

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

**VOIR LA NOTICE D' INSTALLATION AVANT DE
RACCORDER AU RESEAU.**

Edition

June 1994

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Table of Contents

CHAPTER 1: Introduction.....	1-1
System Board Specifications	1-2
System Board Layout.....	1-3
CHAPTER 2: Hardware Installation	2-1
Jumpers and Connectors.....	2-2
Setting Jumpers.....	2-3
CPU Type Selectors: JC1, JC4~JC8.....	2-4
CPU Clock Selectors: JK1~JK5.....	2-5
Voltage Selector: J50.....	2-6
Cache Memory Selection: JS1, JS2, JS3.....	2-7
Memory Bank Configuration.....	2-8
Display Adaptor Selector: JP1.....	2-9
Keyboard Connector.....	2-9
J2: Keyboard Connector - DIN.....	2-9
External Battery Connector	2-10
JB: External Battery Connector	2-10
Case Connector Block	2-11
JFP: Case Connector Block.....	2-11
Power Supply Connector: J1	2-12
Monitor Power Control Connector: JG1	2-13

Power Saving LED Connector: JG2.....	2-13
Power Saving Switch Connector: JG3	2-14
CHAPTER 3: BIOS Setup.....	3-1
Power Management.....	3-1
Requirements.....	3-1
Power Management Software Setup.....	3-1
AMI BIOS Setup	3-3
Main Menu Options	3-4
Standard CMOS Setup.....	3-4
Advanced CMOS Setup.....	3-5
Advanced Chipset Setup.....	3-9
Power Management Setup	3-10
Auto Configuration With BIOS Defaults	3-12
Auto Configuration With Power-On Defaults ...	3-12
Change Password	3-13
Auto Detect Hard Disk	3-14

CHAPTER 1

Introduction

The ALI-486G green system board is a high performance personal computer system board based on an Intel S_L486DX/DX2/DX4 and 486SX/DX/DX2 microprocessor running at 25/33/50/66/75/100 MHz. The board also supports other CPUs such as the AMD-DX/DX2/DXL and Cyrix M7.

A cache subsystem can be configured for 128Kb or 256Kb cache memory to improve overall throughput. The board also features three 32-bit Local Bus slots for the VESA standard.

The ALI-486G system board uses the highly integrated ALI M1429G 32-bit VESA Green single-chip solution to support VESA and Green standards, and the ALI M1431 as TTL ASIC buffer to support the local bus architecture. The ALI chipset integrates all system control functions.

System Board Specifications

CPU:

- Intel S_L486SX/DX/DX2/DX4-25/33/50/66/75/100
- Intel 486SX/DX-25/33/50, 486DX2-50/66
- AMD DX/DXL/DX2-40/50/66
- Cyrix DX/DX2-40/50

Cache memory:

- Supports 128K or 256K cache memory

Main Memory:

- 4 pieces 72-pin SIMM sockets support 4 banks of memory with 1M, 2M, 4M, 8M, 16M and 32M DRAM

Slots:

- Three 32-bit Vesa Local Bus slots, 1 Master and 2 Slave
- Six 16-bit and two 8-bit AT bus slots

Battery:

- 3.6V/480mA or 3.6V/60mA on-board battery

Dimensions:

- 25cm x 22cm x 4 layers

Mounting:

