer, and interrupt signals for system integration. The system also features a connector for modular I/O expansion daughter cards with extra memory, additional processors, or custom I/O. The I/O expansion connector includes 32 data lines, 24 address lines, and all the necessary control signals for extending the DSP bus. In addition, a DSP serial bus enables data transfers at rates up to 8Mbit/sec. A complete suite of development tools is offered with the SPiRiT-32 E88.

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RadiSys designs and manufactures a wide range of standard and custom embedded and stand-alone products, including TI DSP-based data and signal processing solutions.

**RadiSys**

**FEATURES & BENEFITS**

- Floating point DSP and I/O in a single slot
- High accuracy with built-in anti-aliasing
- Stand-alone operation
- RS-232 serial interface
- Easy control of external devices with digit
- 4 Ch. A/D, D/A 48KHz per channel (Optional)

**SPECIFICATIONS****Platforms Supported:**

PC/104

**TMS320 Devices Supported:**

TMS320C32

**CPU:**

1

**Clock Speeds Available:**

40MHz

**Board Size:**

PC/104 form factor

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

Coprocessor daughter card

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SPIRiT-32 PC/104 is a high-performance integrated DSP and I/O system designed for a wide range of applications, including acoustics, instrumentation, and vibration analysis. This addition to the RadiSys C32-based series combines four 16-bit A/D, D/A channels with a floating point DSP, all in the PC/104 form factor. The SPIRiT-32 PC/104 design supports a TMS320C32 processor with 40-, 50-, or 60MFLOP peak processing power. Off the main DSP memory bus is a zero-wait state SRAM (expandable to 128k x 32), two on-chip memory banks of 256 words, an in-circuit MPSD Emulation Port, and a Flash PROM (1Mbit) to hold program and data. The analog front-end provides four simultaneous input and output channels at programmable rates up to 48kHz per channel. A/D data is transferred to the DSP via DMA. This design maximizes the number of DSP clock cycles available for signal processing by eliminating the need to control data acquisition from the DSP. In addition to an RS-232 connector, the SPIRiT-32 has two general purpose digital I/O lines and two timers and an optional telephone line interface. RadiSys provides a suite of development tools for the SPIRiT-32 and numerous optimized DSP functions for the C32 DSP.

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RadiSys designs and manufactures a wide range of standard and custom embedded and stand-alone products, including TI DSP-based data and signal processing solutions.



**FEATURES & BENEFITS**

- Up to four 1600 MIPS TMS320C6201 DSPs at 200 MHz
- Targeted for telecommunications applications
- H.100/110 switch for data access to the DSP, I/O, and i960Rx
- i960Rx processor for cPCI host interface and I(2)O driver support
- Master and slave cPCI transaction capability
- Dual or Quad E1/T1 Daughter Module on PMC form factor

**SPECIFICATIONS**

**Platforms Supported:**

cPCI

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C6x

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**PRODUCT DESCRIPTION**

The SPIRIT-6000 is a high performance integrated I/O, DSP and Switch system designed for telecom applications. Based on TI's latest and most powerful TMS320C6x generation of devices, the SPIRIT-6000 is a 200 MHz engine with an I/O connector that provides an interface to telecom data from various physical layers. The SPIRIT-6000 uses a TMS320C6201 fixed point processor which uses VelociTI advanced VLIW architecture. The External Memory Interface (EMIF) of the C6x provides a glueless interface to SDRAM (up to 32 Mbytes max.). The EMIF provides a programmable refresh controller and a 1/2 CPU synchronous clock for SDRAM operation. In addition to SDRAM, the SPIRIT-6000 also has 512 Kbytes of zero wait-state SBSRAM, two on-chip memory banks of 16K words, interface to H.100 switch and an i960RP processor via the Host Port Interface (HPI). A Flash PROM of 2Mbytes is also provided on the board to hold program and data. platforms: cPCI and PCI

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RadiSys designs and manufactures a wide range of standard and custom embedded and stand-alone products, including TI DSP-based data and signal processing solutions.

**RadiSys**

**FEATURES & BENEFITS**

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- For user request, we do a cooperative development

**SPECIFICATIONS**

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**Platforms Supported:**

PCI PC

**Host Supported:**Windows NT  
UNIX's for req.  
Custom-Piggy**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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A PCI-based modular C44 board for customizable development

**COMPANY INFORMATION**

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**RoBioMat**

6511 Ivory Ash Court  
Kingwood, TX 77346 USA  
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Fax: (713) 812-2052  
e-mail: polyp@robiomat.com  
e-mail: info@robiomat.com



**FEATURES & BENEFITS**

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- Real-time video processing
- High data rate throughput

**SPECIFICATIONS**

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**Platforms Supported:**

PCI PC plug-in

**Host Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SDRAM

**Software Included:**

Preprocessor

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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The PCI-Board is designed for the C6201, 5 ns cycle time. The major priority during the development was high data throughput. The flexibility of the PCI-board, based on the modular design, allows different application out of the video area. Modifications off the video front-end are possible.

**COMPANY INFORMATION**

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**SICAN GmbH**

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SICAN's performance spans conception and development up to the realisation of microelectronic modules, software solutions and entire hard, and software systems.





**FEATURES & BENEFITS**

- Two-third-length plug-in PCI board with complete DSP, onboard SRAM, analog I/O and dual-port RAM host PC interface
- 40- or 60MHz 32-bit floating-point TI TMS320C32 (50- or 33nsec instruction cycle)
- 32- or 128k x 32 of onboard zero-wait-state SRAM
- Eight channels of 16-bit 100kHz SAR analog input with 1,2,4,8x prog. gain, and two channels of 16-bit 100kHz SAR analog output
- 4:1 diff-ended or 8:1 single-ended multiplex option on each analog channel input allows up to 64 total channels to be acquired
- 16-bit parallel and 15Mbaud sync. serial port digital I/O

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC Plug-in

**Host Supported:**

Windows 3.1, Windows 9x, Windows NT

**TMS320 Devices Supported:**

TMS320C32

**CPU:**

1

**Clock Speeds Available**

40- & 60MHz

**Board Size:**

Two-thirds

**Memory (DRAM/SRAM):**

Up to 512k x 32 SRAM

**Expansion Options:**

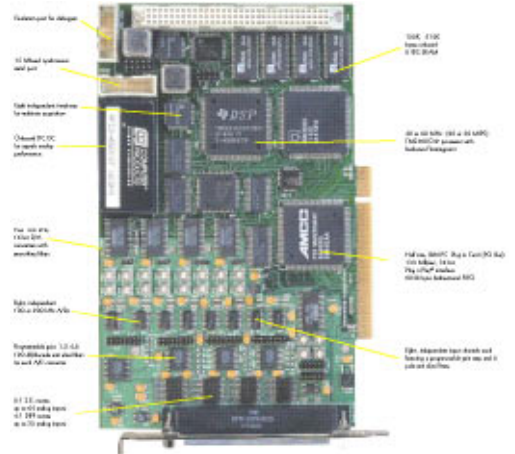
Analog I/O, digital I/O

**Software Included:**

Debuggers, Code Generation tools, Libraries

**Technical Support/Training Available:**

YES. Technical support is available from 9am to 9pm CDT at 214-343-0069 or via e-mail at dspinfo@signallogic.com



**PRODUCT DESCRIPTION**

The ADC64 combines the power of the 32-bit floating-point TMS320C32 DSP with up to 64 channels of analog data acquisition. The TMS320C32 is a low-cost version of Texas Instrument's TMS320C30 device, and includes two onchip DMA channels, 32-bit synchronous serial port, two 32-bit timers, and JTAG 1149.1 boundary scan interface. Primary applications include servo control, telecommunications, speech processing, vibration measurement and analysis, signal synthesis and applications requiring multiple sensors.

**COMPANY INFORMATION**

**Signallogic, Inc.**

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www: http://www.signallogic.com

Signallogic specializes in DSP development tools and PC-based OEM products, including software, hardware, PC104, embedded and real-time systems, data acquisition, MATLAB, LabView and Visual Basic interfaces.



DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- 92dB SNR typical sigma-delta converters
- 50- or 60MHz TMS320C31
- 32-, 128-, 512-, or 640K x 32 OWS SRAM
- 4-ch 16-bit sigma-delta analog I/O w/typ SNR
- JTAG debug connector
- 7.5" x 4.25" compact size (half-size)
- Supported by MATLAB, C, VB, LabView interface

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C31

### CPU:

1

### Clock Speeds Available

50- & 60MHz

### Board Size:

Half card

### Memory (DRAM/SRAM):

up to 640k x 32 SRAM

### Software Included:

Debuggers, Code Generation tools, Libraries

### Technical Support/Training Available:

YES. Technical support is available from 9am to 9pm CDT at 214-343-0069 or via e-mail at [dspinfo@signallogic.com](mailto:dspinfo@signallogic.com)

## PRODUCT DESCRIPTION

The SigC31-4 combines a powerful Texas Instruments 50 or 60MHz TMS320C31 32-bit floating-point DSP, up to 640k x 32 SRAM, and four channels of simultaneously sampled analog input and output on a 7.5" PC plug-in board. Each channel contains 16-bit sigma-delta A/D and D/A converters with typical dynamic range greater than 90dB. The sigma-delta technology gives each channel automatic anti-aliasing and reconstruction filters which track with the programmable sampling rate, and nearly ideal out-of-band rejection and linear phase. Sampling is synchronous among all channels, and sampling rates range from 4kHz to 48kHz; software filtering and decimation can be used to achieve lower sampling rates. An onboard JTAG 1149.1 port allows connection to the standard Texas Instruments high-level language real-time debugger. The SigC31-4 is fully supported by Hypersignal-Macro, DSPower-Block Diagram, and DSPower-HWLib software.

## COMPANY INFORMATION

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www: <http://www.signallogic.com>

Signallogic specializes in DSP development tools and PC-based OEM products, including software, hardware, PC104, embedded and real-time systems, data acquisition, MATLAB, LabView and Visual Basic interfaces.



**FEATURES & BENEFITS**

- High-Speed, Low-Cost DSP/Acquisition
- 1/2 size ISA board w/ DSP, SRAM, analog I/O
- 40-60MHz, 32-bit floating-point 'C32
- 32-640K x 32, OWS SRAM
- 2-ch 200kHz 16-bit analog I/O
- resistor-prog. input gain + inst. amps.
- 16-bit parallel external digital I/O
- EPROM or Flash EEPROM site

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1  
Windows 9x  
Windows NT

**TMS320 Devices Supported:**

TMS320C32

**CPU:**

1

**Clock Speeds Available**

40-, 50- & 60MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

Up to 640k x 32 SRAM

**Expansion Options:**

Analog I/O, digital I/O

**Software Included:**

Debuggers  
Code Generation tools  
Libraries

**Technical Support/Training Available:**

YES. Technical support is available from 9am to 9pm CDT at 214-343-0069 or via e-mail at dspinfo@signallogic.com

**PRODUCT DESCRIPTION**

The SigC32-2 board combines the power of a 32-bit floating-point TMS320C32 DSP with two channels of 16-bit analog I/O and up to 640k x 32 of SRAM. Burr-Brown SAR A/D and D/A converters connected directly to the TMS320C32 serial port are used to help pack the entire functionality into a low-cost, half-length ISA plug-in board. Primary applications are in the fields of instrumentation grade measurement, high-resolution control systems, radio electronics, medical systems, vibration measurement and analysis, and high-frequency acoustic and audio measurement and analysis.

**COMPANY INFORMATION**

**Signallogic, Inc.**

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Signallogic specializes in DSP development tools and PC-based OEM products, including software, hardware, PC104, embedded and real-time systems, data acquisition, MATLAB, LabView and Visual Basic interfaces.







## FEATURES & BENEFITS

- The most versatile IP module available
- IP logic interface supervised by TMS320C50
- DSP and FPGA process 10+MHz sampling rates
- FPGA dynamically reconfigures
- 5k to 56k gate XC4000 FPGA options
- 50 FPGA-defined I/O signals
- 1024x9x2 bidirectional FIFO, 32k 16-bit SRAM

## SPECIFICATIONS

### Platforms Supported:

VME, ISA, PCI PC

### Host Supported:

Windows 3.1, Windows 95, Windows NT

### TMS320 Devices Supported:

TMS320C5x

### CPU:

1

### Clock Speeds Available:

80MHz

### Board Size:

3.9" x1.8" x 0.606"

### Memory (DRAM/SRAM):

SRAM

### Software Included:

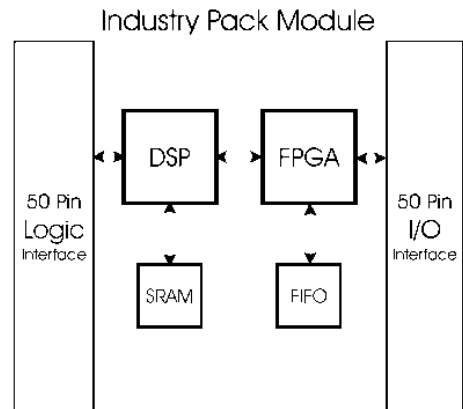
Libraries

### Technical Support/Training Available:

Tech support by phone or on site, on a per-hour basis.  
Design services for custom FPGA programs.

## PRODUCT DESCRIPTION

The DSP-FPGA IP combines the power of a TI DSP(C50) with a high density Xilinx FPGA on a single-size type II module. The 5k to 56k FPGA is dynamically reconfigurable under DSP control. Fast SRAM and FIFO provide substantial data buffering. The I/O interface is connected directly to the FPGA for maximum flexibility of user defined I/O. The logic



interface is managed by the DSP to allow software flexibility in communication with other parts of the system. FPGA and DSP team up well for data acquisition and reduction, beginning with 10+MHz sampling and reducing it to acceptable bus rates. Applications of the module are not restricted by the bandwidth of the IP bus interface. The DSP-FPGA IP is a versatile module that provides a convenient level of modularity for implementing a wide range of control, interface, and digital I/O functions. Applications include interface to high speed A/D and D/A's, custom parallel interfaces, industrial control, neural network signal processing, multiple serial interfaces, decimating filter in data acquisition, high speed discrete I/O and retrofitting custom hardware interfaces.

## COMPANY INFORMATION

### SIGNALWARE Corporation

P. O. Box 50225

Colorado Springs, CO 80949-0225 USA

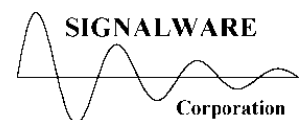
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e-mail: [djnewman@signalware.com](mailto:djnewman@signalware.com)

www: <http://www.signalware.com/dsp>

Hardware design, software and prototypes for DSP and real-time, embedded microprocessors. Experienced in ultra-sonics, video, radar, welding, cellular, neural nets and satellites.





**FEATURES & BENEFITS**

- DSP and FPGA combine for very fast processing
- Dynamically configurable FPGA — 3k-19k gates
- 32k 16-bit external OWS SRAM
- 1024x9x2 bidirectional FIFO
- RS-422 buffered sync. and asynch. serial ports
- Buffered discrete I/O (4in, 8 out)
- Generic parallel I/O port under FPGA control

**SPECIFICATIONS**

**Platforms Supported:**

Stand-alone

**Host Supported:**

RS-232 or JTAG

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

1

**Clock Speeds Available:**

40MHz

**Board Size:**

7.75" x 4.375" x 2.375"

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

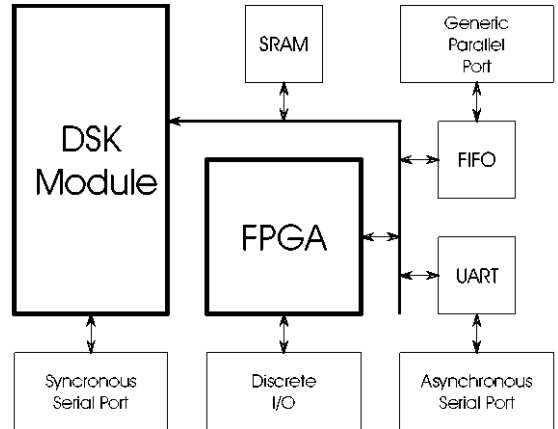
Libraries

**Technical Support/Training Available:**

Tech support by phone or on site, on a per-hour basis. Design services for custom FPGA programs.

**PRODUCT DESCRIPTION**

The prototype kit demonstrates the speed, power and flexibility of a DSP combined with an FPGA. The kit includes a TI C50 DSK, Xilinx 4003/5202 FPGA, UART, FIFO, SRAM, circuit board, and enclosure, combined with socketed ICs and front panel connectors for durability and easy repair, suited for a prototyping environment. TI's DSK consists of a



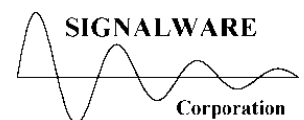
TMS320C50 40MHz fixed point DSP processor, and an AIC for audio frequency analog I/O. The kit includes demonstration software for the C50, FPGA configuration modules, and a dynamic FPGA loader. These programs are useful as a starting point for custom code. Applications include: C40 parallel port interface, parallel printer interface, feedback control and an all-purpose interface adapter. The kit can be purchased preassembled.

**COMPANY INFORMATION**

**SIGNALWARE Corporation**

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 www: <http://www.signalware.com/dsp>

Hardware design, software and prototypes for DSP and real-time, embedded microprocessors. Experienced in ultra-sonics, video, radar, welding, cellular, neural nets and satellites.



DEVELOPMENT BOARDS



**SPECIFICATIONS**

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**Platforms Supported:**

ISA  
PCI PC  
Ethernet

**Host Supported:**

Windows 95  
Windows NT

**Board Size:**

Full card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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SimPhonics has developed reliable DSP, 16-Bit analog I/O boards and VPLus visual programming software. Please see our WEB site for full data and pricing.

**COMPANY INFORMATION**

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**SimPhonics, Inc.**

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www: <http://www.simphonics.com>

SimPhonics produces high fidelity digital audio systems for the simulation and training industry; with VPLus, the latest advance in engineering design software technology.





## FEATURES & BENEFITS

- Reference Designs Included
- Software examples for various motors
- Graphical PC user interface
- 128kwords of RAM, 16k Flash
- Serial port and JTAG interfaces
- Realtime debugging support
- Flash programming capability

## SPECIFICATIONS

### Platforms Supported:

Stand alone  
Serial and JTAG

### Host Supported:

Windows 95

### TMS320 Devices Supported:

TMS320C2xx

### Clock Speeds Available

20MHz

### Board Size:

75 x 115

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Power Modules

### Software Included:

Debuggers  
Libraries

### Technical Support/Training Available:

Technical support via Email and training is available

## PRODUCT DESCRIPTION

The Softronics 'C240 MDS provides a versatile modular motor development platform consisting of: Controller Module, Icepack. The C240 MDS module provides a migration path from the MDS system to proprietary products allowing easy connection of more elaborate motor control designs., The Controller Module features the 16-bit, fixed-point TMS320F240 (20MIPS). The 'C240MDS Controller Module provides 16kwords of one board flash memory, and also provides an additional 128K words of RAM for those more demanding algorithms. A user interface allows communication via its RS-232 port for tuning and graphical responses display the behavior of the system to disturbances and parameter variations. The 'C240 MDS also offers full featured real-time debugging through the JTAG port. When combined with the Softronics "IcePack" Debugger, a full motor controls development-environment allows the total control of the application and manipulation of variables and code segments in real-time without halting the processor. Flash programming is also available. The extended software that comes with C240 MDS provides royalty free ready-to run examples for basic motion control applications including DC servos, three- phase induction, DC brushless, permanent magnet synchronous and stepper motors.

## COMPANY INFORMATION

### Softronics

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Ferntree Gully, Victoria 3156 Australia  
Tel: +61 3 9758 4883  
Fax: +61 3 9752 2757  
e-mail: anthony@softronics.com.au  
www: <http://www.softronics.com.au>

Softronics provides DSP development tools and evaluation boards for a number of DSP families and also provides algorithms and reference designs.



## FEATURES & BENEFITS

- TMS320C50/C51 DSP (40 MIPs) standalone
- 64kword program/data 0 wait-state RAM
- 32kword EPROM
- Windowed assembly language debugger
- Onboard RS-232 serial port (UART)
- Standard JTAG interface onboard
- Compatible with XDS510PP, XDS510

## SPECIFICATIONS

### Platforms Supported:

Standalone

### Host Supported:

Windows 3.1  
Windows 95  
DOS

### CPU:

1

### TMS320 Devices Supported:

TMS320C50/C51

### Clock Speeds Available:

80MHz

### Board Size:

160mm x 100mm

### Memory (DRAM/SRAM):

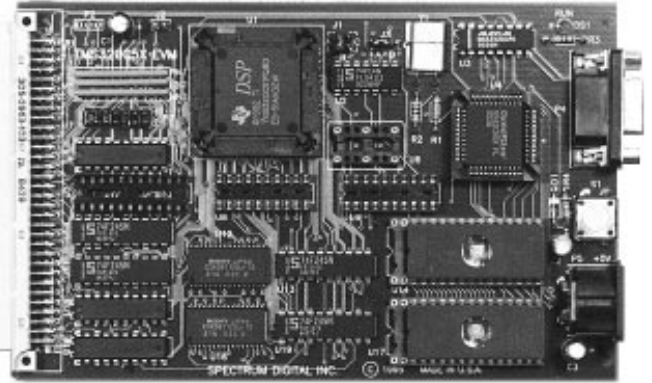
SRAM

### Software Included:

Debuggers

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The EVM320C5x is a 3U-sized standalone controller board designed for system evaluation, prototyping and application development for the TMS320C50 and TMS320C51 DSPs. This module delivers 40MIPs performance. The 96-pin DIN connector provides the user access to the DSP signals to aide in assembly language debugging, a PC-based windowed debugger is shipped with the board. This board is compatible with the XDS510 PP portable scan path emulator.

Documentation includes manual with schematics, PAL equations, and theory of operation.

## COMPANY INFORMATION

### Spectrum Digital, Inc.

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Houston, TX 77099 USA

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## FEATURES & BENEFITS

- Standalone TMS320C203 and TMS320F206 DSPs
- 64kword program and data 0 wait-state memory
- 32kword onboard Flash memory
- TLC320AD55 Sigma Delta AIC onboard
- 4 expansion connectors for prototyping card
- Additional onboard UART
- Standard JTAG interface onboard

## SPECIFICATIONS

### Platforms Supported:

Standalone

### Host Supported:

Windows 3.1

Windows 95

### TMS320 Devices Supported:

TMS320C203/F206

### CPU:

1

### Board Size:

160mm, x 100mm

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The EVM320C203/F206 is a 3U-sized single board computer designed for system evaluation and application development of the TMS320C203 and TMS320F206 DSPs. This cost effective, standalone module is an ideal platform for hardware prototyping and debugging algorithms. The EVM320C203 and EVM320F206 deliver 40MIPs and 20MIPs performance, respectively. Four expansion connectors bring out signals for custom-user logic. The companion wire-wrap prototyping module allows users to tailor input conditioning and output drive circuitry to a specific application. The DB2X RS232 High Level language Debugger is also available for both the C203 and F206 version of the EVM. This board is compatible with the XDS510PP portable scan path emulator and code generation tools from TI.

Documentation includes manual with schematics, PAL equations, peripheral data sheets and theory of operation.

## COMPANY INFORMATION

### Spectrum Digital, Inc.

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e-mail: [sales@spectrumdigital.com](mailto:sales@spectrumdigital.com)

www: <http://www.spectrumdigital.com>





## FEATURES & BENEFITS

- Standalone TMS320C548 at 66MHz or TMS320C549 at 80MHz
- 192kword 0 wait program memory
- 64kword 0 wait state data memory
- 32kword Flash boot ROM
- TLC320AD55 AIC onboard
- Additional onboard UART
- 4 expansion busses plus JTAG

## SPECIFICATIONS

### Platforms Supported:

Standalone

### Host Supported:

Windows 3.1

Windows 95

### TMS320 Devices Supported:

TMS320C54x

### CPU:

1

### Clock Speeds Available:

C548 = 66MHz

C549 = 80MHz

### Board Size:

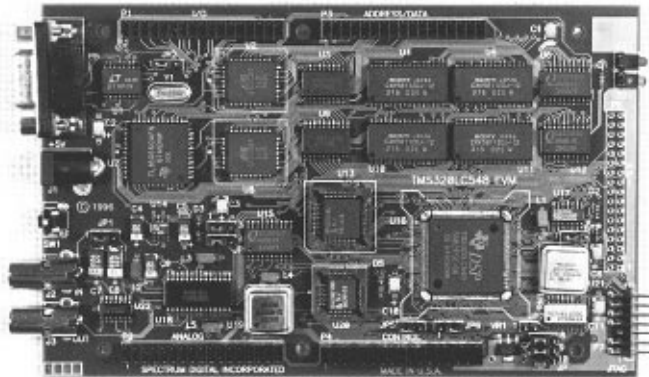
160mm, x 100mm

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The EVM320C548/C549 is a 3U-sized single board computer designed for system evaluation and application development of the TMS320C548/C549 DSP. This cost-effective, standalone module is an ideal platform for hardware prototyping and debugging algorithms. The onboard TLC320AD55 AIC provides 1 channel of analog input and output. Four expansion connectors allow custom logic to be added with a companion wire wrap prototyping card. This module has the standard JTAG interface which operated with the XDS510PP Scan-path Emulator. The EVM320C548/C549 is compatible with TI's fixed-point code generation tools.

Documentation includes manual with theory of operation, complete schematics and PAL equations.

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## FEATURES & BENEFITS

- Standalone TMS320F240 Single Board Computer
- 64kword program/data 0 wait-state RAM
- 32kwords Flash in program space
- MP7680 DAC (4 chan, 12-bit) onboard
- Labdrive Interface and Inverter Module plug-ons
- Additional onboard UART
- Standard JTAG interface onboard

## SPECIFICATIONS

### Platforms Supported:

Standalone

### Host Supported:

Windows 3.1

Windows 95

### TMS320 Devices Supported:

TMS320F240

### CPU:

1

### Board Size:

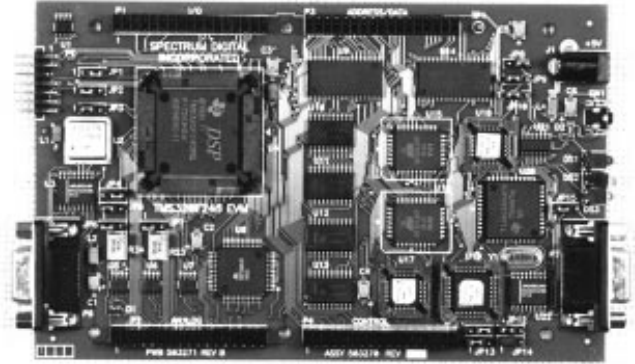
160mm, x 100mm

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The EVM320F240 is a 3U-sized single-board computer designed for systems evaluation and application development of the TMS320F240 DSP. This cost-effective, standalone module is an ideal platform for hardware prototyping and debugging motor control algorithms. Accessory Labdrive Interface and Inverter modules complete the motor application development suite. The EVM320F240 delivers 20MIPs performance. The F240 EVM also operates with the DB2XXX RS232 'C' High Level Language Debugger and the portable XDS510PP Scan Path Emulator. The EVM320F240 is compatible with TI's fixed-point code-generation tools.

Documentation includes manual with theory of operation, schematics, PAL equations, and peripheral data sheets.

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**FEATURES & BENEFITS**

- Enhances DSK capabilities
- Provides UART serial port
- STDIO printf, scanf, putchar, getche included
- Provides 8 latched outputs
- Provides 8 state output LEDs
- Improves the DSK's capabilities

**SPECIFICATIONS**

**Platforms Supported:**

CompactPCI

**Host O/S Supported:**

Windows NT, Solaris, VxWorks

**CPU:**

4

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

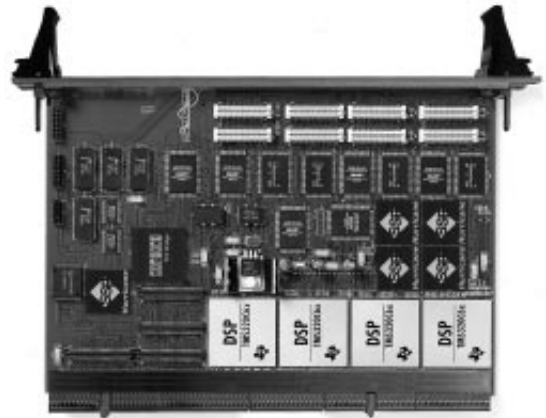
Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Barcelona Dual or Quad TMS320C6201 CompactPCI-based Product — Dual or Quad 1600 MIPS, 200 MHz TMS320C6201 DSPs — FastTrack board architecture eliminates double handling of data — Comprehensive software tools including: Host Interface Library and Drivers, Barcelona board support, DSP Library, Code Composer IDE multi-processor debugger via PCI bus



Diamond, a Real-time DSP OS — 2MB of SBSRAM and 64MB of SDRAM (max) — 2K x 32 quad port memory for low latency and deterministic inter-processor communication — Distributed shared memory provided by SBSRAM — Hurricane, a single chip PCI bridge optimized for DSP systems — Flexible I/O interfaces include: Processor Expansion Module providing 400 MBytes/s per DSP, Industry standard PMC providing a sustained data rate of more than 100 MBytes/s, DSP~LINK3 providing 40 MBytes/s for interfacing to Spectrum I/O and other open I/O solutions — IndustryPack® (IP) support for over 150 different industry standard I/O modules. Barcelona is a dual or quad 'C6x processor cPCI-based product. Its high I/O bandwidth and full suite of software tools allow Barcelona to fully utilize its 6400 MIPS. FastTrack Architecture Barcelona is based on Spectrum's innovative "FastTrack" architecture. Fast Track makes use of Spectrum's revolutionary "Hurricane", a single chip PCI bridge optimized for DSP.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Free Lifetime Technical Support
- Up to seven 50/60 MHz TMS320C4x DSPs
- Three TIM-40 module sites
- Up to 1M x 32 0ws SRAM for embedded DSP
- Up to 512k x 32 1ws SRAM shared between all DSPs
- PEROM for boot-strapping
- PEROM for boot-strapping
- DSP~LINK3 interface

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows 95, Windows NT

**CPU:**

1-7

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

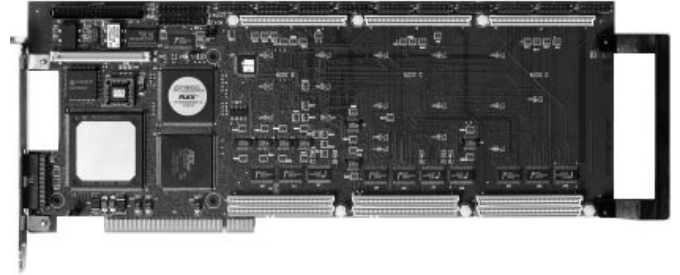
SRAM

**Expansion Options:**

Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

Dakar TMS320C44-Based PCIbus Processor Board — Up to seven 50/60 MHz TMS320C4x processors using TIM modules — Up to 420 MFLOPS PCI Master/Slave DSP board with TIM-40 modules — Three TIM-40 module sites offer a wide range of memory and I/O options — 132 MBytes/s peak transfer rates from 32-bit PCI (Master/Slave) Local Bus — Up to 1M x 32 0ws SRAM for the embedded processor — Up to 512k x 32 1ws SRAM shared between processors — Real-time multi-processor C Source debugging using JTAG — PEROM for boot-strapping and identification — 10 comm ports — DSP~LINK3 interface for connection to IndustryPack® carriers and modules — I/O board site for Spectrum's I/O board or custom I/O — Comprehensive software support. The Dakar is designed around Texas Instruments' TMS320C4x parallel DSP to meet the needs of fast processing and real-time embedded applications. The Dakar features one embedded 'C44 processor, three TIM-40 module sites, 10 external communication ports, a JTAG emulation port, a shared memory architecture, a PCI Master/Slave interface, and an optimized decoupled I/O interface.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Free Lifetime Technical Support
- FastTrack board architecture
- 1MB of SBSRAM and 32MB of SDRAM (max)
- 2K x 32 dual port memory
- Distributed shared memory
- "Hurricane, a single chip PCI bridge
- Flexible I/O interfaces include IndustryPack™ (IP) support

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows NT

**CPU:**

2

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

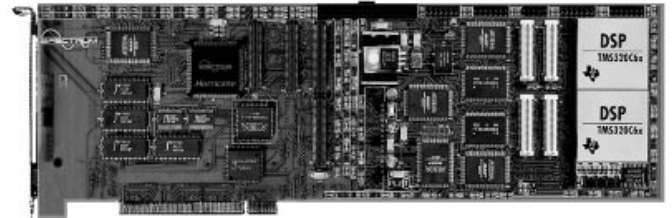
Analog I-O Daughtercard

Digital I-O Daughtercard

Coprocessor Daughtercard

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

Daytona Single or Dual TMS320C6201 PCI-Based Product — Single or Dual 1600 MIPS, 200 MHz TMS320C6201 DSPs — FastTrack board architecture eliminates double handling of data — Comprehensive software tools including: Host Interface Library and Drivers, Daytona board support DSP Library, Code Composer IDE multi-processor debugger via PCI bus, Diamond, a Real-time DSP OS — 1MB of SBSRAM and 32MB of SDRAM (max) — 2K x 32 dual port memory for low latency and deterministic inter-processor communication — Distributed shared memory provided by SBSRAM — Hurricane, a single chip PCI bridge optimized for DSP systems — Flexible I/O interfaces include: Processor Expansion Module providing 400 MBytes/s per DSP, Industry standard PMC providing a sustained data rate of more than 100 MBytes/s, DSP~LINK3 providing 40 MBytes/s for interfacing to mezzanine site and other open I/O solutions — IndustryPack® (IP) support for over 150 different industry standard I/O modules. Daytona is a single or dual 'C6x processor PCI-based product. Its high I/O bandwidth and full suite of software tools allow Daytona to fully utilize its 3200 MIPS.

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http://www.spectrumsignal.com/Daytona.pdf



DEVELOPMENT BOARDS





**FEATURES & BENEFITS**

- Free Lifetime Technical Support
- Comprehensive software tools
- 500KB of SBSRAM
- 16MB of SDRAM
- 500KB of Asynchronous SRAM
- Flexible I/O interfaces
- IndustryPack™ (IP) support
- Spectrum Technical Support

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I-O Daughtercard

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

Detroit Single TMS320C6201 PCI-Based Product — Single 1600 MIPS, 200 MHz TMS320C6201 (‘C6x) DSPs — Comprehensive software tools including: Host Interface Library and Drivers, Detroit board support DSP Library, Code Composer IDE multi-processor debugger via PCI bus, Diamond, a Real-time DSP OS — Memory includes: 500KB of SBSRAM, 16MB of SDRAM, 500KB of Asynchronous SRAM — Flexible I/O interfaces include: Processor Expansion Module providing 400 MBytes/s into ‘C6x external memory interface bus, DSP~LINK3 providing 40 MBytes/s for interfacing to mezzanine site and other open I/O solutions — IndustryPack® (IP) support for over 150 different industry standard I/O modules. Detroit is a single ‘C6x processor PCI-based product. Its high I/O bandwidth and full suite of software tools allow Detroit to fully utilize its 1600 MIPS. Detroit supports Spectrum’s cross-platform ‘C6x architecture. This allows developers to share software and I/O across Spectrum’s PCI, VME, and cPCI-based products. Detroit can be used as a development platform for Spectrum VME or cPCI-based systems.

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Free Lifetime Technical Support
- 40 or 60 MHz TMS320C32
- Up to 1 MByte of Ows SRAM
- Embedded stand-alone operation
- On-board I/O Module site
- DSP~LINK3 parallel interface
- 16 inputs / 16 outputs or 32 inputs of TTL
- Win95 and NT device drivers

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 95  
Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C3x

**Clock Speeds Available:**

60 MHz

**Board Size:**

Half Card

**Memory (DRAM/SRAM):**

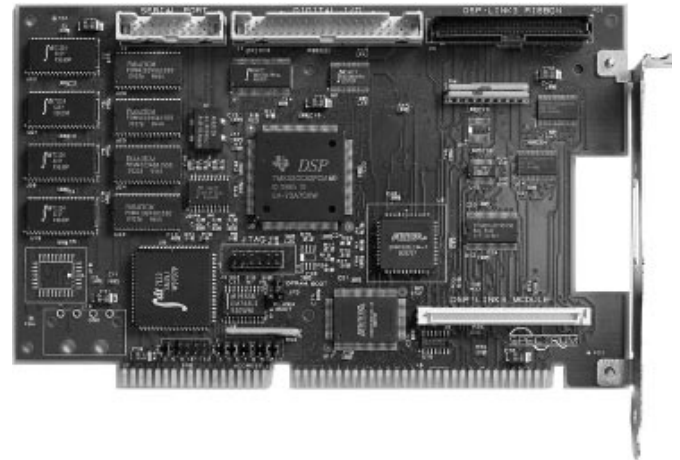
SRAM

**Expansion Options:**

Analog I-O Daughtercard

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

Indy 'C32-Based ISA Processor Board — 40 or 60 MHz TMS320C32 floating-point DSP — Up to 1 MByte of Ows SRAM — 16-bit ISA Bus interface — Embedded stand-alone operation using flash EPROM — On-board I/O Module site for single slot solutions — DSP~LINK3 parallel interface for IndustryPack® I/O expansion — 16 inputs / 16 outputs or 32 inputs discrete digital TTL I/O — Win95 and NT device drivers — Comprehensive software support. The Indy is a two-thirds length ISA-compatible card based on the Texas Instruments TMS320C32 floating-point processor. Due to its flexible memory, DSP and I/O configurability, the Indy can be tailored for differing applications and cost requirements.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Free Lifetime Technical Support
- Two embedded 60 MHz TMS320C40 DSPs
- 840 MFLOPS VXIbus Master/Slave
- HP Local Bus
- 4 to 64MB of DRAM shared
- Eight buffered front panel comm ports
- Single-slot VXIbus C-Size compliant
- Broadcast write from VXIbus and HP Local Bus

**SPECIFICATIONS**

**Platforms Supported:**

VXI

**Host O/S Supported:**

Windows 95, HP-UX

**CPU:**

2-14

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

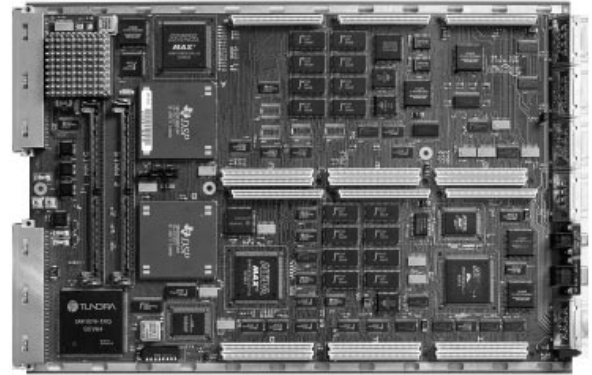
Coprocessor Daughtercard

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

LeMans TMS320C4x-Based VXIbus Master Board — Two embedded 60 MHz TMS320C40 DSPs with support for 6 TIM-40 sites that can carry an additional 12 'C4x processors — 840 MFLOPS VXIbus Master/Slave DSP board — HP Local Bus supports



HP's VXIbus I/O boards — Broadcast write from VXIbus and HP Local Bus — 4 to 64MB of DRAM shared with VXIbus and all TIM-40 sites — Each 'C40 can read and write to any 'C40's Global memory (1ws within a page) — Eight buffered front panel comm ports — Single-slot VXIbus C-Size compliant — Driver support for HP-UX and Windows '95. The LeMans is a VXIbus board based on Texas Instruments' TMS320C4x DSPs. It features two on-board 60 MHz TMS320C40 DSPs for a base 120 MFLOP DSP sub-system which supports shared memory, VXIbus master/slave, and the HP Local Bus. Processing power and memory capacity can be increased to 840 MFLOPS by populating the six available TIM-40 module sites with Spectrum's comprehensive range of TIM modules. The LeMans hosts six TIM-40 module sites to accommodate a combination of single or double-width TIM-40 modules with SRAM, EDRAM, DRAM, or I/O.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Free Lifetime Technical Support
- Up to 480 MFLOPS VME64 Master/Slave
- Four TIM-40 module sites
- Shared bus memory architecture
- 10 comm ports available at front panel
- DSP~LINK3 interface
- I/O board site
- A serial port (full duplex UART)

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host O/S Supported:**

Windows NT, Solaris, VxWorks

**CPU:**

1-8

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60 MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

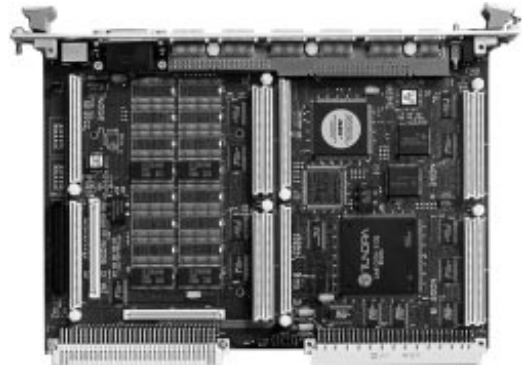
Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Maranello TMS320C4x-Based VME64bus Master Board — Octal configuration using Twin TIM modules (eight 60 MHz TMS320C44S) — Up to 480 MFLOPS VME64 Master/Slave DSP board with TIM-40 modules — Four



TIM-40 module sites offer wide range of memory and I/O options — Shared bus memory architecture (Up to 8MB) — 10 comm ports available at front panel — DSP~LINK3 interface for connection to IndustryPack (TM) carriers and modules — I/O board site for Spectrum's I/O board or custom I/O — A serial port (full duplex UART) — Real-time multiprocessor C Source debugging using JTAG — Comprehensive software support. Maranello offers a complete set of solutions for DSP-based applications on the TMS320C4x processor. The Maranello features four TIM-40 module sites, 10 external communication ports, a JTAG emulation port, application specific ports, a shared memory architecture, a VME64 Master/Slave interface, a UART, and an optimized de-coupled I/O interface. Scalable and Modular Architecture Maranello's scalable, modular architecture enables the use of high-performance, industry standard options providing flexibility through different I/O expansion and TIM modules. A range of system building blocks conforming to the TIM-40 industry standard are available including digital radio, DSP acceleration, memory and multi-processor modules.

**COMPANY INFORMATION**

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<http://www.spectrumsignal.com/catalog/MARANELLO.PDF>



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Free lifetime support
- Comprehensive software tools
- 2MB of SBSRAM and 64MB of SDRAM
- Hurricane: PCI — DSP bridge
- Flexible I/O interfaces
- IndustryPack® (IP) support
- PMC Module site
- 6400 MIPS

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host O/S Supported:**

Windows NT, Solaris, VxWorks

**CPU:**

4

**TMS320 Devices Supported:**

TMS320C6x

**Clock Speeds Available:**

200

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

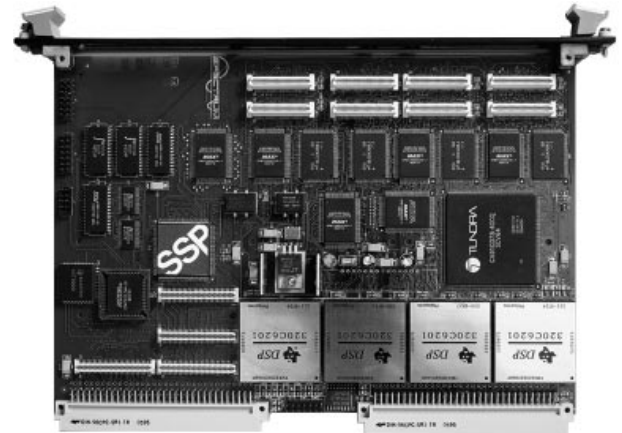
Analog I-O Daughtercard, Digital I-O Daughtercard, Coprocessor Daughtercard

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Monaco Single, Dual or Quad TMS320C6201 VME-based Product — Single, Dual or Quad 1600 MIPS, 200 MHz TMS320C6201 DSPs — Comprehensive software tools including: Host Interface Library and Drivers, Monaco board support, DSP Library, Code Composer,



IDE multi-processor debugger via VME bus, Diamond, a Real-time DSP OS — 2MB of SBSRAM and 64MB of SDRAM (max) — Hurricane, a single chip PCI bridge optimized for DSP systems — Flexible I/O interfaces include: Processor Expansion Module providing 400 MBytes/s per DSP, Industry standard PMC providing sustained data rate of more than 100 MBytes/s, DSP~LINK3 providing 40 MBytes/s for interfacing to Spectrum I/O and other open I/O solutions — IndustryPack® (IP) support for over 150 different industry standard I/O modules. Monaco is a single, dual or quad 'C6x processor VME-based product. Its high I/O bandwidth and full suite of software tools allow Monaco to utilize its full 6400 MIPS. Architecture: Monaco's internal bus architecture is designed to feed data to the four 'C6x processors at more than 1700 MBytes/s. Each 'C6x on the Monaco can directly master the VME bus. Monaco's architecture takes advantage of Spectrum's revolutionary "Hurricane" bridge-chip.

**COMPANY INFORMATION**

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<http://www.spectrumsignal.com/catalog/Monaco.pdf>



DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Four DDCs / Two DSPs in one double-width TIM
- 10-bit 70MS/sec A/D
- 1.25G-bits/sec GLink serial bus
- Unlimited number of DDCs in chain
- Low-Pass filter reduces A/D input noise
- 128k x 32 OWS SRAM per C44 Local Bus
- Clock In/Clock Out allows Spa synchronization

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40

**Host Supported:**

N/A

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available**

50MHz

**Memory (DRAM/SRAM):**

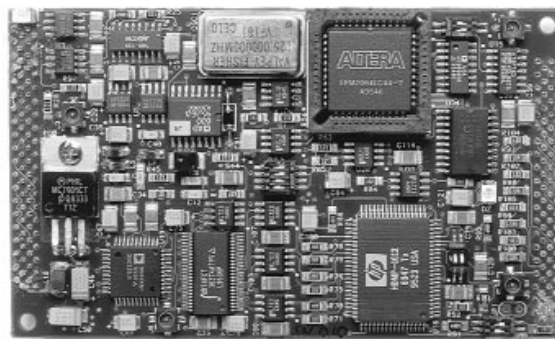
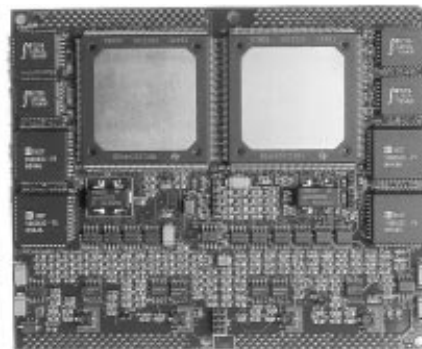
SRAM

**Technical Support/Training Available:**

Unlimited technical support

**PRODUCT DESCRIPTION**

TIM-DDC is a Quad Digital Receiver, Dual C44 TIM-40 module that has two GLink receivers and two GLink transmitters. Combined with TIM-MAI, this module makes up a narrow-band receiver module set that is capable of performing digital demodulation of radio signal up to 30MHz. Radio signals from High Frequency (HF) to microwave frequency can be monitored using the TIM-DDC and TIM-MAI narrow-band receiver module set. These signals are first down-converted to 12kHz, 30MHz Intermediate Frequency (IF) range using conventional analog circuitry including a local oscillator, mixer and appropriate filters. TIM-MAI samples the IF signal at up to 70MHz with



12-bits of resolution. A high-speed serial channel call "GLink" is used to transfer digital data to any number of TIM-DDC modules. For use on Maranello, LeMans, and Dakar TIM-40 carrier boards.

