OPTi 486
VESA Local Bus
MOTHER BOARD

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614DX410

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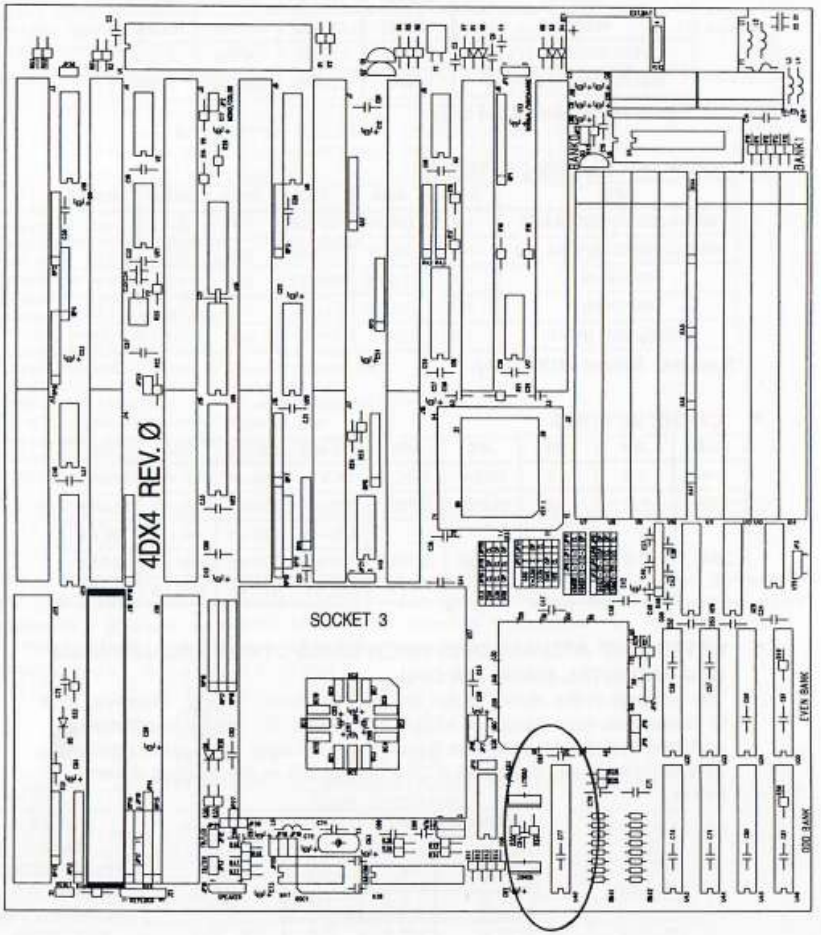
System Boad Layout (Model 4DX4)

The diagram shown below is for 4DX4 model only. For the board layout of 4DVX, please refer to page 9 of this manual.

CAUTION!!!

Please check the circled parts in the diagram below with your motherboard. If the layout **do not** match each other, **DO NOT** install the Intel DX4 CPU on the mother board. Otherwise, damage to the CPU may result.



QUICK INSTALLATION GUIDE (HARDWARE)

- **CPU TYPE SETTINGS**

CPU	JP6	JP7	JP11
486SX	2-3	OPEN	OPEN
486DX/DX2/*DX4	1-2	1-2	CLOSE
PENTIUM OVERDRIVE (P24T)	1-2	2-3	CLOSE

***Remark: Model 4DX4 only.**

- **CLOCK SETTINGS**

CPU	FREQ.	JP18	JP19	JP20
486SX-25/DX2-50/*DX4-75	25MHz	CLOSE	OPEN	CLOSE
486DX-33/DX2-66/*DX4-100	33MHz	CLOSE	CLOSE	OPEN
486DX-40	40MHz	OPEN	OPEN	CLOSE
486DX-50	50MHz	OPEN	CLOSE	OPEN
OVERDRIVE (P24T)-25	25MHz	CLOSE	OPEN	CLOSE
OVERDRIVE (P24T)-33	33MHz	CLOSE	CLOSE	OPEN