- 6 mounting holes

System Board Layout

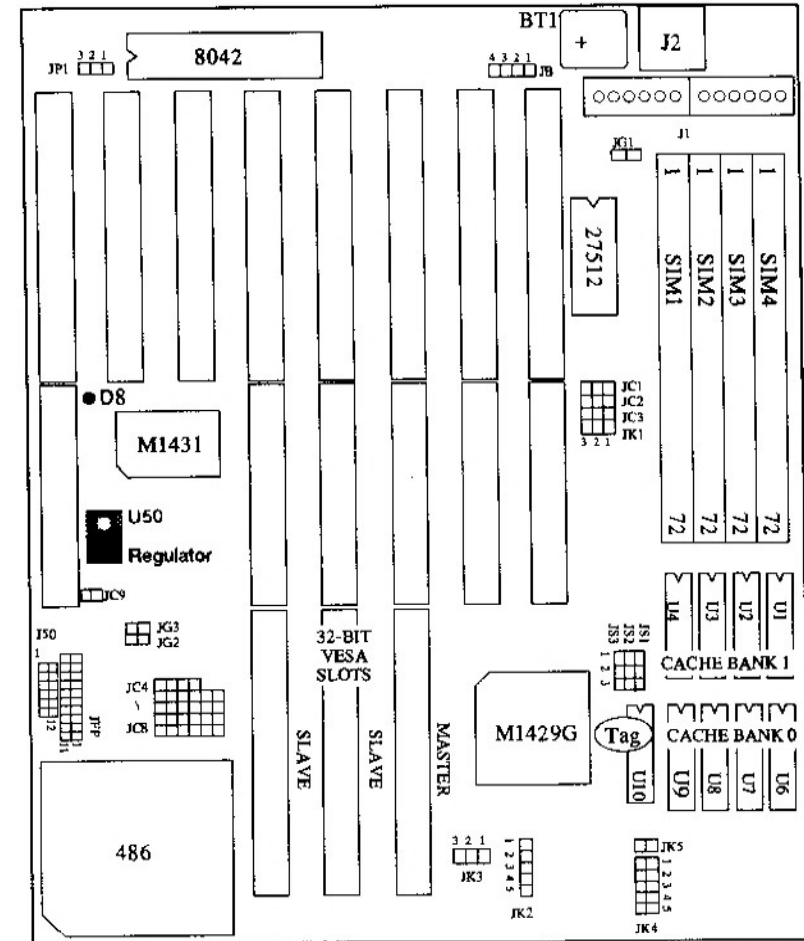


Figure 1-1. System board Layout

CHAPTER 2

Hardware Installation

When you install the ALI-486G system board, you must configure components, set jumpers, and attach connectors.

Components

CPU Settings	2-4
Clock Settings.....	2-5
Cache Memory Installation.....	2-7
Main Memory Installation.....	2-8

Jumpers

CPU Type Selectors — JC1, JC4~JC8.....	2-4
Clock Selectors — JK1~JK5.....	2-5
Voltage Selector — J50.....	2-6
Cache memory Selectors — JS1, JS2, JS3.....	2-7
Display Adaptor Selector — JP1.....	2-9

Connectors

Keyboard connector — J2.....	2-9
Battery connector — JB.....	2-10
Keyboard Lock & Power LED — JFP (pins 1~5).....	2-11
Power Saving LED connector — JFP (pins 3~4).....	2-11
Speaker connector — JFP (pins 7~10).....	2-11
Sleep switch connector — JFP (pins 8~9).....	2-11
Turbo LED connector — JFP (pins 12~13).....	2-11
Turbo switch — JFP (pins 15~17).....	2-11
Hardware Reset — JFP (pins 19~20).....	2-11
Power connector — J1.....	2-12
Monitor Power Control Connector — JG1.....	2-13
Power Saving LED Connector — JG2.....	2-13
Power Saving Switch Connector — JG3.....	2-14

Jumpers and Connectors

Refer to Figure 1-1 for jumper and connector locations.

Jumpers

Jumpers on the system board provide information to your operating system about installed options and system settings. You need to configure jumpers when you install the CPU, select cache size, add an external battery, or clear CMOS memory.

Connectors

Connectors attach control panel switches and indicators, as well as the speaker, external battery, keyboard and power supply.

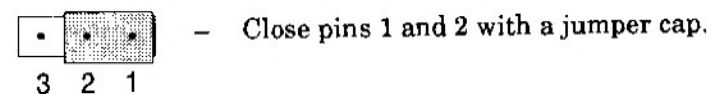
Setting Jumpers

Configure system board options by setting jumper switches. Use your fingers to position a jumper cap over the desired pin setting and gently press down.

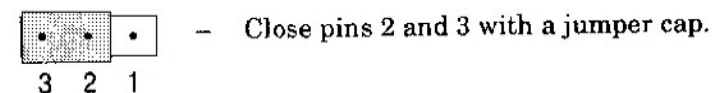
Note: When you open a jumper, leave the plastic jumper cap attached to one of the pins so you don't lose it.