**COMPANY INFORMATION**

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Spectrum Signal Processing is the leading supplier of DSP system solutions. Spectrum offers DSP software, off-the-shelf hardware, custom ASIC design and complete custom systems.



**FEATURES & BENEFITS**

- 50/60MHz TMS320C40 processor
- Up to 2MBytes of OWS SRAM with 50MHz version
- Up to 8MBytes of OWS SRAM with 60MHz version
- Six 20MByte/sec comm ports brought off module
- Global expansion connector
- EEPROM for bootstrapping and ID
- Single width module

**SPECIFICATIONS****Platforms Supported:**

TIM-40

**Host Supported:**

N/A

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available**

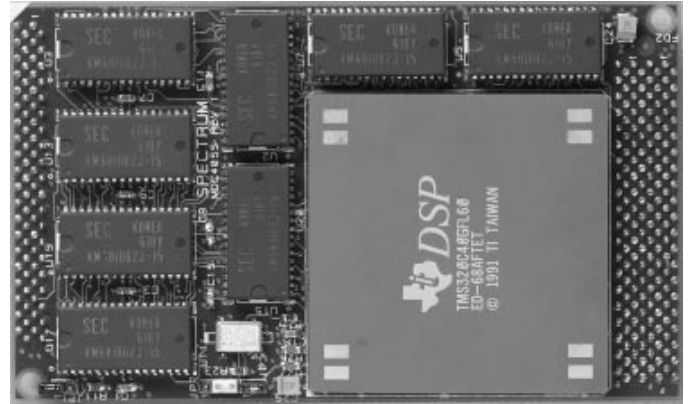
60MHz

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

Unlimited technical support

**PRODUCT DESCRIPTION**

TIM-DSP1 features a TMS320C40 parallel signal processor. It has been designed to comply with the Texas Instruments TIM-40 module standard. The TIM-DSP1 architecture delivers the full performance and capability of the TMS320C40 in both signal processor and multi-processor systems. The C40's six-channel DMA controller supports true concurrent I/O, independent of and in parallel with the CPU, allowing efficient interprocessor communications and minimizing data-flow bottlenecks.

**COMPANY INFORMATION****Spectrum Signal Processing Inc.**

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Spectrum Signal Processing is the leading supplier of DSP system solutions. Spectrum offers DSP software, off-the-shelf hardware, custom ASIC design and complete custom systems.





**FEATURES & BENEFITS**

- Two 50/60MHz TMS320C44
- Single-width TIM-40 module
- Up to 4 MByte of OWS SRAM per processor
- Global expansion connector
- EEPROM for bootstrapping and ID
- Six 20MByte/sec comm ports brought off module

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available**

60MHz

**Memory (DRAM/SRAM):**

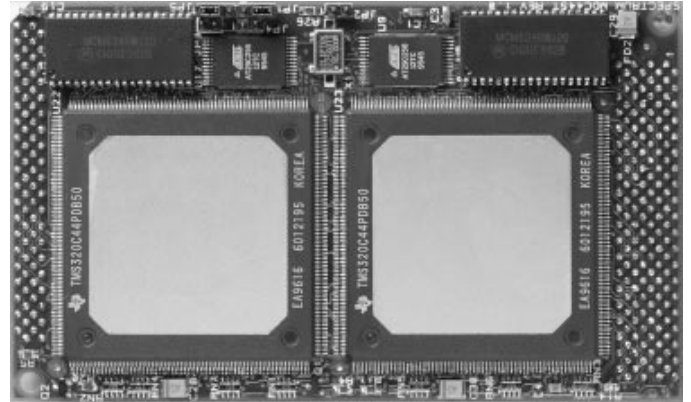
SRAM

**Technical Support/Training Available:**

Unlimited technical support

**PRODUCT DESCRIPTION**

TIM-DSP2 is one of a range of DSP modules from Spectrum that feature a TI TMS320C44 parallel digital signal processor. The 5 MB configuration has one bank of 512k x 32 zero-wait-state SRAM per TMS320C44 local bus and 128k x 32 OWS SRAM per TMS320C44 global bus. The 2MByte and 8MByte configurations have one bank of 128k x 32 or 512k x 32 zero-wait-state SRAM, respectively, per TMS320C44 local and global bus. Each 'C44 also has a 32k x 8 EEPROM on its local bus the may be used to hold system configuration information or as a general non-volatile storage area. The EEPROM also allows the TIM-DSP2 to run independently from a host by booting from the on-module ROM.



DEVELOPMENT BOARDS

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

---

- TIM memory expansion
- Use no TIM carrier sites
- Up to 8Mbytes Ows SRAM
- Uses inverted Global bus connector
- Can be used with SMT3xx/M TIMs
- Full Global memory bandwidth
- No software required

**SPECIFICATIONS**

---

**Platforms Supported:**

TIM-40

**Host O/S Supported:**

Windows NT

Solaris

**CPU:**

0

**TMS320 Devices Supported:**

TMS320C4x

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**COMPANY INFORMATION**

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**Sundance Multiprocessor Technology Ltd.**

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[www.sundance.com/smt3xm.htm](http://www.sundance.com/smt3xm.htm)

Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



# SMT300 4-SLOT TIM PC MOTHERBOARD

by Sundance Multiprocessor Technology Ltd

## FEATURES & BENEFITS

- Very low power consumption
- 8-bit PC/AT ISA card
- Internal double-pipeline communications
- Eight user-selectable 'C40 links
- Non-volatile host interface configuration

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1

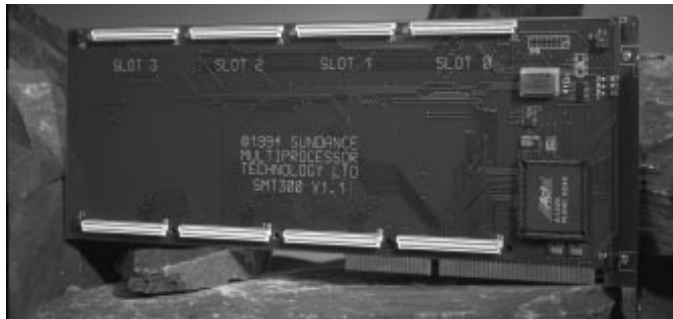
Windows 95

### TMS320 Devices Supported:

TMS320C40, TMS320C6x

### Board Size:

Full card



## PRODUCT DESCRIPTION

The SMT300 is a low-cost TIM-40 standard-compatible motherboard, which slots into an expansion slot of an IBM PC/AT ISA machine. Each motherboard has four TIM-40 module sites. The TIM motherboard uses a simple 8-bit PC ISA interface. Communication between SMT300 and PC host is achieved through a block of registers which map into the PC's I/O address space. The PC host appears to a TIM-40 module in Slot 0 as a normal 'C40 link connection. The double-pipeline architecture provides a sustained interprocessor bandwidth of 36MBytes/sec. The board has no JTAG interface or comm-port buffers. Minimum logic makes the SMT300 ideal for entry-level evaluation systems, or as the base of an embedded PC-based DSP system. The absence of comm-port buffers also allows faster communications.

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SUNDANCE

**FEATURES & BENEFITS**

- VXI Motherboard for up to 8 TIM modules
- Flexible communication port linking
- Global board resources accessible by VXI
- Optional VXI local bus interface
- Memory expansion by daughterboard

**SPECIFICATIONS****Platforms Supported:**

VME

VXI/VME

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

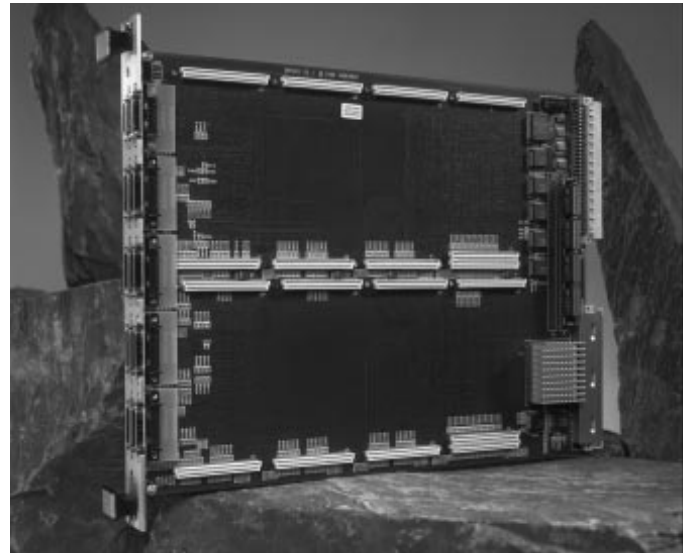
TMS320C4x, TMS320C6x

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The SMT301A is a sophisticated TIM-40 standard compatible motherboard, designed to enable TIMs to be used within a VXI based system. The board offers Master/Slave functionality, and 8 TIM-40 module sites, two of which have global bus connectors. The SMT301A has an optional VXI local-bus connector. Multiple motherboard systems can be built by using either the external comm-port connectors or the VXI and VME buses.

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**FEATURES & BENEFITS**

- Size 1 compute TIM
- 8MByte enhanced DRAM
- Very fast memory interface
- TIM global connector

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 Solaris

**TMS320 Devices Supported:**

TMS320C40

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Memory (DRAM/SRAM):**

DRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The SMT302 module conforms to the published standards of a Size 1 TIM-40, including all six parallel links offering peak data transfer rates of 20MBytes/s per link. This allows high-speed communication between multiple TIMs and other TMS320C40-based systems or peripherals. The SMT302 provides 8MBytes of enhanced DRAM. Each EDRAM device uses 2KBytes of on-chip SRAM cache providing 15nsec access time for cache hits and 35nsec access time for cache misses. The use of EDRAM on the SMT302 offers the benefits of high-speed SRAM with the density of DRAM, yielding the high memory bandwidth required to maximize the achieved performance of the TMS320C40. The single-cycle multiply-accumulate unit and communication ports of the 'C40 make the SMT302 a flexible high-performance module ideal for DSP and general-purpose computing in single- and multi-processor systems.

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Standard Size 2 TIM format module
- Pixel sizes from 1- to 24-bit per pixel
- FPGA programmed to perform pixel operation
- 2MBytes VRAM in two banks of 1MByte
- Optional 16MBytes page-mode DRAM

**SPECIFICATIONS**

**Platforms Supported:**

Size 2 TIM-40

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 Solaris

**TMS320 Devices Supported:**

TMS320C40

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Memory (DRAM/SRAM):**

SRAM  
 DRAM

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The SMT303 arithmetic frame grabber provides a high-performance data capture node for TIM-based systems, and is the ideal partner to the SMT304 high-performance graphics TIM. A monolithic triple 8bit digitizer accepts two channels of RGB-type video signals. This digitized video is input into a high-density, high-speed FPGA. The FPGA can be programmed to control two banks of VRAM, each of which is capable of storing a 512 x 512 true-color image, or four 8-bit grey-scale images. The FPGA performs all serial clocking and transfers to/from the VRAMs. Because the FPGA has access to both banks of VRAMs simultaneously, it is capable of performing simple arithmetic frame operations. These can include frame averaging or differencing in real-time. 4M-bit of EPROM are provided to hold the different configurations for the FPGA. This is sufficient to hold 40 different FPGA applications.

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Weitek Power W9100 graphics controller
- 4MBytes of VRAM, 1MByte fast SRAM
- Brooktree Bt445 True Color RAMDAC
- Pixel depths from 1 to 32 bits
- Screen sizes to 1600x1200

**SPECIFICATIONS**

**Platforms Supported:**

Size 2 TIM-40

**Host Supported:**

Windows 3.1  
 Windows 95  
 Windows NT  
 Solaris

**TMS320 Devices Supported:**

TMS320C40

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Memory (DRAM/SRAM):**

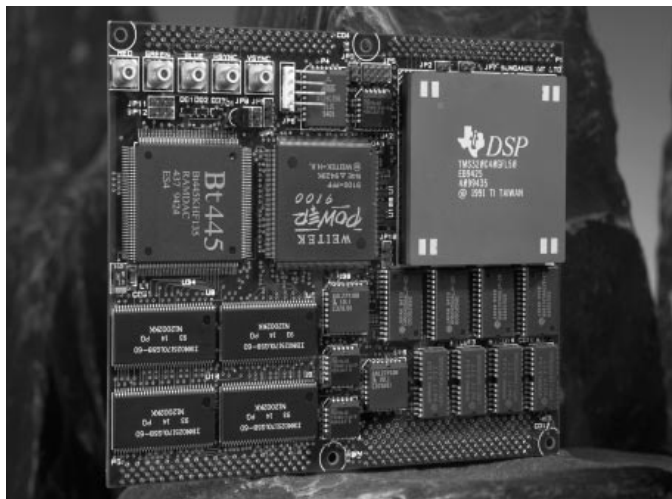
SRAM  
 DRAM

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES



**product description**

The SMT304 Size 2 TIM-40 is a graphics module providing a high-performance display node for TIM-based systems. 1MByte of fast SRAM is supplied as standard for storing code and data, while an optional 16MBytes of DRAM may be fitted for large memory applications. The SMT304 integrates the TMS320C40 with a graphics controller. This design ensures that the DSP device is free to process graphical information while a dedicated graphics processor handles the screen image. The TIM has 4MBytes of VRAM which is shared between the 'C40 and the W9100. This frame store memory is sufficient to support screen sizes of 1280 x 1024 at 8- or 16-bit per pixel. 16-bit is represented as 5-bit per color plus 1-bit of overlay/cursor. Maximum true-color resolution is 1024 x 1024 (24-bits/pixel) with an additional 4-bit overlay and 2-bit cursor. Lower resolutions, up to 1280 x 1024 x 8, may be double buffered.

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## FEATURES & BENEFITS

- Size 2 high-memory-compute TIM
- 64MByte one-wait-state DRAM
- 2MBytes zero-wait-state SRAM
- TIM global connector

## SPECIFICATIONS

### Platforms Supported:

Size 2 TIM-40

### Host Supported:

Windows 3.1

Windows 95

Windows NT

SUN

### TMS320 Devices Supported:

TMS320C40

### CPU:

1

### Clock Speeds Available:

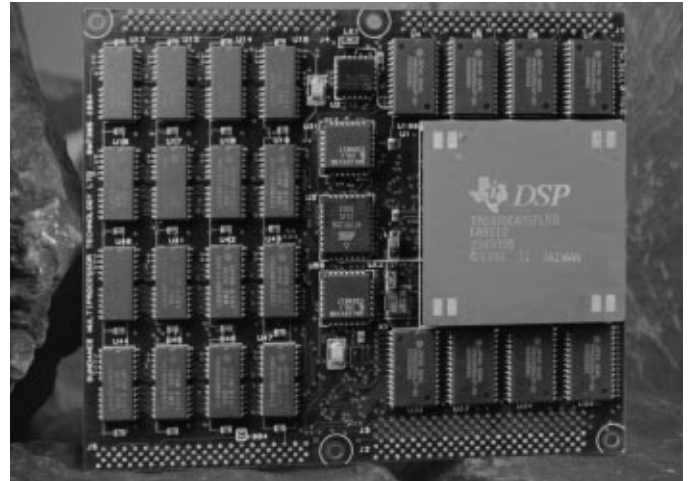
50MHz / 60MHz

### Memory (DRAM/SRAM):

DRAM

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT305 module conforms to the published standards of a Size 2 TIM-40, including all six parallel links offering data transfer rates of 20MBytes/sec per link. This allows high-speed communication between multiple TIMs and other TMS320C40-based systems or peripherals. Applications requiring large amounts of memory are satisfied using the SMT305. Each of the 'C40's memory interfaces (global and local) is interfaced to 32MBytes of DRAM and 1MByte of zero-wait-state SRAM. Each memory interface has a bandwidth of 100MBytes/sec which may be sustained for data and code placed in SRAM. The combination of fast SRAM and large DRAM memory results in the SMT305 being ideal for data acquisition systems where data has high burst rates and the 'C40 is unable to process the data on-line.

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## FEATURES & BENEFITS

- 16-bit neural instruction set processor
- Capable of processing in excess of 64K neuron
- Any number of layers
- Suitable for: Kohonen competitive networks
- Up to 80Minterconnects per second

## SPECIFICATIONS

### Platforms Supported:

Size 2 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C40

### CPU:

1

### Clock Speeds Available:

50MHz

### Memory (DRAM/SRAM):

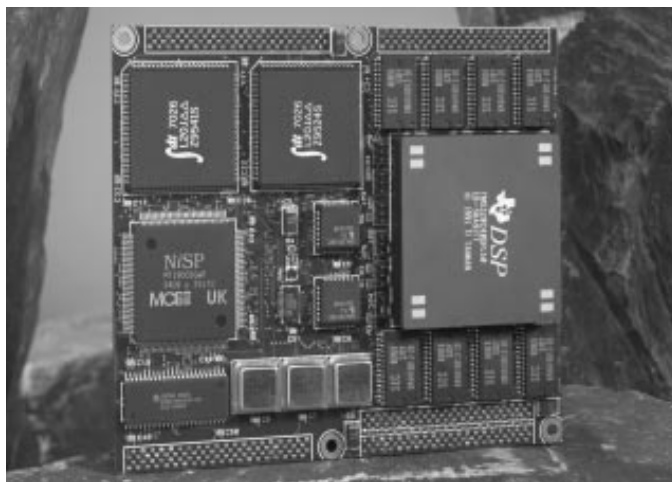
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT306 is a Size 2 TIM-40 module. By using two neural instruction set processors in conjunction with the TMS320C40 parallel DSP, a balance of computational performance and data transfer bandwidth is achieved. Each neural instruction set processor (NiSP) device offers a peak computation rate of 40M Interconnects/s allowing the potential to build real-time systems using the significant advantages offered by neural-network techniques. The TMS320C40 offers a data transfer bandwidth of approaching 120MBytes/sec via its six on-board communications. Software packages are available which are capable of generating files suitable for loading onto NiSP devices allowing rapid design and simulation to be done on commercial neural network software packages.

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## FEATURES & BENEFITS

- 8-bit or 16-bit wide SCSI-2 interface
- NCR 53C720 SCSI-2 I/O processor
- Synchronous transfer up to 20MBytes/sec
- Asynchronous transfer up to 10MBytes/sec
- 4MByte fast EDRAM
- Optional 512kBytes Flash ROM

## SPECIFICATIONS

### Platforms Supported:

SCSI  
TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C44

### CPU:

1

### Clock Speeds Available:

50MHz

### Memory (DRAM/SRAM):

DRAM

### Expansion Options:

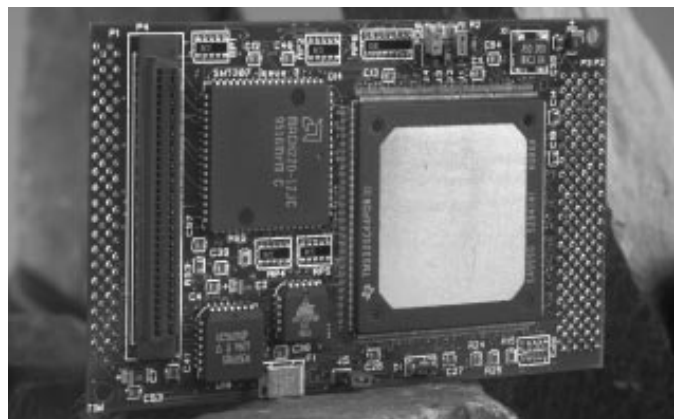
512kBytes FLASH ROM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT307 is a Size 1 TIM-40-compliant module offering a fast SCSI-2 connection between a TMS320C4x-based system and up to 16 devices. The module uses the SCSI-2 I/O processor and is capable of performing transfers of up to 20MBytes/sec synchronous or 10MBytes/sec asynchronous. The on-board TMS320C44 is directly connected to the SCSI processor and is responsible for initializing the controller. The SMT307 has 4MBytes of fast enhanced DRAM accessible by both the 'C44 and SCSI processor. The SCSI processor can read instructions (SCRIPTS file) from the EDRAM without intervention by the 'C44 processor. The 'C44 is directly connected to the 53C720's host port, and is thus responsible for initializing the SCSI controller. The SMT307 supports 512kBytes of Flash ROM which may be factory fitted with Sundance's Disc File System. The SMT307 provides a global bus interface.

## COMPANY INFORMATION

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# SMT311 FFT ACCELERATOR TIM

by Sundance Multiprocessor Technology Ltd

## FEATURES & BENEFITS

- Size 2 dual-processor FFT TIM
- Butterfly FFT coprocessor 40MHz
- 500MOPS and 50MFLOPS
- 2-D 512 x 512 real FFT in 39 msec
- 1k complex FFT in 80 µsec

## SPECIFICATIONS

### Platforms Supported:

Size 2 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C44

### CPU:

1

### Clock Speeds Available:

50MHz

### Memory (DRAM/SRAM):

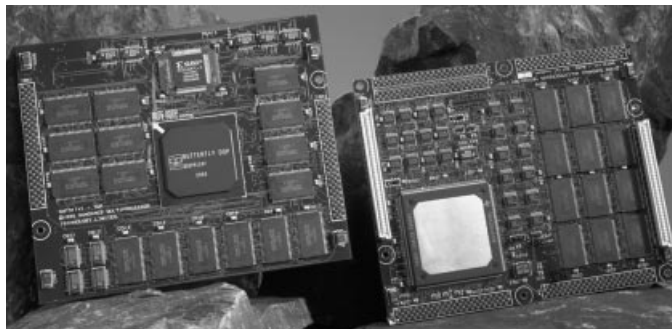
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT311 is a Size 2 TIM-40 module which benefits from the integration of the versatile TMS320C44 with the performance of the FFT coprocessor. The FFT coprocessor is ideal for performing computationally-intensive mathematical operations on high-speed data inputs. In particular, the device is highly optimized for Fast Fourier Transforms. The use of the FFT coprocessor to the 'C44 facilitates flexible solutions for both uni- and multi-processor applications. The 'C44 processor is connected to the FFT coprocessor via an FPGA and FIFO on the local bus. The FPGA is used to control the FFT coprocessor's five-memory-bank address generators. The vector processors instructions are loaded in to a FIFO. In addition the 'C44 has 512kBytes of fast SRAM and 32kBytes of boot and ID PROM. The FFT coprocessor memory comprises a co-efficient bank, two processing banks, and two input/output banks. Each may be configured as either 16-, 32-, or 48-bit interfaces.

## COMPANY INFORMATION

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## FEATURES & BENEFITS

- Size 1 converter TIM
- Data via user-selectable TIM port or 24-way o
- Optional four-fiber modem links
- Full-duplex asynchronous communications
- User-selectable data rate
- Peak rate 115k baud

## SPECIFICATIONS

### Platforms Supported:

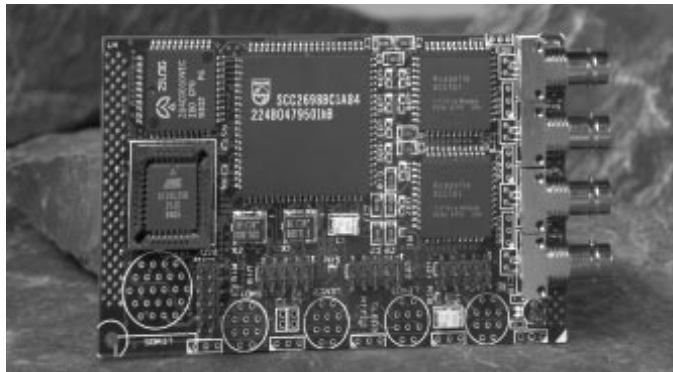
Size 1 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT312 RS-232 converter is a Size 1 TIM-40 compatible module and connects a 'C4x communications port to four RS-232C connectors and also offers four fiber-modem links as a factory-fitted option. The module may either be used as a component in a TIM-based system or stand-alone. When used in a TIM environment, the RS-232 channels are accessed via 10-way IDC-type headers. 10-pin Lemo connectors may be factory fitted for stand-alone operation. Four fiber modem devices can optionally be fitted. They allow full-duplex, high-speed asynchronous serial connection to a similar modem via a single bi-directional fibre. Due to the low data rates available with the RS-232 (as compared to the comm ports) a simple single-buffered comm-port interface is used. With an octal processor running at 10MHz, data rates in excess of 100kbaud should be easily achievable.

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## FEATURES & BENEFITS

- Size 1 compute TIM-40
- Two processors
- 4MBytes fast enhanced DRAM on each processor
- 100MFLOPS, 550MOPS (at 50MHz)
- Shared global bus connector

## SPECIFICATIONS

### Platforms Supported:

Size 1 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C4x

### CPU:

2

### Clock Speeds Available:

60MHz

### Memory (DRAM/SRAM):

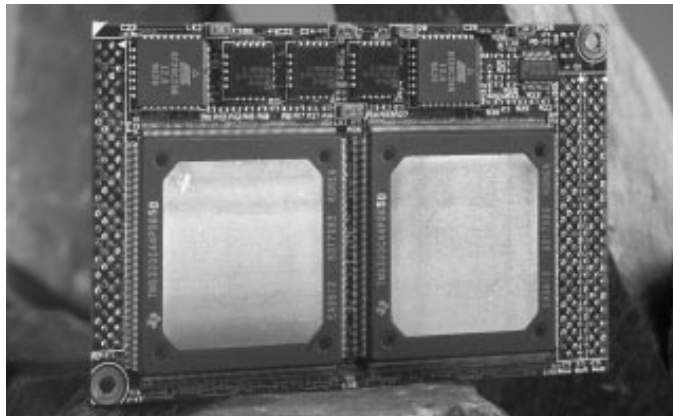
DRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT313 module conforms to the published standards of a Size 1 TIM-40 and comprises two TMS320C44 devices along with 4MBytes (or 1Mword) of fast enhanced DRAM memory for each processor. EDRAM memory increases normal DRAM speed by using 2kBytes of on-chip SRAM cache. This gives 15-nsec access time for cache hits and 35-nsec access time for cache misses. The use of EDRAM on the SMT313 offers the benefits of the speed of SRAM with the density of DRAM yielding the high memory bandwidth required to give the highest performance of the 'C44. The local bus is used to address on-board memory. The global bus of each processor is mapped on to the TIM's global bus connector. The processors are capable of arbitrating for access to the global bus connector.

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# SMT314 VIDEO GRAB & DISPLAY TIM

by Sundance Multiprocessor Technology Ltd

## FEATURES & BENEFITS

- Standard size 2 TIM format module
- TMS320C40 DSP clocked at up to 60MHz
- 512kBytes of SRAM on local bus
- 1MByte of SRAM on global bus
- A 512kByte Flash EPROM for boot code

## SPECIFICATIONS

### Platforms Supported:

Size 2 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C40

### CPU:

1

### Clock Speeds Available:

60MHz

### Memory (DRAM/SRAM):

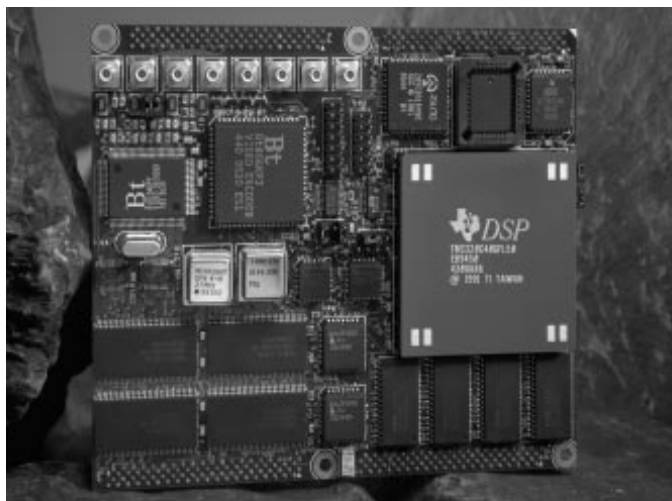
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT314 is a size 2 TIM-40 compliant module. It may be used as a high performance digital signal processing component for the acquisition and display of PAL images. It offers an economical means of integrating frame grabbing and graphics into TIM systems. The TMS320C40 DSP has 4MBytes of VRAM. The VRAM is connected to both the PAL input and output devices. The SMT314 is capable of grabbing any one of 3 input signals.

## COMPANY INFORMATION

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## FEATURES & BENEFITS

- Single width TIM
- TIM Standard compatible
- Two 60MFLOPS TMS320C44 parallel DSPs
- 512Kbytes or 2Mbytes SRAM on each Bus
- 100Mbytes/s zero-wait-state memory interface
- Four 20Mbytes/s comm ports per TMS320C44
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

2

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

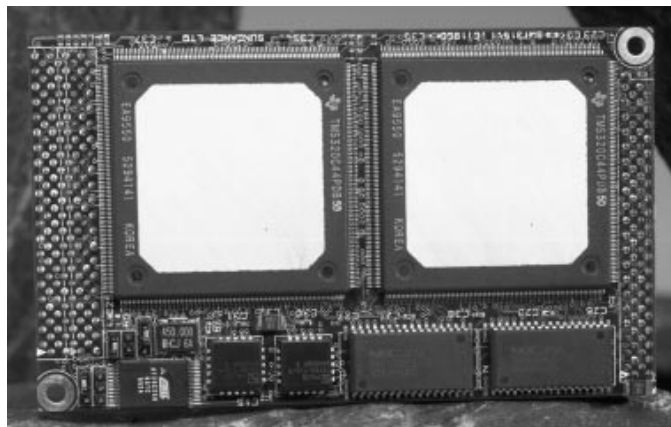
60MHz

### Memory (DRAM/SRAM:)

SRAM

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

### Sundance Multiprocessor Technology Ltd.

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Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



## FEATURES & BENEFITS

- Size 1 compute TIM
- Four TMS320C44 parallel DSP processors
- Ball Grid Array 'C44 package
- Low power consumption and high reliability
- 50MHz or 60MHz processor

## SPECIFICATIONS

### Platforms Supported:

Size 1 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C44

### CPU:

4

### Clock Speeds Available:

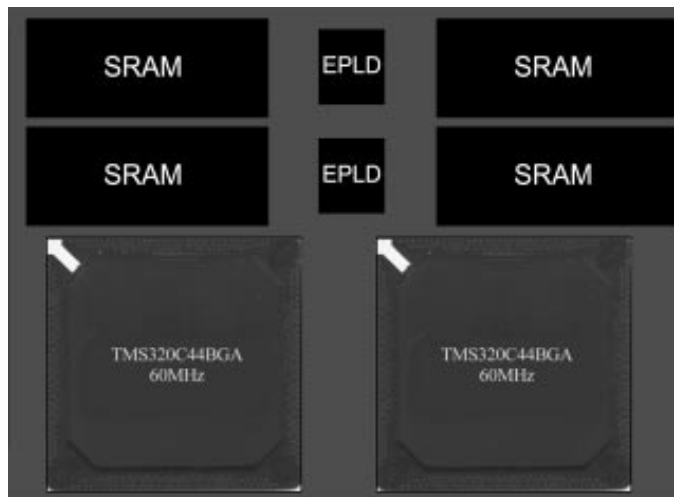
60MHz

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT316 module conforms to the published standards of a size 1 TIM-40 and comprises four high-speed digital signal processing devices along with memory for each processor. The C44 four parallel links offer data transfer rates of 20MBytes/sec per communication port. The SMT316 is capable of high speed-communication between multiple TIMs and other TMS320C4X based systems and peripherals.

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# SMT318 DUAL DIGITAL VIDEO INTERFACE

by Sundance Multiprocessor Technology Ltd

## FEATURES & BENEFITS

- Standard Size 1 TIM-40 format module
- 80MBytes/s video input data rate
- Dual 8-bit or single 16-bit RS-422 I/O
- Independent programmable I/O control lines
- Cascadeable for multi-channel cameras

## SPECIFICATIONS

### Platforms Supported:

Size 1 TIM-40

### Host Supported:

Windows 3.1

Windows 95

Windows NT

SUN

### TMS320 Devices Supported

TMS320C4x

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT318 digital video interface TIM provides a high-performance data capture node for TIM-based systems. This Size 1 TIM-40 module provides a peak acquisition bandwidth of 80M bytes/s over two 8-bit interfaces. These two channels can be concatenated to provide a single 16-bit interface if required. Consisting of two 8-bit RS-422 differential interfaces, the SMT318 provides independent control of each channel. Each channel has five outputs and five inputs independently programmable via comm port 3. The FPGAs perform all clocking and transfers from the video interface through to the 'C40 comm ports. Each data channel is transferred to 'C40 comm port via FIFO devices to smooth bandwidth variations.

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## FEATURES & BENEFITS

- Four-slot TIM motherboard for PCI bus
- Global bus connector on slot 0
- PCI Master Mode
- Host interface bandwidth via global bus
- All comm-ports are un-buffered

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported

TMS320C4x

### Board Size:

Full card

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT320 is a PCI plug-in board with four TIM slots. A bridge device implements an interface between the PCI bus and TIM Slot 0. This interface consists of a PCI initiator which connects to the Slot 0 Global bus (master-mode) and a PCI target which boots to slot 0, via comm-port 3. Comm-ports not connected to the PCI bus are routed to connectors and are not buffered allowing maximum communication rates. Cables are provided allowing interconnection of any desired topology, or connection to other Sundance motherboards.

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**FEATURES & BENEFITS**

- Real time two-dimensional FFTs of 512 x 512
- 1 and 2D FFTs, FCTs, DCCTs, adaptive filters
- Real/Imaginary or Magnitude/Phase output data
- Expandable memory, FFTs up to 1K x 1K pixels
- On-board TMS320C44 DSP processor
- 24-bit precision with block float point
- 12-month warranty

**SPECIFICATIONS****Platforms Supported:**

PCI PC

**Host O/S Supported:**

Windows NT

**CPU:**

1

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

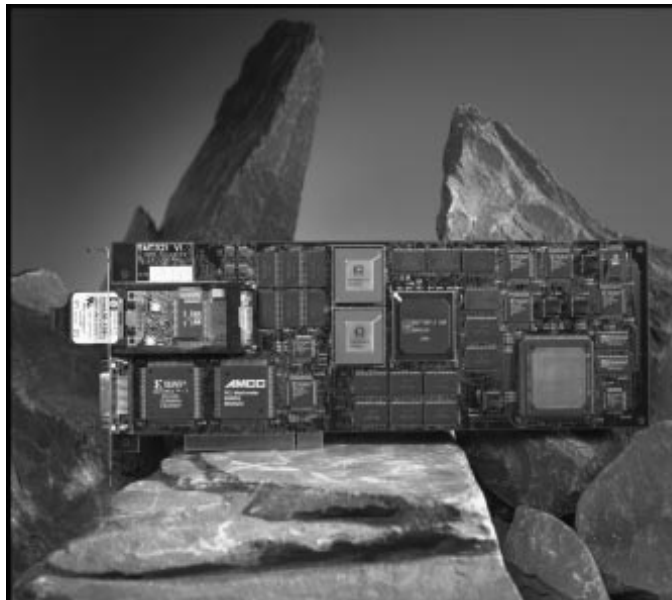
DRAM/SRAM

**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

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Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



## FEATURES & BENEFITS

- 8 16-bit Audio ADCs
- 2 12-bit 300 KHz DACs
- Parallel Digital Signal Processor
- Up to 8MBytes zero-wait-state SRAM

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

50MHz

### Board Size:

Half card

### Memory (DRAM/SRAM):

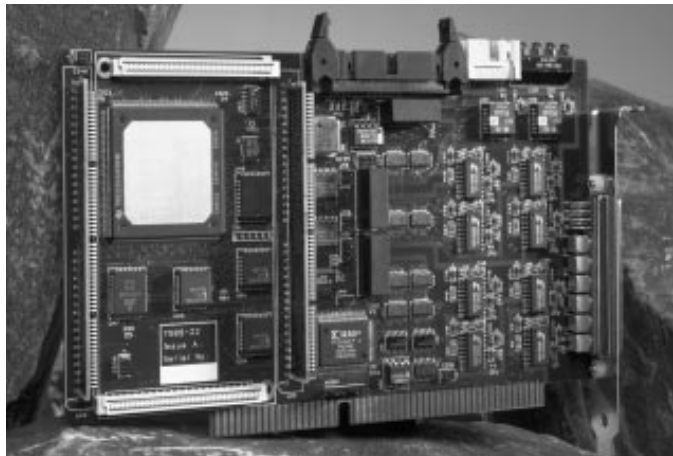
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT322 is a PC-ISA half-length card with Analog to Digital and Digital to Analog converters together with a high-performance Digital Signal Processor (DSP). Additional DSPs may be added via 20MBytes/sec communication ports using TIM daughter boards. THE SMT322 has eight 16-bit ADCs, jumper configured to sample at rates between 62.5kHz and 4MHz. The Board also has two 12-bit DACs with setting times of 3us and may be updated at rates in excess of 300kHz.

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## FEATURES & BENEFITS

- Dual channel digital video interface
- 100MBytes/sec DMA or interface to PCI
- Up to 8MByte SRAM frame store
- Colour or Monochrome capture
- 60MHz DSP with up to 4MBytes SRAM

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT

### TMS320 Devices Supported:

TMS320C44

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

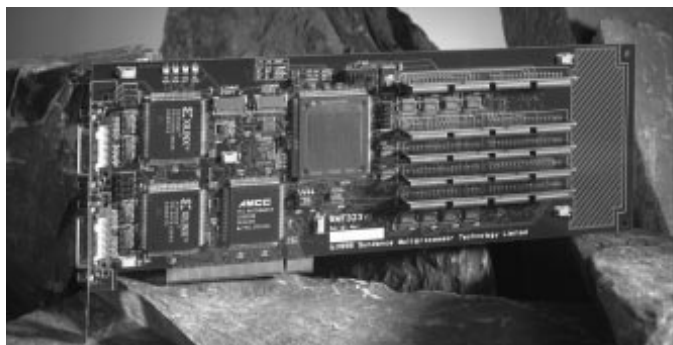
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT323 is a PCI Bus frame grabber with on-board 60MFLOP DSP. The board is capable of acquiring digital video data from one or two sources. Each channel supports capture at pixel rates of 20MHz, (RS-422) or 40MHz (RS-622). Each channel has a frame store capacity of up to 4MBytes. This SRAM frame store can be single or double buffered.

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## FEATURES & BENEFITS

- Standard size 1 TIM-40 format module
- TMS320C44 Parallel DSP at 60MHz
- 512kBytes or 2MBytes fast SRAM per bus
- TIM-40 compliant
- Two Harris HSP50016 Digital Down Converters

## SPECIFICATIONS

### Platforms Supported:

Size 1 TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN

### TMS320 Devices Supported:

TMS320C44

### CPU:

1

### Clock Speeds Available:

60MHz

### Memory (DRAM/SRAM):

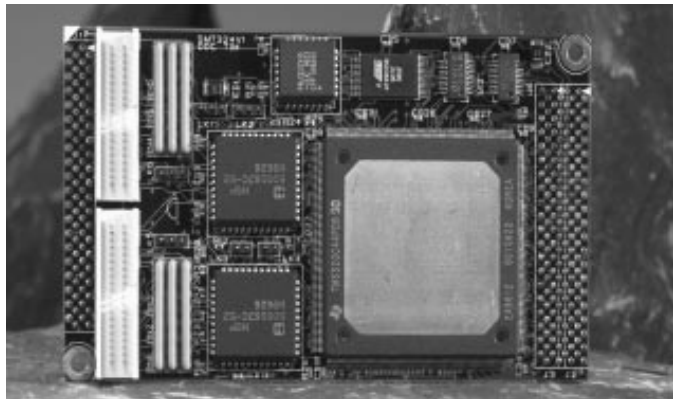
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT324 TIM consists of a Texas Instruments TMS320C44 running at 60MHz. The TIM may be populated with 512kBytes or 2MBytes of zero-wait-state SRAM on both its global and local buses offering a total capacity of up to 4MBytes. The module has two FPGA devices mapped in to the local address space. The HSP50016 devices perform down conversion, narrowband low pass filtering and decimation to produce baseband signals.

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# SMT325 COLOUR FRAME GRABBER TIM

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- 50MFLOPS TMS320C44 parallel DSP
- 1Mbyte VRAM Frame Store
- 1024 x 1024 x 8-bits per pixel
- True color option
- 4Mbytes DRAM for program code
- 2 sets of RGB inputs with separate sync input
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

50MHz

### Memory (DRAM/SRAM):

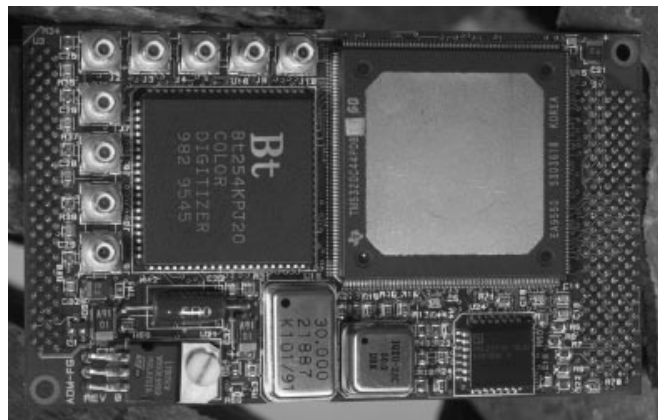
DRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



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## FEATURES & BENEFITS

- Dual 32-Channel A/D & D/A Converter
- 60MHz TMS320C44
- 20-bit 50kHz sampling
- 8-bit PC/AT ISA Card
- Multi-processor expansion via single TIM site.

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT

### TMS320 Devices Supported:

TMS320C44

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The SMT326 is a PC/ISA full length card supporting a TMS320C44 DSP together with multiple A/D and D/A channels. Incorporated on the card is an interface between the PC and a 'C44 comm-port. For increased processing performance another 4 'C44s (or 'C40) can be added as a TIM.

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# SMT327 4-SLOT COMPACTPCI TIM CARRIER

by Sundance Multiprocessor Technology Ltd

## FEATURES & BENEFITS

- Four TIM-slot Compact PCI Motherboard
- Double-height (6U) double width Eurocard
- Global bus connected as a PCI initiator
- Comm-port 3 connected as a PCI target
- Functional and Software compatibility with SMT 320

## SPECIFICATIONS

### Platforms Supported:

CompactPCI

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
SUN



## PRODUCT DESCRIPTION

The SMT327 is a CompactPCI 4 slot motherboard. The interface to the CompactPCI bus is electrically identical to the SMT320 PCI TIM carrier board. In addition to the SMT320, it has 6 fully-buffered front panel comm ports, an uncommitted comm port patch area using FMS connectors and front panel JTAG in and out connectors.