***Remark: Model 4DX4 only.**

- **VESA LOCAL BUS SETTINGS**

CPU	JP10	JP14	JP17	JP21	JP22	JP23
486SX-25/DX2-50/*DX4-75	1-2	OPEN	OPEN	2-3	1-2	1-2
486DX-33/DX2-66/*DX4-100	1-2	OPEN	OPEN	2-3	1-2	1-2
486DX-40	1-2	CLOSE	CLOSE	2-3	1-2	1-2
486DX-50	1-2	CLOSE	CLOSE	1-2	1-2	1-2
OVERDRIVE (P24T)	1-2	OPEN	OPEN	2-3	1-2	1-2

***Remark: Model 4DX4 only.**

- **CACHE SETTING**

SIZE	JP3	JP5	JP8	JP9	U32-U35	U43-U46	U40	U39
64K	2-3	2-3	OPEN	OPEN	8K x 8	8K x 8	8K x 8	BLANK
128K	1-2	1-2	CLOSE	OPEN	32K x 8	BLANK	8K x 8	BLANK
256K	2-3	2-3	CLOSE	CLOSE	32K x 8	32K x 8	8K x 8	8K x 8
					32K x 8	32K x 8	16K x 8	BLANK
					32K x 8	32K x 8	32K x 8	BLANK

- **SETTING OF JP22 AND JP23 WHEN USING CYRIX / AMD 40MHz 486 CPU AND INTEL 50MHz 486 CPU**

  The settings in the above tables are recommended setting. However, due to non-standardize design in VESA peripherals, the motherboard may not perfectly match with particular types of add-on card. You are suggested to try setting jumpers JP22 and JP23 to 1-2 or 2-3 as the options shown below.

OPTIONS	JP22	JP23
1	1-2	1-2
2	1-2	2-3
3	2-3	1-2
4	2-3	2-3

QUICK INSTALLATION GUIDE (SOFTWARE)

AMI BIOS default settings

AMIBIOS SETUP PROGRAM - ADVANCED CMOS SETUP
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Typematic Rate Programming	:Enabled
Typematic Rate Delay (msec)	:500
Typematic Rate (Chars/Sec)	:30
Above 1 MB Memory Test	:Disabled
Memory Test Tick Sound	:Enabled
Memory Parity Error Check	:Disabled
Hit <DEL> Message Display	:Enabled
Hard Disk Type 47 RAM Area	:0:300
Wait For <F1> If Any Error	:Enabled
System Boot Up Num Lock	:On
Floppy Drive Seek At Boot	:Enabled
System Boot Up Sequence	:A:, C:
External Cache Memory	:Enabled
Internal Cache Memory	:Enabled
Fast Gate A20 Option	:Disabled
Turbo Switch Function	:Enabled
Password Checking Option	:Setup

Video ROM Shadow C000,16K	:Enabled
Video ROM Shadow C400,16K	:Enabled
Adaptor ROM Shadow C800,16K	:Disabled
Adaptor ROM Shadow CC00,16K	:Disabled
Adaptor ROM Shadow D000,16K	:Disabled
Adaptor ROM Shadow D400,16K	:Disabled
Adaptor ROM Shadow D800,16K	:Disabled
Adaptor ROM Shadow DC00,16K	:Disabled
Adaptor ROM Shadow E000,16K	:Disabled
Adaptor ROM Shadow E400,16K	:Disabled
Adaptor ROM Shadow E800,16K	:Disabled
Adaptor ROM Shadow EC00,16K	:Disabled
System ROM Shadow F000,64K	:Enabled
BootSector Virus Protection	:Disabled
IDE Block Mode Transfer	:Disabled
IDE Standby mode	:Disabled