Symbols:

For 3-pin jumpers, the following symbols are used:

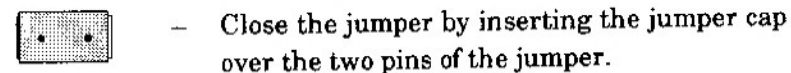


– Close pins 1 and 2 with a jumper cap.

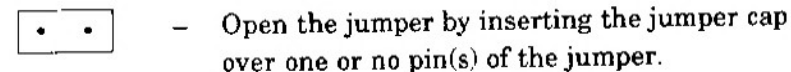


– Close pins 2 and 3 with a jumper cap.

For 2-pin jumpers, the following symbols are used:



– Close the jumper by inserting the jumper cap over the two pins of the jumper.

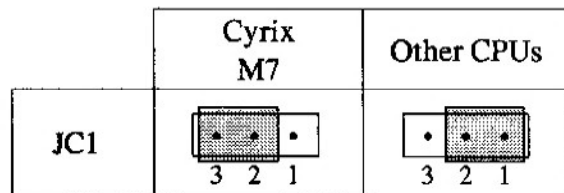


– Open the jumper by inserting the jumper cap over one or no pin(s) of the jumper.

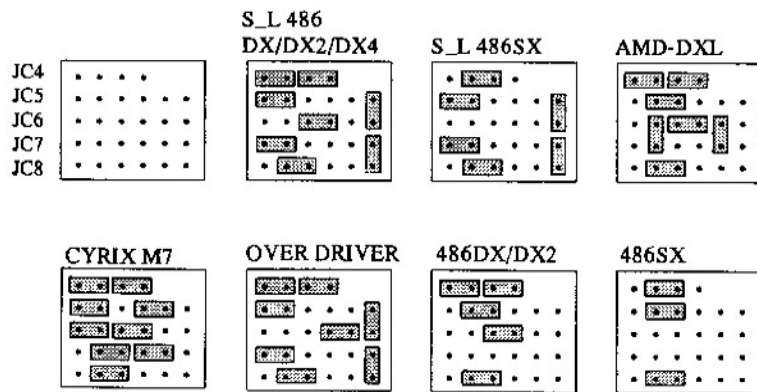
CPU Type Selectors: JC1, JC4~JC8

The ALI-486G system board can support several types of CPU. For the board to recognize which type of CPU is installed, set jumpers as below. See Figure 1-1 for jumper locations.

CPU Selectors: JC1



JC4~JC8:

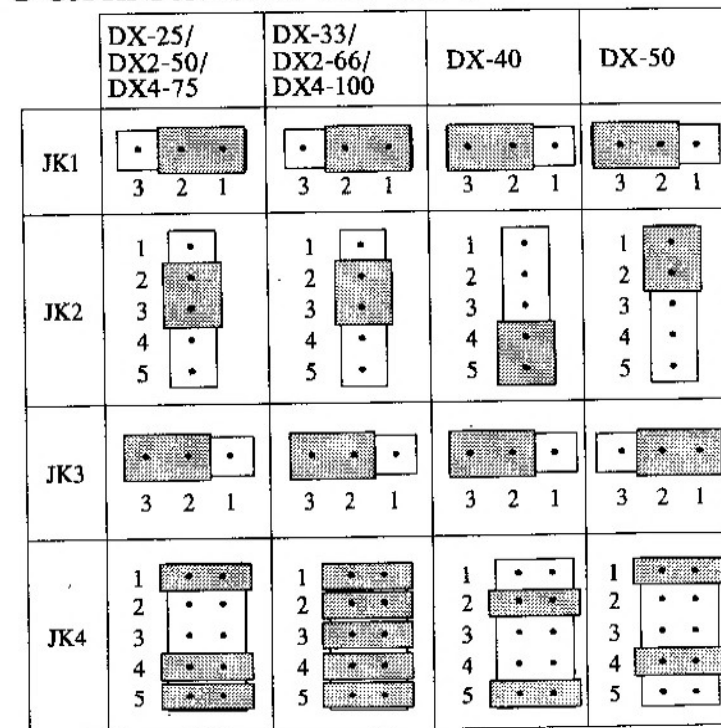


Note : DX4-75/100 is only supported when the 3.3V regulator(U50) and DIODE(D8) are mounted on the system board. See Fig1-1 for U50 and D8's location.