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SUNDANCE





## FEATURES & BENEFITS

- VME TIM carrier with 4 sites
- TIM-40 Standard compatible
- All 6 front panel comm ports fully buffered
- Double pipe comm port architecture
- Shared Global bus on two sites
- 1Mbyte one-wait-state SRAM
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

VME/TIM-40

### Host O/S Supported:

Windows NT

### CPU:

0

### TMS320 Devices Supported:

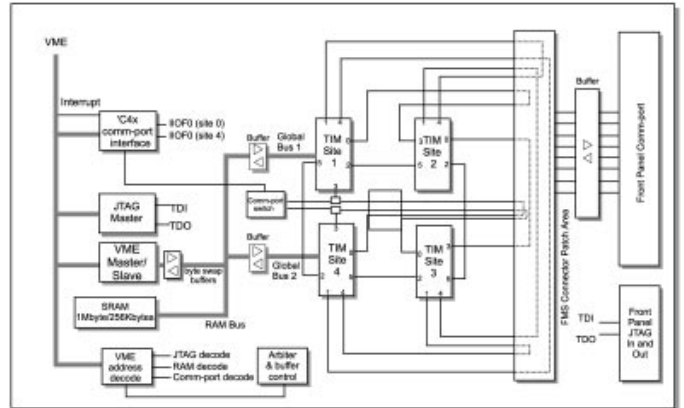
TMS320C4x

### Board Size:

Full Card

### Technical Support/Training Available:

YES



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# SMT330 TMS320C6201 FIBRE CHANNEL TIM

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- Double width TIM
- TIM Standard compatible
- Peak performance of 1600 MIPs, at 5ns
- 128K words SSRAM
- 2M words SDRAM, using SMT604 6x-MIX Core
- 1Gbit Fibre Channel Link, using SMT612 6x-MIX Core
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

1

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200MHz

### Memory (DRAM/SRAM):

SRAM/SDRAM

### Technical Support/Training Available:

YES



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# SMT331 TMS320C6201 ACCELERATOR TIM

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- Single width TIM
- TIM Standard compatible
- 256Kbyte Boot Flash ROM
- 1Mbyte SSRAM; 32Mbytes SDRAM
- Four low-cost TMS320C4x type comm ports
- XDS510 compatible JTAG slave interface
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

### CPU:

1

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200MHz

### Board Size:

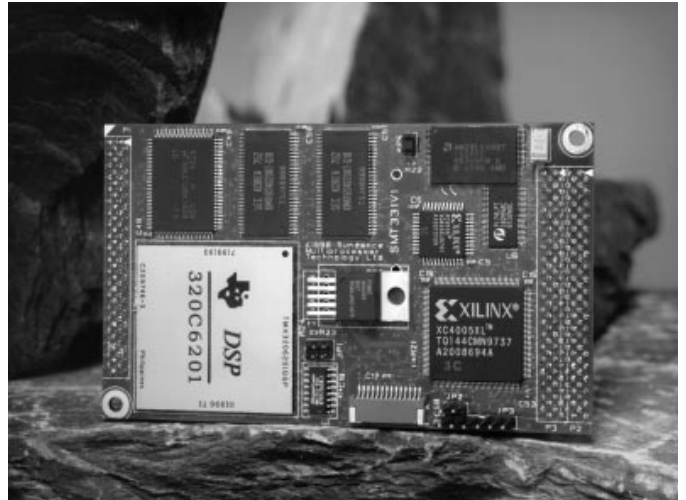
Full Card

### Memory (DRAM/SRAM):

SSRAM/SDRAM

### Technical Support/Training Available:

YES



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# SMT340 2 X 41MSPS, 12-BIT ADC TIM

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- Single width TIM
- TIM Standard compatible
- 41MSMPS 12-bit ADCs
- 2 independent channels
- 80dB dynamic range, 68dB SNR
- Comm port data interface
- Direct data interfaces

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

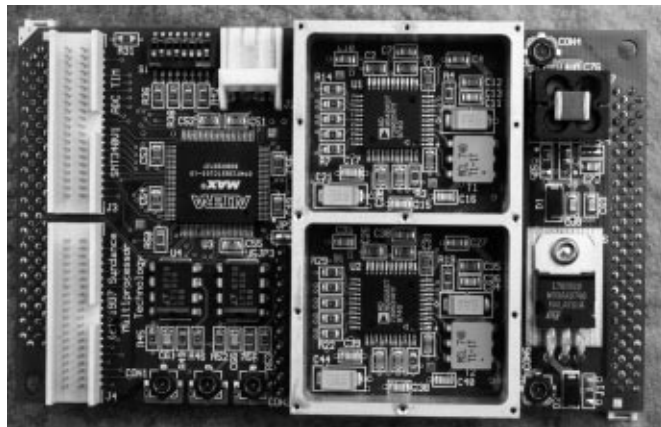
0

### TMS320 Devices Supported:

TMS320C4x

### Software Included:

Libraries



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## FEATURES & BENEFITS

- Single width TIM
- TIM Standard compatible
- Two independent channels
- 32M word digital delay line
- 50MSPS peak throughput rate
- Programmable sample delay up to 32M samples
- Compatible with SMT324 DDC and SMT340 ADC TIMs

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

0

### TMS320 Devices Supported:

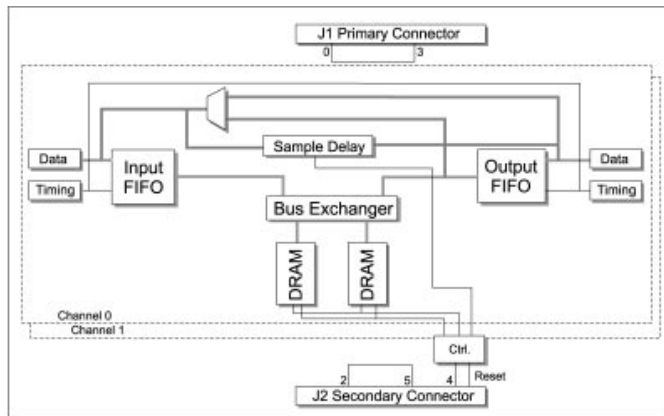
TMS320C4x

### Memory (DRAM/SRAM):

DRAM

### Technical Support/Training Available:

YES



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# SMT342 41MSPS, 12-BIT ADC TIM

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- Single width TIM
- TIM Standard compatible
- 12-bit ADC
- Up to 40MHz sample clock
- Over-sample, decimate and truncate option
- Global interface supports 50MSPS transfer
- On-board or external sample clock

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

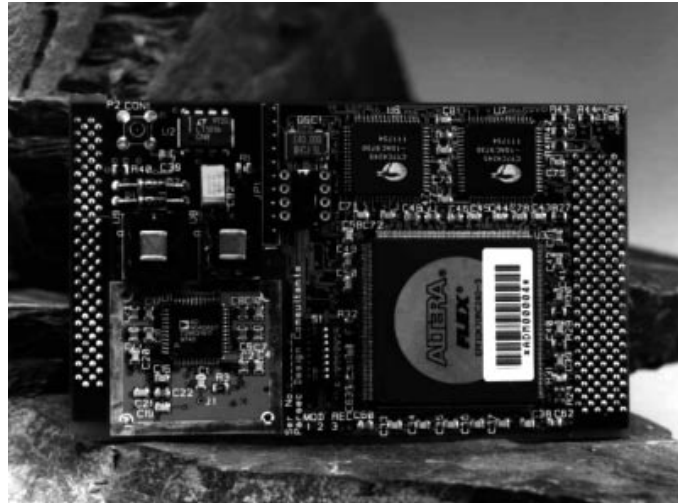
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### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

YES



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# SMT343 GLOBAL BUS TIM CARRIER

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- PC/ISA TIM carrier with 4 sites
- TIM Standard compatible
- Shared global bus on all sites
- 120Mbytes/s transfer speed between sites
- On-board XDS510 compatible JTAG slave i/f
- 3.3V on all TIM sites
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

ISA/TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

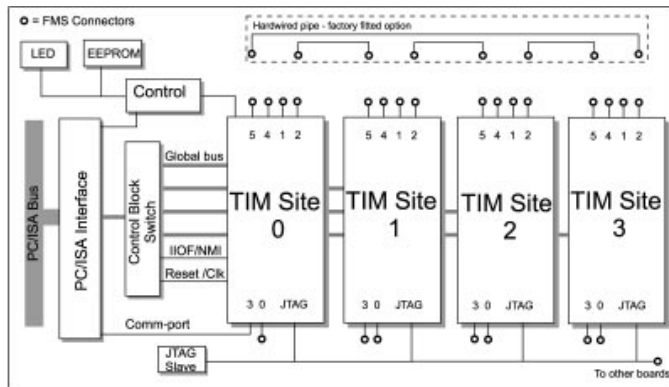
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### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

YES



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## FEATURES & BENEFITS

- Single width TIM
- Two 60MFLOPS TMS320C4x parallel DSPs
- 1Mbyte OWC SRAM per processor
- JTAG connection to each processor
- ID ROM on each processor
- 100Mbytes/s memory interface
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

2

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Memory (DRAM/SRAM):

SRAM



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# SMT345 FIBRE CHANNEL GRABBER

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- Fibre Channel Interface via GLM
- Up to 1Gbit/s transfer speed
- Single Channel Digital Video Interface
- Optional 60MFLOPS TMS320C44 parallel DSP
- Up to 4Mbytes SRAM double-buffered frame stor
- 100Mbytes/s DMA burst mode PCI interface
- Custom FPGA for Image Processing Applications

## SPECIFICATIONS

### Platforms Supported:

PCI PC

### Host O/S Supported:

Windows NT

Solaris

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

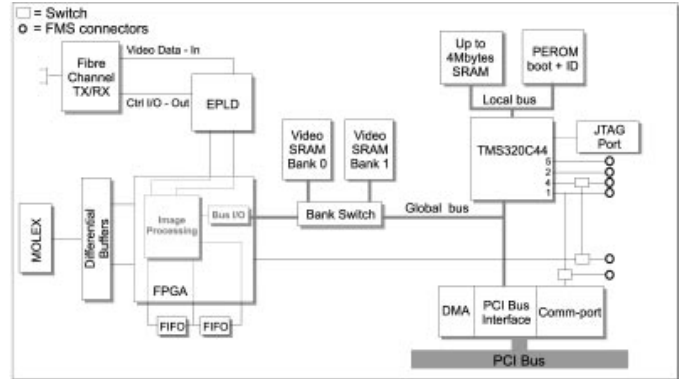
SRAM

### Software Included:

Libraries

### Technical Support/Training Available:

YES



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## FEATURES & BENEFITS

- Two 16-bit AD7722 Sigma Delta ADCs @ 200kHz
- Two 12-bit AD767 DACs @ 300kHz
- 12 general purpose TTL I/O
- Up to 4Mbytes zero-wait-state SRAM
- Expansion via Dual Width TIM Site
- JTAG debugger slave interface to XDS510
- 3.3V on all TIM sites

## SPECIFICATIONS

### Platforms Supported:

ISA/TIM-40

### Host O/S Supported:

Windows NT

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

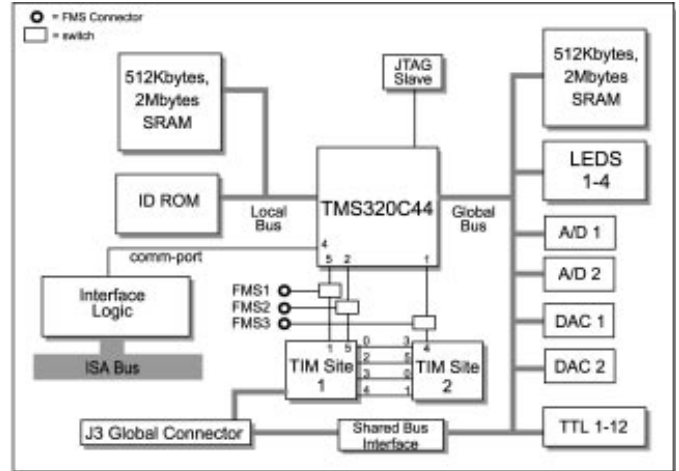
Half Card

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

### Sundance Multiprocessor Technology Ltd.

Chiltern House

Chesham BUCKS HP5 1PS UK

Tel: +44 1494 793167

Fax: +44 1494 793168

e-mail: Sales@sundance.com

www.sundance.com/s346.htm

Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



# SMT347 TIM CARRIER FOR COMPACTPCI

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- CompactPCI Bus TIM carrier with 4 sites
- Common global bus connector on all sites
- Host Interface via 'C4x comm port or PCI
- On-board XDS510 compatible JTAG master i/f
- All comm ports are un-buffered
- 3.3V on all TIM sites
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

CompactPCI/TIM-40

### Host O/S Supported:

Windows NT

### CPU:

0

### TMS320 Devices Supported:

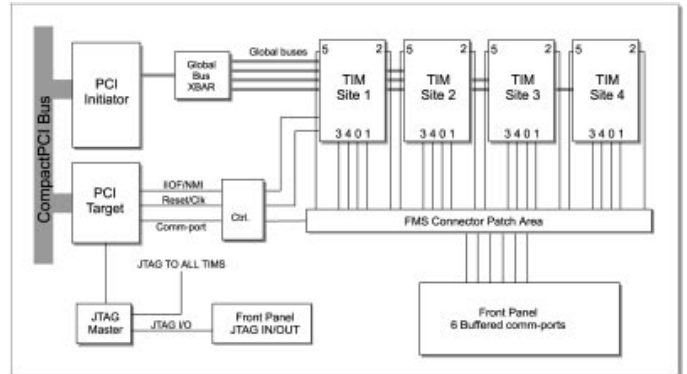
TMS320C4x

### Board Size:

Full Card

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

### Sundance Multiprocessor Technology Ltd.

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 www.sundance.com/s347.htm

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DEVELOPMENT BOARDS



# SMT350 GLOBAL BUS TIM CARRIER

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- PCI TIM carrier with 4 sites
- Common global bus connector on all sites
- On-board XDS510 compatible JTAG master i/f
- All comm ports are un-buffered
- Host Interface via 'C4x comm port or PCI
- 3.3V on all TIM sites
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

PCI PC/TIM-40

### Host O/S Supported:

Windows NT

Solaris

### CPU:

0

### TMS320 Devices Supported:

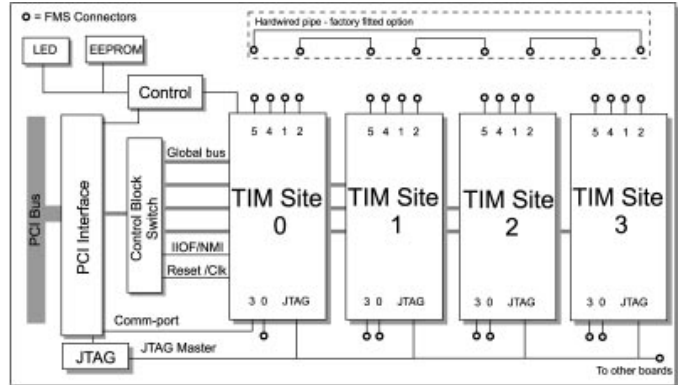
TMS320C4x

### Board Size:

Full Card

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

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www.sundance.com/s350.htm

Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



# SMT400 3 SLOT PMC CARRIER FOR VME

*by Sundance Multiprocessor Technology Ltd.*

## FEATURES & BENEFITS

- 3 Single width PMC Sites
- Conforms to IEEE P1386 standard
- VME Master/slave interface
- 6U Form Factor card
- Supports SMT401,402,403
- 12-month warranty

## SPECIFICATIONS

**Platforms Supported:**

PMC

**Host O/S Supported:**

Windows NT

Solaris

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

Full Card

**Technical Support/Training Available:**

YES



## COMPANY INFORMATION

**Sundance Multiprocessor Technology Ltd.**

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Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



# SMT401 TIM CARRIER FOR PMC

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- PMC TIM carrier with 1 site
- TIM-40 Standard compatible
- Comm port interface to PCI
- Two optional Front Panel comm ports
- Four 20Mbytes/s un-buffered comm ports
- External Control functions for 'C4x systems
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### TMS320 Devices Supported:

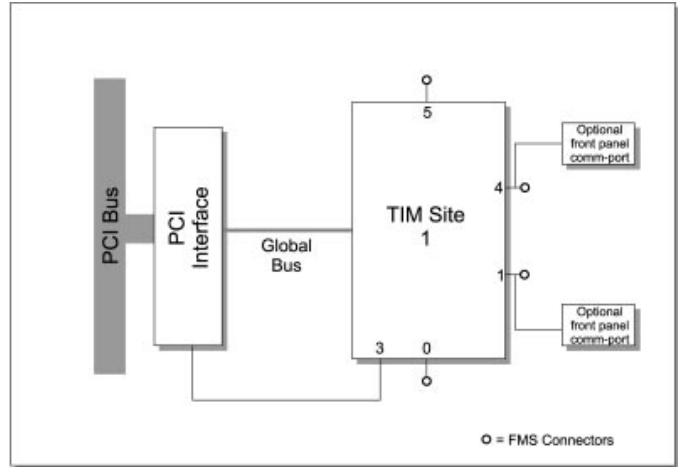
TMS320C4x

### Board Size:

Half Card

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

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www.sundance.com/s401.htm

Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



# SMT402 DOUBLE WIDTH TIM CARRIER

by Sundance Multiprocessor Technology Ltd.

## FEATURES & BENEFITS

- PMC TIM carrier with double width TIM
- TIM Standard compatible
- Conforms to IEEE P1386 PMC Standard
- Comm port interface to PCI
- Two optional Front Panel comm ports
- 3.3V on all TIM sites
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

PMC

### CPU:

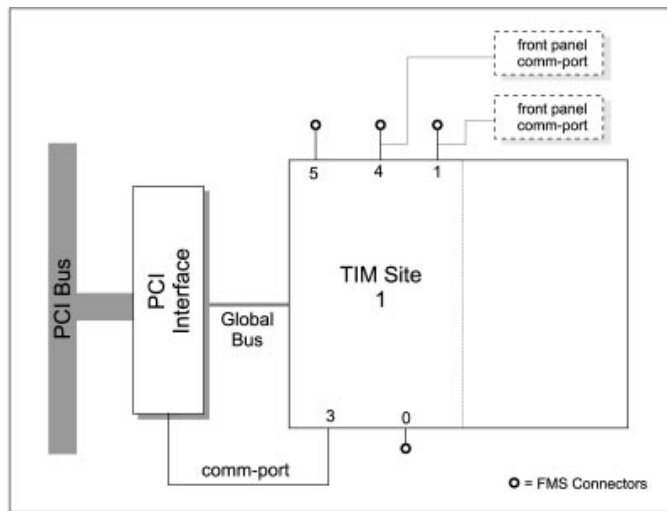
0

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

### Sundance Multiprocessor Technology Ltd.

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www.sundance.com/s402.htm

Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.



## FEATURES & BENEFITS

- 60MFLOPS TMS320C44 parallel DSP
- 512KBytes Ows SRAM on Local bus
- Comm port interface to PCI
- Two optional Front Panel comm ports
- External Control functions for C4x systems
- Conforms to IEEE P1386
- 12-month warranty

## SPECIFICATIONS

### Platforms Supported:

PMC

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

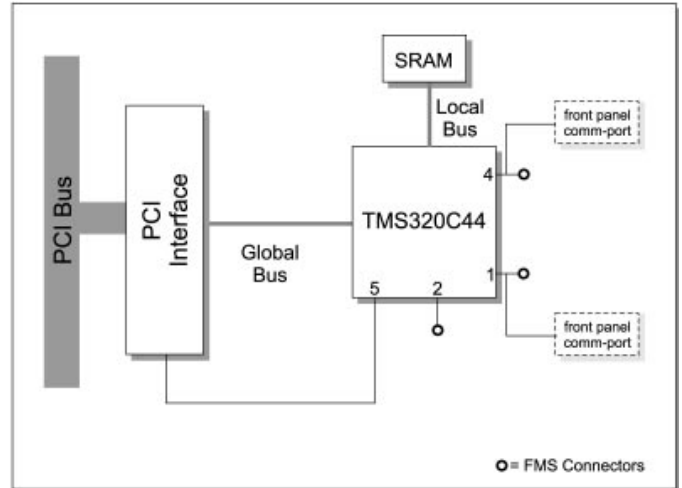
60MHz

### Memory (DRAM/SRAM):

SRAM

### Technical Support/Training Available:

YES



## COMPANY INFORMATION

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www.sundance.com/s403.htm

Sundance was established in 1989, and produces a comprehensive range of competitive, well-engineered products for the embedded high-performance and multi-processor markets.





## FEATURES & BENEFITS

- Integration support is available
- 8 KB/s data rate standard
- GMSK modulation format
- Single chip implementation
- Baseband and IF inputs supported
- Flexible modem/radio interface
- Accepts both analog and digital input data
- Low cost implementation

## SPECIFICATIONS

### Platforms Supported:

Standalone

### TMS320 Devices Supported:

TMS320C2x

TMS320C5x

### CPU:

1

### Program Memory:

8K

### Expansion Options

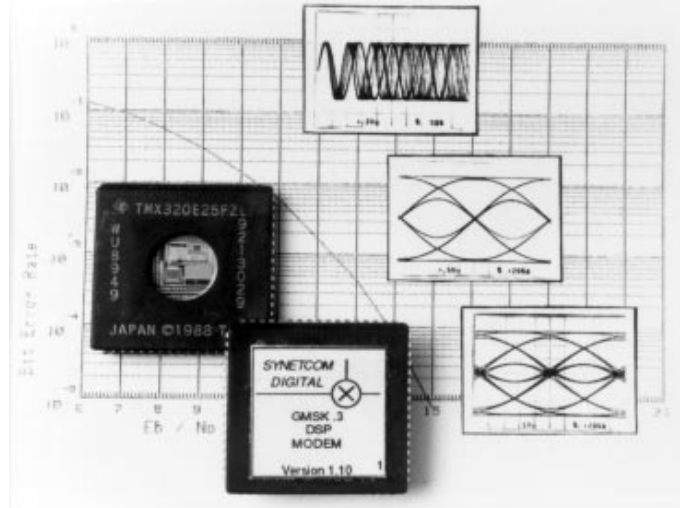
Digital I/O Daughtercard

### Software Included:

Libraries

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The EB-1000 is a fully functional Wireless Data Modem development system. The Wireless Data Modem operates over packet radio data communications networks. A variety of baud rates and communications protocols are available on request.

## COMPANY INFORMATION

### Synetcom Digital, Inc.

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Fax: (310) 372-2331

e-mail: [synet@ix.netcom.com](mailto:synet@ix.netcom.com)

www: <http://www.synetcom.com>

Provides Wireless Communications consulting services support Digital Signal Processing technology.

Manufactures Wireless Data communications equipment that utilizes Digital Signal Processing Technology.



## FEATURES & BENEFITS

- DSP Motion Controller TMS320F240
- On-board 3 phase PWM inverter, 30V, 1.7A
- Brushless motor with encoder and Hall sensors
- Phase currents
- DC-link voltage measurement
- Monitor; Processor evaluation applications
- Windows IDE for analysis of DMC applications
- Ready-to-run motion examples

## SPECIFICATIONS

### Platforms Supported:

PC-RS 232

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

### CPU:

1

### TMS320 Devices Supported:

TMS320C2xx

### Clock Speeds Available:

20MHz

### Board Size:

104mm x 63mm

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

I/O Evaluation Board

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The MCK240 is an evaluation kit for the Texas Instruments TMS320F240 DSP controller which helps to design, execute and debug digital motor control applications. Complemented with high level graphical programming tools, the MCK240 kit permits a quick access to the DSP technology applied to digital motor control as it permits the execution and adaptation of control algorithms and facilitates their implementation into target applications. To rapidly develop and test motion control algorithms, the MCK240 utilizes the features of the unique motor-control event manager of the  $\epsilon$ F240, such as PWM generation or quadrature encoder interface, and has an on board three phases inverter which can be used to drive small AC, brushless and DC motors. A high dynamics escape brushless motor with a high resolution encoder, which can be driven in AC or DC brushless modes, is also included in the package. The MCK240 also offers a universal I/O interface for connection to various external power amplifiers, such as IGBT inverter bridges (see ACPM750 data sheet) for controlling larger motors. The built-in current feedback from the inverter low-side legs or DC path facilitate the development and implementation of a large set of control algorithms including sensorless approaches.

## COMPANY INFORMATION

### Technosoft

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[www.technosoft.ch](http://www.technosoft.ch)

Technosoft has a strong know-how in digital motion control, complemented by industrial control DSP boards and corresponding development tools.



## FEATURES & BENEFITS

- ISA carrier
- 4 x TIM-40 sites
- JTAG debug master
- 16-bit ISA interface
- 12 ext comports

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1

Windows 95

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

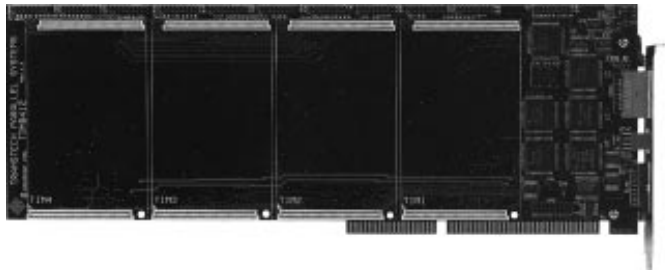
Full card

### Expansion Options:

TIM-40 modules, framegrabbers

### Technical Support/Training Available:

YES



## PRODUCT DESCRIPTION

The TDMB412 is a high-performance PC-hosted TIM-40 carrier board. D-equal Four sites are available or any combination of size one, two or three TIM-40 modules. The TDMB412, when populated with four TDM411 TIM-40's will provide up to 240MFLOPS of DSP processing power. The host interface uses a 16-bit FIFO-based architecture which gives fast communications between the host and the C40 network. The TDMB412 has a ParaDICE-compatible JTAG master on-board which gives the functionality of the Texas Instruments XDS510 IN-System Emulator. The JTAG master is controlled over the ISA bus. This simplifies debugging of systems of multiple daisy chained boards, by allowing a single JTAG master to access processors on other boards in the chain.

## COMPANY INFORMATION

### Transtech Parallel Systems Corporation

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TRANSTECH  
Parallel Systems



**FEATURES & BENEFITS**

- ISA carrier
- 4 x TIM-40 sites
- JTAG debug master
- 16-bit ISA interface
- 12 ext comports

**SPECIFICATIONS**

**Platforms Supported:**

ISA

**Host Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

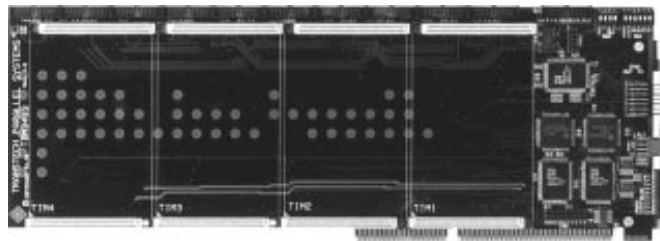
Full card

**Expansion Options:**

TIM-40 modules, I/O and display

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDMB413 is very similar to the Transtech TDMB412 and is a high performance four site TIM-40 PC-hosted TIM-40 carrier board. The difference between the TDMB412 and the TDMB413 is the way in which the hard wired comports between the TIM-40 sites have been arranged. The topology of the comports on the TDMB413 allows TIM-40 modules to be arranged in a 'double pipeline'. It also allows the Transtech TDM431 analog I/O TIM-40 to connect to 2 different TIM-40 modules on the same board. To ensure maximum flexibility, twelve of the TMS320C40 communication ports are accessible allowing user-defined parallel topologies and interconnections of multiple motherboards in an industrial PC rack. One of the com-ports is buffered and is available on the board end-plate. The TDMB413 has a ParaDICE JTAG master on-board which allows simplified debugging of multiple boards in a single DSP system.

DEVELOPMENT BOARDS

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- PCI carrier
- TIM-40 site
- JTAG debug master
- 32-bit PCI rev2.1 interface
- 6 ext. comports

**SPECIFICATIONS**

**Platforms Supported:**

PCI PC

**Host Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C4x

**Clock Speeds Available:**

60MHz

**Board Size:**

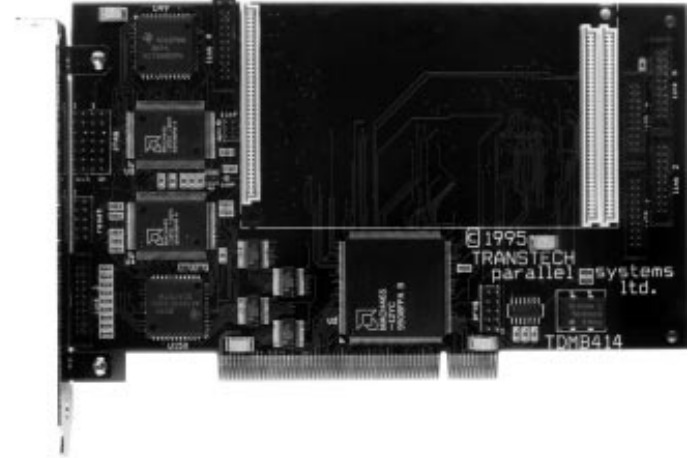
Full card

**Expansion Options:**

TIM-40 modules

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDMB414 is a half-size PCI card with a single TIM-40 slot and provides C4x system developers with the benefits of plug and play found in PC's and workstations. This allows direct access to the wide range of low cost, high performance interface and acquisition cards available for PCI. To allow efficient high speed communications, the TDMB414 includes a 32-bit FIFO based comport interface and optional dual-port memory support for the C4x global bus. The PCI rev 2.1 compliant board has a ParaDICE-compatible JTAG master on-board to allow simplified debugging.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- VME carrier
- 3x TIM-40 sites
- JTAG debug master
- VME slave interface
- 12x external comports
- Bundled Solaris drivers

**SPECIFICATIONS**

**Platforms Supported:**

VME

**TMS320 Devices Supported:**

TMS320C4x

**Host Supported:**

Windows

Solaris

VxWorks

**CPU:**

1-8

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Software Included:**

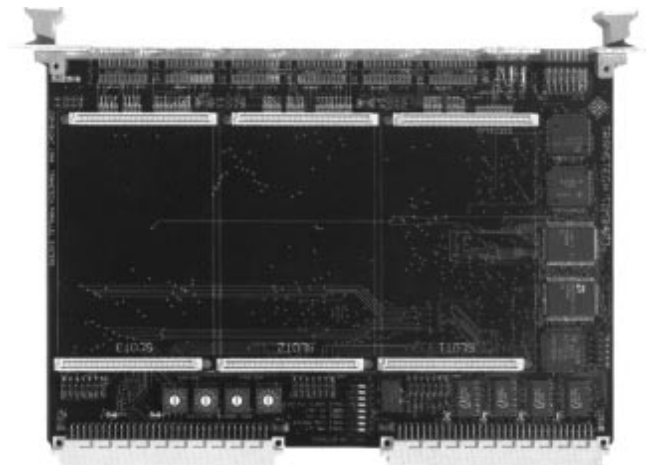
Solaris drivers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TDMB423 is a 6U VME designed to accept 1, 2 or 3 TIM-40 modules. The TDMB423 provides an interface between the VMEbus and port 3 of the TIM-40 at site 1. The VME interface supports slave cycles D8(OE), D16 and D32. For some applications a simple polled interface may not provide sufficient performance, so the TDMB423 supports variable length burst transfers via a FIFO with a level register. Repeated polling is not required with this card because the number of



bytes left is the FIFO is known. To enable easy debugging, the TDMB423 incorporates Transtech's ParaDICE JTAG master onboard which gives the functionality of Texas Instruments XDS510 In-System Emulator. The JTAG master is controlled over VMEbus. Transtech's ParaDICE system allows daisy-chaining of the JTAG ports of multiple boards thereby simplifying debugging. The TDMB423 is shipped with device driver software for Solaris 1 and 2.

DEVELOPMENT BOARDS

**COMPANY INFORMATION**

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Parallel Systems



**FEATURES & BENEFITS**

- VME carrier
- 2x TIM-40 sites
- 2x IP sites
- JTAG debug master
- VME slave interface
- bundled drivers for Solaris 1 and 2

**SPECIFICATIONS**

**Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

Solaris

VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60MHz

**Board Size:**

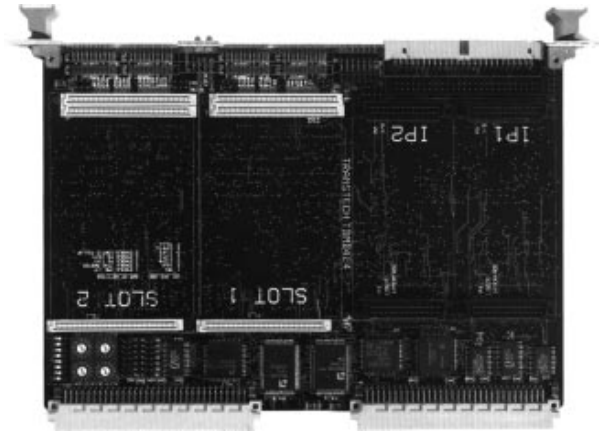
Full card

**Expansion Options:**

IndustryPack and TIM-40 modules

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDMB424 is a 6U VME board designed to provide C40-based signal processing systems with flexible analog and digital I/O facilities using IndustryPack modules. Two single IndustryPacks or one double IndustryPack can be fitted with two TIM-40 sites available as well for further processing capabilities. The TDMB424 is supplied with an IndustryPack support library, as well as a ParaDICE-compatible JTAG master on-board which allows multiple debugging of daisy chained boards. It is also supplied with device driver software running under solaris 1 and 2 with full source code included.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- VME carrier
- 4 x TIM-40 site
- JTAG ParaDICE slave debug
- VME slave interface
- 12 ext. comports
- bundled drivers for Solaris 1 and 2

**SPECIFICATIONS**

**Platforms Supported:**

VME  
Windows

**Host Supported:**

Solaris  
VxWorks

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1-8

**Clock Speeds Available:**

60MHz

**Board Size:**

Full card

**Expansion Options:**

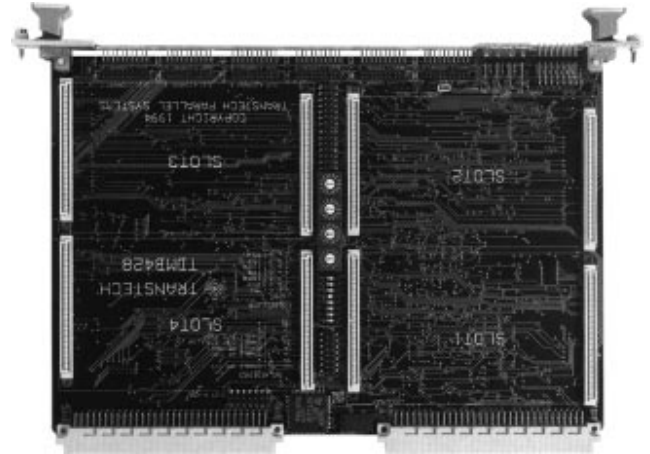
TIM-40 module, i.e. Fiber Optics

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TDMB428 is a 6U VME carrier designed to accept four size 1 or two size TIM-40 modules. When fully populated with 60MHz TMB441 Dual C40 Processing modules up to 480MFLOPs is available in a single VME slot. A version of the TDMB428 is available without the VME interface as TDMB428-NI. The TDMB428 operates as a VME slave, that is it allows the JTAG scan path to be routed through it, allowing any processor on the TDMB428 or other ParaDICE



equipped cards further down the ParaDICE chain to be debugged from a single master (such as TDMB423 or TDMB424) at the start of the chain. The TDMB428 is shipped with device driver software to run under Solaris 1 and 2, full source code for the driver is supplied.

DEVELOPMENT BOARDS

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Processor Module
- Size 1 TIM-40 module
- 2x TMS320C44
- 512kBytes local SRAM per DSP
- 512kBytes global SRAM per DSP

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
PCI  
ISA

**Host Supported:**

PaCE  
3L Parallel C

**TMS320 Devices Supported:**

TMS320CC4x

**CPU:**

2

**Clock Speeds Available:**

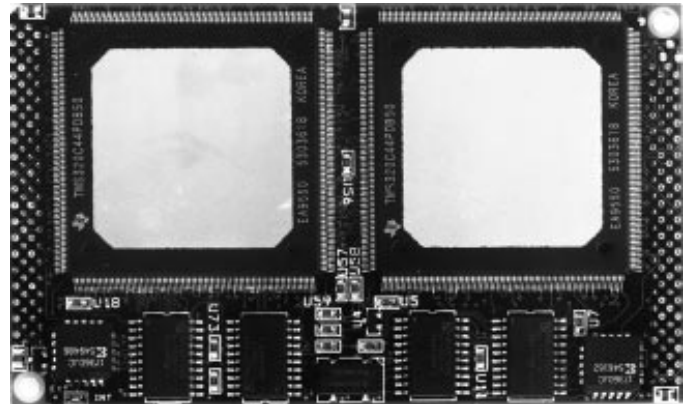
60MHz

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM442 provides the highest levels of performance by combining 2 TMS320C44 processors together with up to 2M of SRAM. Three comports from each processor are available at the TIM-40 connections with the two processors coupled by a single comport. Each processor has its own IDROM allowing multi-processor systems and debugging tools to identify the processing and memory configurations. To aid debugging, a JTAG loop is routed through both processors. The TDM442 provides up to 120MFLOPS, resulting in a high performance/cost ratio.

**COMPANY INFORMATION**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Processor module
- Size 1 TIM-40 module
- TMS320C40 DSP
- Up to 2MBytes SRAM
- Global bus expansion connector

**SPECIFICATIONS**

**Platforms Supported:**

VME  
ISA  
PCI PC  
TIM-40 module

**Host Supported:**

PaCE  
3L Parallel C

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

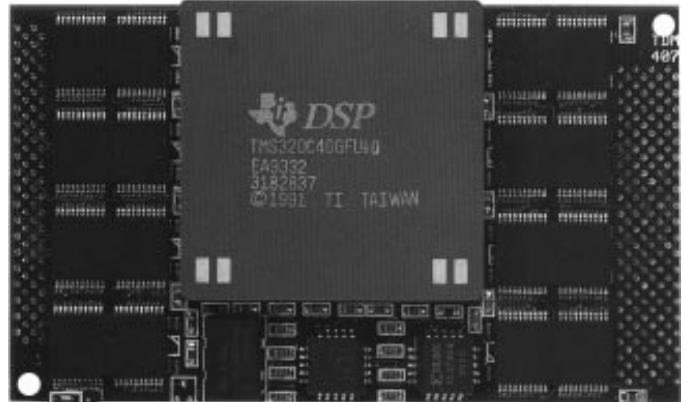
4.2 x 2.5"

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM407 is a size 1 TIM-40 module incorporating a Texas Instruments TMS320C40 DSP processor and up to 2MBytes of SRAM, organized as up to 1MByte per bus (local and global). The TDM407 offers no compromise performance compared to the TDM411, and the benefit of 6 com-ports compared to the 4 com-ports of the TDM443 TIM-40 module from Transtech. The TDM407 has a global bus expansion connector to allow direct access to the C40's memory when placed on suitable motherboards.

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Processor module
- Size one TIM-40 module
- TMS320C40
- Up to 8MBytes EDRAM
- SRAM speed at DRAM cost and density
- Global bus expansion connector

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
PCI  
ISA

**Host Supported:**

PaCE  
3L Parallel C

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

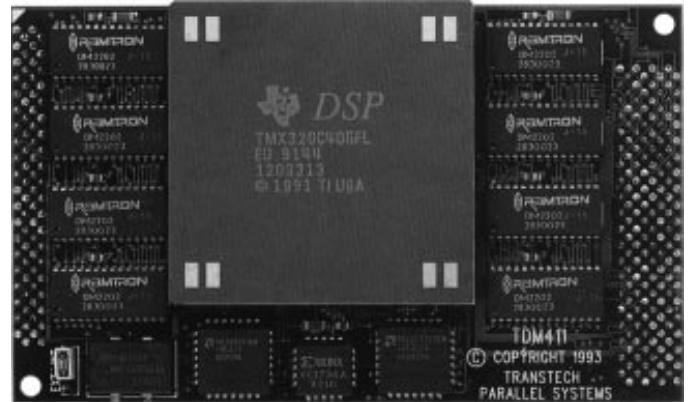
4.2 x 2.5"

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TDM441 processing module represents the ideal combination of performance and memory capacity for users who need more speed than a DRAM based TIM-40 processing module can deliver, but who find the limited density of SRAM inadequate. The module was the first TMS320C40 design to make use of Ramtron's revolutionary enhanced DRAM (EDRAM). This memory consists of a very fast 4Mbit DRAM array which is tightly-coupled to a 2kbit SRAM cache. the DRAM array is equivalent to a 35nsec conventional DRA.



This in itself makes zero-wait-state (2 cycle) page misses possible. The cache can be accessed in just 15nsec, supporting true zero-wait-state single cycle reads. The TDM411 has a high performance, asynchronous memory that fully exploits these features and delivers 0ws access in all possible circumstances, transparently to the user. The TDM411 is a size one TIM-40 with up to 8MBytes of EDRAM available arranged as 4MBytes local and 4MBytes global. The global bus expansion connector for shared memory applications, such as the provision of IndustryPack I/O on the TDMB424 carrier board.

**COMPANY INFORMATION**

**Transtech Parallel Systems Corporation**

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Framegrabber and display module
- Size 3 TIM-40 module
- TMS320C40
- RGB color input
- Two 1024 x 1024 x 8-bit frame buffers
- 1024 x 1024 cx 4-bit overlay plane
- 4MBytes local EDRAM

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
ISA

**Host Supported:**

PaCE  
3L Parallel C

**MS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size:**

4.2", 7.5"

**Memory (DRAM/SRAM):**

SRAM

**Software Included:**

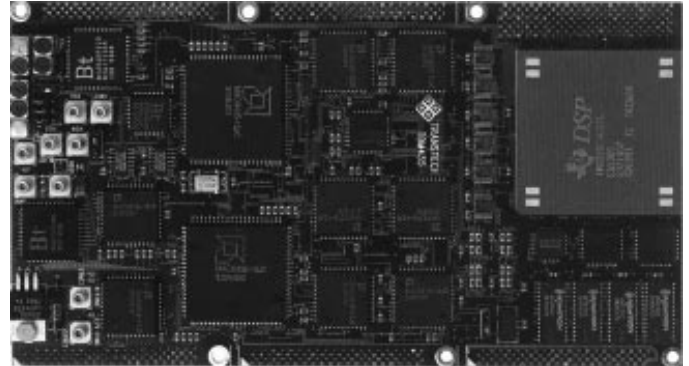
Libraries

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TDM435 is a Size 3 TIM-40 module incorporating a programmable resolution 8-bit monochrome framegrabber, TMS320C40 processor and a 1024 x 1024 x 8-bit RGB graphics section with a 4-bit overlay plane. The video A/D



stage is equipped with selectable chroma filters for PAL and NTSC, and a constant group delay anti-aliasing filter for improved video quality. The use of Ramtron's EDRAM (4MBytes zero wait state) for the local memory gives equivalent SRAM performance with the DRAM memory density and cost. Equipped with a 1024 x 1024-4-bit overlay plane and video that can be displayed from either block of VRAM (2x 1k x 1k) with variable resolution up to 1K x 1K non interlaced make this ideal for machine vision and image processing applications. Video timings can be synchronized with capture if required. Separate H and V syncs area available. A graphics and capture control library provides facilities for display set-up, window drawing and management, draw and fill operations, font manipulations, L-U-T control and image acquisition control. Additional libraries such as the i40 software library from Transtech are available, as well as Foster Findlay's extensive C Library of image processing routines.

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TRANSTECH  
Parallel Systems

DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Color/Monochrome frame grabber
- Size 2 TIM-40 module
- RGB, 2x Y/C or 4x monochrome video inputs
- 1024x1024x24-bit frame buffer
- 4MBytes local EDRAM

**SPECIFICATIONS**

**TMS320 Devices Supported:**

TMS320C4x

**Platforms Supported:**

TIM-40

**Host Supported:**

PaCE

3L Parallel C

**CPU:**

1

**Clock Speeds Available:**

40MHz

**Board Size:**

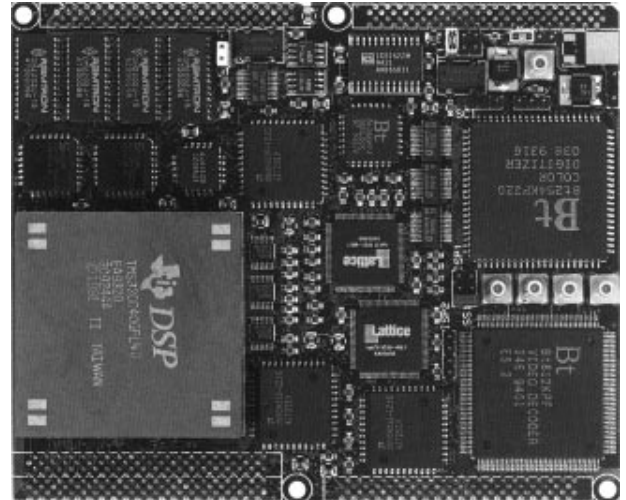
4.2, 5

**Memory (DRAM/SRAM):**

DRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM436 is a high performance color and monochrome framegrabber on a size 2 TIM-40 module with a local TMS320C40 DSP. Input video formats supported include NTSC, PAL, S-video, RGB color , RS170/330 and CCIR monochrome. Four video input are provided which can be used for composite input or separate simultaneous monochrome channels. Image sizes of up to 1024x1024x24-bit are supported. 4MBytes of fast local memory is provided in addition to VRAM frame buffers. An optional imaging processing and analysis library with 130hand optimized functions is available.

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TRANSTECH  
Parallel Systems



**FEATURES & BENEFITS**

- Processor module
- Size 1 dual TIM-40
- 2 x TMS320C40 DSP
- 512kBytes local SRAM per DSP
- Local memory contiguous with internal RAM

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
PCI  
ISA

**Host Supported:**

PaCE  
3L Parallel C

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60MHz

**Board Size:**

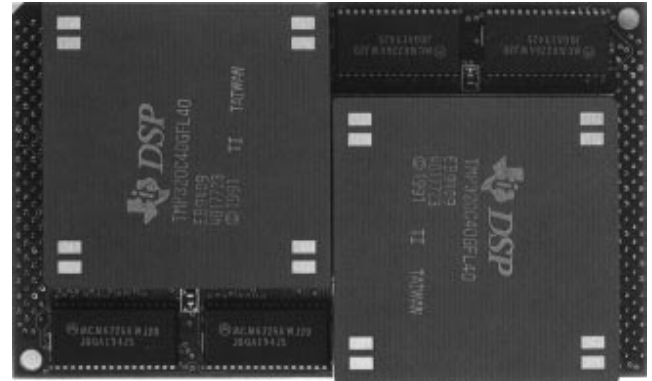
4.2 x 2.5"

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM441 is a dual high performance processing module conforming to the Texas Instruments TIM-40 standard for TMS320C40- based modules and is compatible with Transtech PC/AT and VME Parallel DSP motherboards. The TDM441 has been designed for parallel DSP applications which require the highest achievable processing performance to size ratio, such as image processing, machine vision and radar and sonar signal processing. The TDM441 has two TMS320C40 DSP processors, so that each TIM-40 can provide up to 120MFLOPS, each with 512kBytes SRAM. The architecture is 3-comport pipeline. Each of the two processors has its own IDROM allowing multi-processing operating systems and debugging tools to identify the processing and storage capabilities available. Using the TDM441 it is possible to have up to 480MFLOPS processing power on a single PC/AT or VME card.

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**FEATURES & BENEFITS**

- Processor module
- Size 1 TIM-40 module
- TMS320C44
- Up to 1.5MBytes local SRAM
- Up to 1MByte Global SRAM

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
PCI  
ISA

**Host Supported:**

PaCE  
3L Parallel C

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

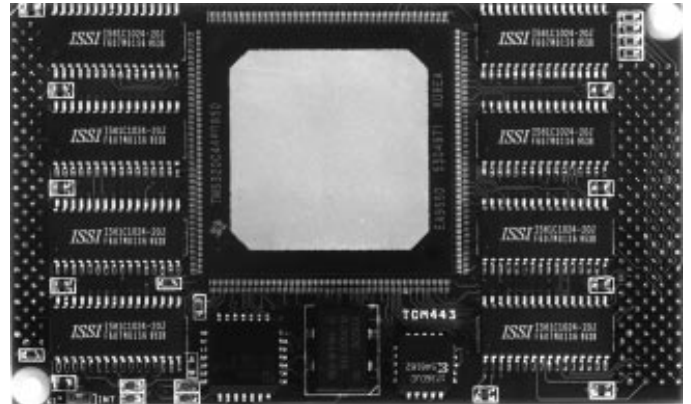
4.2", 2.5"

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM443 is a single TMS320C44 solution providing cost effective processing with the 'no compromise performance' benefit of up to 2.5MBytes of SRAM. The TDM443 is fitted with a global bus connector for applications that require direct access to the processors memory.

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**FEATURES & BENEFITS**

- Processor Module
- Size 1 TIM-40 standard
- 2 x TMS320C44
- 2MBytes local EDRAM per DSP
- 2 MBytes global EDRAM per DSP
- 90% perf. of equivalent SRAM based solution

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
PCI  
ISA

**Host Supported:**

PaCE  
3L Parallel C

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

2

**Clock Speeds Available:**

60MHz

**Board Size:**

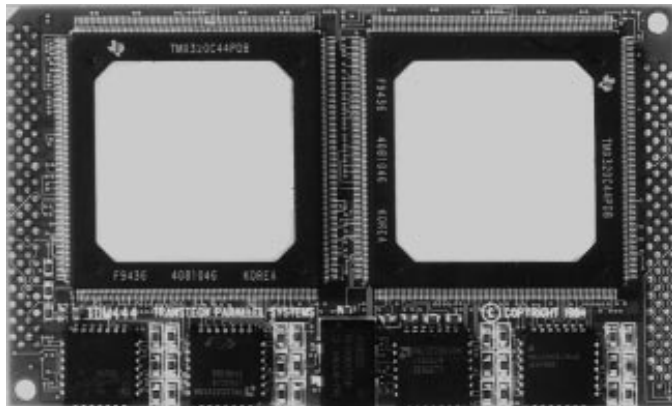
4.2", 2.5"

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM444 is a dual TMS320C44 processor module with up to 8MBytes of EDRAM. this combination offers near SRAM performance at DRAM memory density and cost. The TDM444 is ideal for applications dependent upon embedded DSP's for Image and Signal Processing Projects. The low height profile means that up to 8 processors, giving up to 480MFLOPS can be housed in a single VME slot.

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DEVELOPMENT BOARDS





**FEATURES & BENEFITS**

- Processor module
- Size 1 TIM-40 module
- TMS320C44
- 4MBytes EDRAM local
- 4MBytes EDRAM global
- 90% perf. of equivalent SRAM based solution.