AMIBIOS SETUP PROGRAM - ADVANCED CHIPSET SETUP
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AUTO Config Function	:Enabled
Hidden Refresh	:Disabled
Single ALE Enabled	:No
Keyboard Reset Control	:Enabled
AT BUS Clock Selection	:CLKI/4
Fast Decode Enable	:Disabled
Memory Read Wait State	:2 W/S
Memory Write Wait State	:3 W/S
Cache Read Cycle	:3-2-2-2
Cache Write Wait State	:1 W/S
Non-Cacheable Block-1 Size	:Disabled
Non-Cacheable Block-1 Base	:0 KB
Non-Cacheable Block-2 Size	:Disabled
Non-Cacheable Block-2 Base	:0KB
Cacheable RAM Address Range	:64 MB
Video BIOS Area Cacheable	:Yes
Internal Cache Write Policy	:Wr-Thru

Above tables are AMI BIOS's default settings. The BIOS can detect the the CPU frequency automatically. But if you want to config the BIOS yourself, please disable the "AUTO Config Function" in the ADVANCED CHIPSET SETUP and re-set the BIOS according to the following manufacturer default settings.

CPU	486S-25 486S2-50 486SX-25 486DX2-50 *OverDrive-25	486S-33 486S2-66 486DX-33 486DX2-66 *OverDrive-33	486DX-40	486DX-50
BIOS SETTINGS				
CACHE READ	2-2-2-2 WAIT	3-2-2-2 WAIT	3-2-2-2 WAIT	3-2-2-2 WAIT
CACHE WRITE	0 WS	1 WS	1 WS	1 WS
BUS CLOCK	CLKI/3	CLKI/4	CLKI/5	CLKI/6
FAST DECODE	DISABLE			
DRAM R/W	0/0 WS	2/3 WS	2/3 WS	2/3 WS

*REMARK: OverDrive refers to Pentium OverDrive (P24T) CPU.

INTRODUCTION

Overview

The 4DVP 495SLC 486-VL system board is based on the OPTi 82C495SLC chip. Besides the consideration of high perfermance and reliablitiy, the system board is designed to fully compatible with IBM PC AT machine on both hardware and software level.

Three VESA local bus slots were built in the board supports maximum one master and two slave VESA local bus devices provide 32 bits I/O operation, which enhances the performance of the system even on the I/O perpherials.

The maximum on board memory size is 32MB which satisfies the requirements of most latest operation system, like OS/2, Unix, Novell Netware and Mircosoft Windows.

Features

- Processor support: AMD 486DX; INTEL P24T, 80486DX2, 80486DX, 80486SX.
- Supports 2-1-1-1 or 3-2-2-2 cache cycles
- Up to 32MB of local high-speed, page-mode, DRAM memory space.
- Supports 256KB/1MB/4MB SIMM RAM modules.
- Burst-line-fill during Cache-Read-Miss.
- Hidden refresh support to enhance system performance.
- CAS# before RAS# refresh reduces power consumption.
- Programmable AT bus clock.
- Programmable DRAM speed.
- 8042 emulation for fast CPU-reset and gate A20 generation.
- Comprehensive VESA Local Bus controller supports 1 master and 2 slave VESA Local Bus devices.
- Built-in three VESA Local Bus slots, three 16 bit slots and two 8 bit slots.

HARDWARE INSTALLATION

Unpacking the System Board

The system board consists of electronic components that can be damaged easily by careless handling or static discharge. So be careful when preparing for installation. It is advisable for user to touch a ground metal object before removing the borad from its protective bag

Handling The System Board

To remove the system board form its protective bag, please hold the board by its edge only. Avoid touching the components or connectors. Place the board on a dry clean and static free surface.

Memory Installation

There are eight 9-bit SIMM sockets provided on the system board. Depending on the type of SIMM (Single In-line Memory Module) used, the memory size of the system board can be confgiurated up to 32MB. Memory size will be detcted by the BIOS automatically. Please refer to the following table for proper RAM configuration.

Total Memory	Bank 0 U7-U10	Bank 1 U11-U14
1MB	256KB x 9	Not Install
2MB	256KB x 9	Not Install
4MB	1MB x 9	Not Install
5MB	256KB x 9	1MB x 9
8MB	1MB x 9	1MB x 9
16MB	4MB x 9	Not Install
20MB	1MB x 9	4MB x 9
20MB	4MB x 9	1MB x 9
32MB	4MB x 9	4MB x 9

The recommended memory speed is 80ns. However additional wait states can be inserted if slower SIMM are used. The number of wait states inserted can be programmed in system setup procedure.