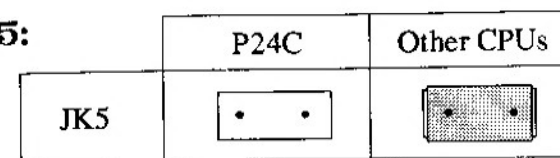
CPU Clock Selectors: JK1~JK5

For different frequency output of the clock generator chip, set JK1~JK5 according to the CPU clock. See Figure 1-1 for jumper locations.

CPU Clock Selectors: JK1~JK4



JK5:



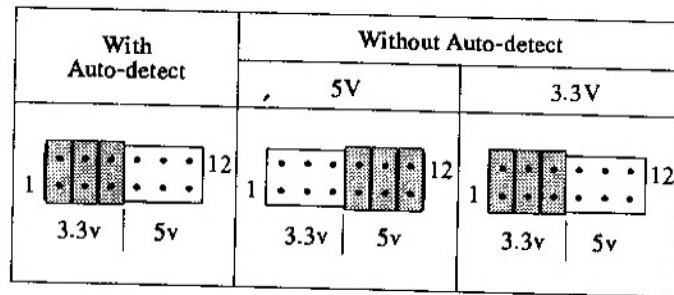
Voltage Selector: J50

The system board provides two types of voltage, 3.3V and 5V, for used by different types of CPUs, by setting the jumper J50.

The system board also supports an auto-detecting function, and can automatically select the proper voltage, either 3.3V or 5V for your CPU. In this situation, set the jumper to 3.3V.

For system board without the auto-detecting function, you should set the jumper to either 3.3V or 5V, depending on your CPU.

Voltage Selector: J50



Note: The system board can only support 5V when the 3.3V regulator(U50) is not mounted on the system board. See Fig 1-1 for U50's location.

Cache Memory Selection: JS1, JS2, JS3

The system board supports 128K/256K of cache memory. You configure cache memory by installing SRAM chips in Data RAM sockets U1~U4 and U6~U9, and in Tag RAM socket U10, and then setting the cache jumpers JS1, JS2 and JS3. Note that the speed required for SRAM chips is 20ns and there is two ways of selecting 256K depending on the size of SRAM you are using.

Cache Size and Memory Locations

Cache Size	Tag RAM (U10)	Bank 0 (U6~U9)	Bank 1 (U1~U4)
128K	8, 16, 32K8	32K8	None
256K (32K8 x 8)	16, 32K8	32K8	32K8
256K (64K8 x 4)	16, 32K8	64K8	None

Cache Size Selection: JS1, JS2, JS3

Cache Size	JS1	JS2	JS3
128K			
256K (32K8 x 8)			
256K (64K8 x 4)			

Memory Bank Configuration

The All-In-One system board supports four pieces of 72-pin SIMM, single density (s) or double density (d), in the following sizes: 1M (s), 2M (d), 4M (s), 8M (d), 16M (s), and 32M (d). See figure 1-1 for bank locations.

The board Auto Detects SIMM modules. However, when installing SIMM, you must insert the modules in the following sequence: SIM1, SIM2, SIM3, SIM4.

The board only supports four banks — if SIM1 and SIM2 are double (density) banks, then you cannot use SIM3 and SIM4.

The maximum memory configuration is 64M = SIM1 (32M) + SIM2 (32M) = SIM1 (32M) + SIM2 (16M) + SIM3 (16M) = SIM1 (16M) + SIM2 (16M) + SIM3 (16M) + SIM4 (16M). See Table 2-1 below for allowable SIMM type configurations.

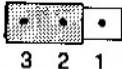
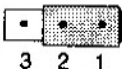
SIM1	SIM2	SIM3	SIM4
(s) type	(s) or (d) type or none	none	none
(s) type	(s) type	(s) type or none	none
(s) type	(s) type	(s) type	(s) type or none
(d) type	(s) or (d) type or none	none	none
(d) type	(s) type	(s) type or none	none

Table 2-1. Memory Configurations

Display Adaptor Selector: JP1

If you are using a monochrome or color (CGA) display adaptor you must set the jumper JP1. If you are using an EGA or VGA adaptor, the JP1 setting is irrelevant. See figure 1-1 for jumper location.