**SPECIFICATIONS**

**Platforms Supported:**

TIM-40  
VME  
PCI  
ISA

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1

**Clock Speeds Available:**

60MHz

**Board Size**

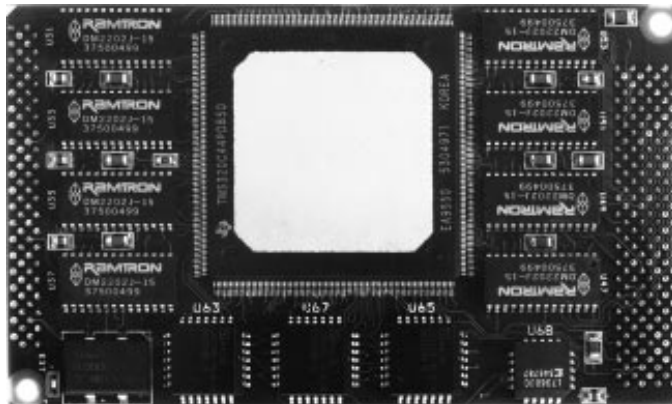
2.5", 4.2"

**Memory (DRAM/SRAM):**

SRAM

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The TDM445 is a single TMS320C44 processor module with up to 8MBytes of memory (EDRAM). Transtech's implementation of EDRAM (the optimum memory for 'C40 solutions) provides both near SRAM performance and at DRAM cost and density, with zero-wait-states in all possible circumstances.

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DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- SCSI-2 TIM-40 (size 2)
- NCR53C720 SCSI processor
- Local 50MHz TMS320C44 DSP
- 4Mbytes local EDRAM
- 4Mbytes global EDRAM
- 20Mbytes/sec synchronous SCSI transfers
- 10Mbytes/sec asynchronous SCSI transfers

## SPECIFICATIONS

### Platforms Supported:

SCSI

### CPU:

1

### TMS320 Devices Supported:

TMS320C4x

### Board Size:

Size2

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The TDM450 is a SCSI-2 TIM-40 module which connects TMS320C4x based systems with up to 16 SCSI devices. The TDM450 may be used with hard disks, CD-ROMs, scanners, tape drives and also workstations or PCs. The SCSI TIM incorporates a TMS320C44 DSP processor, 53C720 SCSI device and 8Mbytes of local memory. This provides DSP systems with an intelligent SCSI sub-system supporting synchronous data transfer rates of up to 20Mbytes/sec. To move data between the host system and a TDM450, the TDM450 can perform DMA transfers at up to 60Mbytes/sec. In addition to a global bus interface, the TDM450 also supports 4 comport links. This enables maximum flexibility for the TDM450 to be used by multiple 'C40 DSPs.

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## FEATURES & BENEFITS

- Compact form factor
- Ideal for embedded or remote systems
- Two TIM-40 module slots
- Up to 8 C4x DSPs (via TIM-40 modules)
- Support for many application-specific modules
- Unlimited expansion capability

## SPECIFICATIONS

### Platforms Supported:

Stand-alone

### Host Supported:

Windows 3.1, Windows 95, Windows NT,  
Solaris, MS DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

0-8

### Clock Speeds Available:

60MHz

### Board Size:

7, 4.2

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I/O, Digital I/O, Coprocessor daughter cards,  
Variety of TIM-40 modules

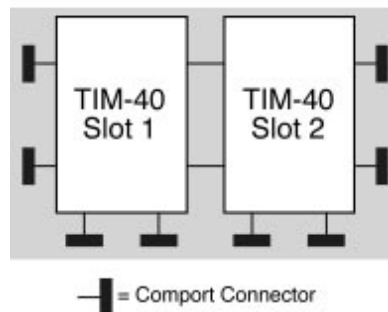
### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEBUSL1 is a compact TIM-40 motherboard with two TIM-40 slots. It is designed for use in TMS320C4x DSP systems, and supports a variety of plug-in TIM-40 modules from Traquair. The HEBUSL1 has no onboard bus interface for communicating with a host computer, but can connect to an external host interface through a TIM-40 Comm port.

HEBUSL1 Block Diagram



Traquair provides such interfaces for SBus, ISA, PCI, PC/104 and VME systems. The two TIM-40 slots are connected by as pair of Comm ports, with the eight remaining Comm ports available at buffered connectors for connection to a host interface and other Traquair motherboards. Optional TIM-40 processing modules are available from Traquair, with up to two TMS320C40 or four TMS320C44 processors on each module (for a total of up to 8 C4x DSPs per HEBUSL1). These modules can include onboard zero-wait-state SRAM, EDRAM, or DRAM. Traquair also has many application-specific TIM-40 modules for image processing, data acquisition, remote communications, and data storage. In addition, custom hardware and third-party IndustryPacks can be added with special modules.

## COMPANY INFORMATION

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Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations. See our website for more details: <http://www.traquair.com>





## FEATURES & BENEFITS

- 3U CompactPCI board
- One TIM-40 slot
- JTAG controller
- Software support thru API

## SPECIFICATIONS

### Platforms Supported:

CompactPCI  
Windows 3.1  
Windows 95  
Windows NT  
DOS  
VxWorks

### CPU:

0-4

### TMS320 Devices Supported:

TMS320C4x

### Clock Speeds Available:

60MHz

### Board Size:

3U

### Expansion Options:

Analog I-O Daughtercard  
Digital I-O Daughtercard  
Coprocessor Daughtercard  
TIM-40 Module

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HECPCI-1 is a CompactPCI board for use in TMS320C4x DSP systems. It has a single TIM-40 slot that supports a variety of plug-in TIM-40 modules, and an onboard JTAG controller. There are six buffered comm port

connectors for connecting to other boards, allowing a system of any size to be constructed. Two of the comm ports can be connected to the PCI interface for host communication. Optional plug-in TIM-40 processing modules are available from Traquair, with up to two TMS320C40 or four TMS320C44 processors on each module. These modules can include onboard zero-wait-state SRAM, EDRAM, or DRAM. Traquair also has many application-specific TIM-40 modules for image processing, data acquisition, remote communications, and data storage. Custom hardware and third-party IndustryPacks can also be added with special modules. Software support is handled transparently through an API, providing a simple and consistent PC programming environment. Many software tools are available for developing and running user applications, including the TI Compiler/Assembler/Linker, Hunt Engineering Server/Loader, 3L Parallel C, Sinectonalysis hand-optimized function libraries, GO DSP Code Composer, and TI Debugger.

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<http://www.traquair.com/?page=products/tim-40.products/hecpci1.html>

Specialist supplier of modular TIM-40 DSP systems that utilize multiple TMS320C40 and TMS320C44 processors in ISA, PCI, CompactPCI, PC/104, VME, SBus and embedded configurations. See Traquair's Web site for more details: <http://www.traquair.com>





## FEATURES & BENEFITS

- SA Interface via two comports
- Four TIM-40 module slots
- Up to 16 C4x DSPs via TIM-40 modules
- Support for many application-specific modules
- Unlimited expansion capability
- Extensive third-party software support
- Onboard JTAG controller

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host Supported:

Windows 3.1, Windows 95, Windows NT, MS DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

0-16

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I/O, Digital I/O, Coprocessor daughter cards, Many TIM-40 module options

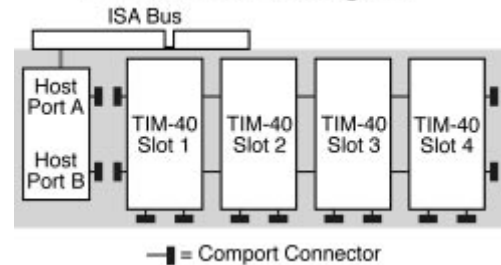
### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEPC2E is a full-length ISA board for use in PC-hosted TMS320C4x DSP systems. It contains four TIM-40 slots, supporting a variety of plug-in TIM-40 modules, and an onboard JTAG controller. The TIM-40 slots are connected in a double com-port pipeline, with the 12 remaining Comports available at buffered connectors for connection to other Traquair motherboards. Two of the com-ports can be connected to the ISA interface for host communication.

HEPC2E Block Diagram



Optional plug-in TIM-40 processing modules are available from Traquair, with up to two TMS320C40 or four TMS320C44 processors on each module (for a total of up to 16 C4x DSPs per HEPC2E). These modules can include onboard zero-wait-state SRAM, EDRAM, or DRAM. Traquair also has many application-specific TIM-40 modules for image processing, data acquisition, remote communications, and data storage. Custom hardware and third-party IndustryPacks can also be added with special modules. Software support is handled transparently through an API, providing a simple and consistent PC programming environment. Many software tools are available for developing and running user applications, including the TI Compiler/Assembler/Linker, Hunt Engineering Server/Loader, 3L Parallel C, Sinectonalysis hand-optimized function libraries, GO DSP Code Composer, and TI Debugger. See our website for more details: <http://www.traquair.com>

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Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.





## FEATURES & BENEFITS

- PCI interface via two com-ports
- Four TIM-40 Module Slots
- Up to 16 C4x DSPs via TIM-40 Modules
- Support for many application-specific modules
- Unlimited expansion capability
- Extensive third-party software support
- Onboard JTAG controller

## SPECIFICATIONS

### TMS320 Devices Supported:

TMS320C4x

### Platforms Supported:

PCI PC

### Host Supported:

Windows 3.1, Windows 95, Windows NT, MS DOS

### CPU:

0-16

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I/O, Digital I/O, Coprocessor daughter cards, Variety of TIM-40 modules

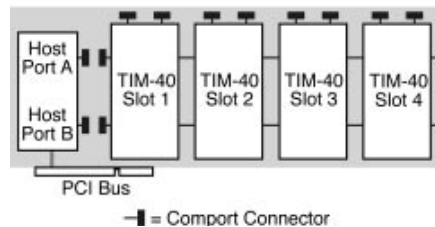
### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEPC4 is a full-length PCI board for PC-hosted TMS320C4x DSP systems. It contains four TIM-40 slots, supporting a variety of plug-in TIM-40 modules from Traquair. It also has an onboard JTAG controller. The TIM-40 slots are connected in a double Comport pipeline, with the 12 additional Comports available for external connection to other

HEPC4 Block Diagram



motherboards. A pair of com-ports can be connected to the PCI interface for host communication. Optional TIM-40 processing modules are available from Traquair, with up to two TMS320C40 or four TMS320C44 processors on each module (up to 16 C4x DSPs per HEPC4). These modules can include onboard zero-wait-state SRAM, EDRAM, or DRAM. Traquair also has many application-specific TIM-40 modules for image processing, data acquisition, remote communications, data storage, custom hardware and third-party IndustryPacks. Software support is handled transparently through an API, providing a consistent PC programming environment. Many software tools are available for developing and running user applications, including the TI Compiler/Assembler/Linker, Hunt Engineering Server/Loader, 3L Parallel C, Sinectonanalysis hand-optimized function libraries, and GO DSP Code Composer. Traquair also offers the HEPC3, which is a half-length PCI board with one TIM-40 slot. See our website for more details: <http://www.traquair.com>,

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Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.





## FEATURES & BENEFITS

- Stackable PC/104 board with host interface
- Onboard TMS320C44 processor
- Up to 2MBytes SRAM
- 1MByte optional Flash ROM
- Unlimited expansion capability
- Extensive third-party software support
- Onboard JTAG controller

## SPECIFICATIONS

### Platforms Supported:

PC/104

### Host Supported:

Windows 3.1, Windows 95, Windows NT, MS DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

1

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

External Hardware via Comports

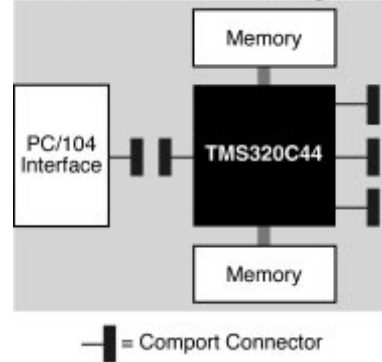
### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEPC2104 is a stackable PC/104 board for use in TMS320C4x DSP systems. It combines a 60MHz TMS320C44 processor, up to 2MBytes zero-wait-state SRAM, 1MByte optional FLASH-ROM, and a host Comport interface. It also has an onboard JTAG controller. Although it does not contain any TIM-40 slots, it can connect to an external TIM-40 motherboard through any of its four

HEPC2104 Block Diagram



com-port connectors. In this way, it can be used as the host interface for any of the TIM-40 processing modules or application-specific modules available from Traquair. It can also connect to the HEBASE104 PC/104 board, for connecting to a variety of I/O interfaces. Software support is handled transparently through the API, providing a simple and consistent PC programming environment. Many software tools are available for developing and running user applications, including the TI Compiler/Assembler/Linker, Hunt Engineering Server/Loader, 3L Parallel C, Jovian Pegasus, and Sinectonalysis Function Libraries. See our website for more details: <http://www.traquair.com>

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 www: <http://www.traquair.com>

Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.



**FEATURES & BENEFITS**

- Single-slot SBus card
- Comport-host interface
- Unlimited expansion capability
- Extensive third-party software support
- Onboard JTAG controller

**SPECIFICATIONS****Platforms Supported:**

SBus

**Host Supported:**

Solaris

**TMS320 Devices Supported:**

TMS320C4x

**Board Size:**

Full card

**Expansion Options:**

External TIM-40 Hardware

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The HESB40 provides a means for interfacing TMS320C4x DSP hardware with Sun Workstations and other hardware that utilizes an SBus interface. It is a single-slot SBus card, with a Comport Interface and an onboard JTAG controller. The HESB40 does not have any TIM-40 slots, but it connects the SBus to a buffered TIM-40 Comport connector. This can then connect to an external TIM-40 motherboard, such as the Pizza Box, HEBUSL1, HEPC2E, HEPC4, or HEV40-4. This allows any of the Traquair processing and application-specific TIM-40 modules to be used in an SBus system. Many software tools are available for developing and running user applications, including the TI Compiler/Assembler/Linker, Hunt Engineering Server/Loader, 3L Parallel C, Sinectonalysis Function Libraries, and TI Debugger. See our website for more details: <http://www.traquair.com>

**COMPANY INFORMATION****Traquair Data Systems, Inc.**

114 Sheldon Road

Ithaca, NY. 14850 USA

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e-mail: [traquair@traquair.com](mailto:traquair@traquair.com)www: <http://www.traquair.com>

Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.







## FEATURES & BENEFITS

- VME Interface
- Four TIM-40 module slots
- Up to 16 C4x DSPs via TIM-40 modules
- Support for many application-specific modules
- Unlimited expansion capability
- Extensive third-party software support
- Onboard JTAG controller

## SPECIFICATIONS

### Platforms Supported:

VME

### Host Supported:

Windows 3.1, Windows 95, Windows NT, Solaris, MS DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

0-16

### Clock Speeds Available:

60MHz

### Board Size:

Full card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

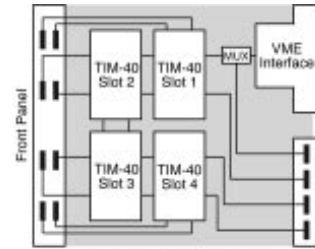
Analog I/O, Digital I/O, Coprocessor daughter card  
Variety of TIM-40 modules

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The HEV40-4 is a 6U VME board for use in TMS320C4x DSP systems. It contains four TIM-40 slots, supporting a variety of plug-in TIM-40 modules from Traquair. It also has an onboard JTAG controller. The TIM-40 slots are connected in a double com-port pipeline, with the 12 remaining Comports



HEV40-4 Block Diagram

available at buffered connectors for connection to other Traquair motherboards. A single Comport connects to the host computer via the VME interface. Optional plug-in TIM-40 processing modules are available from Traquair, with up to two TMS320C40 or four TMS320C44 processors on each module (for a total of up to 16 C4x DSPs per HEV40-4). These modules can include onboard zero-wait-state SRAM, EDRAM, or DRAM. Traquair also has many application-specific TIM-40 modules for image processing, data acquisition, remote communications, and data storage. In addition, custom hardware and third-party IndustryPacks can be added with special modules. A variety of software tools are available for developing and running user applications from either a PC or Sun Workstation. These include the TI Compiler/Assembler/ Linker, Hunt Engineering Server/ Loader, 3L Parallel C, Sinectanalysis hand-optimized function libraries, and others. See our website for more details: <http://www.traquair.com>

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Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.





## FEATURES & BENEFITS

- Complete Integrated Package (S/W + H/W)
- PC-based 'C6201 Board
- Optional Plug-In I/O Hardware
- API for Windows and DOS
- Code Generation, Loading, and Debug Software
- Self Teach Course
- Become a 'C6x user in a day!

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### CPU:

1

### TMS320 Devices Supported:

TMS320C6x

### Clock Speeds Available:

200MHz

### Board Size:

Full Card

### Memory (DRAM/SRAM):

SRAM

### Expansion Options:

Analog I-O Daughtercard

Digital I-O Daughtercard

### Software Included:

Debuggers

Code Generation Tools

Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Traquair's HEVAL6A is a complete, flexible development system that provides all of the hardware and software tools necessary to begin using the new TMS320C6x technology in a wide range of application areas. The hardware combines a 1600 MIPS TMS320C6201 DSP, three types of RAM, FLASH ROM, a PC host interface, a JTAG controller, a serial I/O mezzanine, and two 16-bit I/O slots. A variety of optional data acquisition and communications interfaces are available, such as multiple channel A/D, D/A, RS-232, digital camera, fiber optic, and coaxial interfaces. Software tools include an API for DOS and Windows (3.1, 95, and NT), code generation tools (TI Compiler, Assembler, Assembly Optimizer, Linker, etc), a Server/Loader utility, and debugging tools (GO DSP Code Composer). The system also includes extensive documentation, including a complete self-teach kit.

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<http://www.traquair.com/?page=products/c6x.systems.html>

Specialist supplier of modular TIM-40 DSP systems that utilize multiple TMS320C40 and TMS320C44 processors in ISA, PCI, CompactPCI, PC/104, VME, SBus and embedded configurations.





## FEATURES & BENEFITS

- SPARC-style desktop chassis
- Eight TIM-40 module slots
- Up to 32 C4x DSPs via TIM-40 modules
- Support for many application-specific modules
- Unlimited expansion capability
- Connects to ISA, PCI, VME, SBus, PC/104 Iface
- 100W power supply and cooling fan

## SPECIFICATIONS

### Platforms Supported:

Stand-alone  
Desktop Chassis

### Host Supported:

Windows 3.1, Windows 95, Windows NT,  
Solaris, MS DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

0-32

### Clock Speeds Available:

60MHz

### Memory (DRAM/SRAM)

SRAM

### Software Included:

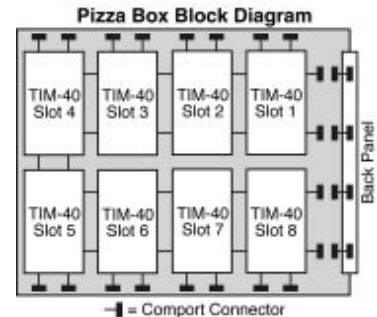
Analog I/O, Digital I/O, Coprocessor daughter cards,  
Variety of TIM-40 Modules

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

The Pizza Box is an 8-slot TIM-40 motherboard in a SPARC-style desktop chassis. It is designed for use in TMS320C4x DSP systems, and supports a variety of plug-in TIM-40 modules from Traquair. It also has a built-in power supply and a cooling fan. The Pizza Box can connect to an external host interface through a TIM-40 com-port, to



communicate with a host computer. Traquair provides interfaces for SBus, ISA, PCI, PC/104 and VME systems. The TIM-40 slots are connected in a double com-port pipeline, with the 20 remaining com-ports available at buffered connectors for connection to a host interface and other Traquair motherboards. Four com-ports can connect directly through the back panel. Optional TIM-40 processing modules are available from Traquair, with up to two TMS320C40 or four TMS320C44 processors on each module (for a total of up to 32 C4x DSPs per Pizza Box). These modules can include onboard zero-wait-state SRAM, EDRAM, or DRAM. Traquair also has many application-specific TIM-40 modules for image processing, data acquisition, remote communications, and data storage. In addition, custom hardware and third-party IndustryPacks can be added with special modules. See our website for more details: <http://www.traquair.com>

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www: <http://www.traquair.com>

Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.





## FEATURES & BENEFITS

- 2-channel RS-232 interface
- Fiber optic transmitter/receiver
- Bi-directional coaxial interface
- Transputer link interface
- Differential transputer link interface
- Third-party IndustryPack interface
- Custom hardware expansion interface

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Traquair has a variety of Remote Communication TIM-40 modules for communication between different nodes in a TMS320C4x DSP system. These modules can be plugged into any of the TIM-40 motherboards, such as the HEPC2E, HEPC3, HEPC4, HEV40-4, HEBUSL1, or Pizza Box. The different modules are: HETBASEIO+HEGD3 (2-channel RS-232 interface), HETBASEIO+HEGD7 (fiber-optic transmitter / receiver), HETBASEIO+HEGD8 (bi-directional coaxial interface), HET403TL (transputer link interface), HET403DTL (differential transputer link interface). In addition, a variety of third-party IndustryPacks can be added with the IPackTIM, and you can add your own custom hardware to the prototyping area of the HEXTIM. For long distance communication, the HEGD7 and HEGD8 also provide a remote booting capability. They are also completely interchangeable, allowing a system to have either a coaxial or a fiber-optic link without any modification of the user software. The HEGD3, HEGD7, and HEGD8 interfaces can also be connected to the HEBASE104 PC/104 board, for use in PC/104-based TMS320C4x systems. See our website for more details: <http://www.traquair.com>

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## FEATURES & BENEFITS

- 16-channel 12-bit A/D interface
- 8-channel 16-bit A/D interface
- 6-channel 20-bit Digital I/O interface
- 4-channel 16-bit D/A interface
- Stereo 16-bit Audio I/O interface
- Third-party IndustryPack interface
- Custom hardware interface

## SPECIFICATIONS

### Platforms Supported:

TIM-40 Module

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris  
MS DOS

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Traquair has a variety of Data Acquisition TIM-40 modules for use with TMS320C4x DSP systems, which provide analog and digital interfacing options. These modules can be plugged into any of the TIM-40 motherboards, such as the HEPC2E, HEPC3, HEPC4, HEV40-4, HEBUSL1, or Pizza Box. The different modules are: HETBASEIO+HEGD1 (16-channel 12-bit A/D interface), HETBASEIO+HEGD2 (8-channel 16-bit A/D interface), HETBASEIO+HEGD4 (6-channel 20-bit digital I/O interface), HETBASEIO+HEGD5 (4-channel 16-bit D/A interface) and HETAIO (16-bit stereo audio I/O interface). In addition, a variety of third-party IndustryPacks can be added with the IPackTIM, and you can add your own custom hardware to the prototyping area of the HEXTIM. All of the HEGDx interfaces can also be connected to the HEBASE104 PC/104 board, for use in PC/104-based TMS320C4x system. See our website for more details: <http://www.traquair.com>

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## FEATURES & BENEFITS

- 24-bit RGB framegrabber (with C44)
- 24-bit composite framegrabber (with C44)
- 8-bit video capture/processing/display (C44)
- Digital camera interface
- Image processor (C40 + 2D Convolution Engine)
- Third-party IndustryPack expansion
- Custom hardware expansion

## SPECIFICATIONS

### Platforms Supported:

TIM-40

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris  
MS DOS

### TMS320 Devices Supported:

TMS320C4x

### CPU:

0-1

### Clock Speeds Available:

50MHz

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Traquair has a variety of Image Processing TIM-40 modules for use with TMS320C4x DSP systems, which provide real-time image capture, display, and specialist image processing options. These modules can be plugged into any of the TIM-40 motherboards, such as the HEPC2E, HEPC3, HEPC4, HEV40-4, HEBUSL1, or Pizza Box. The different modules are: HECFG44 (24-bit RGB framegrabber with a C44), HECCFG44 (24-bit composite framegrabber with a C44), HETVIO2 (8-bit concurrent video capture/processing/display with a C44), HETBASEIO+HEGD6 (digital camera interface) and VIPTIM (image processor with a C40 and a 2D convolution engine). In addition, a variety of third-party IndustryPacks can be added with the IPackTIM, and you can add your own custom hardware to the prototyping area of the HEXTIM. The HEGD6 Digital Camera Interface is also available with the HEBASE104, for use in PC/104-based TMS320C4x DSP systems. See our website for more details: <http://www.traquair.com>

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## FEATURES & BENEFITS

- 1-4 TMS320C40 or TMS320C44 processors
- Up to 16MBytes SRAM
- Up to 8MBytes EDRAM
- Up to 32MBytes DRAM

## SPECIFICATIONS

### TMS320 Devices Supported:

TMS320C4x

### Platforms Supported:

TIM-40 Module

### Host Supported:

Windows 3.1  
Windows 95  
Windows NT  
Solaris  
MS DOS

### CPU:

1-4

### Clock Speeds Available:

60MHz

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Traquair has a variety of TIM-40 processing modules that utilize TMS320C40 and TMS320C44 processors. These modules plug into any of Traquair's TIM-40 motherboards, such as the HEPC2E, HEPC3, HEPC4, HEV40-4, HEBUSL1, or Pizza Box. Each module contains one or more TMS320C40 or TMS320C44 processor, operating at 50- or 60MHz. The module also provides memory to the processor's, in the form of zero-wait-state SRAM, EDRAM, or DRAM. The amount of memory varies, up to 32MBytes DRAM, 8MBytes EDRAM, and 16MBytes SRAM. The different modules are: HET40Sx (one C40 with SRAM), HET40Ex (one C40 with EDRAM), HET40SDx (one C40 with SRAM and DRAM), HET40x (one C40 with DRAM), HETWIN-C40x (two C40s with SRAM), HETWIN-C44x (two C44s with SRAM), HETWIN-C44-Ex (two C44s with EDRAM), and HEQUAD (four C44s with SRAM). See our website for more details: <http://www.traquair.com>

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Specialist supplier of modular scalable DSP systems that utilize TMS320C4x and TMS320C6x technology in ISA, PCI, PC/104, VME, SBus and other configurations.



**FEATURES & BENEFITS**

- Interfaces easily to many sensing devices
- Well-suited to sample line scan data
- Ideal for real-time processing problems
- Custom FPGA's to boost speed
- Low overhead communications
- 20 million 8-bit samples per second A/D
- 4 32k banks of 16-bit EEPROM, can use 5V flash

**SPECIFICATIONS****Platforms Supported:**

VME

**Host Supported:**

Windows 3.1

DOS

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

9

**Clock Speeds Available:**

40, 56MHz

**Board Size:**

Full Card

**Memory (DRAM/SRAM):**

8MByte Global SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The newest VME board from VisionSmart uses FPGA's to connect 9 TMS320C50s to process video information. This board uses highly integrated technology to interface to the VME Bus. We choose the Tundra SCV-64 which provides high performance 64-bit VMEbus interface in one device. The single card has an 8-bit flash A/D converter (20MHz), FIFO, 9-TMS320C50, 128k Flash, 96k Static RAM, two dual port memories, DMA Serial data pass and VME Interface. We also offer multi-processor C25, C26 systems and boards.

**COMPANY INFORMATION****VisionSmart Inc.**

10367 59 Ave.

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VisionSmart Inc. has been providing (for over a decade) multiple DSP board solutions for industrial machine vision applications in many industries, including plastics, forestry (both solid wood and panel board), agriculture, oil, and metals. VisionSmart also provides custom board and /or software development services.







**FEATURES & BENEFITS**

- Emulation for the C3x
- PC-AT compatible (16-bit)
- 32kwords zero-wait-state SRAM on primary bus
- External access to on-card serial ports/timer
- 33MFLOP C3x floating-point DSP on-card
- One-year warranty
- Multiple debugger options

**SPECIFICATIONS**

**Platforms Supported:**

PC-AT

**Host Supported**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

33MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

**Expansion Options:**

Analog I/O daughter card

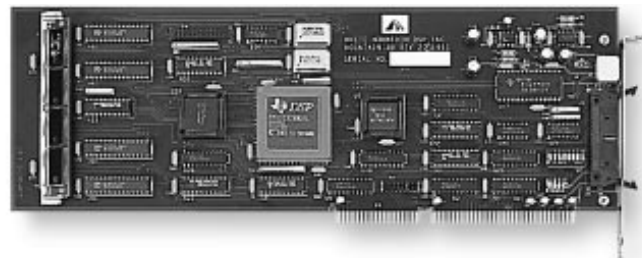
Digital I/O daughter card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The White Mountain DSP Mountain-30 Emulator/Target System offers a unique approach to TMS320C3x hardware/software development. The Mountain-30 system provides state-of-the-art emulation and support for the complete C3x family of DSPs. This system gives you both a target DSP



for evaluation of your C3x algorithms using an on-card 33MFLOP TMS320C30 as well as off-card emulation via the familiar scan-path connection with a 1-meter cable and 12-pin header (supplied). Memory on-card is expandable from 32kwords of zero-wait state SRAM. Analog interface circuits provide both analog-to-digital and digital-to-analog conversion. A dual-port RAM interface is also resident, enhancing the use of the target DSP via fast data transfer between the TMS320C30 and the PC-AT host processor. The Mountain-30 is the choice of developers who desire a software test bed early in the design stage and consequently require full featured C3x emulation capability when target (DSP) hardware becomes available.

**COMPANY INFORMATION**

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www: http://www.wmdsp.com

White Mountain DSP, Inc. is a leading third-party supplier of emulators and development systems for the Texas Instruments DSP product line.



**FEATURES & BENEFITS**

- Emulation for the C3x
- PC-AT compatible (16-bit)
- 50 MHz TMS320C32
- Two 512kbanks of zero-wait-state SRAM
- External access to on-card serial port/timers
- One-year warranty
- Multiple debugger options

**SPECIFICATIONS****Platforms Supported:**

PC-AT

**Host Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**CPU:**

1

**Clock Speeds Available:**

50MHz

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

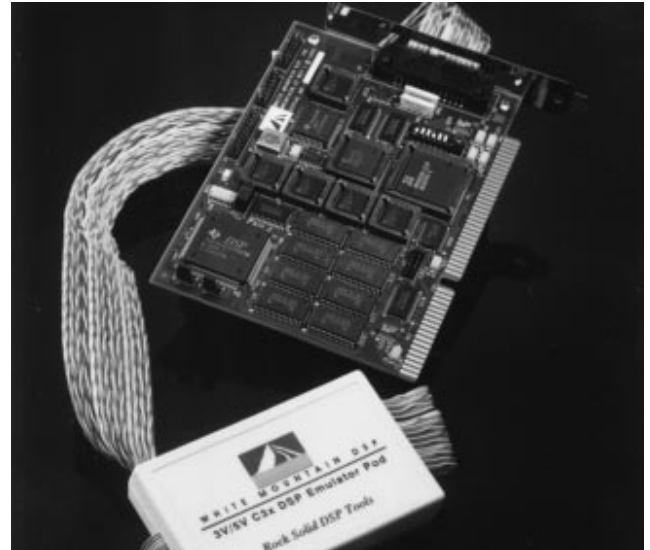
SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The Mountain-32 Emulator/Target System from White Mountain DSP is designed for developers using the new TMS320C32 floating-point DSP from Texas Instruments. The Mountain-32 offers an inexpensive and flexible approach to both hardware and software development for the TMS320C32. This system gives you an on-card 50MHz TMS320C32 DSP for evaluation of your TMS320C32 algorithms, as well as off-card emulation capability via the



familiar scan path connection with White Mountain DSP's 3V/5V emulation pod and cable. Via the pod and cable, the Mountain-32 provides state-of-the-art emulation for the entire TMS320C3x family of DSPs. The Mountain-32 is the choice of developers who desire a software test bed early in the design stage and consequently require full featured C3x emulation capability when target (DSP) hardware becomes available.

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White Mountain DSP, Inc. is a leading third-party supplier of emulators and development systems for the Texas Instruments DSP product line.



**FEATURES & BENEFITS**

- Half-size PC-AT plug in card
- FCC approved telephone DAA
- 16-bit stereo audio interface CODEC
- Daughter card sites for DSP option
- Multiple debuggers available

**SPECIFICATIONS****Platforms Supported:**

PC-AT

**Host Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

TMS320C5x

TMS320C54x

TMS320C6x

**CPU:**

1

**Board Size:**

Half card

**Memory (DRAM/SRAM):**

SRAM

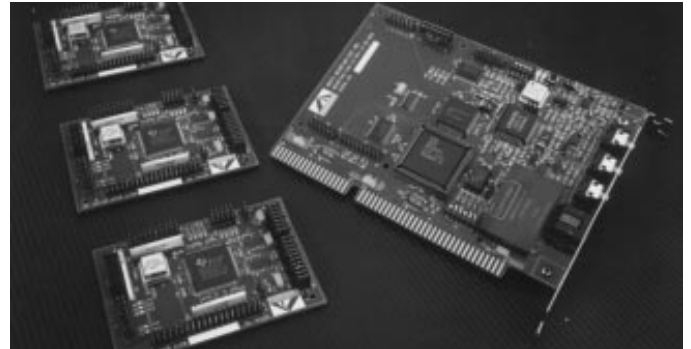
**Expansion Options**

Analog I/O daughter card

Digital I/O daughter card

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The Mountain-Uevm card from White Mountain DSP allows engineers to evaluate different fixed-point DSP chips for various applications without the cost and time commitment involved in traditional prototyping. Using a strategy of interchangeable "Mountain-Pak" modules in conjunction with the Uevm card itself, the White Mountain DSP is bringing a new level of flexibility into the evaluation process required to select the right DSP chip for a given application.

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White Mountain DSP, Inc. is a leading third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





## FEATURES & BENEFITS

- TI 20 MIPS TMS320F206 DSP
- 32K on chip Flash with 4.5K of on chip SRAM
- Wide band audio analog data acquisition
- Standard RCA connectors for analog I/O
- Program, data, and I/O expansion capability
- DSK assembler included
- GO DSP's Code Explorer included

## SPECIFICATIONS

### Platforms Supported:

Standalone

### Host O/S Supported:

Windows 95

### CPU:

1

### TMS320 Devices Supported:

TMS320C2xx

### Clock Speeds Available:

40MHz

### Board Size:

Half Card

### Memory (DRAM/SRAM):

On-chip SRAM

### Expansion Options:

Connect to program, data, and I/O

Interface to 510-series, JTAG emulator

### Technical Support/Training Available:

YES

E-mail only: [pathway@wmdsp.com](mailto:pathway@wmdsp.com)

## PRODUCT DESCRIPTION

The Pathway 2xx DSP Starter Kit (DSK) is a simple, low-cost, stand-alone application board for the Texas Instruments (TI) TMS320F2xx fixed point digital signal processor family. The Pathway 2xx DSK is powerful enough for real-time processing and versatile enough to allow the user full accessibility to on and off chip peripherals. In addition to accessing on and off chip peripherals, the user is free to interface the DSK to external designs through the flexible interconnect system to include a JTAG port for use with 510 series emulators. The Pathway 2xx DSK has a TMS320F206 onboard to allow full-speed verification of code for the entire 2xx family as well as 32K words of flash memory for high-volume, low-cost memory integration. The supplied debugger is windows-oriented, which simplifies code development and debugging capabilities. The Pathway 2xx DSK is CE compliant.

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White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





**FEATURES & BENEFITS**

- Single- or dual- 40/50MHz TMS320C40 DSP
- Supports up to 1MB zero-wait-state SRAM
- C40 global bus daughter card site
- Shared memory and communication port
- External access to four communication ports
- RS-232 and RS-422 serial communication capability
- One-year warranty

**SPECIFICATIONS**

**Platforms Supported:**

PC-AT

**Os Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**CPU:**

1 or 2

**Clock Speeds Available:**

40MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

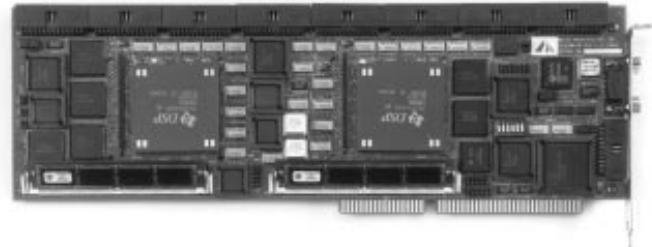
SRAM

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The TMS320C40 architecture combines a high performance CPU, multichannel DMA coprocessor, on-chip memory, six communication ports, dual memory buses, timers, and emulation support. Given this complexity, developers must investigate many areas before proceeding to their own single or multiple TMS320C40 designs. Hardware design areas of concern include global memory arbitration, DSP-to-DSP



interconnection via the communication ports, and peripheral device interface to the memory bus or communication port. For the DSP software engineer, areas of concern include application-specific algorithm characterization, real-time tradeoffs between C and assembly language, multi-tasking support, communication port software, and other real-time peripheral software drivers. The Slalom-40 allows the designer to address all of these concerns via a combination of its on-board functionality, interconnect capability, the robust Texas Instruments C/assembly language source debugger, and the availability of commercial software packages such as SPOX.

DEVELOPMENT BOARDS

**COMPANY INFORMATION**

**White Mountain DSP, Inc.**

20 Cotton Road

Nashua, NH. 03063 USA

Tel: (603) 883-2430

Fax: (603) 882-2655

e-mail: [info@wmdsp.com](mailto:info@wmdsp.com)

www: <http://www.wmdsp.com>

White Mountain DSP, Inc. is a leading third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





**FEATURES & BENEFITS**

- Two TMS320C51-57 DSPs on-card for evaluation
- 64k program memory each
- 64k data memory each
- 2X4 daughter card area for each C51
- Shared memory
- Optional C5x emulation
- One year warranty

**SPECIFICATIONS**

**Platforms Supported:**

PC-AT

**Host Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C5x

**CPU:**

2

**Clock Speeds Available:**

57MHz

**Board Size:**

Full card

**Memory (DRAM/SRAM):**

SRAM

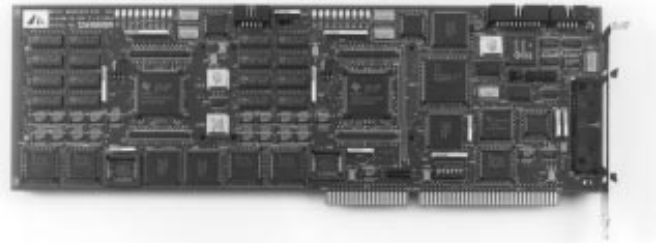
**Expansion Options:**

Analog I/O daughter card

Digital I/O daughter card

**Technical Support/Training Available:**

YES



**PRODUCT DESCRIPTION**

The Slalom-50 is a complete development system for the TMS320C5x family of digital signal processors. The Slalom-50 incorporates two 57MHz TMS320C51 DSPs, a full complement of memory, plus daughterboard I/O capability. Debugger options provide a fully-integrated development system which expedites the generation, debugging, and optimization of C5x-based hardware and software. With many new C5x designs being multiprocessor architectures, the Slalom-50's pair of C51s makes it an ideal platform for system prototyping. The Slalom-50 is the choice of developers who desire a software test bed early in the design stage and consequently require full featured C5x emulation capability when target (DSP) hardware becomes available.

**COMPANY INFORMATION**

**White Mountain DSP, Inc.**

20 Cotton Road

Nashua, NH. 03063 USA

Tel: (603) 883-2430

Fax: (603) 882-2655

e-mail: info@wmdsp.com

www: <http://www.wmdsp.com>

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DEVELOPMENT BOARDS



**FEATURES & BENEFITS**

- Enhances DSK capabilities
- Provides UART serial port
- STDIO printf, scanf, putchar, getche included
- Provides 8 latched outputs
- Provides 8 state output LEDs
- Improves the DSK's capabilities

**SPECIFICATIONS**

**Host Platforms Supported:**

'C5x DSK

**Host O/S Supported**

Windows 3.1  
Windows 95

**CPU:**

'C5x

**Board Size:**

4 in. x 3 in.

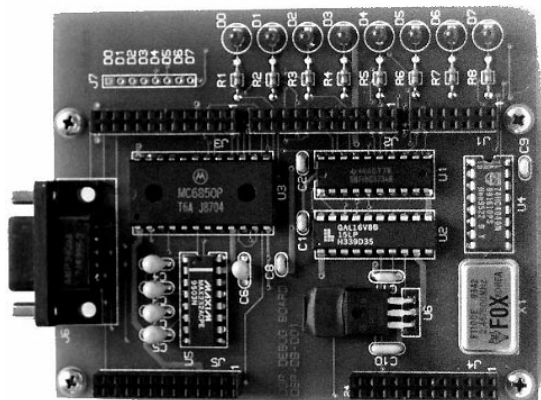
**Software Included:**

Libraries

**Technical Support/Training Available:**

YES

Technical and product support is available via e-mail to: [info@z-domain.com](mailto:info@z-domain.com)



**PRODUCT DESCRIPTION**

Product is a daughtercard for the TI 'C5x DSK. Provides a UART serial port with software selectable baud rate, eight latched outputs and LEDs. Product is shipped with complete C and assembly code providing STDIO functionality (printf, scanf, putchar, getche) to any application built with TI's development tools.

**COMPANY INFORMATION**

**Z-Domain Systems Development, Inc.**

P.O. Box 902  
Fairport, NY 14450 USA  
Tel: 800-743-1374  
E-mail: [info@z-domain.com](mailto:info@z-domain.com)  
[www.z-domain.com](http://www.z-domain.com)

Our company manufactures daughtercards that attach to and enhance TI's DSKPlus and DSK.

DEVELOPMENT BOARDS



## FEATURES & BENEFITS

- Enhances 'C54x, DSKPLUS, DSK capabilities
- Provides 64K of zero-wait-state program RAM
- Provides 64K of zero-wait-state data RAM
- Provides software-configurable UART
- STDIO printf, scanf, putchar, getche included
- Provides 8 latched outputs
- Provides 8 state output LEDs

## SPECIFICATIONS

### Host Platforms Supported:

'C54x DSK

### Host O/S Supported

Windows 3.1

Windows 95

### CPU:

'C5x

### Board Size:

4 in. x 3 in.

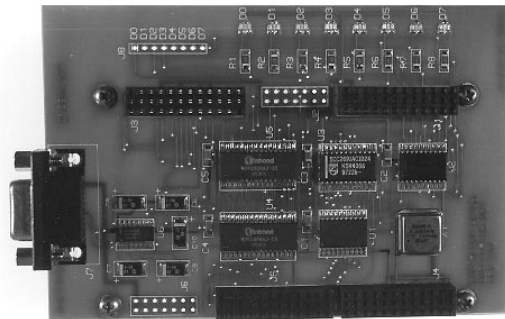
### Software Included:

Libraries

### Technical Support/Training Available:

YES

Technical and product support is available via e-mail to: [info@z-domain.com](mailto:info@z-domain.com)



## PRODUCT DESCRIPTION

Product is a daughtercard for the TI 'C54x DSKPLUS. Provides a UART serial port with software selectable baud rate (300 to 38400 bps), eight latched outputs and LEDs. Product is shipped with complete C and assembly code providing STDIO functionality (printf, scanf, putchar, getche) to any application built with TI's development tools.

## COMPANY INFORMATION

### Z-Domain Systems Development, Inc.

P.O. Box 902

Fairport, NY 14450 USA

Tel: 800-743-1374

E-mail: [info@z-domain.com](mailto:info@z-domain.com)

[www.z-domain.com](http://www.z-domain.com)

Our company manufactures daughtercards that attach to and enhance TI's DSKPlus and DSK.





<b>DEVICE PROGRAMMERS . . . . .</b>	<b>5-1</b>
Advin Systems Inc.	PILOT-MVP . . . . . 5-2
	PILOT-U44-Plus . . . . . 5-3
	PILOT-U84-Plus . . . . . 5-4
White Mountain DSP, Inc.	Mountain Flash Programmers . . . . . 5-5

**FEATURES & BENEFITS**

- Universal and flexible
- Provides true low voltage support
- Interfaces to PC thru standard parallel port
- Supports all package types
- Gang/set expandable
- FREE lifetime S/W updates via BBS or Web
- CE certified and approved by IC manufacturers

**SPECIFICATIONS****Programming Type:**

EPROM

PROM

Flash

EEPROM

Microcontrollers

PLDs

**TMS320 Devices Supported:**

TMS320C1x

TMS320C2x

**PRODUCT DESCRIPTION**

PILOT-MVP is a very cost-effective and reliable universal programmer for programming TI DSPs. Standard equipment comes with a 40-pin, gold-plated DIP ZIF socket. An optional universal PLCC socket adapter provides support for PLCCs from 20 pins to 44 pins. Adapters for other package types are also available directly from Advin for supporting the newest packages on the market. PILOT-MVP offers a true low voltage feature which supports devices that are not 5V tolerant. Whereas many older generation programmers are still using 5V digital levels, PILOT-MVP uses variable digital levels to exactly match the Vcc level being used. PILOT-MVP comes with 40-pin-drivers, each software programmable to generate analog or digital levels. Software is powerful and versatile in features, yet designed for ease-of-use and fast operation. Batch/macro features allow easy setup of repeatedly-used sequences and provide straight-



forward operation by production personnel. Software updates are FREE via BBS or Web for the lifetime of the programmers. PILOT-MVP connects to IBM PCs or compatibles through standard parallel ports. This means there is no time-consuming serial downloading involved and no special PC-interface card is required. The built-in power supply automatically adjusts the operating voltage from 85V to 274V.

**COMPANY INFORMATION****Advin Systems Inc.**

1050L E. Duane Ave.

Sunnyvale, CA 94086 USA

Tel: 800-627-2456 or 408-243-7000

Fax: 408-736-2503

e-mail: sales@advin.com

www: <http://www.advin.com>

Advin Systems Inc. is a leading U.S. manufacturer of programming instruments. Our programmers support the latest in device technologies and package types. Advin programmers are approved and/or qualified by all major IC manufacturers.





**FEATURES & BENEFITS**

- Universal and flexible
- Provides true low voltage support
- Interfaces to PC thru standard parallel port
- Supports all package types
- Gang/set expandable
- Free lifetime S/W updates via BBS or Web
- CE certified and approved by IC manufacturers

**SPECIFICATIONS**

**Programming Type:**

- EPROM
- Flash
- EEPROM
- Microcontrollers
- PLDs

**TMS320 Devices Supported:**

- TMS320C1x
- TMS320C2x

**PRODUCT DESCRIPTION**

PILOT-U44-Plus is a state-of-the-art, advanced universal programmer capable of supporting the newest devices from Texas Instruments. Standard equipment comes with a 44-pin gold-plated DIP ZIF socket. An optional universal PLCC socket adapter provides support for PLCCs from 20 to 44 pins. Adapters for other package types are also available directly from Advin for supporting the newest packages on the market. PILOT-U44-Plus offers a true low voltage feature which supports devices that are not 5-volt tolerant. While many older generation programmers are still using 5 volt digital levels, PILOT-U44-Plus uses variable digital levels to exactly match the VCC level being used. PILOT-U44-Plus comes with 44 pin-drivers, each software programmable to generate analog or digital levels. Software is powerful and versatile in features, yet

designed for ease-of-use and fast operation. Batch/macro features allow easy setup of repeatedly used sequences and provide straight-forward operation by production personnel. Software updates are FREE via BBS or WEB for the lifetime of the programmer. PILOT-U44-Plus connects to IBM PCs or compatibles through standard parallel ports. The built-in power supply automatically adjusts the operating voltage from 85v to 274v.

**COMPANY INFORMATION**

**Advin Systems Inc.**

1050L E. Duane Ave.  
 Sunnyvale, CA 94086 USA  
 Tel: 800-627-2456 or 408-243-7000  
 Fax: 408-736-2503  
 e-mail: sales@advin.com  
 www: http://www.advin.com

Advin Systems Inc. is a leading U.S. manufacturer of programming instruments. Our programmers support the latest in device technologies and package types. Advin programmers are approved and/or qualified by all major IC manufacturers.