Cache Ram Installation

20ns SRAM is recommanded to use as external cache in the system board, and various size of external cache size can be installed:

Cache Size	Even Bank U32 - U35	Odd Bank U43 - U46	U40	U39
64KB	4pcs 8K x 8	4pcs 8K x 8	8K x 8	Not Install
128KB	4pcs 32K x 8	Not Install	8K x 8	Not Install
256KB	4pcs 32K x 8	4pcs 32K x 8	8K x 8	8K x 8

The jumpers of J3, J5, J8 and J9 should be set correctly according to the cache ram size installed. Please refer to the table on the section of Jumper Setting.

Mounting The System Board

The system board should be accommodated in a proper case. Follow the instructions to mount the system board:

1. Open the system unit cover.
2. Carefully place the system board into the system unit chassis. Alagn the appropriate mounting holes. Mount the system board using the screws provided with the system unit chassis.

Power Supply Requirements

The system requires a reliable power supply which should provides a minimum of 200W and +5V voltage range of 4.95 volt minimum to 5.25 volts maximum. Power good signal should be provided from the power supply and it should met the IBM PC AT standard.

If your area has noisy power transmission, use a line noise filter between the power source and your computer.

JUMPER SETTINGS

CPU Type Selection

CPU	JP6	JP7	JP11
486DX	1-2	1-2	Close
486SX	2-3	Open	Open

Cache Size Selection

Cache Size	JP3	JP5	JP8	JP9
64K	2-3	2-3	Open	Open
128K	1-2	1-2	Close	Open
256K	2-3	2-3	Close	Close

Clock Generator Selection

JP25 Open = Clock Chip Present
Close = Clock Chip not Present

Clock Generator Output Selection

Clock Output	JP18	JP19	JP20
20MHz	Open	Close	Close
25MHz	Close	Open	Close
33.33MHz	Close	Close	Open
40MHz	Open	Open	Close
50MHz	Open	Close	Open

Display Type Selection

JP2	Open	=	Mono
	Close	=	Color

Local Bus Device Control

JP21	1-2	=	50MHz
	2-3	=	33MHz
JP22	1-2	=	Delay CPU Clock
	2-3	=	Delay Chipset Clock
JP23	1-2	=	Normal Local Bus Clock
	2-3	=	Delay Local Bus Clock
JP10	2-3	=	LRDY*Direct to CPU
	1-2	=	LRDY*to Chipset for Sync.
JP14	Open	=	Local Bus Speed <= 33MHz
	Close	=	Local Bus Speed > 33MHz
JP17	Open	=	Local Bus 0 WS write
	Close	=	Local Bus 1 WS write

Power Connector

Pin Number	J11	J12
1	Power Good	Ground
2	+5V	Ground
3	+12V	-5V
4	-12V	+5V
5	Ground	+5V
6	Ground	+5V

CMOS Memory State Selection

JP1	1-2	=	Discharge CMOS
	2-3	=	Normal

Note: If you are power up the system for the first time or you have turn off the system for more than one month, you should leave your system on for 10 to 15 hours to completely recharge the battery.