Display Adaptor Jumper: JP1

Display type	JP1
Color Graphics Adaptor	 3 2 1
Monochrome Adaptor (default)	 3 2 1

Keyboard Connector

The system board provides a DIN connector for attaching a keyboard. See figure 1-1 for connector locations.

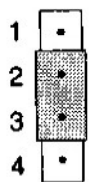
J2: Keyboard Connector - DIN

J2 is a standard five-pin female DIN connector. You can plug a keyboard cable directly into this connector.

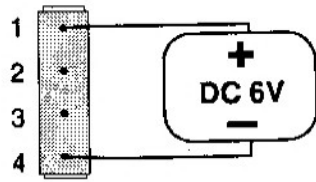
External Battery Connector

A battery must be used to retain the system board configuration in CMOS RAM. You can use either the on-board battery or an external battery. If you use the on-board battery you must short pins 2-3 of JB. For an external battery, the battery's cable connector attaches to pins 1 and 4 of JB. See Figure 1-1 for the connector's location.

JB: External Battery Connector



**Jumper Setting
for using
on-board Battery**



**External Battery
Connection**

Figure 2-1. Setting the External Battery Connector - JB

Case Connector Block

The Turbo LED, Turbo switch, Hardware Reset, Keylock, Power LED, Power Saving LED, Sleep switch, and Speaker are all connected to the JFP Connector Block as shown below. See Figure 1-1 for the connector block's location.

JFP: Case Connector Block

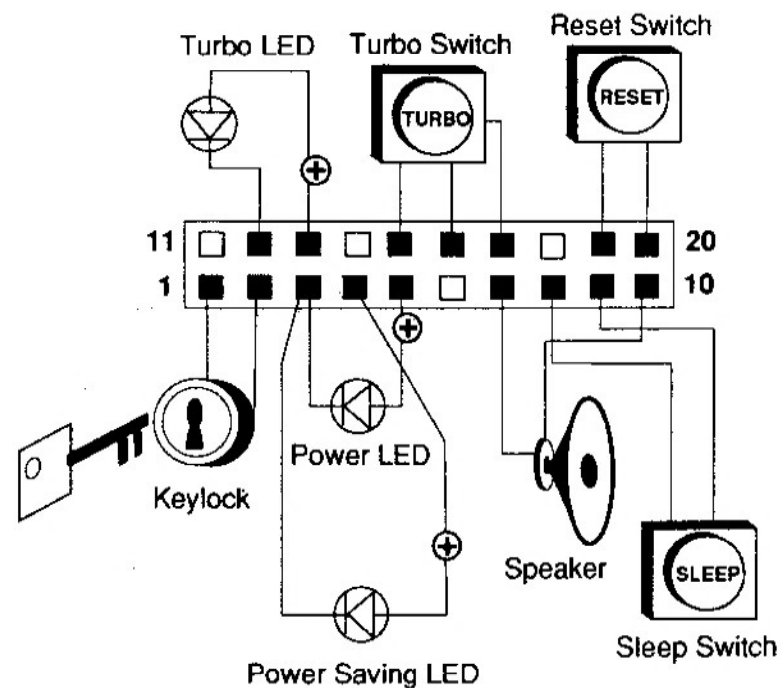


Figure 2-2. Case Connector Block - JFP

Power Supply Connector: J1

The power supply connector is a twelve-pin male connector. Dual connectors from the power supply can fit in only one direction. Make sure to attach the connectors with the two black wires at the center, as show in the diagram below. See Figure 1-1 for the connector's location.

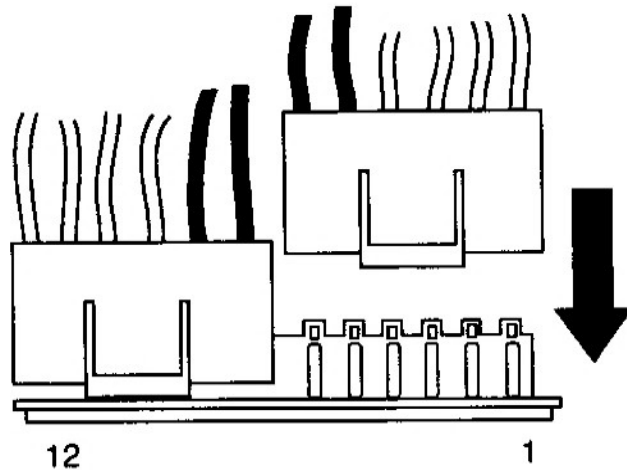


Figure 2-3. Attaching Power Supply Connectors

Connector Pin Description

Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

Monitor Power Control Connector: JG1

Connect the monitor's power control connector from the power supply to connector JG1. If the system does not detect any activity, the system goes into sleep mode and powers-off the monitor.

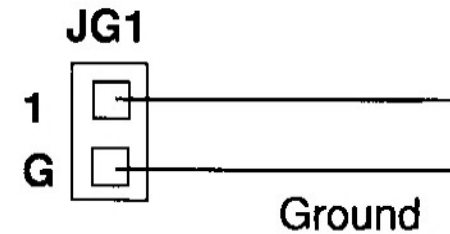


Figure 2-4. Monitor Power Control Connector

Power Saving LED Connector: JG2

Attach an LED to this connector. When the system is not in power saving mode, this LED is off. When the system goes into power saving mode, this LED flashes.

Note: In low-turbo mode, this LED remains on.

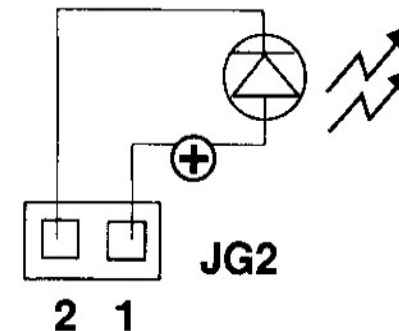


Figure 2-5. Power Saving LED Connector

Power Saving Switch Connector: JG3

Attach a power saving switch to this connector. When the switch is pressed, the system goes immediately into sleep mode.

Note: Do not press this button during a copy operation, or you could lose data.

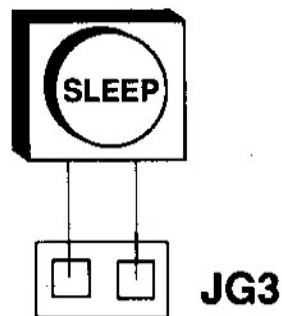


Figure 2-6. Power Saving Switch Connector

CHAPTER 3

BIOS Setup

The system contains system configuration and chipset internal register information in the CMOS RAM. This information is retained by a battery when the power is turned off.

You can modify this system information with the system's BIOS setup program. The system board comes with the AMI BIOS from American Megatrends Inc.

Power Management

All BIOS programs come with power management, or Green PC, features.

Requirements

Important — If you want to use Green PC features:

1. You must have a Green monitor or Green power equipment.
2. If you want to run a multi-tasking operating system such as OS/2, UNIX, or Windows NT, you must use a CPU that provides system management mode.

Power Management Software Setup

Some CPUs or operating systems (OS) may or may not require an Advanced Power Management (APM) program.

MS-4137 Supplement

How to Recognize the CPU Types: (See p. 2-4)

486SX

S_L 486SX



Contains the mark "5V1X"

486DX/DX2

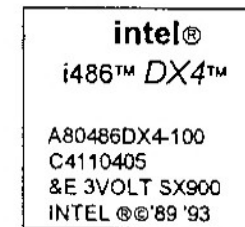


S_L 486DX/DX2



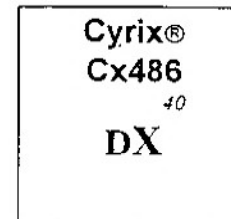
Contains the mark "5V1X"

S_L 486DX4

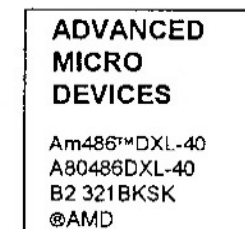


3.3-volt CPU

Cyrix M7



AMD-DXL



Contains the mark "DXL"