**FEATURES & BENEFITS**

- Universal and flexible
- Provides true low voltage support
- Interfaces to PC thru standard parallel port
- Supports all package types
- Gang/set expandable
- Free lifetime S/W updates via BBS or Web
- CE certified and approved by IC manufacturers

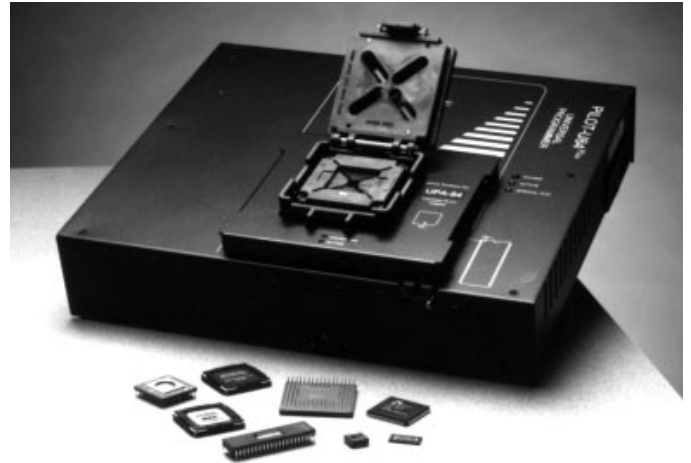
**SPECIFICATIONS**

**Programming Type:**

- EPROM
- PROM
- Flash
- EEPROM
- Microcontrollers
- PLDs

**PRODUCT DESCRIPTION**

PILOT-U84-Plus is a state-of-the-art, advanced, universal programmer capable of supporting the newest devices from all major semiconductor manufacturers including Texas Instruments. Standard equipment comes with a 44-pin, gold-plated DIP ZIF socket. An optional universal PLCC socket adapter provides support for PLCCs from 20 to 84 pins. Adapters for other package types are also available directly from Advin for supporting the newest packages on the market. PILOT-U84-Plus offers a true low-voltage feature which supports devices that are not 5V tolerant. Whereas many older generation programmers are still using 5V digital levels, PILOT-U84-Plus uses variable digital levels to exactly match the Vcc level being used. PILOT-U84-Plus comes with 84-pin drivers, each software programmable to generate analog or digital levels. Software is powerful and versatile in features, yet designed for ease-of-use and fast operation. Batch/macro features allow easy setup of repeatedly used sequences and provide straight-forward operation by production personnel. Software updates are FREE via BBS or Web for the lifetime of the programmer. PILOT-U84-Plus connects to IBM PCs or



compatibles through standard parallel ports. This means there is no time-consuming serial downloading involved and no special PC-interface card is required. The built-in power supply automatically adjusts the operating voltage from 85V to 274V.

**COMPANY INFORMATION**

**Advin Systems Inc.**

1050L E. Duane Ave.  
 Sunnyvale, CA 94086 USA  
 Tel: 800-627-2456 or 408-243-7000  
 Fax: 408-736-2503  
 e-mail: sales@advin.com  
 www: <http://www.advin.com>

Advin Systems Inc. is a leading U.S. manufacturer of programming instruments. Our programmers support the latest in device technologies and package types. Advin programmers are approved and/or qualified by all major IC manufacturers.



**FEATURES & BENEFITS**

- FLASH programming for TI's family of F206/F240 DSPs
- Programs one to eight devices simultaneously
- Cost-effective programming

**SPECIFICATIONS****Programming Type:**

Flash

**TMS320 Devices Supported:**

TMS320C2xx

**PRODUCT DESCRIPTION**

Dubbed the Mountain-Flash and the Mountain-FlashPRO, these devices respectively offer single device or multi device "gang" programming capability for the Texas Instruments TMS320F206/F24x DSPs. The Mountain-Flash unit is a hand-held programmer which connects to any PC via a standard RS-232 serial port cable. The multi device FlashPRO programmer allows users to program up to eight DSPs simultaneously. Hosted by a standard Pentium class PC, this programmer comes equipped with ZIF (zero insertion force) sockets simplifying the programming process. Used in conjunction with the White Mountain DSP programming utilities and Summit-510 JTAG controller card, the systems offer a complete programming solution for DSP engineers and production technicians who are required to program flash based DSPs. Call your White Mountain DSP Sales Representative for more details.

**COMPANY INFORMATION****White Mountain DSP, Inc.**

20 Cotton Road, Suite 101  
Nashua, NH 03063 USA  
Tel: (603) 883-2430  
Fax: (603) 882-2655  
e-mail: [info@wmdsp.com](mailto:info@wmdsp.com)  
[www.wmdsp.com](http://www.wmdsp.com)

White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





**EMULATORS . . . . . 6-1**

DEEMAX Technology, Inc.	P-ICE 320C14/C15/C16/C2X/C5X/C2XX . . . . .	6-2
DSP Research, Inc.	TEM2XX . . . . .	6-3
	TEM30 . . . . .	6-4
	TEM30S . . . . .	6-5
	TEM40 . . . . .	6-6
	TEM40S . . . . .	6-7
	TEM50 . . . . .	6-9
	TEM50S . . . . .	6-10
	TEM54X . . . . .	6-11
Instrumental Systems Corporation	EML510 . . . . .	6-12
Kane Computing	KCE Series . . . . .	6-13
MicroLAB Systems Ltd.	MIRAGE-510D Emulator . . . . .	6-14
	UECM Emulation Daughter-Card Modul . . . . .	6-15
Softronics	IcePack . . . . .	6-16
Spectrum Digital, Inc.	XDS510PP Scan Path Emulator . . . . .	6-17
Tasking S.r.l.	LINK-C30 . . . . .	6-18
	UPS-10 and UPS-25 . . . . .	6-19
TechLab 2000 Ltd.	ETIC-25 . . . . .	6-20
White Mountain DSP, Inc.	Mountain-510/LT Universal DSP Emulator . . . . .	6-21
	Mountain-510 Universal DSP Emulator . . . . .	6-22
	Mountain-510/WS Workstation DSP Emulator . . . . .	6-23
	Summit-510 PCI-Based JTAG Emulator . . . . .	6-24
	Trek-510 Universal Ethernet Emulator . . . . .	6-25

EMULATORS



## FEATURES & BENEFITS

- 64k execution breakpoints
- 5 bus breakpoints, 8 levels for sequence trig
- 4K x 45-bits trace buffer
- Emulation memory: 128kw('C25), 4kw('C14)
- C5x/C2xx is JTAG as emulation ports
- High-level language debugger

## SPECIFICATIONS

### Host Platforms Supported:

Parallel printer port

### Host O/S Supported:

Windows 95

DOS

### TMS320 Devices Supported:

TMS320C1x

TMS320C2x

TMS320C2xx

TMS320C5x

### Software Included:

YES

### Technical Support/Training Available:

YES

### Cable Length:

6 inches

### Voltages Supported:

5V

## PRODUCT DESCRIPTION

Full emulation function for 'C1x, 'C2x. JTAG emulation port for 'C2xx, 'C5x.

## COMPANY INFORMATION

### DEEMAX Technology, Inc.

7F~1, No. 537, Sec. 2, Kuang-fu Road

Hsinchu, Taiwan, R.O.C

Tel: 886-3-5619739

Fax: 886-3-5619963

e-mail: [deemax@shts.seed.net.tw](mailto:deemax@shts.seed.net.tw)

www: <http://www.deemax.com.tw>

DEEMAX is a leading technical company in Taiwan. Providing high-performance development tools for hardware and software is the main goal. Our technical support engineers speed up customer's projects. The main product lines are in-circuit emulators for DSP and CISC, as well as DSP control systems/boards to reduce a designer's hardware effort. DEEMAX's main market is in education school, research institute/company.



**FEATURES & BENEFITS**

- Support for all TMS320C2xx target systems
- Runs under DOS or Microsoft Windows
- Target emulation at full device speed
- Extra long cables to target, 10 feet standard
- Special reset wire to control the target reset line if desired
- Full-featured C Source Level Debugger
- MS-Windows user interface
- Compatible with the Texas Instruments XDS-510
- Code Composer Visual Development Environment is also available

**SPECIFICATIONS**

**Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1  
 Windows 95  
 Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

**Software Included:**

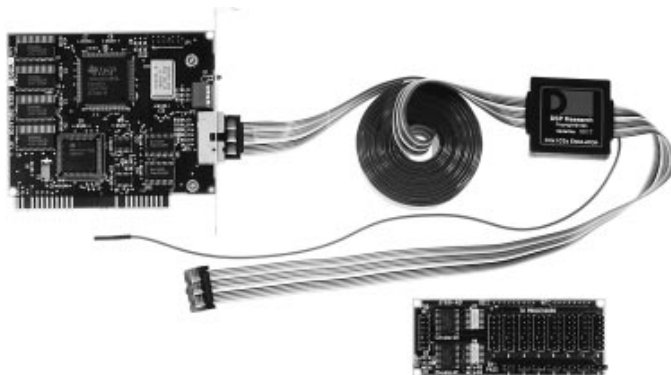
YES

**Technical Support/Training Available:**

YES

**Cable Length:**

10 feet



**PRODUCT DESCRIPTION**

The TEM2XX Emulator for DOS and Microsoft Windows is a full-featured, scan based emulator. Easily installed and configured, the TEM2XX connects to any TMS320C2xx system through the standard 14-pin JTAG connector. Debugger choices for the TEM2XX include: Texas Instruments DB2xx and Code Composer. Complete emulator packages including the Texas Instruments C Compiler and Tools and the TIGER PowerPack Math/DSP/Vector Library are also available.

**COMPANY INFORMATION**

**DSP Research, Inc.**

1095 E. Duane Ave, Ste 203  
 Sunnyvale, CA 94086  
 Tel: (408) 773-1042  
 Fax: (408) 736-3451  
 e-mail: info@dSpr.com  
<http://www.dSpr.com/products/tem2xx.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.







**FEATURES & BENEFITS**

- Emulation at full device speed, up to 90 MHz
- 25-MIPS co-processor speeds emulation
- Extra long 10-foot emulator cable
- Very-thin TIGER SmartPOD
- Choice of Code Composer or TI DB3x debuggers
- XDS510 compatible (but 3 times faster)

**SPECIFICATIONS**

**Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C3x

**Software Included:**

Debugger choices for the TIGER TEM3X include: Texas Instruments DB3X (TIGER DB3X);

Code Composer from GO DSP

**Technical Support/Training Available:**

YES

**Connection Mechanism:**

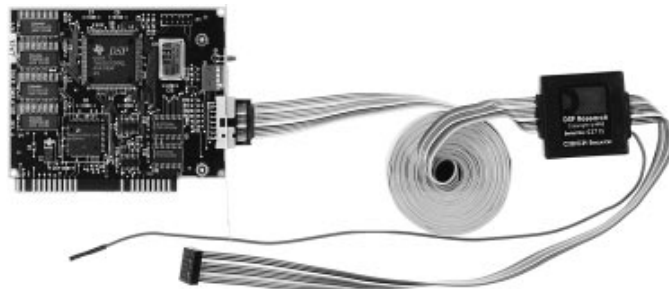
12-pin MPSD

**Cable Length:**

10 feet

**PRODUCT DESCRIPTION**

The TEM3X Emulator for the TMS320C3x is a full-speed in-circuit emulator for 'C30, 'C31, and 'C32 devices running at up to 90 MHz. With its 25-MIPS on-board co-processor, it is the only emulator designed to support future TMS320C3x devices running at higher than 60-MHz clock speed. The emulation co-processor speeds emulation, increasing the speed of program download and other tasks as much as four times compared to



the TI XDS510 and other compatible emulators. Interfacing via the target processor's built-in scan path, the emulator gives the user full control over the device, and every memory location and register in the target system. Debugger choices for the TEM3X include: Texas Instruments DB3X or Code Composer. Complete emulator packages including the Texas Instruments C Compiler and Tools and the TIGER PowerPack Math/DSP/Vector Library are also available. If you already own a Texas Instruments EVM3 board, a low-cost software and TIGER SmartPOD package is available to upgrade it to an emulator.

**COMPANY INFORMATION**

**DSP Research, Inc.**

1095 E. Duane Ave, Ste 203  
Sunnyvale, CA 94086  
Tel: (408) 773-1042  
Fax:(408) 736-3451  
e-mail: info@dSpr.com  
<http://www.dSpr.com/products/tem30.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



EMULATORS



**FEATURES & BENEFITS**

- Support for all TMS320C3x target systems
- Runs under X Windows
- Target emulation at full device speed
- On-board emulation Co-processor
- Extra long TIGER SmartPOD cables to target, 10 feet standard
- Special reset wire to control the target reset line if desired
- C source-level debugging
- Compatible with the Texas Instruments XDS-510WS

**SPECIFICATIONS**

**Host Platforms Supported:**

SBus

**TMS320 Devices Supported:**

TMS320C3x

**Software Included:**

YES

**Technical Support/Training Available:**

YES

**Cable Length:**

10 feet

**PRODUCT DESCRIPTION**

The TEM30S Emulator is an advanced in-circuit emulator for Sun SPARCstations or compatible hosts. It provides all the features necessary to perform full speed in-circuit emulation for 'C30, 'C31 and 'C32 devices running at up to 60 MHz. It interfaces via the TIGER SmartPOD to the target system via the built-in scan path interface, giving the user full control over the 'C3x,



and every memory location and register in the target system. The emulation co-processor speeds emulation, increasing the speed of program download and other tasks as much as four times compared to the TI XDS-510WS and other compatible emulators. The user interface is identical to that of the DB30 Debugger, providing a seamless transition from code development on TIGER hardware to final integration and debugging on the target system.

**COMPANY INFORMATION**

**DSP Research, Inc.**

1095 E. Duane Ave, Ste 203

Sunnyvale, CA 94086

Tel: (408) 773-1042

Fax:(408) 736-3451

e-mail: info@dSpr.com

<http://www.dSpr.com/products/tem30s.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- True multi-processor emulator for Windows
- Debug Manager controls HW parallel execution
- 20 MIPS co-processor speeds emulation
- Emulation at full device speed, up to 100MHz+
- TI XDS510-compatible
- Choice of DB4X or Code Composer

**SPECIFICATIONS**

**Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1  
 Windows 95  
 Windows NT

**TMS320 Devices Supported:**

TMS320C4x

**Software Included:**

Other software options for the TIGER TEM4X C compiler, assembler, linker, and tools; TIGER PowerPack Math/DSP/Vector library

**Technical Support/Training Available:**

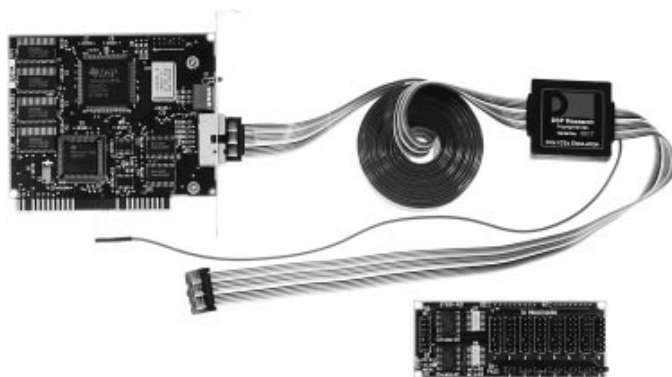
YES

**Connection Mechanism:**

JTAG

**Cable Length:**

10 feet



**PRODUCT DESCRIPTION**

The TIGER TEM40 Emulator is an advanced in-circuit emulator for IBM PC or compatible hosts. It provides all the features necessary to perform full speed in-circuit emulation for 'C4x devices. It interfaces to the devices via the built-in scan-path interface, giving the user full control over the device, and every memory location and register in the target system.

**COMPANY INFORMATION**

**DSP Research, Inc.**

1095 E. Duane Ave, Ste 203  
 Sunnyvale, CA 94086  
 Tel: (408) 773-1042  
 Fax:(408) 736-3451  
 e-mail: info@dSpr.com  
 www: <http://www.dSpr.com/products/tem40.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



EMULATORS



**FEATURES & BENEFITS**

- X Windows implementation, Motif interface
- Runs any number of 'C4x target devices
- Emulation @ full device speed, up to 100 MHz+
- Single SPARC process; efficient use of screen
- 20-MIPS on-board co-processor
- Thin pod with 10-foot cable to target

**SPECIFICATIONS**

**Host Platforms Supported:**

SBus

**TMS320 Devices Supported:**

TMS320C4x

**Software Included:**

Other software options for the TIGER TEM4X C compiler, assembler, linker, and tools; TIGER PowerPack Math/DSP/Vector library

**Technical Support/Training Available:**

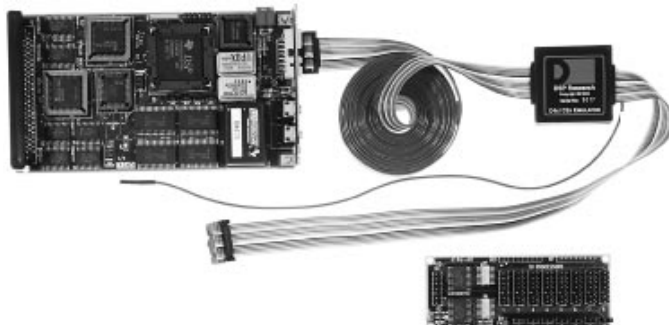
YES

**Cable Length:**

10 feet

**PRODUCT DESCRIPTION**

The TEM4XS Emulator for TMS320C4x devices is an advanced in-circuit emulator, based around a Sun Workstation. It provides all the features necessary to perform full-speed in-circuit emulation for large numbers of 'C4x devices running at up to 100 MHz or more. It interfaces to the devices via the built-in JTAG scan-path interface, giving the user full control over the device, and every memory location and register in the target system. The user interface is true X Windows/Motif, with a single SPARC process controlling any number of 'C4x devices in an efficient manner. Any number of windows can be opened. Processors can also be controlled without having any windows open for that specific processor. This means that a large number of processors can be debugged without running out of screen real estate, SPARC processes, or memory.



EMULATORS

**COMPANY INFORMATION**

**DSP Research, Inc.**

1095 E. Duane Ave, Ste 203

Sunnyvale, CA 94086

Tel: (408) 773-1042

Fax:(408) 736-3451

e-mail: info@dSpr.com

<http://www.dSpr.com/products/tem40s.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- 20-MIPS co-processor speeds emulation
- 5-V and 3.3-V support
- Emulation at full device speed, to 100+ MHz
- 10-ft. target cable, very-thin TIGER SmartPOD
- XDS510-compatible

**SPECIFICATIONS****Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1

Windows 95

Window NT

**TMS320 Devices Supported:**

TMS320C5x

**Software Included:**

Software options for the TEM5X include: Texas Instruments DB5X (TIGER DB5X) -Code Composer from GO DSP - Texas Instruments C compiler, assembler, linker, and tools

**Technical Support/Training Available:**

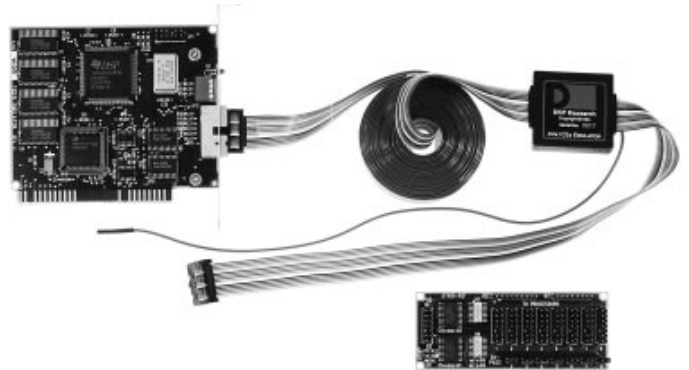
YES

**Cable Length:**

10 feet

**PRODUCT DESCRIPTION**

The TEM5X Emulator is an advanced in-circuit emulator for IBM PC or compatible hosts. It provides all the features necessary to perform full speed in-circuit emulation for 'C50, 'C51, 'C52, 'C53, 'C56, or 'C57 devices running at up to 100 MHz or more. It interfaces to the devices via the built-in scan-path interface, giving the user full control over the device, and every memory location and register in the target system.

**COMPANY INFORMATION****DSP Research, Inc.**

1095 E. Duane Ave, Ste 203

Sunnyvale, CA 94086

Tel: (408) 773-1042

Fax:(408) 736-3451

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<http://www.dSpr.com/products/tem50.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.





**FEATURES & BENEFITS**

- 20-MIPS co-processor speeds emulation
- Emulation at full device speed, to 100+ MHz
- 10-ft. target cable, very thin TIGER SmartPOD
- Easy to install in a single-wide SBus slot
- XDS510WS-compatible

**SPECIFICATIONS**

**Host Platforms Supported:**

SBus

**TMS320 Devices Supported:**

TMS320C5x

**Software Included:**

YES

**Technical Support/Training Available:**

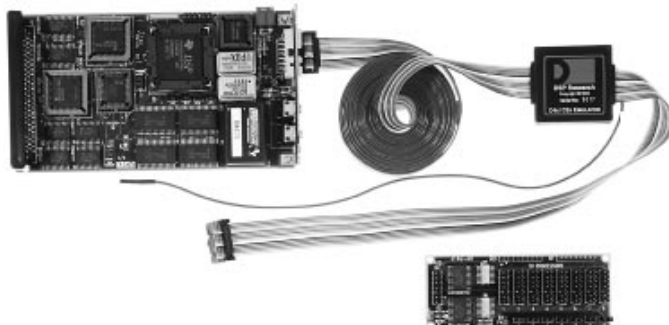
YES

**Cable Length:**

10 feet

**PRODUCT DESCRIPTION**

The TEM5XS Emulator for the TMS320C5x is an advanced in-circuit emulator for Sun SPARCstations or compatible hosts. It provides all the features necessary to perform full-speed in-circuit emulation for 'C50, 'C51, 'C52, 'C53, 'C56, or 'C57 devices running at up to 100 MHz. It interfaces to the device via the built-in scan-path interface, giving the user full control over the device and every memory location and register in the target system. The user interface is identical to the DB5X Debugger, providing a seamless transition from code development on TIGER hardware to final integration and debugging on the target system. Software options for the TEM5XS include Texas Instruments C compiler, assembler, linker, and simulator.



**COMPANY INFORMATION**

**DSP Research, Inc.**

1095 E. Duane Ave, Ste 203

Sunnyvale, CA 94086

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e-mail: info@dspr.com

<http://www.dspr.com/products/tem50s.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- Support for all TMS320C54x target systems
- Target emulation at full device speed
- Extra long cable to target, 10 feet standard
- Special reset wire to control target reset
- Choice of Code Composer or TI DB54X debuggers
- XDS510-compatible, but three times faster

**SPECIFICATIONS****Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C54x

**Software Included:**

YES

**Technical Support/Training Available:**

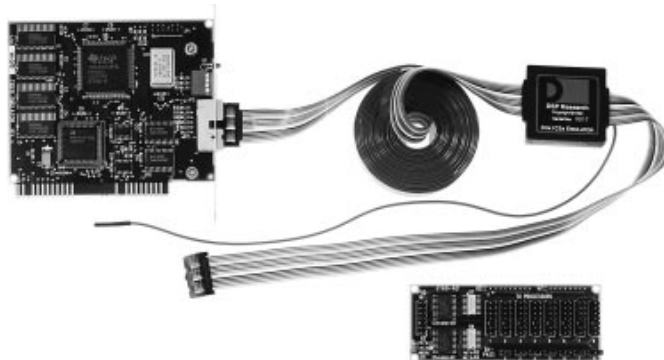
YES

**Cable Length:**

10 feet

**PRODUCT DESCRIPTION**

The TEM54X Emulator for DOS and Microsoft Windows is a full-featured, scan based emulator. Easily installed and configured, the TEM54X connects to any TMS320C54x system through the standard 14 pin JTAG connector. Debugger choices for the TEM54X include: Texas Instruments DB54x and Code Composer. Complete emulator packages including the Texas Instruments C Compiler and Tools and the TIGER PowerPack Math/DSP/Vector Library are also available.

**COMPANY INFORMATION****DSP Research, Inc.**

1095 E. Duane Ave, Ste 203

Sunnyvale, CA 94086

Tel: (408) 773-1042

Fax: (408) 736-3451

e-mail: [info@dSpr.com](mailto:info@dSpr.com)<http://www.dSpr.com/products/tem54x.htm>

Founded in 1989, DSP Research manufactures and markets products that accelerate DSP development from design to production. The company specializes in TMS320 DSPs from Texas Instruments, offering development systems, emulators, and OEM application solutions for wireless, Internet telephony, and computer telephony applications.



**FEATURES & BENEFITS**

- Full XDS-510 compatibility
- Low cost
- PC/AT ISA interface

**SPECIFICATIONS****Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1

Windows 95

Windows NT

MS-DOS

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

**Software Included:**

No. Emulator can work with TI's, GODSP's, White Mountain's and any other XDS510 compatible debugging software.

**Technical Support/Training Available:**

YES

**Cable Length:**

50 Inches

PC/AT ISA interface

**Voltages Supported:**

5V

**PRODUCT DESCRIPTION**

JTAG emulator, functionally identical to XDS-510. It provides a standard debug interface across multiple host operating environments and concurrent full-speed emulation and monitoring of multiple DSP processors residing on one or more target boards. The EML510 can work with any DSP board that provides an external IEEE Std. 1149.1 debug port or MPSD port.

**COMPANY INFORMATION****Instrumental Systems Corporation**

23 Vorontsovskaja Street

Moscow 109147

Russia

Tel: +7 (095) 232-1994

Fax: +7 (095) 330-1392

Development, manufacturing and marketing of innovative DSP products. Offers DSP boards based on the 'C3x, 'C4x, 'C5x and 'C620x devices for PC/AT ISA, PCI and VME bus.





**FEATURES & BENEFITS**

- Fully featured scan based emulators
- In-circuit emulator at full DSP speed
- Easy installation and configuration
- Windows orientated interface
- Multi-level debugger and tools

**SPECIFICATIONS****Host Platforms Supported:**

ISA  
Sun

**Host OS/S Supported:**

Windows 3.1  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x

**Software Included:**

YES

**Technical Support/Training Available:**

YES

**Cable Length:**

10 feet

**Voltages Supported:**

3.3/5 volt

**PRODUCT DESCRIPTION**

KCE series emulators are fully featured scan-based hardware/software systems that offer in-circuit emulation of TMS320DSPs. Easily configured and installed, these emulators plug into a single slot of a PC/AT, SPARCstation or compatible host and connect to your TMS320 system through a standard 14-pin JTAG connector. An in-circuit smart POD allows your target DSP to remain in-socket, even soldered in place, leaving the bus unaffected by the emulation process. DSPs can continue to execute all instructions in a single bus cycle while offering you full control over every memory and I/O location on your target system at the full speed of the DSP device. Fully featured KCE series emulator/debugger software offers state-of-the-art debug and optimization tools to enhance the design of your final product. Complete solutions that add C-source development tools from either Texas Instruments or Code Composer are also available, making KCE series emulators the developer's choice for scan-based emulation.

**COMPANY INFORMATION****Kane Computing**

7 Theatre Court, London Road  
Northwich, Cheshire  
CW9 5HB  
England

Tel: 44 (0) 1606 351006

Fax: 44 (0) 1606 351007/8

e-mail: [tech.support@kanecomputing.com](mailto:tech.support@kanecomputing.com)

e-mail: [kane@kanecomputing.com](mailto:kane@kanecomputing.com)

[www.kanecomputing.com/kanecomputing](http://www.kanecomputing.com/kanecomputing)

Kane Computing is a provider of high performance computing hardware for industrial and military applications, specializing in C.O.T.S DSP solutions.





## FEATURES & BENEFITS

- Single- or dual-channel configurations
- JTAG and MPSD pods
- LED indicators on pods
- TI HLL debuggers
- GoDSP code composer IDE

## SPECIFICATIONS

### Platforms Supported:

ISA

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### TMS320 Devices Supported:

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

### Software Included:

YES

### Technical Support/Training Available:

YES

### Connection Mechanism:

JTAG

### Cable Length:

40 inches

### Voltages Supported:

3V/5V

## PRODUCT DESCRIPTION

MIRAGE-510D is the industry first dual-channel MPSD/JTAG emulator for TI DSPs (C2xx/C3x/C4x/C5x/C54x/C6x) for ISA-bus host PCs. It is well suited for multiprocessor applications and mixed DSP platforms designs. MIRAGE-510D is supported by the TI HLL Debuggers and GoDSP Code Composer IDE.

## COMPANY INFORMATION

### MicroLAB Systems Ltd.

59a Beskudnikovskiy bulvard

Moscow, MR 127486, Russia

Tel: +7-(095)-485-6332

Fax: +7-(095)-485-6332

e-mail: mlabsys@online.ru

MicroLAB Systems was organized as company for instrumentation and development tools. Now offers a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughter cards.





## FEATURES & BENEFITS

- Daughtercard module for TORNADO DSP Systems
- Emulates TORNADO on-board DSP
- Emulates external TI DSPs
- Compact size
- TI HLL Debuggers and GoDSP Code Composer IDE

## SPECIFICATIONS

### Platforms Supported:

TORNADO UECM bu

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### TMS320 Devices Supported:

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

### Software Included:

YES

### Technical Support/Training Available:

YES

### Connection Mechanism:

JTAG

### Cable Length:

40 inches

### Voltages Supported:

3V/5V

## PRODUCT DESCRIPTION

UECM is the universal emulation control daughter card module for TORNADO-3x/4x/54x/6x DSP systems. It offers emulation of both TORNADO on-board DSP (C3x/C4x/C54x/C6x) and any external TI DSP (C2xx/C3x/C4x/C5x/C54x/C6x) via optional buffer pod. Runs under TI HLL Debugger and GoDSP Code Composer IDE tools.

## COMPANY INFORMATION

### MicroLAB Systems Ltd.

59a Beskudnikovskiy bulvard

Moscow, MR 127486, Russia

Tel: +7-(095)-485-6332

Fax: +7-(095)-485-6332

e-mail: mlabsys@online.ru

MicroLAB Systems was organized as company for instrumentation and development tools. Now offers a broad range of DSP boards with TI DSPs, emulators, and AD/DA daughter cards.



**FEATURES & BENEFITS**

- Rugged compact design
- Modular/interchangeable JTAG and MPSD pods
- Flash programming support
- Real-time debugging supported
- Long 2 Metre cable
- Supplied with TI C/assembly source debugger
- ISA/PCI/IEEE1394 options

**SPECIFICATIONS**

**Host Platforms Supported:**

ISA  
PCI PC  
IEEE1394

**Host O/S Platforms Supported:**

Windows 95

**TMS320 Devices Supported:**

TMS320C2xx, TMS320C3x, TMS320C5x,  
TMS320C54x, TMS320C6x

**Software Included:**

YES

**Cable Length:**

200cm

**Voltage Supported**

3/5V

**Technical Support/Training Available:**

The IcePack is supplied with the Texas Instruments C Source Debugger and comes with a CD ROM containing a full set of documentation.



**PRODUCT DESCRIPTION**

The IcePack provides a cost effective DSP development tool for debugging C/assembly source on a wide range of TMS320 DSP families and allows the user to: download a program to a target system, remotely execute and evaluate a program, start, stop and single step as well as run and set break-points, modify variables, memory locations and CPU internal registers, Flash programming, real-time debugging also is supported. The IcePack is supplied with the Texas Instruments C Source Debugger.

**COMPANY INFORMATION**

**Softronics**

56 Helen Rd  
Ferntree Gully, Victoria 3156 Australia  
Tel: +61 3 9758 4883  
Fax: +61 3 9752 2757  
e-mail: [inform@softronics.com.au](mailto:inform@softronics.com.au)  
www: <http://www.softronics.com.au>

Softronics provides DSP development tools and evaluation boards for a number of DSP families and also provides algorithms and reference designs.

EMULATORS



## FEATURES & BENEFITS

- Supports TI DSPs with JTAG/MPSD interfaces
- Compatible with TI XDS510
- Operates off PC's parallel port
- Supports 4-bit, 8-bit, EPP transfers
- Powered by target or supplied AC adapter
- Supports 3- and 5V circuitry
- Supports TI debugger, Code Composer, SDVbx

## SPECIFICATIONS

### Host O/S Supported:

Windows 3.1  
Windows 95  
DOS

### TMS320 Devices Supported:

TMS320C2xx  
TMS320C3x  
TMS320C5x  
TMS320C54x  
TMS320C6x

### Software Included:

The XDS510PP can be bundled with the TI debugger, Code Composer. The emulator comes with parallel port utilities to aid in port configuration.

### Technical Support/Training:

YES

### Connection Mechanism:

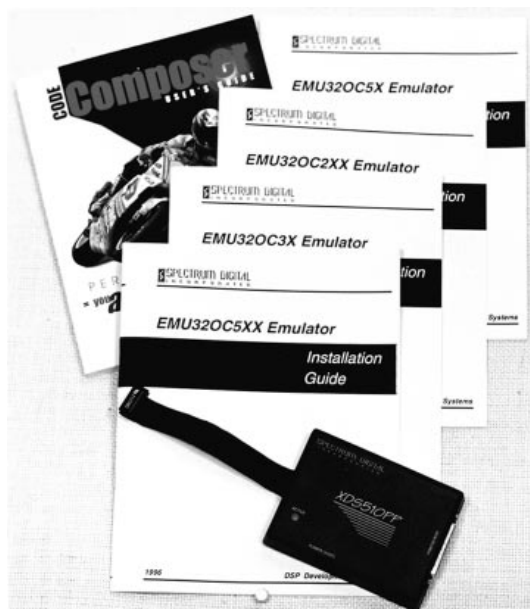
Parallel printer port

### Cable Length:

PC to emulator 6ft., emulator to target = 8 inches.

### Voltages Supported:

5V, 3.3V



## PRODUCT DESCRIPTION

The XDS510PP Scan Path Emulator, designed and manufactured by Spectrum Digital, is the standard in cost effective, portable DSP development. The XDS510PP operates off a PC parallel port thereby eliminating an adapter card. This means the emulator also works with laptops and portable computers. Data transfers can be done in 4-bit, 8-bit and EPP mode depending on the parallel port capability. This emulator is supported by the TI debugger, Code Composer, programming utilities, and Visual Basic Primitives. The XDS510PP is compatible with TI's code generation tools.

## COMPANY INFORMATION

### Spectrum Digital, Inc.

10853 Rockley Road  
Houston, TX 77099  
Tel: (281) 561-6952  
Fax: (281) 561-6037  
e-mail: sales@spectrumdigital.com  
www: <http://www.spectrumdigital.com>



**FEATURES & BENEFITS**

- Microsoft Windows debugger
- True graphical user interface
- C source-level debugging
- Up to 20 resource windows
- Compact hardware

**SPECIFICATIONS****Host Platforms Supported:**

ISA

**Host O/S Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**Technical Support Training Available:**

YES

**Cable Length:**

3+6 Feet

**PRODUCT DESCRIPTION**

LINK-C30 is a development system for the TMS320C3x DSPs. The debugger is a true Microsoft Windows application with a user interface compatible with the Microsoft Windows convention. Buttons provide a fast way to enter commands, memory can be displayed graphically, watch variables can be set with a mouse click. The debugger is symbolic, it provides source-level debugging for C programs. The hardware uses the debug and test port available on the DSP as the emulation path to the chip. The system includes the emulation hardware, the debugger software, the user's manual and a full satisfaction guarantee.

**CONTACT INFORMATION****Tasking S.r.l.**

Via Napo Torriani, 29

Milan, MI 20124 ITALY

Tel: +39 2 66982207

Fax: +39 2 66982189

e-mail: support\_it@tasking.com

www: <http://www.tasking.com>

TASKING Srl is the Italian subsidiary of TASKING group, focused on creating and evaluating the most advanced programming tools available for extensive embedded development support. TASKING srl provides a full life cycle support with cross development tools, test debugging and software analysis tools, JTAG/BDM test systems and high performance real-time test with In-Circuit Emulators. A fully integrated kernel environment including I/O components and protocols is also provided.



## FEATURES & BENEFITS

- On-the-fly access to program and data memory
- On-the-fly trace buffer viewing at program run
- Trace with time stamp support
- Eight-level hardware-break sequencer
- Unlimited software breakpoints
- Source-level language debugger

## SPECIFICATIONS

### Host Platforms Supported:

Other

### Host O/S Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C1x

TMS320C2x

### Technical Support/Training Available:

YES

### Cable Length:

40

### Voltages Supported:

5

## PRODUCT DESCRIPTION

These ICE are designed to plug directly into the DSP socket. The main innovation is the dual-ported RAM architecture with a double bus which allow the user to read and write memory in real-time while the processor is running and to execute an on-the-fly real-time trace with 32K frame \* 80-bits depth.

## CONTACT INFORMATION

### Tasking S.r.l.

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Fax: +39 2 66982189

e-mail: [support\\_it@tasking.com](mailto:support_it@tasking.com)

www: <http://www.tasking.com>

TASKING Srl is the Italian subsidiary of TASKING group, focused on creating and evaluating the most advanced programming tools available for extensive embedded development support. TASKING srl provides a full life cycle support with cross development tools, test debugging and software analysis tools, JTAG/BDM test systems and high performance real-time test with In-Circuit Emulators. A fully integrated kernel environment including I/O components and protocols is also provided.



**FEATURES & BENEFITS**

- Up to 4 probes
- All software included
- Assembler compatible with TI standard
- Debugging on Source Level
- Works with PC
- Small limitation
- Low price

**SPECIFICATIONS**

**Host Platforms Supported:**

PC compatible

**Host OS/S Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C2x

**Software Included:**

Integrated Software Development system:  
Assembler, linker, source code debugger working  
under Windows 3.1x and Windows 95, and 1 year  
free of charge upgrades.

**Technical Support/Training Available:**

YES

**Cable Length:**

20 inches

**Voltages Supported:**

5V

**PRODUCT DESCRIPTION**

ETIC-25 a simple in-circuit emulator can emulate concurrently up to 4 TMS320C25 DSPs. It communicates with a host PC using one serial port. The hardware emulator is supplied with own design environment including assembler, linker, debugger and source editor. A user can divide his source up to 256 sections independently for each processor without real limitation of their length. A designer can use up to 3200 symbols 32-characters long for each processor. Debugger works directly on source code which is compatible with TI standard. All software is windowed and works under Windows 3.1x and Windows 95. As a simple in-circuit emulator ETIC has following limitations: (1) prolongs memory access time by 7nsec; (2) reserves: (a) TRAP for internal use, (b) one level stack, (c) two consecutive words from page 0 of B2 block (address programmable in hardware- one page of external memory (address programmable in hardware)); (3) needs: (a) one I/O port address (chosen by user), (b) any of external interrupts (not necessary but recommended).

**COMPANY INFORMATION**

**TechLab 2000 Ltd.**

Sniadeckich 10/1, Warsaw 00-656  
Poland

Tel: +48-22-625 71 27

Fax: +48-22-625 53 19

e-mail: tl2000@ikp.atm.com.pl

e-mail: office@tl2000.com.pl

www: <http://www.tl2000.com.pl> (under construction)

Hardware and Software design house. Keywords: hardware, software, DSP, measurement, control, encoding, decoding, digital, analog, PCB, microcontroller, microprocessor.



EMULATORS





**FEATURES & BENEFITS**

- Type III PCMCIA hosted emulator card
- High speed 3V/5V scan-based pod and cable
- Installation guide
- One year warranty

**SPECIFICATIONS**

**Platforms Supported:**

PCMCIA

**Host O/S Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

**Software Included:**

NO

Debuggers sold separately

**Technical Support/Training Available:**

YES

**Connection Mechanism:**

MPSD/JTAG

**Cable Length:**

40 inches

**Voltages Supported:**

3V, 5V



**PRODUCT DESCRIPTION**

The Mountain-510/LT Universal Emulator provides support for portable computers with a Type III (PCMCIA) slot making mobile emulation a reality. The Mountain-510/LT is sold with one or more of the most popular debuggers for TI's DSPs including the White Mountain DSP single and multiprocessor version of the Texas Instruments debugger for DOS and Windows (Vista-MP/SP), or the GO DSP Code Composer environment. This flexible combination of universal emulator and debug environment provides a rich feature set for all TMS320 DSP development environments.

**COMPANY INFORMATION**

**White Mountain DSP, Inc.**

20 Cotton Road, Suite 101

Nashua, NH 03063 USA

Tel: (603) 883-2430

Fax: (603) 882-2655

e-mail: [info@wmdsp.com](mailto:info@wmdsp.com)

[www.wmdsp.com](http://www.wmdsp.com)

White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





## FEATURES & BENEFITS

- Low profile 16 bit PC-AT hosted card
- High-speed flexible cable and pod
- Interchangeable connection and ejector latch
- Installation guide
- One year warranty

## SPECIFICATIONS

### Platforms Supported:

PC-AT

### Host O/S Supported:

Windows 3.1, Windows 95, Windows NT

### TMS320 Devices Supported:

TMS320C2xx, TMS320C3x

TMS320C4x, TMS320C5x

TMS320C54x, TMS320C6x

TMS320C8x

### Software Included:

NO

Debuggers sold separately

### Technical Support/Training Available:

YES

### Connection Mechanism:

JTAG, MPSD

### Cable Length:

40 inches

### Voltages Supported:

3V, 5V

## PRODUCT DESCRIPTION

The Mountain-510 Universal Emulator eliminates the cost barrier to DSP development by providing C/assembly source level debugging capability for the entire C2xx, C3x, C4x, C5x, C54x, C6x and C8x DSP families. TI's ARM7 MCU is also supported. The Mountain-510's scan path connection controls the DSPs within the targeted applications as well as both internal



and external memory. The Mountain-510 is sold with one or more of the most popular debuggers for TI's DSPs including the Texas Instruments C/assembly source debugger, the White Mountain DSP's single and multiprocessor version of the Texas Instruments debugger for DOS and Windows (Vista-MP/SP), the Tartan C/C++ debugger, or the GO DSP Code Composer environment. This flexible combination of universal emulator and debug environment provides a rich feature set for all TMS320 DSP development environments.

## COMPANY INFORMATION

### White Mountain DSP, Inc.

20 Cotton Road, Suite 101

Nashua, NH 03063 USA

Tel: (603) 883-2430

Fax: (603) 882-2655

e-mail: [info@wmdsp.com](mailto:info@wmdsp.com)

[www.wmdsp.com](http://www.wmdsp.com)

White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





## FEATURES & BENEFITS

- Sun SBus hosted emulator card
- High speed 3V/5V scan-based cable and pod
- Interchangeable connection and ejector latch
- Installation guide
- One year warranty

## SPECIFICATIONS

### Platforms Supported:

Sun SBus

### Host O/S Supported:

Solaris 2.x and Sun 4.1.x

### TMS320 Devices Supported:

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

### Software Included:

NO

Debuggers sold separately

### Technical Support/Training Available:

YES

### Connection Mechanism:

JTAG/MPSD

### Cable Length:

40 inches

### Voltages Supported:

3V, 5V

## PRODUCT DESCRIPTION

The Mountain-510/WS Universal Workstation Emulator provides Sun SBus-compatible C/assembly source level debugging for the C2xx, C3x, C4x, C5x, C54x, C6x and



C8x DSP families. The Mountain-510/WS scan path connection controls the DSPs within the targeted application and allows access to the complete register set as well as both internal and external memory. The Mountain-510/WS is sold with one or more of the most popular debuggers for TI's DSPs including the Texas Instruments C/assembly source debugger, the Tartan C/C++ debugger, or the GO DSP Code Composer environment for UNIX. Support for Tartan's AdaScope is also available. This flexible combination of universal emulator and debug environment provides a rich feature set for all TMS320 DSP development environments.

## COMPANY INFORMATION

### White Mountain DSP, Inc.

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Tel: (603) 883-2430

Fax: (603) 882-2655

e-mail: info@wmdsp.com

www.wmdsp.com

White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





# SUMMIT-510 PCI BASED JTAG EMULATOR

by White Mountain DSP, Inc.

## FEATURES & BENEFITS

- Summit-510 PCI Local Bus emulator card
- Remote 3V/5V JTAG emulator pod and 3 meter cable
- Software driver support for Windows 95/Windows NT
- Certified for CE compliance
- One year warranty

## SPECIFICATIONS

### Platforms Supported:

PCI PC plug-in

### Host O/S Supported:

Windows 95, Windows NT

### TMS320 Devices Supported:

TMS320C2xx

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

### Software Included:

NO

Debuggers sold separately

### Technical Support/Training Available:

YES

### Cable Length:

120 inches

### Voltages Supported:

3V, 5V

## PRODUCT DESCRIPTION

The next generation of TI DSP emulation systems is here! The Summit-510 system PCI Local Bus card provides emulation and debug support for Texas Instruments (TI) JTAG-based DSPs which includes the C2xx, C4x, C5x, C54x, C6x, and C8x. TI's ARM7 MCU is also supported. The Summit-510 provides a unique three meter (ten feet) cable, over two meters longer than the standard TI style remote pod and cable assembly,



enabling debug of hard-to-reach target systems. In addition, the use of the newer PCI bus now available in all PC-compatibles assures Plug and Play installation of the emulation card plus a performance boost of as much as 25% over traditional DSP emulators. The Summit-510 is sold with one or more of the most popular debuggers for TI's DSPs including Vista-MP, White Mountain DSP's Multiprocessor version of the Texas Instruments debugger for Windows, or the GO DSP Code Composer environment. This flexible combination of PCI-based emulator and debug environment provides rich feature set for today's TMS320 DSP development environments.

## COMPANY INFORMATION

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# TREK-510 UNIVERSAL ETHERNET EMULATOR

by White Mountain DSP, Inc.

## FEATURES & BENEFITS

- Network hosted mini tower emulator
- High-speed 3V/5V scan-based cable and pod
- Interchangeable connection and ejector latch
- Installation guide
- One year warranty

## SPECIFICATIONS

### Host O/S Supported:

Windows 95  
Windows NT  
Solaris 2.x

### TMS320 Devices Supported:

TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8x

### Software Included:

NO  
Debuggers sold separately

### Technical Support/Training Available:

YES

### Connection Mechanism:

JTAG/MPSD

### Cable Length:

40 inches

### Voltages Supported:

3V, 5V



## PRODUCT DESCRIPTION

Another first in the industry, the Trek-510 Universal Ethernet Emulator provides network-hosted emulation for the C2x, C3x, C4x, C5x, C54x, C6x, and C8x family of DSPs from TI. Providing maximum flexibility, the Trek-510 connects via a 10-base-T or AUI connection to an Ethernet-based local area network, allowing remote debugging between either PC or Sun workstation debug host and the target DSP system. Via the TCP/IP protocol, the Trek-510 provides seamless emulation of TI DSPs from either a Windows 95/Windows-NT based PC, or SunOS 4.1.x or Solaris 2.x based Sun workstation.

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**LOGIC ANALYZERS** ..... **7-1**

Corelis, Inc.	PI-320C20/25 .....	7-2
	PI-320C30/31 .....	7-3
	PI-320C32 .....	7-4
	PI-320C40 .....	7-5
	PI-320C50/51/53 .....	7-6
	PI-320C52 .....	7-7
	PI-320C80 .....	7-8
	PI-320C548 .....	7-9
Digital Logic Instruments GmbH	Personal Line .....	7-10



**FEATURES & BENEFITS**

- Quick and easy connection to analyzer
- Full inverse assembly
- Compatible with entire HP family
- Low capacitance probing
- Support for PGA package

**SPECIFICATIONS**

**Host Platforms Supported:**

HP analyzers

**TMS320 Devices Supported:**

TMS320C2x

**Number of Channels:**

100

**Software Included:**

Includes full inverse-assembly and screen-configuration file. Requires 3 analyzer probes for inverse assembly.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications.

State/Timing E Listing 1 Invasm Print Run

Markers Off

Label>	ADDR	TMS320C25 Inverse Assembler	DATA2	STAT	/HO
Base>	Hex	mnemonics	Hex	Binary	Bin
0	0001	reset vector	0022	101110	1
1	0022	DINT	CE01	101111	1
2	0023	LDPK >0000	C800	101111	1
3	0024	ROVM	CE02	101111	1
4	0025	LARP ARO	5588	101111	1
5	0026	SPM 000 [ No Shift ]	CE08	101111	1
6	0027	RTXM	CE20	101111	1
7	0028	SXF	CE0D	101111	1
8	0029	SSXM	CE07	101111	1
9	002A	CNFD	CE04	101111	1
10	002B	LALK >FFFF	D001	101111	1
11	002C	operand fetch	FFFF	101110	1
12	002D	SACL >0003	6003	101111	1
13	002E	ZAC	CA00	101111	1
14	002F	SACL >0004	6004	101111	1
15	0030	SACL >0005	6005	101111	1

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<http://corelis.com/products/preprocessor.html#processors>

Corelis develops and manufactures preprocessors for the TI DSP family. These are used with the HP family of logic analyzers to provide inverse assembly, trace, state analysis. Including telephony and voice algorithms, real-time system software and development services.





**FEATURES & BENEFITS**

- Complete inverse assembly
- Low capacitance probing
- Quick and easy connection to the logic analyzer
- Support for 320C30/31

**SPECIFICATIONS**

**Host Platforms Supported:**

HP analyzers

**TMS320 Devices Supported:**

TMS320C3x

**Number of Channels:**

100

**Software Included:**

Includes full inverse-assembly and screen-configuration files. Requires 4 analyzer pods for inverse assembly. Support for PGA and PQFP packages.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications.

160ch St/Time A Listing 1 Invasm Print Run

Markers Off

Label>	TMS320C30 Mnemonic		ADDR_B	DATA
Base>	Address (Hex)	Invasm (Decimal)	Hex	Hex
40	p000058	LDI 0805H, AR1	1FF7	FFFFFF
41	p000059	LSH 000CH, AR1	1FF7	FFFFFF
42	p00005A	ADDI 0FFFF, AR1	1FF7	FFFFFF
43	p00005B	LDI 0000H, R3	1FF7	FFFFFF
44	p00005C	STI R3, *AR1	1FF7	FFFFFF
45	p00005D	LDI *AR1, R3	1FF7	FFFFFF
46	p00005E	AND 0001H, R3	1FF7	00000
47	1805FFF	00000000H * data write *	1FFF	00000
48	p00005F	BLS 00005DH	1FFF	00000
49	1805FFF	00000000H * data read *	1FFF	00000
50	p000060	*LDI 0000H, R3	1FFF	00000
51	p000060	LDI 0000H, R3	1FFF	FFFFFF
52	p000061	STI R3, *AR0	1FFF	FFFFFF
53	p000062	LDI 0001H, R3	1FFF	FFFFFF
54	p000063	STI R3, *AR1	0000	00000
55	1804000	00000000H * data write *	0000	00000

LOGIC ANALYZERS

**COMPANY INFORMATION**

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**FEATURES & BENEFITS**

- Quick and easy connection to analyzer
- Full inverse assembly
- Low capacitance probing
- Support for PQFP or TQFP package

**SPECIFICATIONS**

**Host Platforms Supported:**

HP analyzers

**TMS320 Devices Supported:**

TMS320C3x

**Number of Channels:**

100

**Software Included:**

Includes full inverse-assembly and screen-configuration software. Requires 5 analyzer pods for inverse assembly.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications. Support available for the 144-pin PQFP or the 144-pin TQFP package.

160ch St/Time A Listing 1 Invasm Print Run

Markers Off

Label>	TMS320C32 Mnemonic		ADDR_B	DATA
Base>	Address (Hex)	Invasm (Decimal)	Hex	Hex
40	p000058	LDI 0805H, AR1	1FF7	FFFF
41	p000059	LSH 000CH, AR1	1FF7	FFFF
42	p00005A	ADDI 0FFFH, AR1	1FF7	FFFF
43	p00005B	LDI 0000H, R3	1FF7	FFFF
44	p00005C	STI R3, *AR1	1FF7	FFFF
45	p00005D	LDI *AR1, R3	1FF7	FFFF
46	p00005E	AND 0001H, R3	1FFF	0000
47	1805FFF	00000000H * data write *	1FFF	0000
48	p00005F	BLS 00005DH	1FFF	0000
49	1805FFF	00000000H * data read *	1FFF	0000
50	p000060	*LDI 0000H, R3	1FFF	0000
51	p000060	LDI 0000H, R3	1FFF	FFFF
52	p000061	STI R3, *AR0	1FFF	FFFF
53	p000062	LDI 0001H, R3	1FFF	FFFF
54	p000063	STI R3, *AR1	0000	0000
55	1804000	00000000H * data write *	0000	0000

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LOGIC ANALYZERS

**FEATURES & BENEFITS**

- Quick and easy connection to the logic analyzer
- Zif socket for PGA device
- Low capacitance probing

**SPECIFICATIONS****Host Platforms Supported:**

HP analyzer

**TMS320 Devices Supported:**

TMS320C4x

**Number of Channels:**

100

**Software Included:**

Includes full inverse-assembly software as well as a screen configuration file. Requires 5 analyzer pods for global or local bus inverse assembly. Requires 6 pods for status display of both busses. Requires 8 pods for display of opposite bus address.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications. Support for the PGA package.

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**CORELIS**



**FEATURES & BENEFITS**

- Quick and easy connection to the HP analyzer
- Full inverse assembly
- Low capacitance probing

**SPECIFICATIONS**

**Host Platforms Supported:**

HP analyzer

**TMS320 Devices Supported:**

TMS320C5x

**Number of Channels:**

100

**Software Included:**

Includes full inverse assembly and screen configuration file.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications. Support for the 132-pin PQFP package.

Label>	ADDR	TMS320C5x Inverse Assembler	STAT	Time
Base>	Hex	mnemonics hex	Symbol	Relativ
6	20CE	ADD #01	Prog Rd	400 n
7	20CF	BCND 20D3 E0	Prog Rd	400 n
8	20D0	operand read	Prog Rd	400 n
9	20D1	CALL 20D7,*,1	Prog Rd	400 n
10	20D2	operand read	Prog Rd	400 n
11	20D3	pipeline flushed	7A89	Prog Rd
12	20D4	pipeline flushed	2000	Prog Rd
13	20D7	LACC #213E,0	Prog Rd	400 n
14	20D8	operand read	213E	Prog Rd
15	20D9	LDP #000	Prog Rd	400 n
16	20DA	TBLR *	Prog Rd	400 n
17	20DB	ADD #01	Prog Rd	400 n
18	20DC	LAR AR2,*,2	Prog Rd	440 n
19	213E	LAR AR0,01	Prog Rd	440 n
20	08A1	data write	0001	Data Wr
21	20DD	BANZ 20E0,*,1	Prog Rd	440 n

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Corelis develops and manufactures preprocessors for the TI DSP family. These are used with the HP family of logic analyzers to provide inverse assembly, trace, state analysis. Including telephony and voice algorithms, real-time system software and development services.



LOGIC ANALYZERS



**FEATURES & BENEFITS**

- Quick and easy connection to the logic analyzer
- Low capacitance probing
- Full inverse assembly

**SPECIFICATIONS**

**Host Platforms Supported:**

HP analyzer

**TMS320 Devices Supported:**

TMS320C5x

**Number of Channels:**

100

**Software Included:**

Includes full inverse-assembly and screen-configuration file.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications. Includes full inverse assembly. Support for the 100-pin PQFP package.

Analyzer Listing TI320C52ST Invasm Cancel Run

Markers Off Acquisition Time 02 Apr 1996 20:58:35

Label>	ADDR	TMS320C52 Inverse Assemble		STAT
Base>	Hex	mnemonics	hex	Hex
8	0086	LACC	20,4	1B
9	0087	LACC	32,4	1B
10	0088	LACC	20,4	1B
11	8160	LACC	09,5	1B
12	8161	LAR	AR1,5B	1B
13	8162	BIT	++	1B
14	8163	BIT	*,5	1B
15	8164	LACC	01	1B
16	835B	data read	0078	17
17	8165	LACC	+-	1B
18	835C	data read	1048	17
19	8166	LACC	*	1B
20	8167	LACC	09,5	1B
21	835C	data write	1049	07
22	8168	LAR	AR1,5F	1B
23	835B	data write	0078	07

LOGIC ANALYZERS

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Corelis develops and manufactures preprocessors for the TI DSP family. These are used with the HP family of logic analyzers to provide inverse assembly, trace, state analysis. Including telephony and voice algorithms, real-time system software and development services.



**FEATURES & BENEFITS**

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- Quick and easy connection to the HP analyzer and target board
- Low capacitance probing
- Support for PGA package

**SPECIFICATIONS**

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**Host Platforms Supported:**

HP analyzer

**TMS320 Devices Supported:**

TMS320C8x

**Number of Channels:**

100

**Software Included:**

Screen-configuration software only

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

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Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. The UI-320C80 is supplied with software that runs on the logic analyzer and provides a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications.

**COMPANY INFORMATION**

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Corelis develops and manufactures preprocessors for the TI DSP family. These are used with the HP family of logic analyzers to provide inverse assembly, trace, state analysis. Including telephony and voice algorithms, real-time system software and development services.

**CORELIS**



**FEATURES & BENEFITS**

- Quick and easy connection to the logic analyzer
- Low capacitance probing
- Full inverse assembly
- 100 pin TQFP package support

**SPECIFICATIONS**

**Host Platforms Supported:**

HP analyzer

**TMS320 Devices Supported:**

TMS320C54x

**Number of Channels:**

100

**Software Included:**

Includes full inverse-assembly and screen-configuration file.

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Corelis preprocessors provide a complete interface between the target processor or other device and the HP family of logic analyzers. All preprocessors are supplied with software that runs on the logic analyzer and provides inverse assembly as well as a screen configuration file. Corelis preprocessors are a non-intrusive development tool and provide a powerful environment for the debugging of both hardware and software real-time applications. Includes full inverse assembly software. Support for the 100-pin TQFP package.

100/500MHz LA C Listing 1 Invasm Print Run

Markers Off Acquisition Time 25 Jun 1996 15:25:48

Label>	ADDR	TMS320C54x Inverse Assembler	STAT	Time
Base>	Hex	mneumonics hex	Hex	Relative
9	0125	ADD #0001h,0h,A,B	003B	32 ns
10	0126	operand read	003B	24 ns
11	0127	BC F97Dh,BEQ	003B	24 ns
12	0128	operand read	F97D	24 ns
13	012A	ADD 36h,B	003B	72 ns
14	012B	READA *(AR2)	003B	24 ns
15	012C	operand read	0012	32 ns
16	0136	READA *(6EF9h)	003B	24 ns
17	0137	operand read	6EF9	003B
18	0138	ADD #0001h,0h,A,A	003B	24 ns
19	0179	operand read	0001	007B
20	013A	BANZ 012Bh,*AR1-	003B	24 ns
21	013B	operand read	012B	003B
22	013C	unused prefetch	F074	003B
23	013D	unused prefetch	00E0	003B
24	012B	READA *(AR2)	003B	24 ns

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**FEATURES & BENEFITS**

- Disassemblers without the need of preprocessor hardware for reverse assembly of processor-code with easy-to-use graphical user interface operating under Microsoft Windows 3.1x, Windows 95 and NT
- High Level Language Manager for debugging on source code level and trigger on a source code line
- Software interface for user written control and data display programs
- Easy documentation through full compatibility to Windows programs like WinWord
- High-impedance, 16-channel active logic probes for easy adaptation and minimum loading
- Powerful 15-level trigger with physical trigger outputs to trigger external devices

**SPECIFICATIONS****Host Platforms Supported:**

Windows 3.1, Windows 95, Windows NT

**TMS320 Devices Supported:**

TMS320C2xx, TMS320C3x, TMS320C4x  
TMS320C5x, TMS320C54x, TMS320C6x

**Number of Channels:**

Total= 192

No. of state/Timing= 192

No. of Scope= 0

**Maximum Clock Rate:**

Total= 1000MHz

State/Synchronous= 100MHz

Timing/Asynchronous= 1000MHz

**Memory Depth per Channel:**

32k

**Software Included:**

YES

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

The Personal Line (PL) Logic Analyzer Family features up to 192 channels per mainframe, a memory depth up to 32k, external clock rate up to 100MHz, and internal clock rate up to 1GHz. A full range of triggering capability with interactive data stimulus allows the system to work as an ideal ATE system for user specific applications. The system can be stand alone or slaved to a PC running as an application under popular MS Windows. Capabilities include full time correlated dual processor tracing (expandable to 16 processors), powerful Disassemblers and High Level Language Debugging, a Software Interface to control and operate the Personal Line from user written programs and a 10ns Time Stamp for time correlation of all busses (processors) being monitored.

**COMPANY INFORMATION****Digital Logic Instruments GmbH**

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Germany

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dli digital logic instruments gmbh, specializes in Logic Analyzers operating under Microsoft Windows with Disassembler and High Level Language Support for TI DSP's.



**DEBUGGERS . . . . . 8-1**

Allant Software Corporation	ASPEX Development Environment . . . . .	8-2
Innovative Integration, Inc.	Code Hammer. . . . .	8-3
Signalogic, Inc.	DSPower-Block Diagram . . . . .	8-4
Spectrum Digital	SDVBX . . . . .	8-5
	DB2XX HLL Debugger . . . . .	8-6
White Mountain DSP, Inc.	Vista-MP . . . . .	8-7
	Vista-X. . . . .	8-8





## FEATURES & BENEFITS

- DSP, MCU and ASIC visibility and control
- Based on proven, industry standard technology
- Scales to accommodate the way you work
- Supports simulators, JTAG, monitors
- Intuitive, easy-to-learn and use GUI
- Designed-in multiprocessor support
- OS support — commercial and custom

## SPECIFICATIONS

### Host O/S Supported:

Windows 95  
Windows NT  
Solaris 2.5

### TMS320 Devices Supported:

TMS320C54x  
TMS320C2xx  
TMS320C6xx

### Software Included:

Debuggers

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

ASPEX is an advanced software development environment targeted to the requirements of software developers designing DSP and mixed architecture embedded systems. ASPEX leverages state-of-the-art, field-proven embedded microprocessor technology to deliver a development environment designed specifically for developers of DSP-based products. ASPEX provides advanced functionality yet is robust and easy to use. The ASPEX Development Environment is a complete, integrated development environment that includes an integrated, context-sensitive editor, build facilities, source code version control management, the ASPEX debugger, and other software development tools. Designed to be easy to learn and easy to use, ASPEX adjusts to the way developers prefer to interact as their development process evolves. This scalability is reflected in the way ASPEX provides a simple environment to support a single developer; while at the same time, easily expands to support a large team of local or geographically dispersed developers. ASPEX gives developers complete visibility into and control of the inner workings of embedded systems. Innovative technology allows additional target visibility to be enabled "in the field" not by Allant's engineers, but by the designers of the target system.

## COMPANY INFORMATION

### Allant Software Corporation

1280 Civic Drive, Suite 206  
Walnut Creek, CA 94596 USA  
Tel: (925) 944-9690  
Fax: (925) 944-9612  
e-mail: support@allant.com  
www.allant.com

Allant's ASPEX is the first development environment to let software developers quickly and easily create applications for embedded systems that include DSPs, MCUs, and ASICs.



**FEATURES & BENEFITS**

- Full speed emulation over three meter cable
- Code Composer Windows software, 3V and 5V operation
- Works with any C2xx, C3x, C4x, C5xx, C6x DSP, May also be purchased separately

**SPECIFICATIONS****Host Platforms Supported:**

Windows 3.1

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

TMS320C3x

TMS320C4

TMS320C5x

TMS320C54x

TMS320C6x

**Software Included:**

Debuggers

Code generation tools

Libraries

**Technical Support/Training Available:**

Technical support is available 8am to 5pm Pacific time or e-mail: [techsprt@innovative-dsp.com](mailto:techsprt@innovative-dsp.com).

**PRODUCT DESCRIPTION**

Full speed emulation over three-meter cable. Code Composer Windows software. 3V and 5V operation. Works with any C2xx, C3x, C4x, C5xx, C6x DSP Board. May also be purchased separately.

**COMPANY INFORMATION****Innovative Integration, Inc.**

5785 Lindero Canyon Road

Westlake Village, CA 91362 USA

Tel: (818) 865-6150

Fax: (818) 879-1770

e-mail: [techsprt@innovative-dsp.com](mailto:techsprt@innovative-dsp.com)www: <http://www.innovative-dsp.com>

Manufactures high performance DSP cards for ISA, PCI, Compact PCI and stand alone applications which feature extensive I/O capabilities.





## FEATURES & BENEFITS

- Support for multiple DSP Engines
- Source code generation
- User-defined blocks
- Block Diagram user-interface
- Graphical and iconic display
- Real-time symbol/variable monitor and read out
- Memory display in text and graphical formats

## SPECIFICATIONS

### Host Platforms Supported:

Windows 3.1  
Windows 9x  
Windows NT

### TMS320 Devices Supported:

TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x

### Software Included:

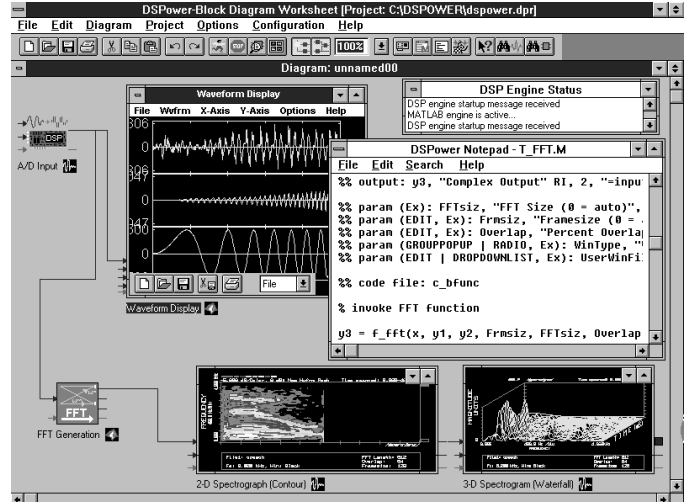
Debuggers  
Code generation tools  
Libraries

### Technical Support/Training Available:

YES. Technical support is available from 9am to 9pm CDT at 214-343-0069 or via e-mail at [dspinfo@signallogic.com](mailto:dspinfo@signallogic.com)

## PRODUCT DESCRIPTION

DSPower-Block Diagram is a Windows software package with block diagram and graphical-control user interfaces. Depending upon the "DSP Engine(s)" with which it is used, DSPower offers math/DSP simulation and real-time execution of block diagrams, interactive instrumentation, measurement, displays visualization, analysis, data acquisition and source-code generation. Both diagram and interactive modes of operation are available; partial diagram execution is possible. Diagrams can include both data and control



constructs and are saved in source code form. Graphical and iconic interfaces, inside interactive display and instrument blocks are rich and full-featured, and can be customized. Procedure blocks can be created, including specification of inputs/outputs, block icon, on-line help, and other definable parameters. Source code generation includes Hypersignal macro language, MATLAB .m file, and real-time C language. Debugging capabilities include real-time variable and symbol monitor and readout (text, gauge, meter, etc.), memory display in text and graphical (waveform) formats, and COFF file download.

## COMPANY INFORMATION

### Signallogic, Inc.

9617 Wendell @ Skillman  
Dallas, TX 75243 USA  
Tel: (214) 343-0069  
Fax: (214) 343-0163  
e-mail: [dspinfo@signallogic.com](mailto:dspinfo@signallogic.com)  
www: <http://www.signallogic.com>

Signallogic specializes in DSP development tools and PC-based OEM products, including software, hardware, PC104, embedded and real-time systems, data acquisition, MATLAB, LabView and visual Basic interface.



**FEATURES & BENEFITS**

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- Visual Basic Primitives control for TI DSPs
- Operates with TMS320C3x, TMS320C5x
- Operates with XDS510PP Scan Path Emulator
- Compatible with Windows 3.1, 95
- Provides the start/stop/single step control
- Allows read/write of memory and registers
- Program and data can be downloaded

**SPECIFICATIONS**

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**TMS320 Devices Supported:**

TMS320C3x

TMS320C5x

**Host O/S Supported:**

Windows 3.1

Windows 95

**Technical Support/Training Available:**

Yes

**SOFTWARE OVERVIEW**

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The Spectrum Digital SDVbx is a set of Visual Basic control primitives that operate with the XDS510PP Scan Path Emulator to control the operation of a TI TMS320C3x DSP. The PC that runs the VBX communicates with the target DSP via the XDS510PP connected to the MPSD or JTAG test interface. The user is then able to write applications in Visual Basic to perform diagnostics, test sequences and limited debugging. Because the XDS510PP operates off the bi-directional port no add-in adapter cards are required.

**COMPANY INFORMATION**

---

**Spectrum Digital, Inc.**

10853 Rockley Road

Houston, TX. 77099

Tel: (281) 561-6952

Fax: (281) 561-6037

e-mail: [sales@spectrumdigital.com](mailto:sales@spectrumdigital.com)www: <http://www.spectrumdigital.com>

**FEATURES & BENEFITS**

- High-level language 'C' Debugger
- Operates with TMS320C203/F206/F240
- Operates through PC's RS-232 port
- No emulator required
- Operates on EVM320C203/F206/F240 Evaluation Modules
- Compatible with TI HLL Debugger
- Minimal DSP resources required

**SPECIFICATIONS****TMS320 Devices Supported:**

TMS320C203

TMS320F206

TMS320F240

**Host O/S Supported:**

Windows 3.1

Windows 95

DOS

**Technical Support/Training Available:**

Yes

**SOFTWARE OVERVIEW**

The DB2XX High Level Language 'C' debugger is a cost-effective method of debugging software on TMS320C203, F206, and F240 DSPs. The debugger through a PC's serial port, talks to a small monitor resident on the target board. This debugger is compatible with TI's HLL debugger and code generation tools. This debugger allows debugging of C-level, assembly language, or mixed-mode debugging. The debugger supports single stepping, multiple break points, code windows, run-time analysis, and machine state information.

**COMPANY INFORMATION****Spectrum Digital, Inc.**

10853 Rockley Road

Houston, TX. 77099

Tel: (281) 561-6952

Fax: (281) 561-6037

e-mail: sales@spectrumdigital.com

www: <http://www.spectrumdigital.com>

**FEATURES & BENEFITS**

- Includes a DOS version of the TI C debugger
- Allows debugging of one DSP on scan chain
- Includes a Windows version of TI C debugger
- PDM improves efficiency in multiprocessing
- Fast, cost effective debugging system

**SPECIFICATIONS****Host O/S Supported:**

Windows 3.1  
Windows 95

**TMS320 Devices Supported:**

TMS320C2xx  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8x

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Perform multiple DSP debugging without ever leaving Windows! Vista-MP from White Mountain DSP provides developers with all the functionality of the industry standard TI debugger to include the popular Parallel Debug Manager (PDM) utility without having to use IBM's OS/2 operating system. This innovative feature improves debugging efficiency for DSP developers working in multiprocessor environments, ultimately promoting faster time to market.

**COMPANY INFORMATION****White Mountain DSP, Inc.**

20 Cotton Road, Suite 101  
Nashua, NH 03063 USA  
Tel: (603) 883-2430  
Fax: (603) 882-2655  
e-mail: [info@wmdsp.com](mailto:info@wmdsp.com)  
[www.wmdsp.com](http://www.wmdsp.com)

White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.



**FEATURES & BENEFITS**

- Network based debugging of all TI JTAG DSPs
- Uses TCP/IP network protocol
- Uses Active-X type technology
- Sold exclusively with Summit-510 PCI emulator

**SPECIFICATIONS****Host O/S Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2xx

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

**Software Included:**

Debuggers

**Technical Support/Training Available:**

YES

**PRODUCT DESCRIPTION**

Vista-X is comprised of the parallel debug manager (PDM), a network-capable version of the TI C source debugger, and the TI composer utility, all capable of running under Windows 95 as well as Windows NT. The Vista-X version of the TI C source debugger supports full debug capability across networks, and is available for all JTAG DSPs. With Vista-X, a PC-based emulator can be installed in one machine (the server) and a remote (client) machine can access the emulator and consequently run a debug session across the network. In this way, users can develop and debug DSP applications from their individual client PCs and no longer have to be co-located with the DSP target being debugged.

**COMPANY INFORMATION****White Mountain DSP, Inc.**

20 Cotton Road, Suite 101

Nashua, NH 03063 USA

Tel: (603) 883-2430

Fax: (603) 882-2655

e-mail: [info@wmdsp.com](mailto:info@wmdsp.com)[www.wmdsp.com](http://www.wmdsp.com)

White Mountain DSP, Inc. is a third-party supplier of emulators and development systems for the Texas Instruments DSP product line.





**SIMULATION MODELS** ..... **9-1**  
    Zeelan® Technology .....  
    MasterModel. .... 9-2





## FEATURES & BENEFITS

- Zeelan Technology measurement-based models come ready to load and operate without translation or conversion measurement based
- Digital signal-integrity models based on actual parts
- Formats: IBIS, Quad, Cadence
- Computers: IBM PC or UNIX
- Ready to load and run
- Model library for each pin on the part

## SPECIFICATIONS

### Host Platform Supported:

Windows 3.1

Windows 95

Windows NT

Solaris

UNIX computers

### TMS320 Devices Supported:

TMS320C4x,

TMS320C5x

TMS320C54x

### Software Included:

Bundled Libraries

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

Zeelan Technology provides individual MasterModel simulation model libraries for Texas Instruments TMS320 DSPs. The MasterModels are based on measurements from the actual Texas Instruments TMS320 devices allowing the designer to identify digital signal-integrity problems based on the physical layout of the circuit card during the design phase and then make changes before system fabrication. To ensure realistic representation of each part, measurements are performed in a tightly controlled environment. Zeelan has developed specialized equipment which delivers high speed pulse stimuli to the device under test and then acquires the critical data used in modeling the parts performance. Zeelan Technology creates complete pin-specific models for each part from the measurements using Zeelan's automated modeling technology. Because the models are based on physical reality and high frequency effects that are inherent in digital designs, simulation results are more likely to match the actual design.

## COMPANY INFORMATION

### Zeelan Technology

8005 SW Boeckman Road

Wilsonville, OR 97070 USA

Tel: (503) 685-1000

Fax: (503) 685-1001

e-mail: [info@zeelan.com](mailto:info@zeelan.com)www: <http://www.zeelan.com>

Zeelan Technology has measurement-based, digital signal-integrity simulation model libraries for TI DSP parts for the simulator, model format and computer of your choice.



**SIMULATORS** ..... **10-1**

Allant Software Corporation	ASPEX Development Environment.....	10-2
Synetcom Digital, Inc.	SD2000A.....	10-3



## FEATURES & BENEFITS

- Run multiple simulators w/one debugger
- Based on proven, industry standard technology
- Scales to accommodate the way you work
- Intuitive, easy-to-learn and use GUI
- Designed-in multiprocessor support
- Run simulations on local or network hosts

## SPECIFICATIONS

### Host O/S Supported:

Windows 95

Windows NT

Solaris

### TMS320 Devices Supported:

TMS320C54x

TMS320C2xx

TMS320C6xx

### Software Included:

Debuggers

Code Generation Tools

### Technical Support/Training Available:

YES

## PRODUCT DESCRIPTION

ASPEX is an advanced software development environment targeted to the requirements of software developers designing DSP and mixed architecture embedded systems. ASPEX leverages state-of-the-art, field-proven embedded microprocessor technology to deliver a development environment designed specifically for developers of DSP-based products. ASPEX provides advanced functionality yet is robust and easy to use. The ASPEX Development Environment is a complete, integrated development environment that includes an integrated, context-sensitive editor, build facilities, source code version control management, the ASPEX debugger, and other software development tools. Designed to be easy to learn and easy to use, ASPEX adjusts to the way developers prefer to interact as their development process evolves. This scalability is reflected in the way ASPEX provides a simple environment to support a single developer; while at the same time, easily expands to support a large team of local or geographically dispersed developers. ASPEX gives developers complete visibility into and control of the inner workings of embedded systems. Innovative technology allows additional target visibility to be enabled "in the field" not by Allant's engineers, but by the designers of the target system.

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### Allant Software Corporation

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e-mail: support@allant.com

www.allant.com

Allant's ASPEX is the first development environment to let software developers quickly and easily create applications for embedded systems that include DSPs, MCUs, and ASICs.





## FEATURES & BENEFITS

---

- Two 100kHz 16-bit filter channels
- Up to 128 tap FIR filter implementations
- Automatically designs and implements filters
- External control interface available
- Single channel version available
- Custom filter functions available
- Text book quality filter designs

## SPECIFICATIONS

---

### TMS320 Devices Supported:

TMS320C2x

TMS320C5x

### Software Included:

Bundled Libraries

### Technical Support/Training Available:

Technical support is provided with purchase.

## PRODUCT DESCRIPTION

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The SD2000A programmable digital filter instrument is completely self-contained programmable digital filter instrument. Standard filter types, including low pass, high pass, Bandpass and Bandstop filters, can be implemented using the SD2000A. Other special filter types can also be implemented ie. raised cosine filters for telecommunications.

## COMPANY INFORMATION

---

### Synetcom Digital, Inc.

1426 Aviation Blvd., Suite 203

Redondo Beach, CA 90278 USA

Tel: (310) 379-2000

Fax: (310) 372-2331

e-mail: [synet@ix.netcom.com](mailto:synet@ix.netcom.com)www: <http://www.synetcom.com>

Provides wireless communications consulting services support digital signal pProcessing technology.

Manufactures wireless data communications equipment that utilizes digital signal processing technology.

**Synetcom**  
Synetcom Digital Incorporated



<b>SOFTWARE DEVELOPMENT UTILITIES.....</b>	<b>11-1</b>
3L Ltd.	3L Parallel C ..... 11-2
	3L Windows Server ..... 11-3
	Debugger Support Kit ..... 11-4
	Paramex ..... 11-5
3L Ltd.	VPB Performance Monitor ..... 11-6
AB Nyvalla DSP	Aladdin Interactive DSP ..... 11-7
Applied Signal Technology, Inc.	Elvira Signal Analysis Software ..... 11-8
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Transtech Parallel Systems Corporation	PACE ..... 11-43
Visual Solutions Incorporated	VISSIM/DSP ..... 11-43



## FEATURES & BENEFITS

- Moving tasks between processors is easy
- Code and data get to the right places, quickly
- Overlap processing with comms for performance
- Share DSP power between multiple tasks
- Licensed copy of the Texas Instruments C4x C compiler package, offering excellent performance plus compatibility with third-party tools and libraries
- A powerful communications framework that helps you fully utilize the parallel processing features of the TMS320C4x, saving time in multi-processor projects
- A distributed microkernel that provides a robust, light weight foundation for your code, offering many features of a traditional RTOS with little of the overhead

## SPECIFICATIONS

### Application Area:

Communication

### Host Platforms Supported:

Windows 3.1

Window 95

Windows NT

Solaris

### Codegeneration Capabilities:

C

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

Full technical support included. Two-day Parallel C training courses are available for groups of 4 to 10 people.

## SOFTWARE OVERVIEW

Multi-processor systems are treated as collections of concurrent tasks in a structure closely matching familiar DSP block diagrams.

Key Parallel C benefits: many tasks can share one processor, while moving tasks between processors to optimize performance is a one-line change, not a major re-write. Parallel C liberates you from hardware topology: any task can send messages to any other. Your code is the same whether a message is sent to another task on the same processor, over a C4x comm port to a neighboring processor, or routed through many nodes to a distant processor. Applications that automatically adapt to any number of C4x nodes are easy-to-build. C standard I/O works from any network node.

See our article under "Operating Systems" for details of the underlying microkernel.

## COMPANY INFORMATION

### 3L Ltd.

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EH9 1PY, United Kingdom

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Fax: +44 131 662 4556

e-mail: support@threeL.co.uk

www: <http://www.threeL.co.uk>

Texas Instruments commissioned 3L to port their successful Parallel C tools to the TMS320C4x in 1992. 3L Parallel C is now the leading C4x RTOS.





## FEATURES & BENEFITS

- Easily add Windows user interface to DSP app
- Also supports C std. I/O from DSP
- Access any Windows feature
- Ready-written drivers for many DSP boards
- Simple, high-level API

## SPECIFICATIONS

### Application Area:

GUI design

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

YES

## SOFTWARE OVERVIEW

The 3L Windows Server makes it easy to give your DSP application a compelling Windows-based user interface. At the same time, you can use standard C I/O to access host files from the DSP and generate diagnostic output via printf.

The user-interface parts of your application are written using standard Windows tools like Visual C++ or Visual Basic. That gives your DSP code access to any Windows feature, from menus and dialogs right up to OLE, DirectX and Winsock networking. 3L provides a DLL that allows your host program to download code to the DSP and then communicate with it. All this functionality is accessible from easy-to-use C++ classes that build on Microsoft's foundation classes (MFC).

On the target side a library of C-callable functions is provided that allows the DSP to exchange messages with the host-side code. This library integrates with 3L's Parallel C programming environment to allow the host to signal semaphores on the DSP when interesting user-interface events occur (e.g., mouse clicks, menu commands).

A wide range of DSP boards is supported by plug-in driver DLLs. Communication between host and target uses simple, high-level calls, saving you the effort of writing driver code for the DSP hardware.

## COMPANY INFORMATION

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www: <http://www.threeL.co.uk>

In 1992, Texas Instruments commissioned 3L to port their successful Parallel C software to the TMS320C4x. It is now the leading RTOS for the C4x.





## FEATURES & BENEFITS

- Source-level debug of Parallel C code
- Support for multiple tasks

## SPECIFICATIONS

### Application Area:

Parallel Debug

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

Solaris

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

Full technical support is included.

## SOFTWARE OVERVIEW

This add-on product for 3L Parallel C allows standard JTAG debuggers for the TMS320C4x to work with Parallel C. All the main debuggers are supported, including GO DSP's Code Composer, Vista-MP from White Mountain and most board vendors' versions of the Texas Instruments XDS510 debugger.

These debuggers understand how to load and debug the COFF files generated by the TI linker. Each target processor can have only a single program, running a single thread of execution. The Debugger Support Kit (DSK) makes these standard debugger products work with Parallel C applications, which can have multiple tasks running on the same DSP, each with its own separate symbol table.

## COMPANY INFORMATION

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In 1992, Texas Instruments commissioned 3L to port their successful Parallel C software to the TMS320C4x. It is now the leading RTOS for the C4x.







## FEATURES & BENEFITS

- Use MATLAB with DSP chips
- Wide range of DSP boards supported
- Support for networks of parallel DSPs
- Rich parallel programming environment
- Use MATLAB as user interface for DSP apps

## SPECIFICATIONS

### Application Area:

Visualization

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C4x

### Codegeneration Capabilities:

C

### Technical Support/Training Available:

Full technical support is included with the product.

## SOFTWARE OVERVIEW

MATLAB allows you to speed up interpreted "m" files by calling compiled C code ("mex" files). Paramex extends this by allowing the C code to run on DSP boards, giving you access to real-time performance. Paramex therefore integrates the intensive compute performance of DSP chips with the data visualization power of MATLAB.

Because Paramex uses 3L Parallel C as the programming environment for the DSPs, it is easy to make use of not just one DSP, but many of them running in parallel for ultimate performance. Multi-tasking, multi-threading and automatic support for any number of DSPs is provided. Starting out with just one DSP though is simply a matter of recompiling your original "mex" file. No source changes are required.

Any processor in the target network can call MATLAB on the host computer to execute built-in MATLAB functions, "m" files, or "mex" files that run on the host. For example, any DSP can execute mexEvalString ("plot(s)"); to plot the matrix "s". Full and sparse matrices can be passed between MATLAB on the host and any of the DSPs. Paramex also adds matrix-based inter-processor communication operations to Parallel C. Any processor in the DSP network can read or write "mat" data files.

## COMPANY INFORMATION

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In 1992, Texas Instruments commissioned 3L to port their successful Parallel C software to the TMS320C4x. It is now the leading RTOS for the C4x.





## FEATURES & BENEFITS

- Maximize DSP code execution speed
- Measure CPU and comport utilization
- Log events with high-resolution timestamp
- Selectively enable event logging
- Graphical results display

## SPECIFICATIONS

### Application Area:

Parallel

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

Solaris

### TMS320 Devices Supported:

TMS320C4x

### Codegeneration Capabilities:

C

### Technical Support/Training Available:

Full technical support is included with the product.

## SOFTWARE OVERVIEW

VPB reduces development time, risks and costs by helping you measure and tune the performance of multi-processor TMS320C4x software. Load measurements show you any performance bottlenecks, while event markers locate their causes in the program code. Major speed-ups can come from better load balancing when you have the information VPB provides.

VPB/Mon synchronizes the target processor's clocks then records processor loading and event information in real-time. The data is stored in memory then flushed to disk at the end of the run for later analysis using VPB/View. Any user task on any processor can generate both event markers and formatted text messages. These identify points in the source code and are directly represented in the performance graphs. The user has control over what is monitored, over what period, and at what sampling rate. The complete run can be sampled at various resolutions to allow detailed analysis of problem areas. All VPB-related code can be removed from the executable by rebuilding with a different "make" target. There is no need to edit the source code.

VPB/View displays the data collected by VPB/Mon in a graphical "oscilloscope"-style format under Microsoft Windows or Motif. Pan and zoom features allow accurate time measurement.

## COMPANY INFORMATION

### 3L Ltd.

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Fax: +44 131 662 4556

support@threeL.co.uk

www: <http://www.threeL.co.uk>

In 1992, Texas Instruments commissioned 3L to port their successful Parallel C software to the TMS320C4x. It is now the leading RTOS for the C4x.



**FEATURES & BENEFITS**

- Audio band DSP integration in MS Windows®
- No DSP programming expertise needed
- Highly interactive
- User-extendable and embeddable
- Works on various different boards

**SPECIFICATIONS****Application Area:**

Prototyping  
Simulation  
Education  
General DSP

**Code Generation Capabilities:**

Interpreter

**Visual Programming Capabilities:**

YES

**Host O/S Supported:**

Windows 3.1x  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C3x  
TMS320C4x

**Technical Support/Training Available:**

YES

**SOFTWARE OVERVIEW**

Nyvalla DSP's Aladdin Interactive DSP Workbench™ is a block-oriented real-time signal application editor running under Microsoft Windows®. The Standard Edition provides full support for implementing real-time signal processing models for the audio frequency range. The larger Developer Edition has more features and enables the user to write stand-alone applications that interface directly to Nyvalla DSP's Aladdin Executive™, a high-performance, object-oriented DSP command interpreter. User applications are written with any Microsoft Windows®-compatible development tool that can link to DLLs. Sample host programs are provided in C, C++, Microsoft Visual Basic® and Microsoft Excel®. The Block Developer Edition enables users with the TI development tools to add their own Alladin-style function blocks. Board access is provided by Nyvalla DSP's DSPgate™ device driver scheme for Microsoft Windows®, which supports several DSP boards covering a wide price range.

**COMPANY INFORMATION****AB Nyvalla DSP**

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Fax: +468-15 97 17  
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www.nyvalla-dsp.se





## FEATURES & BENEFITS

- FFTs to 256K points
- FIR filtering
- Digital demodulation
- DS-1 bit stream analysis
- RF scanning
- Fax demodulation
- Digital protocol ID

## SPECIFICATIONS

### Application Area:

Communications

### TMS320 Devices Supported:

TMS320C3x

TMS320C5x

### Codegeneration Capabilities:

C

### Technical Support/Training Available:

Unlimited phone support, contract training and custom development.

## SOFTWARE OVERVIEW

The ELVIRA Signals Analysis Workstation provides sophisticated signal acquisition, processing, and analysis capabilities for the IBM PC. ELVIRA contains pre-configured applications for the survey and processing of common FDM, PCM, and RF signal types in a low-cost, portable package. In addition, the ELVIRA rapid application development environment allows you to build your own solutions using a variety of specialized signal processing tools. The wide array of applications and simulated signals also makes ELVIRA an effective communications training tool. ELVIRA is ideally suited for signal research and target development at the channel and emitter levels. Users of the Model 120 and related products find ELVIRA's Network Analysis and Baseband Characterization tools particularly helpful for configuring the algorithms and tuners of these complex devices. Model 320A users supplement that product's automated recognition algorithms with ELVIRA's wide variety of analysis tools, which identify channel contents that would otherwise be categorized as unknown.

## COMPANY INFORMATION

### Applied Signal Technology, Inc.

400 West California Avenue

Sunnyvale, CA 94086 USA

Tel: 800 374-3560

Fax: 408 522-2960

e-mail: [customer@appsig.com](mailto:customer@appsig.com)

www: <http://www.appsig.com>

The company develops and manufactures signal processing products for OEM and system development solutions for wireless telecommunications signals in both the consumer and reconnaissance marketplace.



## FEATURES & BENEFITS

- Documentation includes installation guide, and list of control primitives
- Visual Basic primitive controls for DSPs
- Operates under Windows with PCs
- Works with XDS510PP Emulator
- Start/Stop/Step program execution
- Placement of breakpoints
- Read/write memory/CPU registers
- Download program and data

## SPECIFICATIONS

### Application Area:

Filter Design

Control

Other Communication

### Host Platforms Supported:

Solaris 2.5.1

HP/UX 10.x

### TMS320 Devices Supported:

TMS320C1x

TMS320C2x

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

### Technical Support/Training Available:

Aptix provides on-site training with its products.

Hot-line, field application engineers and consulting services are available.

## SOFTWARE OVERVIEW

The Spectrum Digital SDVbx is a set of Visual Basic control primitives that operate with the XDS510PP Scan Path Emulator to control the operation of a TMS320C3X/5X DSP. The user is then able to write applications in Visual Basic to perform diagnostics, test sequences and limited debugging. The PC that runs the VBX communicates with the target DSP via the JTAG or MPSD test interface.

The Aptix system emulation products were developed to rapidly prototype, verify and debug complex electronic systems in a real-time environment, unlike ASIC emulators and software simulators. The System Explorer products combine Aptix's proprietary FPIC (Field Programmable Interconnect Component) and FPCB (Field Programmable Circuit Board) and the accompanying software to emulate a complete system. The FPCBs contain free holes for the insertion of user components, the connections between the components are routed through the FPICs. New ASIC components can be implemented in multiple FPGAs and combined with other system components in Aptix's system emulation solutions. This approach delivers verification throughput up to 30MHz - which is six orders of magnitude ( $10^{**6}$ ) higher than simulation. The System Explorer products include low cost system replicates that enable hardware/software co-design by replicating the prototype in the software and firmware development. Since the software engineers can now program in an actual hardware environment, system integration and verification is ensured at an earlier stage in the design cycle.

## COMPANY INFORMATION

### Aptix Corporation

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Tel: (408) 428 6200

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www: <http://www.aptix.com>

**SPECIFICATIONS****Application Area:**

Filter design

**Host Platforms Supported:**

DOS

**TMS320 Devices Supported:**

TMS320C1x, TMS320C2x

TMS320C3x, TMS320C4x

**Codegeneration Capabilities:**

Assembly

**Technical Support Training Available:**

YES

**SOFTWARE OVERVIEW**

DFDP4/Plus (Digital Filter Design Package plus Signal Analysis) designs digital filters for implementation on either floating-point or fixed-point DSP microprocessors. DFDP4/ Plus designs all forms of FIR filters optimally, by using the Parks-McClellan (PMFIR) method or quickly by using the Kaiser and other windowing methods (Window FIR). It will optionally generate programs with ASPI Digital's code generators (CGEN) for realizing filters on DSP microprocessors. DFDP4/Plus has different scaling and ordering options for narrow-band and wide-band input signals. It also includes direct pole input for IIR filters, allowing you to design filters by entering pole and zero characteristics. Arbitrary magnitude and group-delay compensation for IIR-multiband filters, and automatic design of compensated group delay filters for standard low-pass, band-pass, band-stop, and high-pass filters.

**COMPANY INFORMATION****ASPI Digital**

1375 Peachtree ST NE STE 690

Atlanta, GA 30309-3115 USA

Tel: 404/892-3200

Fax: 404/892-2512

e-mail: [help@aspi.com](mailto:help@aspi.com)[www.aspi.com](http://www.aspi.com)

ASPI Digital supplies OEMs with MPEG audio encoders, acoustic echo cancellation products and DSP platforms needed to integrate high-quality algorithms in system-level products.



## FEATURES & BENEFITS

- FIR and IIR digital filters
- Data analysis in SIGLAB
- Algorithm generation in SIGLAB
- Adaptive filters
- DSP Microprocessor code generators
- Competitive pricing

## SPECIFICATIONS

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C5x

### Application Area:

Filter Design

Signal Analysis

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

DOS

### Codegeneration Capabilities:

Assembly

### Visual Programming Capabilities:

NO

### Technical Support/Training Available:

Free support for installation and upgrades and for product defects. Hourly/package technical support available.

## SOFTWARE OVERVIEW

The MONARCH Series of DSP software offers a complete set of signal and systems analysis tools for a PC, at very competitive prices. DIGITAL FILTERS takes your filter specification, generates the filter and immediately displays impulse and frequency responses, and then stores the filter coefficients in an ASCII file. A complete selection of FIR and IIR filter architectures is provided. CODE GEN provides highly optimized assembly language implementation for both FIR and IIR filters. All filter code is tested on the TI simulator, and is very simple to modify for a target hardware system. SIGLAB performs desktop signal and system analysis. It is an ideal environment for experimenting with different DSP solutions, and for comparing theoretical expectations with real-world results. SIGLAB contains over 140 operations, including Fourier transforms, convolution, correlation, window generation, complex arithmetic and more. Adaptive Filters supports many LMS and FLS algorithms for 1-D to M-D adaptive systems.

## COMPANY INFORMATION

### The Athena Group, Inc.

5522 NW 43rd. St. Suite B

Gainesville, FL 32653 USA

Tel: (352) 371-2567

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e-mail: support@athena-group.com

www.athena-group.com

The Athena Group, Inc. was founded in 1986. We provide off-the-shelf DSP software as well as DSP consulting services.



## FEATURES & BENEFITS

- Maximizes execution speed
- Identifies bottlenecks
- Comm channel monitoring
- Powerful information manager
- Supports Parallel C from 3L Ltd.

## SPECIFICATIONS

### Application Area:

Performance Tuning

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

### Codegeneration Capabilities:

C

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

CRL are also able to provide a performance tuning consultancy service—where we optimize your code for you.

## SOFTWARE OVERVIEW

VPB Toolset measures the performance of software running on parallel computers or embedded multi-processor systems. As a developer of applications for multiple DSP systems, you can monitor the actual rather than the predicted behavior of your software. Load measurements detect performance bottlenecks and event markers locate their causes in the program code. Loads can be balanced, performance tuned and execution speeds increased, which leads to reduced development risks and costs. Any user task on any processor can generate both event markers and formatted text messages. These identify points in the source and are directly represented by the performance graphs, quickly enabling bottlenecks to be isolated. The user has control of what is monitored, over what period and at what sampling rate. The complete run can be sampled at various resolutions to allow problem areas to be analyzed in detail. System configuration files are produced automatically as part of the process of specifying the network. The output of a network worm can be used as the basis for this specification. All VPB-related code can be removed from the application executable simply by rebuilding the system with a different make target. There is no need to re-edit the source files.

## COMPANY INFORMATION

### Central Research Laboratories

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UK

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CRL employs over 140 engineers and scientists. Our expertise includes algorithm, software and hardware development, and systems integration.





## FEATURES & BENEFITS

- Flash EPROM programming utility
- Win95 application
- Win32 API-compatible Flash file management
- Supports AMD 29F010/29F040
- Programming over serial ports
- Remote modem programming
- Allows for operating system upgrades
- Reliable Zmodem communications protocol

## SPECIFICATIONS

### Application Area:

Flash programming utility

### Host O/S Supported:

Windows 3.1

Windows 95

### TMS320 Devices Supported:

TMS320C3x

### Visual programming Capabilities:

YES

### Technical Support/Training Available:

YES

## SOFTWARE OVERVIEW

FLASHER\* is a Windows 95 application designed to program Flash EPROM via a serial connection or remotely over a modem. It provides both Flash file management and BIOS functions performing hardware self-tests, managing operating system, and application execution. This software enables users to upgrade software on the processor board quickly and easily. FLASHER\* organizes files on Flash memory devices into a flat file directory, and it handles the specifics of programming and managing files over its supported Flash devices. The host Windows application enables users to graphically display the Flash memory map, and to easily program (or load) into the Flash on the embedded target board.

## COMPANY INFORMATION

### Concur System Technologies

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Fax: (512) 306-0558

e-mail: [info@concursys.com](mailto:info@concursys.com)

www: <http://www.concursys.com>

Concur System Technologies manufactures Internet-ready computers called mini-web servers and embedded subsystems that comprise them. By merging DSP and PC processor technologies, Concur's products allow information from factory floors and industrial processes to be accessed in real-time over intranets. These products provide solutions for applications such as real-time process control, motion-control data measurement, medical monitoring, telecommunications and embedded Internet servers.

**FEATURES & BENEFITS**

- Fully-coupled, on-Line, adaptive, feedforward and feedback control algorithms
- Real-time DSP interaction
- Reduction in ASVC application development time
- Access to Digisonix application engineering support
- Fully documented, customizable source code

**SPECIFICATIONS****Application Area:**

Adaptive/Active Control

**Host Platforms Supported:**

Windows 3.1

Windows 95

Windows NT

**Codegeneration Capabilities:**

C

Assembly

**TMS320 Devices Supported:**

TMS320C3x, TMS320C4x

**Technical Support/Training Available:**

Yes

**SOFTWARE OVERVIEW**

The DIGIWARE™ Application Development System includes patented, high-powered software and advanced signal processing hardware. It is a research and development tool that can actively control, shape, and cancel noise and vibration. The DIGIWARE system provides rapid solutions that allow you to integrate state-of-the-art sound and vibration control technology in your products. With the benefit of more than a decade of experience in active control, Digisonix has incorporated many software features in the DIGIWARE system. It includes user-friendly application programs (running under Microsoft Windows) that allow you to configure, optimize, and tailor the control software for your specific application. Quickly access and modify algorithm parameters in real-time during the control process. With the DIGIWARE system, you can gather transfer function information via the controller and set working parameters (like convergence rates and filter lengths) to understand the system dynamics and optimize the adaptive control parameters.

**COMPANY INFORMATION****Digisonix, Inc.**

908 Stewart Street

Madison, WI 53713 USA

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e-mail: [information@digisonix.com](mailto:information@digisonix.com)www: [http://www.mailbag.com/users/dgsnx\\_mr/](http://www.mailbag.com/users/dgsnx_mr/)

Digisonix, Inc., is a world leader in the development and application of active sound and vibration control (ASVC) technology.



## FEATURES & BENEFITS

- IDE provides run-time shell for C4x beginners
- Full control over system, no operating system
- Low level debugging via JTAG or hema host-I/O
- C source code of C4x system included
- Source code of user interface on request
- Host based or stand alone system
- CAN bus support planned

## SPECIFICATIONS

### Application Area:

Image Processing

### Host Platforms Supported:

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C4x

### Technical Support/Training Available:

Unlimited free e-mail support with each product and one day free training at hema on purchase of one complete system.

## SOFTWARE OVERVIEW

The hema image processing environment - hIPE - has been designed as a quickstart tool for the hema image processing system hIPS. hIPE targets experienced C programmers who want to migrate to a C4x based system. Because hIPE is fully transparent it is easy to understand and does not have any limitations. hIPE unleashes the C4x processing capabilities from the beginning of program development. The provided C4x target source code shows DMA programming for image grabbing, data preprocessing and sending processed data to the connected host. To keep the developer away from system complexity, hIPE has been designed to work hand in hand with the hema hIPS. This system consists of a VSP1 frame grabber, a DSP2 CPU board and a HPSI1 SCSI interface board. A DSPCAN1 node can be added for controlling digital I/O or to integrate the IPS into an existing CAN network. All components reside in a industrial proven small 19" rack. The system is connected through a SCSI cable to a PC. The user interface of hIPE runs under Windows 95 or Windows NT. hIPE provides a IDE for source code composing, compiling, program download and communication with the target system. The main program controls all basic functionality like frame grabber initialization, image grabbing, data preprocessing and visualization of the processed images in a Windows session.

## COMPANY INFORMATION

### hema Elektronik GmbH

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Aalen, D 73431 Germany

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e-mail: info@hema.de

www: <http://www.hema.de>

German company founded in 1978 - our name stands for industrial proven stand alone systems. We develop and manufacture innovative products on a high quality level.

**FEATURES & BENEFITS**

- Multiple channel signal generation
- Digitally calculated values
- Arbitrary waveform generation
- Remote internet connectivity
- Photo-realistic look and feel
- Digital readouts

**SPECIFICATIONS****Application Area:**

Test and measure

**Host Platforms Supported:**

Windows 95

Windows 98

Windows NT

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

TMS320C8x

**Visual Programming Capabilities:**

YES

**Technical Support/Training Available:**

Free tech support is available over phone, fax, or e-mail.

**SOFTWARE OVERVIEW**

The HSVI1000 Function Generator is a Windows-based virtual instrument that offers standard functions such as sine, square and triangle waveform generation. The intuitive front panel display uses photo-realistic knobs, toggles, and controls to adjust frequency, amplitude, and offset information.

**COMPANY INFORMATION****Hyperception, Inc.**

9550 Skillman, LB 125

Dallas, TX, 75243 USA

Tel: (214) 343-8525

Fax: (214) 343-2457

e-mail: [info@hyperception.com](mailto:info@hyperception.com)

www: <http://www.hyperception.com>

Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, imaging, and more.

***Hyperception****The Leader in DSP*



## FEATURES & BENEFITS

- Remote internet testing
- RMS Measurement
- Vertical and horizontal control
- Fast screen update
- Two channel operation
- Photo-realistic appearance
- Low cost

## SPECIFICATIONS

### Application Area:

Test and measure

### Host Platforms Supported:

Windows 95

Windows 98

Windows NT

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

TMS320C8x

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

Free tech support is available over phone, fax, or e-mail.

## SOFTWARE OVERVIEW

General-purpose digital oscilloscope which will enhance test and measurement capabilities. It has a photo-realistic front panel with vertical, horizontal, and trigger control knobs. Waveform display is automatic, with a separate RMS measurement digital readout through use of a toggle switch.

## COMPANY INFORMATION

### Hyperception, Inc.

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Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, imaging, and more.



## FEATURES & BENEFITS

- Real-time spectrographic display
- Low cost solution
- Remote Test & Measurement
- Dynamic display
- Move to word processors/spreadsheets

## SPECIFICATIONS

### Application Area:

Speech noise

### Host Platforms Supported:

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

TMS320C8x

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

Free tech support is available over phone, fax, or e-mail.

## SOFTWARE OVERVIEW

The HSVI3000 Frequency Domain Analyzer is a high-performance virtual instrument. It is a combined hardware and software solution for real-time frequency domain analysis. The low cost system allows the user to obtain a wealth of information on the frequency content of a real-world signal. The real-time display provides information while the signal is being monitored and is quickly updated for dynamic on-screen analysis of the incoming signal.

## COMPANY INFORMATION

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Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, imaging, and more.

**Hyperception**

*The Leader in DSP*



## FEATURES & BENEFITS

- Multi-role instrument
- Four operating modes
- Sample rates up to 20MHz
- Can use standard sound cards
- Real-time analysis
- Move to word processors or spreadsheets
- Low cost

## SPECIFICATIONS

### Application Area:

Test and measure

### Host Platforms Supported:

Windows 95

Windows 98

Windows NT

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

TMS320C8x

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

Free tech support is available over phone, fax, or e-mail.

## SOFTWARE OVERVIEW

The HSVI4000 is a real-time signal analyzer for time, phase and frequency domain. This virtual instrument can use many DSP/acquisition boards or sound cards. It is capable of analyzing signals in real-time and can operate in four distinct modes: FFT analyzer, frequency band analyzer, phase analysis, and time domain modes.

## COMPANY INFORMATION

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Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, imaging, and more.



## FEATURES & BENEFITS

- Free technical support available
- Visual programming
- OEM applications
- Create standalone applications
- Customizable

## SPECIFICATIONS

### Application Area:

Design applications

### Code Generation Capabilities:

C

### Visual Programming Capabilities:

YES

### Host O/S Supported:

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

### Technical Support/Training Available:

YES

## SOFTWARE OVERVIEW

HAppI is designed to allow visual simulations/real-time projects to be executed as stand-alone applications under the Microsoft Windows environment. This effectively allows for a run-time only version of the end users simulation/project. User controls representing inputs and outputs are used to accomplish specific user I/O; objects such as knobs, sliders, keypads, meters, and displays are typical user controls.

## COMPANY INFORMATION

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[www.hyperception.com](http://www.hyperception.com)

Hyperception's visual design environment for design, development, and test of DSP addresses signal manipulation, data analysis, algorithm development, instrumentation, and CASE.

*The Leader in DSP*





## FEATURES & BENEFITS

- Flexible Open Software Architecture
- Large function library
- Rapid Prototyping of DSP-based systems
- Interactive control
- Direct observation at execution time
- Block Wizard for adding custom blocks
- True n-level hierarchy design

## SPECIFICATIONS

### Application Area:

Simulation

Other

### Host Platforms Supported:

Windows 95

Windows 98

Windows NT

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x,

TMS320C5x

TMS320C6x

TMS320C8x

### Codegeneration Capabilities:

C, Optional add-on

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

Tech support is available free of charge over phone, fax or e-mail. Training is also available for a fee.

## SOFTWARE OVERVIEW

Hypersignal block diagram is a complete visual programming tool which allows for comprehensive dynamic system design and simulation. Block Diagram's object oriented visual design environment provides a means to create your system, analyze data, and perform many types of simulations.

## COMPANY INFORMATION

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www: <http://www.hyperception.com>

Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, imaging, and more.

**Hyperception**

*The Leader in DSP*



## FEATURES & BENEFITS

- High-level source code
- Ability to transfer to alternative platforms
- Can be cross-compiled
- Interface with user-written code
- Allows re-entry into visual design
- Reduces project time

## SPECIFICATIONS

### Application Area:

Code Generation

### Language:

C

### Host Platforms Supported:

Windows 95

Windows 98

Windows NT

### TMS320 Devices Supported:

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

TMS320C8x

### Codegeneration Capabilities:

C

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

Free tech support is available over the phone, fax, or e-mail.

## SOFTWARE OVERVIEW

The C Source Code Generator software development tool automatically creates ANSI C source code which represents the algorithm designed visually with Block Diagram or RIDE. This source code may then be transferred to alternative platforms such as UNIX-based systems and high-end workstations. In addition, for real-time applications, the C source code may be cross-compiled for a particular DSP chip.

## COMPANY INFORMATION

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www: <http://www.hyperception.com>

Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, imaging, and more.

**Hyperception**

*The Leader in DSP*

**FEATURES & BENEFITS**

---

- HAppl Wizard
- Low cost
- Device independent driver
- Real-time/Simulation applications
- Component based visual environment
- Reduces time to market

**SPECIFICATIONS**

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**Application Area:**

Application interface

**Host Platforms Supported:**

Windows 95

Windows 98

Windows NT

**TMS320 Devices Supported:**

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C6x

TMS320C8x

**Visual Programming Capabilities:**

YES

**Technical Support/Training Available:**

Free tech support is available over phone, fax, or e-mail

**SOFTWARE OVERVIEW**

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Hyperception's HAppl (Hyperception Application Interface) product allows real-time DSP applications to be created from visual designs; the result is a self-standing, real-time DSP application which may be used or shipped to an end customer. Within the user's visual design, user controls representing inputs and outputs are developed to accomplish specific user I/O; objects such as knobs, sliders, keypads, meters, and displays are typical user controls. After designing the project visually, the worksheet is saved as a file, which is then used by the HAppl Wizard to create a stand-alone independent windows application. This is useful for creating stand-alone virtual instruments (simulated or real-time).

**COMPANY INFORMATION**

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**Hyperception, Inc.**

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e-mail: [info@hyperception.com](mailto:info@hyperception.com)www: <http://www.hyperception.com>

Hyperception's visual design environment can be used for DSP applications in the areas of instrumentation, control, math and signal analysis, speech, image, and more.

***Hyperception****The Leader in DSP*



## FEATURES & BENEFITS

- Full featured COFF support
- Heterogeneous multiple processor support
- Block Wizard support
- Full target DSP memory map control
- Virtual DSP support
- Real-time DSP application export
- Runs at executable speed

## SPECIFICATIONS

### Application Area:

Filter Design  
Control  
Various

### Host Platforms Supported:

Windows 95  
Windows 98  
Windows NT

### Codegeneration Capabilities:

C

### TMS320 Devices Supported:

TMS320C3x  
TMS320C4x  
TMS320C5x,  
TMS320C6x  
TMS320C8x

### Visual programming Capabilities:

YES

### Technical Support/Training Available:

Tech support is available free of charge over phone, fax, or e-mail.

## SOFTWARE OVERVIEW

Hypersignal RIDE is a complete visual design environment for use in real-time systems development. This tool can be used for a variety of exciting applications ranging from low-level DSP systems design [and] implementation to projects such as real-time instrumentation, data acquisition, control systems, and more. RIDE includes provisions for extensibility, efficiency, portability, and rapid development cycles. Because Hypersignal RIDE supports a wide range of industry standard DSP/acquisition boards directly, an application specific target is easy to find for your project. Migrating designs from one DSP/acquisition board to a different one (or to a different DSP) is very easy. In addition to the large base of hardware which is already supported, more are being added by Hyperception all of the time. Hundreds of both real-time and simulation functions are available for visually designing your system, and you can easily add your own additional custom functions. This unique open architecture approach to Hypersignal RIDE lowers your technical risk for real-time development. Virtually any real-time design which can be done through use of conventional means may be accomplished quickly within Hypersignal RIDE.

## COMPANY INFORMATION

### Hyperception, Inc.

9550 Skillman, LB 125  
Dallas, TX 75243 USA  
Tel: (214) 343-8525  
Fax: (214) 343-2457  
e-mail: [info@hyperception.com](mailto:info@hyperception.com)  
www: <http://www.hyperception.com>

Developer of visual design software for virtual instrumentation, simulation, real-time applications, math and signal analysis, speech, image, control, and code generation.



## FEATURES & BENEFITS

- Real-time graphical compilation
- Streamlines algorithm design
- Eliminates source code creation step
- Direct to DSP chip graphical programming
- Debugging not necessary
- Self-documenting
- Improves maintainability and support

## SPECIFICATIONS

### Application Area:

Compilation

### Visual Programming Capabilities:

YES

### Host Platforms Supported:

Windows 95  
Windows NT  
Windows 98

### TMS320 Devices Supported:

TMS320C2x  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C6x

### Technical Support/Training Available:

YES

Free technical support available over phone, fax, or e-mail.

## SOFTWARE OVERVIEW

The OORVL DSP Design Studio makes efficient use of the processor by offering direct to DSP chip graphical programming. The graphical compiler streamlines the algorithm design and test process by eliminating the source code creation and debug steps. The combination of DSP speed and graphical programming software lowers the technical barriers associated with DSP applications, and allows engineers to get a prototype system up and running in a matter of minutes, leaving them free to focus on developing application-specific algorithms.

## COMPANY INFORMATION

### Hyperception, Inc.

9550 Skillman, LB 125  
Dallas, TX 75243 USA  
Tel: (214) 343-8525  
Fax: (214) 343-2457  
e-mail: [info@hyperception.com](mailto:info@hyperception.com)  
[www.hyperception.com](http://www.hyperception.com)

Hyperception's visual design environment for design, development, and test of DSP addresses signal manipulation, data analysis, algorithm development, instrumentation, and CASE.

*The Leader in DSP*

**FEATURES & BENEFITS**

- High level abstraction
- Easy to port on different platforms
- High flexibility
- Well designed development platform
- Available in source and object code

**SPECIFICATIONS****Application Area:**

Visual Communication

**Host Platforms Supported:**

Windows 3.1

Windows 95

Windows NT

OS2

**TMS320 Devices Supported:**

TMS320C8x

**Codegeneration Capabilities:**

C

**Technical Support Training Available:**

Standard startup support included. Additional support on request.

**SOFTWARE OVERVIEW**

The H.320 API (Application Programming Interface) is well designed software to enable and control the video conferencing. Originally, it is designed as a host part of TMS320C8x based H.320 library, implemented from IAT. The H.320 API is separated into blocks of related functions: initialization functions; connection and monitoring functions; capability functions; audio control functions; video control functions; data transfer function; MCU-access low-level functions; MCU-access high-level functions; information functions; low-level functions. Because of applied programming technique the API is easy to port on different platforms up to user-defined operating systems. The H.320 API is available as part of IAT H.320 SDK for Windows 3.11/95/NT and OS2 in object code. Further, it is available in source code for custom-defined development.

**COMPANY INFORMATION****IAT AG**

Aarestrasse 17

Vogelsang-Turgi CH 5300 Switzerland

Tel: +41562235022

Fax: +41562235023

e-mail: e.fazlic@iat-gmbh.de

www.iat-gmbh.de

IAT is a internationally group of companies on the stock exchange; the parent company is IAT Multimedia, INC., USA. IAT AG and IAT Deutschland GmbH are affiliates of the group.



THE ELECTRONIC MEETING



## FEATURES & BENEFITS

- High level of abstraction
- Easy to port on different platforms
- High flexibility
- Well-designed development platform
- Based on DSP Technology

## SPECIFICATIONS

### Application Area:

Visual Communication

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

OS2

### TMS320 Devices Supported:

TMS320C8x

### Codegeneration Capabilities:

C

### Technical Support/Training Available:

Standard startup support included. Additional support on request.

## SOFTWARE OVERVIEW

The IAT H.320 SDK, Software Development Kit, allows a user to develop his own video-conferencing application for an IBM-compatible PC under Windows 3.11/95/NT or OS2. For this purpose, IAT is providing: IAT Multimedia Codec Board Universal A4 and Wonderboard80 (4Q1997); TMS320C80 based run-time H.320 library; H.320 API (Application Programming Interface); Sample application for test and demo purpose; Detailed H.320 API documentation. System requirements are: MS-Windows®, 3.11, MS-Windows®, 95/MS-Windows®, NT operating system; MS-Visual C++ 4.0 or later. Optional: OS2 operating system and Visual Age for C++ 3.0 or later; PC with ISA (Universal A4) or PCI (Wonderboard80) slot; NTSC or PAL video camera; audio source; video overlay card or TV monitor to display the video image; NIC with MVIP, IOM-1 or IOM-2 bus. This development platform is optimally suited for office communication as well as for visual communication applications in vertical markets e.g. Tele-Medicine, Tele-Service, Tele-Security.

## COMPANY INFORMATION

### IAT AG

Aarestrasse 17

Vogelsang-Turgi CH 5300 Switzerland

Tel: +41562235022

Fax: +41562235023

e-mail: e.fazlic@iat-gmbh.de

www.iat-gmbh.de

IAT is a internationally group of companies on the stock exchange; the parent company is IAT Multimedia, INC., USA. IAT AG and IAT Deutschland GmbH are affiliates of the group.



THE ELECTRONIC MEETING

**FEATURES & BENEFITS**

- Interactive design capabilities
- Stand-alone optimized code generation
- Automatic performance evaluation
- Multiple architectures
- Various data visualization windows
- Automated design tuning
- Code verification

**SPECIFICATIONS****Application Area:**

Control

Image recognition

**Code Generation Capabilities:**

C

Assembly

**Visual Programming Capabilities:**

YES

**Host O/S Supported:**

Windows NT

HP-UX

**TMS320 Devices Supported:**

TMS320C3x

TMS320C5x

**Technical Support/Training Available:**

YES

Online support available

**SOFTWARE OVERVIEW**

Interactive design environment for computational intelligence techniques (neural networks, fuzzy logic, genetic algorithms) with extensive code generation capabilities for stand-alone applications.

**COMPANY INFORMATION****IMPACTS Intelligent Systems**

P.O. Box 800, Groningen

Groningen, 9700 AV, The Netherlands

Tel: +31 50 363 7125

Fax: +31 50 363 3800

e-mail: [info@impacts.nl](mailto:info@impacts.nl)[www.impacts.nl](http://www.impacts.nl)

Independent software developer for process automation and embedded applications with computational intelligence.





## FEATURES & BENEFITS

- Fuzzy logic optimized solutions
- Assembly-code generation
- Portable C-code generation
- Graphical user interface

## SPECIFICATIONS

### Application Area:

Control

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C2x

TMS320C3x

TMS320C4x

TMS320C5x

### Codegeneration Capabilities:

C

Assembly

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

INFORM provides a broad spectrum of seminars and workshops. On-site training is available upon request.

## SOFTWARE OVERVIEW

The fuzzyTECH MCU-320 Edition utilizes an intuitive graphical user interface which provides you with extensive visual feedback to help you understand and optimize your fuzzy logic inference. With fuzzyTECH you write no code. The MCU-320 Edition comes complete with open interfaces to other software, as well as plug and play interfaces to software like VisSim and MS Excel. Your fuzzy system is called like a standard C function, linking it easily to existing applications. Its performance, however, is that of highly-optimized assembly code. Jointly developed by Texas Instruments and Inform, this tool combines the fuzzy logic expertise of Inform with the code optimization experience of Texas Instruments. FuzzyTECH MCU-320 is the tool for developing fuzzy logic-based systems on the TMS-320 digital signal processor family.

## COMPANY INFORMATION

### Inform Software Corporation

2001 Midwest Road, Ste. 100

Oak Brook, IL 60523 USA

Tel: (630) 268-7550

Fax: (630) 268-7554

e-mail: [hotline@inform-ac.com](mailto:hotline@inform-ac.com)

www: <http://www.fuzzytech.com>

INFORM was founded in Germany in 1968 and developed fuzzyTECH as an internal productivity tool for turnkey intelligent control systems in 1988 and released it publicly in 1991.

**FEATURES & BENEFITS**

- 250 function DSP and peripheral control library
- Target DSP example programs in source form
- Ring 0, 32-bit Windows NT/95 device driver
- Dynamic Link Library with numerous
- PC example program in source form

**SPECIFICATIONS****Application Area:**

Board Libraries

**Host Platforms Supported:**

Windows 95

Windows NT

**TMS320 Devices Supported:**

TMS320C2x

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

**Codegeneration Capabilities:**

C, Assembly

**Visual Programming Capabilities:**

YES

**Technical Support/Training Available:**

Technical support is available 8 am to 5 pm Pacific time or e-mail at [techsprt@innovative-dsp.com](mailto:techsprt@innovative-dsp.com).

**SOFTWARE OVERVIEW**

250 function DSP and peripheral control library. Target DSP example programs in source form. Ring 0, 32-bit Windows NT/95 device driver and Dynamic Link Library with numerous PC example programs in source form.

**COMPANY INFORMATION****Innovative Integration, Inc.**

5785 Lindero Canyon Road

Westlake Village, CA 91362 USA

Tel: (818) 865-6150

Fax: (818) 879-1770

e-mail: [techsprt@innovative-dsp.com](mailto:techsprt@innovative-dsp.com)www: <http://www.innovative-dsp.com>

Manufactures high-performance DSP cards for ISA, PCI, Compact PCI and stand-alone applications which feature extensive I/O capabilities.





## FEATURES & BENEFITS

- Fastest way to develop multi-DSP apps
- Produces optimized, compiled, C4x code
- Can easily incorporate legacy C code
- Builds host GUI and host/DSP communications
- Supports embedded (ROM-based) systems
- 40+ off the shelf ISA/PCI/VME cards supported
- TCP-IP for distributed parallel applications

## SPECIFICATIONS

### Application Area:

Filter Design  
Control  
General

### Host Platforms Supported:

Windows 95  
Windows NT

### Codegeneration Capabilities:

C  
Assembly

### Visual Programming Capabilities:

YES

### TMS320 Devices Supported:

TMS320C4x  
TMS320C6x

### Technical Support/Training Available:

2 to 4 day on-site course for all levels of expertise.

## SOFTWARE OVERVIEW

Pegasus is a complete graphically-based environment for DSP and system development. Pegasus provides DSP simulation capability with the ability to turn that simulation into an embedded parallel-processing DSP application. For applications with a user interface, Pegasus builds a host application complete with displays, controls and other user I/O employed in the simulation. The DSP application runs under Parallel C, which provides a preemptive multi-tasking parallel OS environment. Pegasus supports comm-port-based I/O for data acquisition, providing a seamless interface for real-time I/O. Combining Pegasus with C4x and I/O hardware, graphically programmable "black boxes" can be created. If more MFLOPs are needed, simply add more C40s and re-configure the system. Pegasus eliminates the need to modify software when more resources are added so configuration changes can be accommodated in minutes. Pegasus leverages the strengths of your existing designers by removing the need to get involved with the drudgery of programming parallel processing applications.

## COMPANY INFORMATION

### Jovian Systems, Inc.

70 Tower Office Park  
Woburn, MA 01801 USA  
Tel: (781) 937-6300  
Fax: (781) 938-6553  
e-mail: [info@jovian.com](mailto:info@jovian.com)  
www: <http://www.jovian.com>

Jovian's Pegasus development tool is the simplest way to develop software for C4x systems. Jovian also provides pre-configured real-time systems as well as custom development for OEM applications.

**FEATURES & BENEFITS**

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- 21 different adaptive algorithms
- Applications: prediction, modeling
- Arrays: multi-channel, multi-dimension
- Comprehensive plots for analysis
- Support C3x for real-time adaptive filtering

**SPECIFICATIONS**

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**Application Area:**

Filter Design  
Control

**Host Platforms Supported:**

Windows 3.1  
Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**Codegeneration Capabilities:**

Source code

**Visual Programming Capabilities:**

NO

**Technical Support/Training Available:**

Technical support through e-mail, fax, or phone.

**PRODUCT DESCRIPTION**

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Adaptive Signal Processing software contains 21 different adaptive filter algorithms. It covers four applications: prediction, modeling, multi-channel, and multi-dimension. It supports TMS320C3x DSP boards for LMS algorithms in real-time.

**COMPANY INFORMATION**

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**MultiDSP**

4865 Linaro Dr.

Cypress, CA 90630 USA

Tel: (714) 527-8086

Fax: (714) 527-8287

e-mail: [multidsp@aol.com](mailto:multidsp@aol.com)

www: <http://users.aol.com/multidsp/index.htm>

MultiDSP, a software company, provides algorithms, code development, system integration, and consultant services to customers in communication and speech coding.

**FEATURES & BENEFITS**

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- FIR Design: Window and Park-McClellan methods
- IIR Design: bi-linear and impulse-invariant
- Coefficient rounding and scaling 8- to 32-bit
- Supports C3x for real-time filtering

**SPECIFICATIONS**

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**Application Area:**

Filter Design  
Control Systems  
Instrumentation

**Host Platforms Supported:**

Windows 3.1  
Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**Codegeneration Capabilities:**

Source code

**Visual Programming Capabilities:**

NO

**Technical Support/Training Available:**

Technical support through e-mail, fax, or phone.

**PRODUCT DESCRIPTION**

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DigiFilter offers both FIR (Window and Equiripple) and IIR (bi-linear and Impulse-invariant) design. Coefficients can be rounded can scaled from 8- to 32-bits for both Direct forms I and II. It supports C3x for real-time filtering.

**COMPANY INFORMATION**

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**MultiDSP**

4865 Linaro Dr.  
Cypress, CA 90630 USA  
Tel: (714) 527-8086  
Fax: (714) 527-8287  
e-mail: multidsp@aol.com  
www: <http://users.aol.com/multidsp/index.htm>

MultiDSP, a software company, provides algorithms, code development, system integration, and consultant services to customers in communication and speech coding.



## FEATURES & BENEFITS

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- Data acquisition through C3x board
- Real-time FFT spectrum analyzer
- Time-domain scope
- Autocorrelation, decimation, filtering
- Signal generator: Sin, noise, windows, etc.
- Signal combination: Add, subtract, multiply

## SPECIFICATIONS

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**Application Area:**

FFT Analyzer

Data acquisition and post processing

**Host Platforms Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C3x

**Codegeneration Capabilities:**

Source code

**Visual Programming Capabilities:**

NO

**Technical Support/Training Available:**

Technical support through e-mail, fax, or phone.

## PRODUCT DESCRIPTION

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DSPlus is a data acquisition and processing software packages. It supports C3x DSP board for real-time FFT spectrum analyzer, and scoping, simultaneously. It offers post-processing such as auto-correlation, decimation, interpolation, etc.

## COMPANY INFORMATION

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**MultiDSP**

4865 Linaro Dr.

Cypress, CA 90630 USA

Tel: (714) 527-8086

Fax: (714) 527-8287

e-mail: multidsp@aol.com

www: <http://users.aol.com/multidsp/index.htm>

MultiDSP, a software company, provides algorithms, code development, system integration, and consultant services to customers in communication and speech coding.



## FEATURES & BENEFITS

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- Consisted interface regardless of platforms
- One-time configuration set up
- Shared resources locally and remotely
- Multiprocessor development
- C-standard I/O server bundled with it
- Zero overhead while DSP program is executing
- Makes downloading and debugging easier

## SPECIFICATIONS

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**Application Area:**

DSP Development

**Host Platforms Supported:**

Windows 95

Windows NT

Solaris

**Codegeneration Capabilities:**

C

**Visual Programming Capabilities:**

Yes

**TMS320 Devices Supported:**

TMS320C4x

**Technical Support/Training Available:**

Highly trained and experienced application engineers are dedicated to help you get your system up and running.

## SOFTWARE OVERVIEW

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SwiftNet is a software development tools to help get your application up and running fast. It is a communication protocol that links your workstation and Pentek development tools to your VMEbus DSP processors. SwiftNet treats DSP processors as network devices and supports all possible combinations of platforms, tools and boards therefore improving the development environment overall for embedded DSP applications. SwiftNet is based on an applications programming interface (API). The API provides a uniform host-target link that can be applied to the widest variety of configurations giving you the interoperability that is needed in a multi platform system. SwiftNet allows you to share data in both local and remote locations and with multiple targets. Over long distances, you can share data over the internet because it's based on the TCP/IP protocol. For example, JAVA applets can be used for remote locations. Swiftnets supports workstations to VMEbus interfaces with ethernet, bus adapters, embedded CPU's and integral card cages. Workstations supported by SwiftNet include SUN SPARCstations running SunOS/Solaris, HP workstations running HP/UX, Digital Alpha running Digital UNIX, VxWorks CPU processor boards (68k, SPARC, PowerPC) and PC-AT computers.

## COMPANY INFORMATION

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**Pentek, Inc.**

One Park Way

Upper Saddle River, NJ 07458 USA

Tel: 201-818-5900

Fax: 201-818-5904

e-mail: [info@pentek.com](mailto:info@pentek.com)www: <http://www.pentek.com>

Pentek manufactures DSP and data acquisition boards for VME, VXI, PCI/PMC. We offer flexible configurations and the largest variety of I/O interfaces including digital receivers.



## FEATURES & BENEFITS

- H.324 Software Reference Design
- C82 Hardware Platform for videophone application
- Microphone input & speaker output
- Composite video input/output
- V.34 Modem interface
- Telephone handset interface

## SPECIFICATIONS

**Application Area:**

Videophone

**Host Platforms Supported:**

C82 based embedded system

**TMS320 Devices Supported:**

TMS320C8x

**Visual Programming Capabilities:**

YES

**Technical Support Training Available:**

YES

## SOFTWARE OVERVIEW

H.324 reference design software is based on the hardware reference board designed for videophone application.

The hardware reference design is optimized for mass production. The components of H.324 standard are implemented in DSP code and optimized for video & audio quality.

The whole reference design can be available in hardware platform-only package, H.324 Developer's Package, or Manufacturing Kit Package.

## COMPANY INFORMATION

**Proton Communications Technologies**

15F, 51 Kee-Lung Road Sec 2

Taipei, Taiwan

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Fax: 886-2-377-5614

e-mail: chen@protoncomm.com.tw

www.protoncomm.com.tw

Established in 1996 focusing on development of visual communications products. Proton's a subsidiary of Proton Electronics which makes high-end TV and stereos.

**PROTON**  
Communications





**FEATURES & BENEFITS**

- Framework for generating optimized multi-algorithm telecom apps.
- Simultaneous processing of multiple channels
- Automatic data locality management
- Programming methodology for easy application development
- Compile-time estimate of MIPS memory and power requirements
- Automatic creation of multi-channel threads
- Host file I/O for data logging and debugging

**SPECIFICATIONS**

**Application Area:**

Telecommunications

**Host Platforms Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C6x

**Codegeneration Capabilities:**

C  
Assembly  
COFF

**Visual Programming Capabilities:**

YES

**Technical Support Training Available:**

YES

**SOFTWARE OVERVIEW**

The Telecom Application-Specific Kernel (TASK-6000) provides efficient programming methodology, tools, and an optimized run-time environment for C6x based application development. The TASK-6000 provides the user with the ability to simultaneously process multiple channels of data (e.g. a TDM stream from a T1/E1 connection) in real-time and enables the user to group multiple-related physical channels into virtual channels. Virtual channels can further be grouped based on their function, such as voice and fax, and these groupings can be changed dynamically. The kernel, due to data locality management feature, allows even greater processing power than can normally be achieved on the C6x DSP. The TASK-6000 schedules automatic program- and data-swapping into and out of C6x internal memory to maximize the performance by minimizing external memory accesses. TASK simplifies the development of C6x optimized real-time applications by enabling the user to decompose the application into modules that fit into the C6x internal program memory, and further organize each module into phases that operate on buffers which fit into the C6x internal data memory. The user is required to optimize only the module code, and the TASK takes care of creating an optimal application code.

**COMPANY INFORMATION**

**RadiSys Corporation**

5445 N.E. Dawson Creek Drive  
Hillsboro, OR 97124 USA  
Tel: (617) 244-0406  
Fax: (617) 244-1069  
e-mail: info@radisys.com  
www: http://www.radisys.com

RadiSys designs and manufactures a wide range of standard and custom embedded and stand-alone products, including TI DSP-based data and signal processing solutions.





## FEATURES & BENEFITS

- Editor with flow chart
- Analysis
- Browse
- Graph
- Macro language
- Productivity increase
- Quality increase

## SPECIFICATIONS

### Application Area:

Other: All

### Host Platforms Supported:

Windows 3.1

Windows 95

Windows NT

### TMS320 Devices Supported:

TMS320C2x

TMS320C2xx

TMS320C5x

TMS320C6x

### Codegeneration Capabilities:

Other

### Visual Programming Capabilities:

NO

### Technical Support/Training Available:

YES

## SOFTWARE OVERVIEW

Project-oriented IDE with code analyzer, editor with flow-chart, browse, call hierarchy- and type-graph, macro language, export. DA-C supports many TI ANSI C-compiler dialects (TMS 370, TMS 320 DSP and TMS 320C2x/2xx/5x/6x), Version Control Systems and Emulator-Debuggers. The Analyzer detects syntax errors, usage conflicts and dead code, generates software-metrics, makes dependencies and data base. Editor has Flow-Chart (structured and non structured), bi-directional connection to Browse and Graph, connection to Project documents, configurable keyboard and comment keywords. Browse knows the usage, value-changes, calls of all the symbols in your scope on the project-level (out of the results from the analyzer) along with versatile function-and type-graph with the possibilities of zooming, coloring, grouping (design) and Mosaic-Printing. Configurable left to right or top to down the powerful and easy-to-understand macro-language for the integration of external DOS or Windows programs (Compiler, Make, Debugger, Version Control System) and viewing the results in the Browser or Editor. With DA-C you can think and act on the project-level; everything is available by mouse-click or key-press. DA-C is especially useful on large projects, for the introduction of new staff members and software reviews with productivity increases up to 30-70%.

## COMPANY INFORMATION

### Ristanovic CASE

Zielackerstrasse 19

Wallisellen/Zuerich, ZH 8304 Switzerland

Tel: + 41 1 833 07 57

Fax: + 41 1 833 06 14

e-mail: [info@ristancase.ch](mailto:info@ristancase.ch)

www: <http://www.ristancase.ch>

Founded in 1994. Eight employees. Main Products Development Assistants for C or PL/M.





**FEATURES & BENEFITS**

- High-speed detection
- Special filters
- Two-dimensional measurement

**SPECIFICATIONS**

**Application Area:**

Filter Design  
Object Recognition

**Host Platforms Supported:**

Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C6x

**Codegeneration Capabilities:**

C

**Technical Support Training Available:**

YES

**SOFTWARE OVERVIEW**

Using video sequences, every picture can be digitized and stored, if necessary together with measurement data. Out of this data, dedicated algorithms recognize objects.

Picture by picture, you evaluate shapes and surface and get pattern and effects. In the end, the whole movement shows you velocity and acceleration. Now you can compare your results.

SICAN virtual Trace software can analyze pictures and sequences. Two dimensional measurement will be done under the assistance of calibration pattern. Pursuit of objects could be done fully automatically.

Development version

- Realized marked points at itself and follow them
- Analyze movement
- Filter adjustment

Field of business

- Object recognition and trace for medicine or industrial needs
- Analyze crash tests
- Human motion estimation
- Improve sports
- Therapeutic exercise

**COMPANY INFORMATION**

**SICAN GmbH**

Garbsener Landstr. 10  
Hannover 30419 Germany  
Tel: 49-511-277-1449  
Fax: 49-511-277-2440  
e-mail: [mj@sican.de](mailto:mj@sican.de)  
[www.sican.de](http://www.sican.de)

SICAN's performance spans conception and development up to the realization of microelectronic modules, software solutions and entire hard- and software systems.





## FEATURES & BENEFITS

- Block diagram user interface
- Graphical and iconic display
- Support for multiple DSP Engines
- Source-code generation
- Interactive display and instrument blocks
- Difference equations
- Filter design

## SPECIFICATIONS

### Application Area:

Filter Design  
Control  
DC - MHz, C

### Host Platforms Supported:

Windows 3.1  
Windows 9x  
Windows NT

### TMS320 Devices Supported:

TMS320C2x, TMS320C3x, TMS320C4x,  
TMS320C5x, TMS320C54x, TMS320C6x

### Codegeneration Capabilities:

Hypersignal macro language, MATLAB .m file,  
and C language

### Visual Programming Capabilities:

YES

### Technical Support/Training Available:

YES. Technical support is available from 9am to 9pm CDT at 214-343-0069 or via e-mail at [dspinfo@signallogic.com](mailto:dspinfo@signallogic.com)

## SOFTWARE OVERVIEW

DSPower-Block Diagram is a Windows software package with block diagram and graphical-control user interfaces. Depending upon the "DSP Engine(s)" with which it is used, DSPower offers math/DSP simulation and real-time execution of block diagrams, interactive instrumentation, measurement, displays visualization, analysis, data acquisition, and source code generation. Both diagram and interactive modes of operation are available; partial diagram execution is possible. Diagrams can include both data and control constructs, and are saved in source-code form. Graphical and iconic interfaces inside interactive display and instrument blocks are rich and full-featured, and can be customized. Procedure blocks can be created, including specification of inputs/outputs, block icon, on-line help, and other definable parameters.

## COMPANY INFORMATION

### Signallogic, Inc.

9617 Wendell @ Skillman

Dallas, TX 75243 USA

Tel: (214) 343-0069

Fax: (214) 343-0163

e-mail: [dspinfo@signallogic.com](mailto:dspinfo@signallogic.com)

www: <http://www.signallogic.com>

Signallogic specializes in DSP development tools and PC-based OEM products, including software, hardware, PC104, embedded and real-time systems, data acquisition, MATLAB, LabView and visual Basic interface.

**FEATURES & BENEFITS**

- Exact simulation in fixed-point arithmetic
- Signal generation, time-domain plotting
- FFT-based spectral analysis
- Coefficient scaling for overflow avoidance
- IIR designs to order 99
- Parks-McClellan FIR designs to length 2000
- Arbitrary magnitude Parks-McClellan FIR

**SPECIFICATIONS****Application Area:**

Filter Design

**Host Platforms Supported:**

Windows 3.1

Windows 95

**TMS320 Devices Supported:**

TMS320C1x

TMS320C2x

TMS320C2xx

TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

TMS320C8x

**Codegeneration Capabilities:**

Assembly

**Technical Support/Training Available:**

Telephone support for licensed users.

**SOFTWARE OVERVIEW**

The DISPRO<sup>®</sup>/Professional software system lets you design, simulate and evaluate digital filter operations for implementation on all members of the TMS320 family. The capability to exactly simulate filter operations with the appropriate coefficient wordlength, arithmetic characteristics, and user-specified test signal is combined with general-purpose time-domain plotting, so that any filter design can be evaluated before being embedded in the target application. With a unique combination of coefficient scaling and IIR filter realization, DISPRO/ Professional and /Personal provide a solution to dynamic-range problems in fixed-point arithmetic. IIR filter categories include Butterworth, Chebyshev I and II, and Elliptic in LP, HP, BP, or BS configurations. Linear-phase FIR-filter design, via an improved Parks-McClellan-Remez algorithm, provides standard pass/stop-band configurations as well as arbitrary magnitude response specification, and  $\sin x/x$  rolloff compensation for D/A converters. Program outputs are: coefficients in decimal, integer, or hex; poles and zeros for IIR filters for any wordlength; hard copy of all graphs; and automatically named ASCII files with all design and simulation data.

**COMPANY INFORMATION****Signix Corporation**

19 Pelham Island Road

Wayland, MA 01778

Tel: (508) 358-5955

Fax: (508) 358-5955

**FEATURES & BENEFITS**

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- Automation for network and task configuration
- Works with PRIM-C40
- Graphical user interface
- Heuristic-based task distribution
- Load-monitoring facility
- Support for various host platforms

**SPECIFICATIONS**

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**Application Area:**

Design Automation

**Host Platforms Supported:**

Windows 3.1

Windows 95

Windows NT

Solaris 2.4

Other: Linux

**TMS320 Devices Supported:**

TMS320C4x

**Codegeneration Capabilities:**

Assembly, PRIM-C40 configuration files

**Visual Programming Capabilities:**

YES

**Technical Support/Training Available:**

Available on request.

**SOFTWARE OVERVIEW**

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The PRIM DesignTool in its base version provides a graphical interface for the manual design of a parallel DSP application. The more-advanced DesignTool for task system environments can automatically distribute tasks on a parallel system according to their computation and communication demands. For further optimizations, the DesignTool provides a load-monitoring facility for tasks running on arbitrary nodes in the network.

**COMPANY INFORMATION**

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**SSE Czech und Matzner**

Georgenstv 105

80798 Munich, Germany

Tel: +49 89 278182 16

Fax: +49 89 278182 17

e-mail: [info@sse.de](mailto:info@sse.de)www: <http://www.sse.de>



## FEATURES & BENEFITS

- TI C-compiler, assembler and linker
- Low cost
- Host server and standard I/O library
- Parallel network loader
- C-source level debugger
- Multi-processor support

## SPECIFICATIONS

**Application Area:**

Filter Design

Control

Other: General

**Host Platforms Supported:**

Windows 3.1

Solaris, 2

**TMS320 Devices Supported:**

TMS320C4x

**Codegeneration Capabilities:**

C, Assembly

**Technical Support/Training Available:**

YES

## SOFTWARE OVERVIEW

PaCE (Parallel C40 Environment) is a low level programming toolset for developing TMS320C4x applications. PaCE includes Texas Instrument's C-compiler, assembler, linker and C source level debugger with JTAG support for Transtech TDM4xx C4x boards. PaCE extends the TI toolset by including host server I/O libraries for remote console and file system I/O and parallel network loader utilities. The network loader allows easy downloading of applications and inter-communications.

## COMPANY INFORMATION

**Transtech Parallel Systems Corporation**

20 Thornwood Drive

Ithaca, NY 14850-1263 USA

Tel: (607) 257 6502 or (800) 836 1012

Fax: (607) 257 3980

e-mail: transtech@transtech.com

www: <http://www.transtech.com>

**FEATURES & BENEFITS**

- Native Windows program (3.1/95/NT)
- Easy-to-use, block diagram based
- Automatic C code generation
- Automatic compilation and downloading to DSP
- High quality, self-documenting code
- Real-time hardware in the loop DSP validation
- Efficient code = fast sampling rate

**SPECIFICATIONS****Application Area:**

Filter Design  
Control  
DSP design

**Host Platforms Supported:**

Windows 3.1  
Windows 95  
Windows NT

**TMS320 Devices Supported:**

TMS320C3x  
TMS320C4x  
TMS320C6x

**Codegeneration Capabilities:**

C

**Visual Programming Capabilities**

YES

**Technical Support/Training Available:**

YES

**SOFTWARE OVERVIEW**

VisSim/DSP is a completely integrated, native Windows program for the rapid application development of control systems targeted for DSP's and embedded systems. The price: performance of today's DSP's, together with the use of powerful design and programming tools, allow engineers to design controllers much faster and with less cost than traditional "custom" controller board designs. VisSim/DSP includes integrated modules for control system design and simulation, automatic C code generation, compilation and downloading; and real-time DSP validation and optimization. All of these tasks can be completed without writing a line of code. VisSim/DSP's true WIndows-based system offers unprecedented ease of use and consequently a shorter learning curve than competitive systems. Less time training—more time engineering.

**COMPANY INFORMATION****Visual Solutions Incorporated**

487 Groton Road  
Westford, MA 01886 USA  
Tel: (508) 392-0100  
Fax: (508) 692-3102  
e-mail: [www.info@vissol.com](mailto:www.info@vissol.com)  
www: <http://www.vissim.com>

Visual Solutions is a leading developer of Windows-based software for modeling, simulation and control system - DSP design.







**THIRD-PARTY CONSULTANTS**

Central Research Laboratories	12-2
Colorado Electronic Product Design, Inc.	12-3
Consulting Engineer Alexander Kuhn	12-4
D2 Technologies, Inc.	12-5
Delphi Engineering Group	12-6
DiCon Lab, Inc.	12-7
DNA Enterprises, Inc.	12-8
DSP Tools, Inc.	12-9
Eberwein and Associates, Inc	12-10
Epstein Associates - K9APE	12-11
ET Electronic Tools GmbH	12-12
GBM mbH	12-13
Gordian	12-14
Gram and Juhl ApS	12-15
Institute for Integrated Circuits	12-16
Instrumental Systems Corporation	12-17
JKJ Associates	12-18
Jovian Systems, Inc.	12-19
Nova Engineering, Inc.	12-20
OBJECTIF S.A.	12-21
Orsys GmbH	12-22
Pentek, Inc.	12-23
Questra Corporation	12-25
RadiSys Corp., DSP Division	12-26
Real Time Products Ltd	12-27
RoBioMat	12-28
SICAN GmbH	12-29
SIGNALWARE Corporation	12-30
SignalWorks, Inc.	12-31
Sinectonalysis, Inc.	12-32
Spectral Design	12-33
Synetcom Digital, Inc.	12-34
Systems Technology Associates	12-35
TechLab 2000 Ltd.	12-36
Technologie-Partner	12-37
The Athena Group, Inc.	12-38
The Moving Pixel Company	12-39
University of Miskolc	12-40
VisionSmart Inc.	12-41
Zeidman Consulting	12-42

**AREAS OF EXPERTISE**

- Vocoder Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Run-Time Support Libraries
- Integrated Development Environments/Application Specific Systems Development Hardware
- Emulators
- Application Hardware
- Algorithm Development Software
- Application Software
- Assembler-Linker
- TMS320 Family Device Modeling
- Other: watermarking algorithms

**DEVICES SUPPORTED**

TMS320C1x  
 TMS320C2x  
 TMS320C2xx  
 TMS320C3x  
 TMS320C4x  
 TMS320C5x  
 TMS320C54x  
 TMS320C6x

**CREDENTIALS, HONORS AND AWARDS**

Nobel Prize, CAT scanner  
 The Prince of Wales Award for Innovation,  
 Finalist 1992 and 1996  
 ISO9001

**COMPANY BACKGROUND**

CRL generates new sustainable business opportunities for its customers by the creation, development and protection of advanced technologies and products. Since its foundation in 1928, CRL has invented and developed a number of world firsts including stereophonic sound, public broadcast television and the Nobel Prize-winning CAT scanner. Today, CRL continues to create key technologies for many of the world's leading companies. Our clients gain vital competitive advantage from CRL's proven expertise in commercially successful innovation. We invent new technologies and, in partnership with our clients, develop them into competitive new products and processes. Extensive market knowledge and technical expertise is embodied in a team of 140 professional staff of which 27 hold doctorates and one is a Nobel Prize winner.

CRL has proven hardware, software and algorithm design experience using the TI range of DSP's. We are able to assist our clients through the DSP design cycle, including: system integration, COTS component selection, system specification and technical translation, turnkey hardware, software or algorithm development and feasibility studies. Application areas where CRL has particular expertise include: process control, video, Imaging, wireless comms., security, wired comms., networking, Internet, medical systems, defence and aerospace, consumer, audio, biometrics, finance, distributed systems, multi-media, and sensors.

**COMPANY INFORMATION****Central Research Laboratories**

Dawley Road  
 Hayes, Middex UBB 1HH  
 United Kingdom  
 Tel: +44 (0) 181 848 6444  
 Fax: +44 (0) 181 848 6454  
 e-mail: [jnolan@crl.co.uk](mailto:jnolan@crl.co.uk)  
 www: <http://www.crl.co.uk>



## AREAS OF EXPERTISE

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- Audio Algorithms
- Telecommunications Algorithms
- Motor Control Systems
- Application Hardware
- Algorithm Development Software
- Application Software
- Embedded software

## DEVICES SUPPORTED

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TMS320C1x

TMS320C2x

TMS320C3x

TMS320C5x

## CREDENTIALS, HONORS AND AWARDS

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Members of Colorado Electronic Product Design, Inc. are ICSPAT, authors. David Farrell obtained his BSEE from Colorado State University and MSEE (Communications and DSP) from the University of Colorado at Boulder. He is a registered Professional Engineer and is listed as an inventor on six U.S. Patents. Brian Roberts obtained his BSEE from Colorado State University and MSEE (Telecommunications and DSP) from the Georgia Institute of Technology.

## COMPANY BACKGROUND

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Colorado Electronic Product Design, Inc. develops hardware and software utilizing DSP technology for a variety of telecom, instrumentation and control system applications.

Consulting services are provided in the following areas:

- disk-drive and other servo control
- DTMF, MF, and R2 signaling
- companding
- noise generation and echo cancellation
- test measurement
- equalization filter design
- multi-processor/multi-tasking design

- high speed inter-processor communication protocols
- A/D, D/A and CODEC interfacing
- cryptology

## COMPANY INFORMATION

---

### Colorado Electronic Product Design, Inc.

825 S Broadway

Suite 15

Boulder, CO 80303

Tel: (303) 554-1100

Fax: (303) 554-1101

e-mail: [develop@synthesize.com](mailto:develop@synthesize.com)www: <http://www.synthesize.com>

Colorado  
Electronic Product Design, Inc.

**AREAS OF EXPERTISE**

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- Vocoder Algorithms
- Speech Recognition/Synthesis Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Emulators
- Logic Analyzers
- Motor Control Systems
- Algorithm Development Software
- Simulator

**DEVICES SUPPORTED**

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TMS32C2x  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C6x  
TMS320C8X

**CREDENTIALS, HONORS AND AWARDS**

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Specialist for digital video TMS320C80.

**COMPANY BACKGROUND**

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Digital video (TMS320C80): 4:2:2, MPEG; Development of mathematical algorithms; DSP hardware and software design; Theoretical research and simulation; Modulation, Demodulation, Equalization: GSM, QAM, FSK, MSK, PSK, DQPSK, PI/4-DQPSK; Spectrum analysis (complex FFT, IFFT); Sampling rate conversion.

**COMPANY INFORMATION**

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**Consulting Engineer Alexander Kuhn**

20320 N.W. Colonnade Dr.  
Hillsboro, OR. 97124 USA  
Tel: (503) 617 6181  
Tel: (503) 627 3962  
e-mail: AlexanKuhn@aol.com



## AREAS OF EXPERTISE

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- Vocoder Algorithms
- Telecommunications Algorithms
- Operating Systems
- Run-Time Support Libraries

## DEVICES SUPPORTED

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TMS320C1x  
TMS320C2xx  
TMS320C5x  
TMS320C54x  
TMS320C6x

## CREDENTIALS, HONORS AND AWARDS

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David Y. Wong, President, has a Ph.D. in signal processing, was a UCSB and IEEE instructor, and holds several patents including DTMF, the SPOX operating system, CAS tone detection. He has published over 20 technical papers in the academic press. David M. Lindsay, Vice-President, has an MSEE, was an MTS at Bell Labs, and also holds a patent on the SPOX operating system.

## COMPANY BACKGROUND

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D2's objective is to help companies innovate telecommunications and information products with voice processing technology, including telephony and voice algorithms, real-time system software, and development services. The two co-founders also co-founded Spectron Microsystems. The company has extensive experience in signal processing, hardware and software design, and consumer and telecommunications product development.

D2 is able to facilitate the development of custom systems and applications for manufacturers who lack the time, funds or in-house expertise to take advantage of advanced DSP technology in a timely, cost-effective way. D2's business model is to develop close partnerships with its customers via high levels of service and special engineering to ensure mutual success.

Voice processing solutions provider for computer telephony. Over 20 years of industry experience in algorithms, DSP implementation, real-time systems, telephony system integration.

## COMPANY INFORMATION

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### **D2 Technologies, Inc.**

104 West Anapamu Street  
Santa Barbara, CA 93101 USA  
Tel: (805) 564-3424  
Fax: (805) 966-2144  
e-mail: sales@d2tech.com  
www: <http://www.d2tech.com>



**AREAS OF EXPERTISE**

- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Integrated Development Environments
- Motor Control Systems
- Application Hardware
- Application Software
- Radar, Sonar, EW processing systems

**DEVICES SUPPORTED**

TMS32C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x

**CREDENTIALS, HONORS AND AWARDS**

7 DSP engineers on staff, most with advanced degrees, with an average of 12 years experience. Holders of 3 U.S patents in DSP technology.

**COMPANY BACKGROUND**

Delphi Engineering Group, incorporated in 1994, has assembled a talented and entrepreneurial staff that provides advanced DSP technologies to our clients for the purpose of improving their products. Delphi's staff has a proven track record of solving difficult technical problems within tight schedule and budgetary constraints for such diverse customers as Honeywell Satellite Systems, Parker, Hannifin, Mission Research, and Hughes Aircraft. Delphi maintains a high level of technical expertise in several critical technologies and provides this expertise to our customers. Core competencies include DSP systems development, ranging from system conceptual and architecture design, hardware and software development, system integration, and installation; DSP algorithm development for motor control, communication, radar, image and audio processing; DSP software development in C, C++ and assembly for single and multi-processor applications; and DSP hardware design ranging from VHDL based ASIC design to embedded DSP applications, board level products, and full multi-processor systems. Delphi supports ISO-9000 processes for all areas of systems, software, and hardware development. We rely on these structured top-down design methodologies to produce high quality software and hardware products, while meeting demanding schedules and cost constraints.

**COMPANY INFORMATION****Delphi Engineering Group**

485 E. 17th Street, Suite 400  
Costa Mesa, CA 92627 US  
Tel: (714) 515-1488  
Fax: (714) 515-1491  
e-mail: [jstaub@DelphiEng.com](mailto:jstaub@DelphiEng.com)  
www: <http://www.DelphiEng.com>

Delphi applies advanced DSP technology to our clients' products. Proven capabilities include algorithm and software development, embedded systems, and DSP hardware development.

**DELPHI**  
ENGINEERING GROUP, INC.

**AREAS OF EXPERTISE**

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- Vocoder Algorithms
- Audio Algorithms
- Image Algorithms
- Operating Systems
- Development Hardware
- Motor Control Systems
- Application Hardware
- Algorithm Development Software
- Application Software
- Assembler-Linker

**DEVICES SUPPORTED**

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TMS32C1x  
TMS320C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x

**CREDENTIALS, HONORS AND AWARDS**

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Numerous PhDs and Master's Degrees.

**COMPANY BACKGROUND**

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We offer services in the following areas: DSP algorithm development (code generation and application solutions), custom hardware designs, Windows programming, complete product development (hardware and software solutions).

**COMPANY INFORMATION**

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**DiCon Lab, Inc.**

6423 NW 52nd Terrace  
Gainesville, FL. 32653 USA  
Tel: (352) 372-6160  
Tel: (352) 376-7215  
e-mail: sales@diconlab.com  
www: <http://www.diconlab.com>



## AREAS OF EXPERTISE

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- Vocoder Algorithms
- Speech Recognition-Synthesis Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Operating Systems
- Development Hardware
- Application Hardware
- Algorithm Development Software
- Application Software

## DEVICES SUPPORTED

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TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8x

## COMPANY BACKGROUND

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DNA Enterprises, Inc., founded in 1981 and located in the Telecom Corridor of Richardson, Texas, provides clients worldwide with consulting engineering services and turnkey product development in the signal processing, communications and multimedia (voice, video, and data) industries. DNA's staff of over one hundred seasoned engineers, with 12 years experience on average, has expertise in hardware, software, systems architecture and DSP. We combine these core technological capabilities with a rigorous project management process to deliver high quality results on-time and on-budget. DNA's customer base ranges from start-ups to Fortune 500 technology companies.

In addition to our services business, DNA maintains a DSP Products Group and Design Center which focuses on custom product development. This group leverages over 15 years of DSP experience and many industry firsts into advanced DSP architectures and innovative product development. Our

experience can be utilized to accelerate time-to-market for your products while substantially reducing development risk. From initial concept through delivery of the product, our engineers work with your staff to ensure that system and application requirements are met. After the prototyping phase of development is complete, your design is taken through production by DNA, or, optionally, integrated into your production process.

## COMPANY INFORMATION

---

### **DNA Enterprises, Inc.**

269 W. Renner Parkway  
Richardson, TX 75080 USA  
Tel: (972) 644-3301  
Fax: (972) 644-6338  
e-mail: [rmarshal@dnaent.com](mailto:rmarshal@dnaent.com)  
www: <http://www.dnaent.com>

DNA Enterprises combines over 15 years of DSP and telecom experience with a rigorous project management process to provide our customers with leading-edge products and design services.





**AREAS OF EXPERTISE**

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- Telecommunications Algorithms
- Development Hardware
- Application Hardware
- Application Software

**DEVICES SUPPORTED**

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TMS32C2xx

TMS320C3x

TMS320C4x

TMS320C5x

**COMPANY BCKGROUND**

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Quick turn-around hardware design including schematic, printed circuit board layout, prototype fab and assembly. Delivering working prototypes including DSP and Windows software.

**COMPANY INFORMATION**

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**DSP Tools, Inc.**

1131 Betts Trail Way

Potomac, MD. 20854-5537 USA

Tel: (301) 424-5808

Fax: (301) 424-0386

e-mail: jervisd@dsptools.com

**AREAS OF EXPERTISE**

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- Image Algorithms
- Integrated Development Environments
- Development Hardware
- Application Hardware
- Algorithm Development Software
- Application Software

**DEVICES SUPPORTED**

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TMS320C3x

TMS320C5x

**CREDENTIALS, HONORS AND AWARDS**

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Submitted on request

**COMPANY BACKGROUND**

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Consulting firm specializing in hardware/software product development using DSP and/or embedded processors

**COMPANY INFORMATION**

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**Eberwein and Associates, Inc**

9449 Briar Forest, Suite 507

Houston, Tx 77063 USA

Tel: (713) 784-1226

Fax: (713) 784-3651

e-mail: val@hal-pc.org

**AREAS OF EXPERTISE**

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- Image Algorithms
- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Application Hardware
- Algorithm Development Software
- Assembler-Linker

**DEVICES SUPPORTED**

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TMS32C4x

**CREDENTIALS, HONORS AND AWARDS**

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Please see <http://www.k9ape.com/c96/resume'.html>

**COMPANY BACKGROUND**

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We engineer image analysis inspection systems for special parts, microscopic defect detection, surface metrology, cosmetic defects and ophthalmics with DSP, wavelets and statistics.

**COMPANY INFORMATION**

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**Epstein Associates - K9APE**

P.O.B. 400

Wilmette, IL 60091-0400 U.S.A.

Tel: (847) 853-9292

Fax: (847) 853-9293

e-mail: [info@k9ape.com](mailto:info@k9ape.com)

www: <http://www.k9ape.com>

**AREAS OF EXPERTISE**

- Vocoder Algorithms
- Speech Recognition/Synthesis Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Operating Systems
- Integrated Development Environments
- Development Hardware
- Emulators
- Application Hardware
- Algorithm Development Software
- Assembler-Linker
- Simulator

**DEVICES SUPPORTED**

TMS320C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8X

**COMPANY BACKGROUND**

I: DSP Hardware, PC Signal Processor and Peripheral Boards, VMEbus Signal Processor and Peripheral Boards, Power PC, Transputer, Embedded DSP Modules, MiniKit, TIM-40, SharcPac, Custom-made Designs and Developments, Emulators.

II: DSP Software, Telecommunications Algorithms (Vocoder, Fax, Modem, Telephony), Custom-made Integrated Telecommunications Solutions, Real-time Multitasking/ Multiprocessing Kernel, C Compiler, Assembler and Source Level Debugger, Function Libraries for Signal and Image Processing, Signal Analysis and Processing, Filter Design.

**COMPANY INFORMATION****ET Electronic Tools GmbH**

Eisenhuettenstraße 12  
Ratingen, D 40882 Germany  
Tel: +49 (0) 2102 8801-10  
Fax: +49 (0) 2102 8801-23  
e-mail: [nnoelker@etools.de](mailto:nnoelker@etools.de)  
www: <http://www.etools.de>

Supplier of miniKit embedded DSP modules. Numerous off-the-shelf products available with standard interfaces, or customer-specific. Development tools, excellent technical support.



## AREAS OF EXPERTISE

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- Audio Algorithms
- Image Algorithms
- Integrated Development Environments
- Development Hardware
- Application Hardware
- Algorithm Development Software
- Application Software

## DEVICES SUPPORTED

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TMS320C3x

TMS320C4x

TMS320C5x

TMS320C54x

TMS320C6x

## COMPANY BACKGROUND

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GBM mbH provides DSP hardware and software integration and development in the field of data-acquisition, controllers and image-processing. From system idea up to the DSP-solution, GBM develops customers system.

## COMPANY INFORMATION

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### **GBM mbH**

Erfststrasse 20

Moenchengladbach, 41238 Germany

Tel: +49-2166-98789-0

Fax: +49-2166-98789-1

e-mail: [info@gbm.de](mailto:info@gbm.de)





## AREAS OF EXPERTISE

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- Application Hardware
- Application Software
- System design

## DEVICES SUPPORTED

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TMS320C1x  
TMS320C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8X

## COMPANY BACKGROUND

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Since 1986, we have provided a full range of engineering services. These include: Total system design, hardware engineering and design, gate array design, board design, emissions and safety testing, contract debugging, low-cost manufacturability design, software engineering and design, networking protocols, embedded systems, Java, embedded HTTP servers, cross platform design, graphical user interface design mechanical engineering and design, industrial design, CAD, manufacturing, documentation, authoring and editing, graphics, on-line help, document conversion to HTML and PDF, document design, interface evaluation, manufacturing documentation, multiple delivery options, interactive prototyping, testing and quality assurance, user testing and quality assurance, manufacturing testing and quality assurance.

## COMPANY INFORMATION

---

### Gordian

20361 Irvine Ave.

Santa Ana Heights, CA.92707 USA

Tel: (714) 850-0205

Fax: (714) 850-0533

e-mail: [info@gordian.com](mailto:info@gordian.com)

www: <http://www.gordian.com>



**AREAS OF EXPERTISE**

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- Audio Algorithms
- Operating Systems
- Integrated Development Environments
- Application Software
- Machine Health Monitoring, Vibrations

**DEVICES SUPPORTED**

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TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x

**CREDENTIALS, HONORS AND AWARDS**

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Staff is graduated and post graduated in electronic engineering from the Technical University of Denmark.

**COMPANY BACKGROUND**

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Gram and Juhl is specialized in developing DSP-solutions. This comprises solutions for areas such as the automotive industry, geophysical surveillance, telecommunication and machine condition monitoring. Services include: research, solution proposal, system design, advise on platform and operating system, implementation and system integration. Feel free to contact us for more information. Areas of Expertise: Signal analysis methods, algorithm development, Real-time and parallel multi-processor DSP implementation, Extracting information in signals with bad SNR, i.e. for geophysical surveillance, Tracking and tacho, algorithms for the automotive industry, Vibration measurements for machine condition monitoring, Voice switching and echo cancellation in telecommunication.

Company established in 1993.

**COMPANY INFORMATION**

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**Gram and Juhl ApS**

Studsgade 10  
Aarhus, DK 8000 Denmark  
Tel: +45 861 29870  
Fax: +45 861 98366  
e-mail: gramjuhl@pip.dknet.dk  
www: <http://www.pip.dknet.dk/~pip145>

**AREAS OF EXPERTISE**

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MPEG4

**DEVICES SUPPORTED**

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TMS320C8x

**COMPANY BACKGROUND**

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The video group at the Institute for Integrated Circuits is active in the field of video communication (e.g. H.263, MPEG4). We are involved in the MPEG4 standardization process. Focus of our R&D is algorithms implementation and VLSI architectures. The task is to analyze algorithms, to identify critical components and realize these with DSP or ASIC. We can offer know how and expertise in these fields.

**COMPANY INFORMATION**

---

**Institute for Integrated Circuits**

Arcisstr. 21

Muenchen, D-80290 Germany

Tel: +49-89-289-23862

Fax: +49-89-289-28323

<http://www.lis.e-technik.tu-muenchen.de/index.html>

The institute belongs to the Technical University of Munich and has currently 25 scientists. There is a close cooperation with the Fraunhofer Institute for Solid State Technology.



**AREAS OF EXPERTISE**

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- Operating Systems
- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Emulators
- Application Hardware
- Application Software

**DEVICES SUPPORTED**

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TMS32C1x  
TMS320C2x  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C6x

**CREDENTIALS, HONORS AND AWARDS**

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Company employs over 20 professionals with master and doctoral degrees in electronics, DSP and computer sciences.

**COMPANY BACKGROUND**

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Company expertise spans the entire TI processor line. We have considerable experience with SPOX and Parallel C operating systems. We can create any combination of hardware and software to meet our customers' needs.

**COMPANY INFORMATION**

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**Instrumental Systems Corporation**

23 Vorontsovskaja Street  
Moscow, 109147 Russia  
Tel: +7 (095) 232-1994  
Fax: +7 (095) 330-1392  
e-mail: [insys@instrum.msk.su](mailto:insys@instrum.msk.su)

Development, manufacturing and marketing of innovative DSP products. Offers DSP boards based on the 'C3x, 'C4x, 'C5x and 'C620x devices for PC/AT ISA, PCI and VME bus.





## AREAS OF EXPERTISE

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- Vocoder Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Application Software
- System integration

## DEVICES SUPPORTED

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TMS32C1x  
TMS320C2x  
TMS320C3x  
TMS320C54x

## CREDENTIALS, HONORS AND AWARDS

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James M. Kresse has a BSEE and MSEE from the University of Notre Dame. He is a member of IEEE, Tau Beta Pi, and Eta Kappa Nu.

## COMPANY BACKGROUND

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JKJ Associates has been providing DSP consulting services since 1987. We focus on the development of high quality (bug-free), highly-efficient (maximizing the performance of a given processor), maintainable (easy to modify and upgrade) custom real-time embedded software for programmable DSP chips. We can also supply system architecture and system integration support for those situations where off the shelf solutions may fit part, but not all, of your needs.

## COMPANY INFORMATION

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### **JKJ Associates**

29 Glenwood Drive

Westerville, Ohio 43081-2216

Tel: (614) 549-5457

Fax: (614) 549-5407

e-mail: [kresse@asacomp.com](mailto:kresse@asacomp.com)

www: <http://www.asacomp.com/~kresse/jkj>



## **AREAS OF EXPERTISE**

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- Audio Algorithms
- Operating Systems
- Integrated Development Environments
- Development Hardware
- Application Hardware
- Algorithm Development Software
- Application Software
- Real-time systems

## **DEVICES SUPPORTED**

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TMS32C4x

## **COMPANY BACKGROUND**

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Jovian's principals have a wide range of industrial and scientific applications experience. Jovian can evaluate a projects requirements at all levels: from top-level system and implementation down to detailed cost and time estimates. If the project requires it, Jovian may also use the resources of its parent company, ADAC, a manufacturer of industrial data acquisition systems more than 20 years. Jovian also has a network of companies and consultants that it works with that can provide specific expertise on a wide range of applications. Jovian specializes in high performance real-time systems, and offers development services for C4x-based systems using Jovian's Pegasus software.

## **COMPANY INFORMATION**

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### **Jovian Systems, Inc.**

70 Tower Office Park  
Woburn, MA 01801 USA  
Tel: (617) 937-6300  
Fax: (617) 938-6553  
e-mail: info@jovian.com

**JOVIAN**  
SYSTEMS, INC



## AREAS OF EXPERTISE

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- Vocoder Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Integrated Development Environments
- Development Hardware
- Application Hardware

## DEVICES SUPPORTED

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TMS32C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x

## CREDENTIALS, HONORS AND AWARDS

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Nova's staff represents over 300 man-years of experience in communications system development, and collectively holds over 30 patents.

## COMPANY BACKGROUND

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Nova Engineering provides design, analysis, simulation, and hardware and software development for a wide array of electronic systems, including radio communications equipment and advanced signal processing systems. Corporate capability includes system engineering and digital hardware and software for a wide range of processors and operating systems. Nova has particular expertise in the development of hardware and software for embedded signal processing systems using the 'C3x, 'C5x, and 'C54x DSPs. Nova's primary emphasis is the application of advanced signal processing techniques to the solution of complex communications problems. Recent experience includes development of several Orthogonal Frequency Division Multiplexing (OFDM) modems employing a combination of BPSK, QPSK, 16-QAM, and 32-QAM on each of the orthogonal carriers (implementation on 'C31s and 'C40s). Nova has also developed high performance real-time forward error correction codes using concatenated Reed-Solomon and Nadler codes on both the 'C31 and 'C50. Other areas of expertise include: embedded

real-time signal processing systems; low-rate speech compression algorithms (1200, 800, 600bps); high-speed correlators; adaptive bandwidth symbol synchronizers; FIR and IIR filtering; advanced modulation and demodulation techniques; high-performance FFTs; and linear and decision feedback adaptive equalizers.

## COMPANY INFORMATION

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### **Nova Engineering, Inc.**

5 Circle Freeway Drive  
Cincinnati, OH. 45246 USA  
Tel: (513) 860-3456  
Fax: (513) 860-3535  
e-mail: [blampe@nova-eng.com](mailto:blampe@nova-eng.com)





## AREAS OF EXPERTISE

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- Telecommunications algorithms
- Operating systems
- Integrated-development environments
- Emulators
- High-level language compiler
- Algorithm-development software
- Application software
- Assembler-linker
- Simulator

## DEVICES SUPPORTED

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TMS32C2x  
TMS32C2xx  
TMS32C3x  
TMS32C4x  
TMS32C5x  
TMS32C54x  
TMS32C6x  
TMS32C8X

## COMPANY BACKGROUND

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OBJECTIF S.A. is specialized in DSP software development. The applications areas we support include modem, telecom-munications, defense, automotive, instrumentation, biomedical, image processing .OBJECTIF S.A. is focusing on real-time applications and delivers professional and reliable software using the most demanding methods such as SA/RT, DOD2167, V cycle and others. OBJECTIF S.A. know-how allows you a total control of the developments in terms of quality, design documents, costs and delivery, looking for the customers' satisfaction.

## COMPANY INFORMATION

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### OBJECTIF S.A.

e-mail: 100117.1356@compuserve.com



## AREAS OF EXPERTISE

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- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Emulators
- Application Hardware
- Device Programmer
- High-Level Language Compiler
- Application Software
- Assembler-Linker
- Simulator
- TMS320

## DEVICES SUPPORTED

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TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C6x

## COMPANY BACKGROUND

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ORSYS Orth System GmbH is a leading supplier of DSP boards, development tools and is specialized in extremely time critical solutions for signal processing. Beside of the micro-line™ Embedded DSP-board family, ORSYS offers innovative hardware and software development services for customer specific applications, based on latest DSP and FPGA technologies. Essential parts of the company philosophy are intensive customer consultation, use of state-of-the-art technologies for achievement of high performance and low-power consumption solutions, use of rigorous design to low-cost strategies and delivery on schedule.

A new service, offered by ORSYS, is based on the new IEEE-1394 High Performance Serial Communication technology. Supplying customers with in-house-developed IEEE-1394-boards and full IEEE-1394 compliant driver software solutions guarantees customers a rapid entry into this great technology.

## COMPANY INFORMATION

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### Orsys GmbH

Am Stadtgraben 1  
Markdorf, D 88677  
Tel: +49 (0) 7544 95610  
Fax: +49 (0) 7544 956129  
e-mail: [orsys.mo@t-online.de](mailto:orsys.mo@t-online.de)  
www: <http://www.orsys.de>



**AREAS OF EXPERTISE**

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- Integrated Development Environments
- Development Hardware
- Application Hardware

**DEVICES SUPPORTED**

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TMS320C3x

TMS320C4x

TMS320C6x

TMS320C8x

**CREDENTIALS, HONORS AND AWARDS**

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VITA member

VXIplug and play compatible

**COMPANY BACKGROUND**

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Pentek offers DSP and data acquisition boards. We probably have the board you thought you had to build yourself available right off the shelf. Our boards are available in VME, VXI, PCI and PMC form factors. We offer flexible processor (based on TI's 'C30, 'C40, 'C80 and 'C6x products), memory configurations and the largest variety of I/O options available for DSP. I/O interfaces include the MIX and PMC mezzanine interfaces, FPDP, comm port and G-link interfaces. Plus VME interfaces like VME64, RACEway and VSB. Our Digital Receiver products are available up to 16-channels and 70MHz. Flexible GUI interface development software is available as well as compatibility with other third-party product lines.

**COMPANY INFORMATION**

---

**Pentek, Inc.**

One Park Way

Upper Saddle River, NJ 07458 USA

Tel: (201) 818-5900

Fax: (201) 818-5904

e-mail: info@pentek.com

**PENTEK**



## **AREAS OF EXPERTISE**

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- Image Algorithms
- Operating Systems
- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Emulators
- Logic Analyzers
- Application Hardware
- High-Level Language Compiler
- Algorithm Development Software
- Application Software

## **COMPANY BACKGROUND**

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Questra is a professional engineering services firm. We specialize in creating and integrating embedded systems software and hardware solutions. We offer custom development services in accordance with your software or hardware platform requirements. Our embedded systems experience spans a wide variety of operating systems, hardware and applications which allows Questra to leverage the numerous opportunities that Texas Instruments' DSP Solutions offer to the embedded market.

## **COMPANY INFORMATION**

---

### **Questra Corporation**

300 Linden Oaks

Rochester, NY 14625 USA

Tel: (716) 381-0260

Fax: (716) 381-8098

e-mail: [ses-services@questra.com](mailto:ses-services@questra.com)

<http://www.questra.com>





## AREAS OF EXPERTISE

- Vocoder Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Operating Systems
- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Emulators
- Motor Control Systems
- Application Hardware
- Algorithm Development Software
- Application Software

## DEVICES SUPPORTED

TMS32C3x  
 TMS320C4x  
 TMS320C54x  
 TMS320C6x

## COMPANY BACKGROUND

In addition to off the shelf products, RadiSys offers custom application development services. Our goal is to offer simple and cost effective solutions. Our strengths include a world-class technical team, our ability to provide innovative solutions, and our emphases on quality products and customer support. RadiSys has expertise in all the core technologies needed for the successful completion of the most demanding development project, including algorithm development, programming and optimization, I/O hardware design, system and test software, and manufacturing. RadiSys can assist you during each phase of your data acquisition and signal processing project. We offer: Intimate design knowledge of DSP hardware and software implementation on CPCI, PCI, VME, ISA, and embedded systems. A background in developing products for both host-based and stand-alone systems. RadiSys has an extensive diagnostics, firmware and host code development tradition and an understanding of the tools and support required to promote sales of DSP processors and ISO-9001 Manufacturing facilities Contact us to see how RadiSys can find a "Perfect-Fit" solution for your next project.

## COMPANY INFORMATION

### RadiSys Corporation

5445 N.E. Dawson Creek Drive  
 Hillsboro, OR 97124 USA  
 Tel: (617) 244-0406  
 Fax: (617) 244-1069  
 e-mail: [info@radisys.com](mailto:info@radisys.com)  
 www: <http://www.radisys.com>

**RadiSys**<sup>®</sup>

**AREAS OF EXPERTISE**

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- Operating Systems
- Application Software

**DEVICES SUPPORTED**

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TMS320C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8X

**COMPANY BACKGROUND**

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RTP specializes in real-time embedded systems, with particular expertise in DSP and ATM technologies. Clients are typically from Europe and the USA. We provide high-level consultancy advice through to complete development projects and in-depth feasibility studies. Our expertise can be seen through the following projects:

- Writing a test harness for a DSP development environment
- Implementing and testing low bit rate speech coders
- Adaptive filtering
- Wavelet analysis
- Linear prediction
- Expanded memory support for C50
- SPOX/Virtuoso Board Support Packages
- Custom device driver and system-level software for sonar receiver
- Speech analysis tools for formant extraction
- Real-time coder/decoder
- Multi-DSP distributed processing system for industrial control application
- Bidirectional comms port driver for C40 using DMA

**DSP Chip and Board Service**

RTP can provide independent, accurate advice on the choice of target DSP chip or board. One recent project saw RTP carry out a detailed feasibility study evaluating the use of certain DSP's to run large C++ programs.

RTP Ltd also distributes and supports the TI 3rd Party products from Spectron Microsystems, Eonic Systems and White Mountain DSP in the UK.

**COMPANY INFORMATION**

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**Real Time Products Ltd**

8 Holt Court, Aston Science Park  
Birmingham, W. Mids  
B7 4EJ United Kingdom  
Tel: +44 121 333 6955  
Fax: +44 121 333 5433  
e-mail: [enquiries@rtp.co.uk](mailto:enquiries@rtp.co.uk)  
www: <http://www.rtp.co.uk>

**AREAS OF EXPERTISE**

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- Speech-recognition/synthesis algorithms
- Operating systems
- Motor control systems
- Application hardware

**DEVICES SUPPORTED**

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TMS32C2x  
TMS32C2xx  
TMS32C3x  
TMS32C4x  
TMS32C5x  
TMS32C54x

**COMPANY INFORMATION**

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**RoBioMat**

6511 Ivory Ash Court  
Kingwood, TX. 77346  
Tel: (713) 812-2052  
Fax: (713) 812-2052  
e-mail: sales@robiomat.com

Full-line (fixed/floating) TI DSPs development.

**AREAS OF EXPERTISE**

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- Speech Recognition/Synthesis Algorithms
- Audio Algorithms
- Image Algorithms
- Integrated Development Environments
- Development Hardware
- Application Hardware
- Algorithm Development Software
- Application Software

**DEVICES SUPPORTED**

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TMS32C4x

TMS320C6x

**COMPANY BACKGROUND**

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SICAN's performance spans conception and development up to the realization of microelectronic modules, software solutions and entire hard, and software systems.

**COMPANY INFORMATION**

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**SICAN GmbH**

Garbsener Landstr. 10  
Hannover, 30419 Germany  
Tel: +49 511 277 1449  
Fax: +49 511 277 2440  
e-mail: [mj@sican.de](mailto:mj@sican.de)  
www: <http://www.sican.de>



**AREAS OF EXPERTISE**

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- Telecommunications Algorithms
- Image Algorithms
- Operating Systems
- Motor Control Systems
- Application Hardware
- Application Software
- Field Prog. Gate Arrays

**DEVICES SUPPORTED**

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TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8x

**CREDENTIALS, HONORS AND AWARDS**

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Dr. Newman's qualifications include PhD Systems Engineering and 10+ years with Texas Instruments, Senior Member Technical Staff.

**COMPANY BACKGROUND**

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Dr. Newman consults on use of DSP, in a wide range of commercial and military product development projects including; video processing, especially IR; ultra-sonics; radar receivers, cellular telephony; welding, neural nets and satellite applications of DSP.

Signalware designs products, builds prototype hardware and writes DSP software.

**COMPANY INFORMATION**

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**SIGNALWARE Corporation**

P.O. Box 50225

Colorado Springs, CO. 80949-0225 USA

Tel: (719) 593-0509

Fax: (719) 593-1705

e-mail: [djnewman@signalware.com](mailto:djnewman@signalware.com)



**AREAS OF EXPERTISE**

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- Audio Algorithms
- Telecommunications Algorithms
- Development Hardware
- Emulators
- Application Hardware
- Device Programmer
- High-Level Language Compiler
- Algorithm Development Software
- Application Software
- Assembler-Linker
- Simulator

**DEVICES SUPPORTED**

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TMS320C2xx  
TMS320C3x  
TMS320C5x

**COMPANY BACKGROUND**

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SignalWorks provides support and customization of SignalWorks licensed speaker-phone technology. Consulting also is provided in related audio and telephony-signal processing areas. Consulting may consist of system design, software design, DSP programming and DSP algorithm development.

**COMPANY INFORMATION**

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**SignalWorks, Inc.**

625 Ellis St. Suite 208  
Mountain View, CA. 94043 USA  
Tel: (415) 254-0186  
Fax: (415) 254-0187  
e-mail: [hugh@signalworks.com](mailto:hugh@signalworks.com)

**AREAS OF EXPERTISE**

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- Image Algorithms
- Run-Time Support Libraries
- Code optimization

**DEVICES SUPPORTED**

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TMS320C3x

TMS320C4x

**COMPANY BACKGROUND**

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Sinectonalysis specializes in algorithm development and code optimization for TMS320C3x/TMS32C4x processors. Our products cover DSP and Image processing as well optimized linear algebra software libraries.

**COMPANY INFORMATION**

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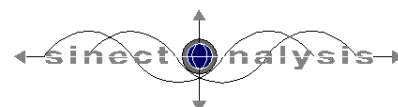
**Sinectonalysis, Inc.**

3702 South Virginia St. Suite G-12 #164

Reno, NV 89502 USA

Tel: (702) 345-0148

Fax: (702)345-0149

e-mail: [sinecto@clark.net](mailto:sinecto@clark.net)<http://www.clark.net/pub/sinecto/index.html>

**AREAS OF EXPERTISE**

- Audio algorithms
- Integrated development environments/application specific systems
- Algorithm development software
- Application software
- Conversion of analogue systems to digital systems
- Digital filter design
- Adaptive spectral audio signal processing
- Audio for virtual reality applications
- Development of virtual test instrumentation
- Binaural signal processing
- Noise suppression measurement
- Development of digital modelling tools for sound & noise design
- Analysis of perceptual values (loudness, sharpness, tonality, etc.)
- Multichannel audio coding and decoding
- Perceptual audio coding techniques (bitrate reduction)

**DEVICES SUPPORTED**

TMS320C1x  
TMS320C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8x

**COMPANY BACKGROUND**

Spectral Design has been developing digital signal processing software under contract for customers, for more than seven years and with 15 engineers. As a technology based company, the core business of Spectral Design is bespoke software development and research, with the emphasis placed on audio signal processing. An adaptation of the way in which the human ear functions would be the ideal solution for many of these tasks. Spectral Design has examined the results of several research projects in this field and have developed algorithms of commercial value from them. The experience gained places Spectral Design in the position to develop algorithms for mathematical and psycho-acoustic simulation models of many hearing properties. Due to the intensive data processing requirements, it is mainly necessary to employ multi-processor systems.

Spectral Design is also able to design or to integrate applications on DSP processors as well as on native host processors. This means we can design complicated systems on high-level language like C/C++ and optimise it for DSP based processor systems.

**COMPANY INFORMATION****Spectral Design**

Wiener Straße 5

Bremen, D 28359

Germany

Tel: +49 421 20144 25

Fax: +49 421 20144 48

e-mail (tech info): a.skaebe@spectral-design.com

www.spectral-design.com

Consultant for digital signal processing, digital filter design, measurement, digital audio, algorithm development



**AREAS OF EXPERTISE**

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- Telecommunications Algorithms
- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Application Hardware
- Application Software

**DEVICES SUPPORTED**

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TMS320C2x

TMS320C3x

TMS320C5x

**CREDENTIALS, HONORS AND AWARDS**

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Published article in TI Telecommunications Articles,  
with the TMS320C5X DSPs Application Book.

**COMPANY BACKGROUND**

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Provides Wireless Communications consulting services  
support Digital Signal Processing technology.

Manufactures Wireless Data communications equipment  
that utilizes Digital Signal Processing Technology.

**COMPANY INFORMATION**

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**Synetcom Digital, Inc.**

1426 Aviation Blvd., Suite 203  
Redondo Beach, CA 90278 USA  
Tel: (310) 379-2000  
Fax: (310) 372-2331  
e-mail: [synet@ix.netcom.com](mailto:synet@ix.netcom.com)  
www: <http://www.synetcom.com>

**Synetcom**  
Synetcom Digital Incorporated

**AREAS OF EXPERTISE**

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- Vocoder Algorithms
- Speech Recognition/Synthesis Algorithms
- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Operating Systems
- Run-Time Support Libraries
- Integrated Development Environments
- Development Hardware
- Emulators
- Logic Analyzers
- Motor Control Systems
- Application Hardware
- Device Programmer
- High-Level Language Compiler
- Algorithm Development Software
- Application Software
- Assembler-Linker
- Simulator

**DEVICES SUPPORTED**

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TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8X

**CREDENTIALS, HONORS AND AWARDS**

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Patents in the speech processing area

**COMPANY BACKGROUND**

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We design and program for the fixed and floating point families. We specialize in telecommunications, speech processing, pattern recognition and real time processing.

We have done extensive programming on both the fixed and floating point families in both assembly and C languages. Our projects have included numerous telecommunications, speech processing, pattern recognition and process control systems. We are available for all phases of the software development process, either on or off site.

**COMPANY INFORMATION**

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**Systems Technology Associates**

119 SW Maynard Road

Cary, NC 27511 USA

Tel: (919) 460-0020

Fax: (919) 469-9443

e-mail: [guerreri@mindspring.com](mailto:guerreri@mindspring.com)

www: <http://www.guerreri.home.mindspring.com>

**AREAS OF EXPERTISE**

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- Integrated Development Environments
- Development Hardware
- Emulators
- Logic Analyzers
- Application Hardware
- Application Software
- Assembler-Linker
- Encoding/Decoding, Measurement Systems

**DEVICES SUPPORTED**

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TMS32C2x  
TMS320C2xx  
TMS320C5x

**COMPANY BACKGROUND**

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TechLab is a design house with strong experience in hardware, firmware, and application software. Our main activities are: design of control and measurement systems based on TI DSPs, design of development tools for TI DSPs, encoding/decoding systems based on TI DSPs. We can consult your design or we can design for you as well. We have got all necessary tools to develop sophisticated hardware and software designs quickly. We have background in the field of cellular networks and image processing. Thanks to our good relations to Polish researchers and scientist in mathematics we can develop new algorithms.

Hardware and Software design house  
Keywords: hardware, software, DSP, measurement, control, encoding, decoding, digital, analog, PCB, microcontroller, microprocessor.

**COMPANY INFORMATION**

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**TechLab 2000 Ltd.**

Sniadeckich 10/1  
Warsaw, 00-656 Poland  
Tel; +48 22 625 71 27  
Fax: +48 22 625 53 19  
e-mail: tl2000@ikp.atm.com.pl



TECHLAB 2000 Ltd.

**AREAS OF EXPERTISE**

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- Image Algorithms
- Integrated Development Environments
- Development Hardware
- Motor Control Systems
- Application Hardware
- Application Software
- MATLAB, LabVIEW

**DEVICES SUPPORTED**

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TMS320C3x

TMS320C4x

**COMPANY INFORMATION**

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**Technologie-Partner**

Ehrensteiner Feld 23

Ulm, BW. 89075 Germany

Tel: +49 731 554393

Fax: +49 731 554394

e-mail: [tp\\_motras@look.de](mailto:tp_motras@look.de)

Training, consultancy, complete solutions.

**AREAS OF EXPERTISE**

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- Audio Algorithms
- Telecommunications Algorithms
- Image Algorithms
- Algorithm Development Software
- Application Software

**DEVICES SUPPORTED**

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TMS320C3x

TMS320C4x

TMS320C5x

**CREDENTIALS, HONORS AND AWARDS**

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5 U.S. Patents

10 DSP Books (Professional and Academic)

**COMPANY BACKGROUND**

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The Athena Group has provided consulting services for DSP software and hardware systems since 1986. From turnkey designs using off-the-shelf parts to innovative custom designs, Athena engineers utilize their collective 50+ years of DSP experience to create efficient and effective solutions.

**COMPANY INFORMATION**

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**The Athena Group, Inc.**5522 NW 43rd. St. Suite B  
Gainesville, FL 32653 USA

Tel: (352) 371-2567

Fax: (352) 373-5182

e-mail: support@athena-group.com

www: <http://www.athena-group.com>

**AREAS OF EXPERTISE**

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- Image algorithms
- Development hardware
- Algorithm development software
- Application software
- Real-time video

**DEVICES SUPPORTED**

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TMS320C6x

TMS320C8x

**COMPANY BACKGROUND**

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We design custom hardware and software for real-time video processing with our current emphasis on multiple 'C80 implementations. We are experts at the proper spatial filtering required for broadcast-quality video. Experience with special effects, measurements, signal generation, text, graphics, pattern recognition, multiple 'C80 implementations, large SDRAM, low-cost, high performance, highly-optimized PP code, and PCI. We get very high levels of performance from the 'C80 because of our deep expertise in both hardware and software.

**COMPANY INFORMATION**

---

**The Moving Pixel Company**

3835 SW 185th Avenue, Suite 200

Beaverton, OR 97007-1553 USA

Tel: 503-848-3993

Fax: 503-848-3994

E-mail: [info@movingpixel.com](mailto:info@movingpixel.com)[www.movingpixel.com](http://www.movingpixel.com)

Real-time video hardware and software consultants,  
multiprocessing.



**AREAS OF EXPERTISE**

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- Integrated Development Environments
- Development Hardware
- Emulators
- Motor Control Systems
- Application Hardware
- Assembler-Linker
- Simulator

**DEVICES SUPPORTED**

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TMS320C3x

TMS320C4x

**COMPANY BACKGROUND**

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We are experts in TMS320C3x, TMS320C4x floating-point DSP development systems. The DSP tools at our department are: Assembler, C language systems, software simulators, debuggers. DFDP4 filter design kit. Hardwares: TMS320C3x EVM, XDS510 Emulators and target cables, TMS320C30 LSI System board, Innovative Integration PC32 Supercontroller Design Kit. Research fields: DSP based ac and dc motor control, DSP applications in industry control systems. Our department presents TMS320C3x and C4x seminars and workshops.

The University of Miskolc is one of the higher education institutions in Hungary. Our Department teaches electrical engineering, microelectronics, DSP, electrical drives.

**COMPANY INFORMATION**

---

**University of Miskolc**

Egyetemvaros

Miskolc, H 3515 Hungary

Tel: +36 46 366 111/1218

Fax: +36 46 361 740

e-mail: elkadam@gold.uni-miskolc.hu



**AREAS OF EXPERTISE**

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- Image Algorithms
- Line speed scanning

**DEVICES SUPPORTED**

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TMS320C2x

TMS320C5x

**COMPANY BACKGROUND**

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Can provide consultation on integration of VisionSmart DSP boards into a variety of applications including high-speed real-time image acquisition and processing.

**COMPANY INFORMATION**

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**AREAS OF EXPERTISE**

---

- Development hardware
- Emulators
- Logic analyzers
- Motor control systems
- Application hardware
- Device programmer

**DEVICES SUPPORTED**

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TMS32C1x  
TMS320C2x  
TMS320C2xx  
TMS320C3x  
TMS320C4x  
TMS320C5x  
TMS320C54x  
TMS320C6x  
TMS320C8X

**CREDENTIALS, HONORS AND AWARDS**

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Winner, Wyle/EETimes 1994, American By Design Contest, Stanford Graduate Engineering, Fellowship, National Merit Scholarship, Association for Educational Data, Systems Honorable Mention

**COMPANY BACKGROUND**

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Zeidman Consulting offers high quality hardware and software design consulting, specializing in RISC based designs, custom ASICs and FPGAs, and firmware. Previous designs include a high speed memory architecture for an embedded RISC processor, an Ethernet switch, a ASIC simulation environment in Verilog, and several high end laser printer controllers.

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