External Battery Connector

Pin Number	J1
1	Battery+
2	N.C.
3	Ground
4	Ground

Reset Switch Connector

S1	Close	=	Reset
	Open	=	Normal

External Turbo Switch

JP13	Open	=	Normal
	Close	=	Turbo

Turbo LED Connector

Pin Number	JP12
1	LED-
2	LED+

Keyboard Port

Pin Number	J2
1	Keyboard Clock
2	Keyboard Data
3	N.C.
4	Ground
5	+5V

Keylock connector

Pin Number	J21
1	LED+
2	N.C.
3	LED-
4	Keylock
5	Ground

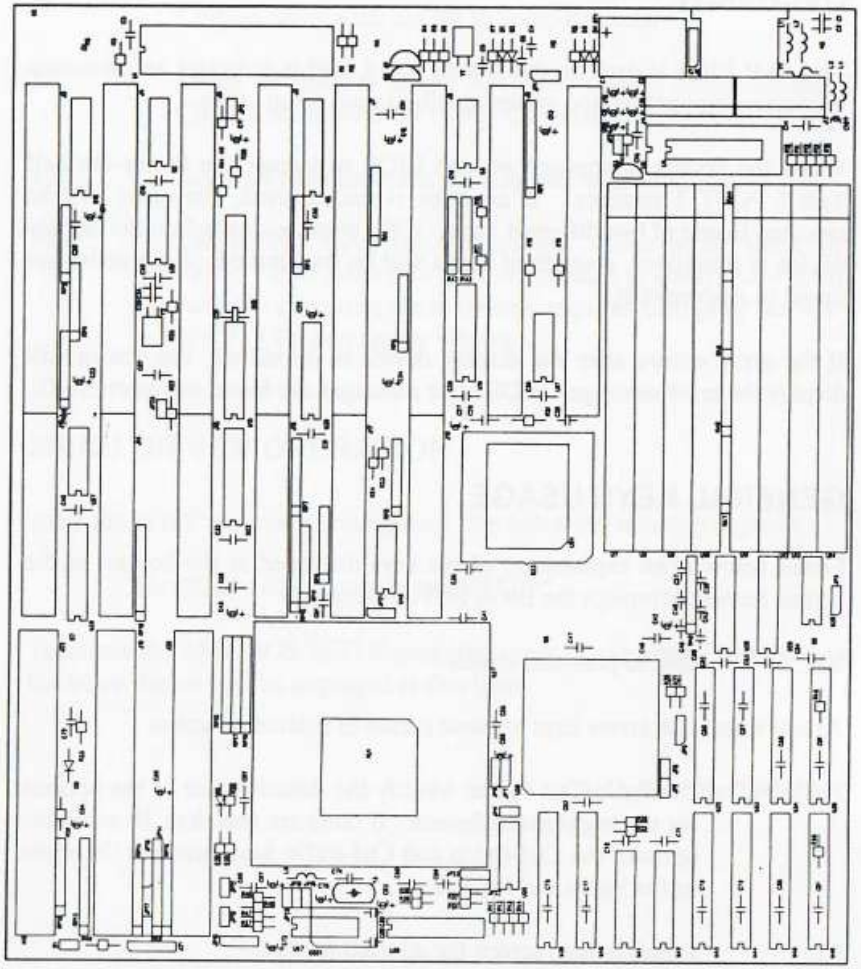
Speaker Port

Pin Number	JP16
1	Speaker Input
2	N.C.
3	Ground
4	+5V

Slots Description

Master VESA Local Bus Slot	J4
Slave VESA Local Bus Slot	J3, J5
16-bit Slot	J6, J7, J8
8-bit Slot	J9, J10

System Board Layout



RMA FORM

(When the M/B can't work well, please fill in this form to describe the related situations. If the space is not enough, you can attach another paper.)

HARDWARE:

M/B: Model Z4DVX

CPU: Brand _____, Model _____, Speed _____MHz

SIMM: Brand _____, Speed _____ns, Qt'y _____pcs
Total _____MB

CACHE: Brand _____, Speed _____ns, Total _____K

TAG RAM: Brand _____, Speed _____ns

BIOS DATE CODE: _____

OSCILLATOR: _____MHz (If the M/B used osc.)

JUMPERS: (If you changed the jumpers, please advise)

VIDEO CARD: Chip _____, RAM _____, Manufacturer _____,
VGA Mode _____

OTHER ADD-ON CARDS:

SOFTWARE:

OPERATING SYSTEM _____, Version _____

SOFTWARE PROGRAM _____

CMOS SETTING: DRAM R/W Wait _____, CACHE R/W Wait _____

If you changed the CMOS setting, please describe the changes

PROBLEM DESCTIPTION: