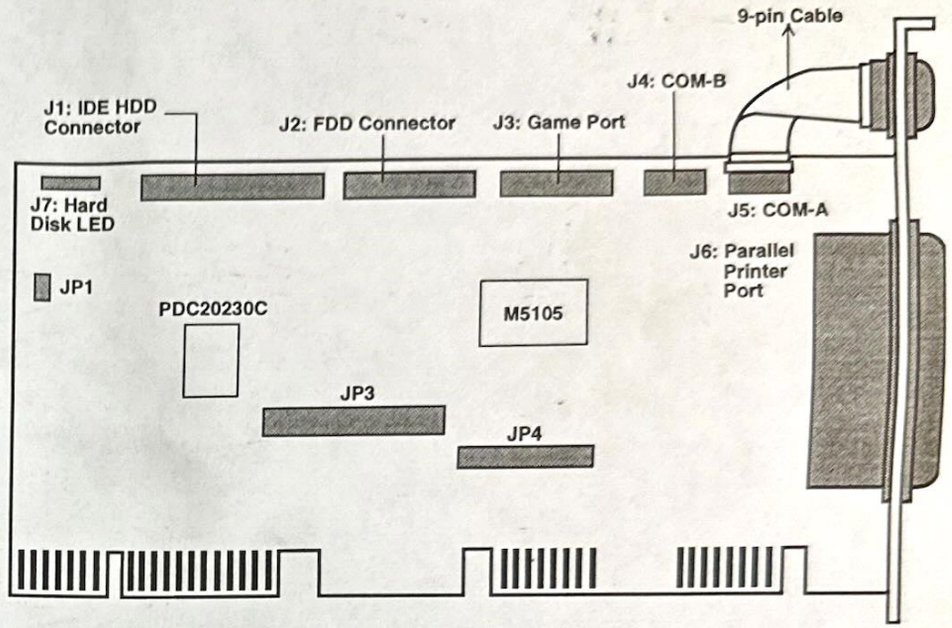
MIO-400VL

Rev. A
VESA VL-Bus I/O Board
User's Manual



The MIO-400VL Board

- 22241013 -

❖ Features and Specifications

- **Serial Ports**
  * Two RS-232C 9-pin or 25-pin serial ports
  * Ports may be assigned as COM1 - COM4 addressed at 3F8-3FF, 2F8-2FF, 3E8-3EF and 2E8-2EF
  * Supports IRQ2, 3, 4 and 5

- **Parallel Printer Port**
  * One parallel printer port
  * Ports may be assigned as LPT1, LPT2 and LPT3 addressed at 3BC-3BE, 378-37A and 278-27A
  * Supports IRQ5 and 7

- **Floppy Disk Controller**
  * One floppy disk controller
  * Supports two floppy disk drives
  * Supports 360KB, 720KB, 1.2MB and 1.44MB floppy disk drives

- **IDE Hard Disk Interface**
  * One IDE hard disk controller
  * VESA VL-Bus rev. 1.0 compatible
  * Supports two IDE hard disk drives

- **Game Port**
  * One game port

- **All components are equipped with enable/disable function**

- **Device Drivers for VL-Bus IDE Disk Controller**
  * VLIDE.SYS: driver for DOS
  * VLIDE.386: driver for Microsoft Windows 3.1
  * VLIDE310.DSK: driver for NetWare 3.10
  * VLIDE311.DSK: driver for NetWare 3.11
  * VLIDE401.DSK: driver for NetWare 4.01
  * VLIDE.ADD: driver for OS/2 2.0 and 2.1
  * VLIDENT.SYS: driver for Windows NT

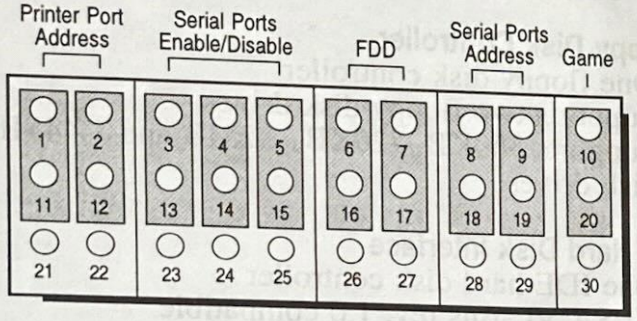
❖ Jumper Settings

Jumper JP1
IDE Hard Disk Enable/Disable Select

On: Enabled
(Default)

Off: Disabled

Jumper JP3
Serial and Parallel Ports, FDD Controller and Game Port



Printer Port Address
Pins 1-11, 2-12 On: 378*
Pins 11-21, 2-12 On: 3BC
Pins 1-11, 12-22 On: 278
Pins 11-21, 12-22 On: Disabled

Serial Ports Enable/Disable
Pins 3-13, 4-14, 5-15 On: COM A Enabled
COM B Enabled*
Pins 3-13, 14-24, 5-15 On: COM A Enabled
COM B Disabled
Pins 13-23, 4-14, 5-15 On: COM A Disabled
COM B Enabled
Pins 13-23, 14-24, 15-25 On: COM A Disabled
COM B Disabled

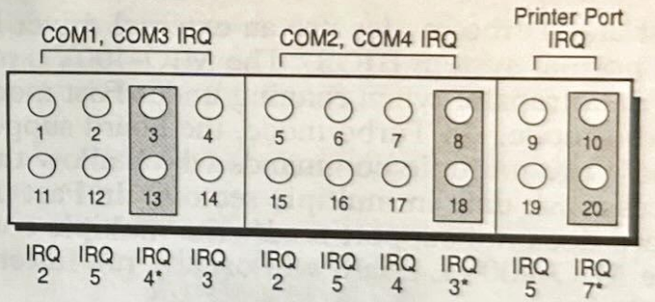
FDD
Pins 6-16, 7-17 On: Enabled*
Pins 16-26, 7-17 On: Disabled

Serial Ports Address
Pins 8-18, 9-19 On: COM A = COM1 = 3F8*
COM B = COM2 = 2F8
Pins 8-18, 19-29 On: COM A = COM1 = 3F8
COM B = COM4 = 2E8
Pins 18-28, 9-19 On: COM A = COM3 = 3E8
COM B = COM4 = 2E8
Pins 18-28, 19-29 On: COM A = COM3 = 3E8
COM B = COM2 = 2F8

Game
Pins 10-20 On: Enabled*
Pins 20-30 On: Disabled

* *Default setting*

Jumper JP4
IRQ Line Selection



* *Default setting*

❖ Software Installation

The MIO-400VL board comes with a diskette that includes drivers for the VL-Bus IDE hard disk controller. The "Promise PDC20230 IDE Device Driver" diskette contains the following files:

VLIDE.SYS	Driver for DOS
VLIDE.386	Driver for Microsoft Windows 3.1
VLIDE310.DSK	Driver for NetWare 3.10
VLIDE311.DSK	Driver for NetWare 3.11
VLIDE401.DSK	Driver for NetWare 4.01
VLIDE.ADD	Driver for OS/2 2.0 and 2.1
VLIDENT.SYS	Driver for Windows NT
VLIDE.EXE	Installation Utility

The MIO-400VL allows your computer to use Normal, Fast, or Turbo disk access modes. Normal mode uses the original system BIOS to access the hard disks to avoid any potential compatibility problem. In normal mode, with the MIO-400VL, your system will run at a faster VL-Bus speed (33MHz or higher).

Fast and Turbo modes use an external driver instead of the normal system BIOS. The MIO-400VL provides 32-bit data transfer when running under Fast mode and Turbo mode. In Turbo mode, the board supports read/write multiple commands which allow the host to access disk data in multiple sectors. In Fast mode, the board does not support read/write multiple commands. The MIO-400VL board will usually run faster in Turbo mode.

Not all IDE drives support read/write multiple commands. When you boot up your system, the driver will send an Identify Drive command to check if the IDE drive installed in your system supports read/write multiple commands. If it doesn't, the MIO-400VL will automatically run in Fast mode.

VLIDE.EXE Installation Utility

The device drivers for DOS, Windows 3.1, NetWare 3.10, NetWare 3.11 and NetWare 4.01 all have internal tables that contain the optimal speed setting parameter of the most popular IDE drives. When the VLIDE.EXE installation utility is executed, it will identify the hard drives connected to the IDE controller. If the drive(s) are among those in the internal table, the utility will select the parameter from the device drivers. Otherwise, the utility will perform a real speed test to determine the optimal parameters, and reconfigure the device drivers for DOS, Windows 3.1 and NetWare automatically.

Note:
We highly recommend that you install the device drivers for DOS and Windows 3.1 using the installation utility. To install, execute the VLIDE.EXE utility. The drivers will automatically be installed.

Once the drivers are installed, the following message will appear:

HDD 0 setting : Fast Mode, Speed 5 by DEVICE DRIVER AUTOMATICALLY
HDD 1 setting : Turbo Mode, Speed 5 by DEVICE DRIVER AUTOMATICALLY

The underlined parameters will vary according to the hard drive(s) connected to the MIO-400VL board. If the IDE drive(s) did not respond correctly to the Identify Drive command of the device driver, you have to

install the device drivers manually and add the appropriate parameters to ensure reliable operation of the IDE drive(s).

Important:

1) *The VLIDE.EXE installation utility can only be executed from a floppy drive. The floppy diskette must have at least 300KB of free space.*

2) *Since this utility may reconfigure the device drivers in the diskette, the diskette cannot be write-protected during its operation. We highly recommend that you make a backup copy of the distribution diskette and execute the utility from the backup diskette.*

3) *During installation, the device drivers are reconfigured according to the hard drive(s) detected. This ensures optimal performance and reliable disk operation. If the device drivers in your system are copied from other PCs instead of being installed as described above, your IDE drive(s) may not work properly.*

Installing the Device Drivers Manually

If you are installing the device drivers manually, copy the driver from the backup diskette into your root directory. After copying the driver, add a line to your CONFIG.SYS file similar to the one shown below. Make sure that you add the appropriate parameters to the CONFIG.SYS file to ensure reliable operation of the IDE drive(s).

DEVICE = [DRIVE:] [PATH] [DRIVER] [/F or /T] [/W] [/D0:N] [/D1:M]

[DRIVE:]	the drive that contains the driver
[DRIVER]	the driver to be installed

[/F]	defines the MIO-400VL to run under Fast mode
[/T]	defines the MIO-400VL to run under Turbo mode
[/W]	defines the MIO-400VL to run under 16-bit access mode
[/D0:N]	drive 0 speed setting; speeds from 0 to 7
[/D1:M]	drive 1 speed setting; speeds from 0 to 7

For example, if the VLIDE.SYS driver for DOS is in the root directory of drive C and you want your MIO-400VL board to run in Turbo mode and drive 0: speed 1, add the following line to the CONFIG.SYS file:

DEVICE = C:\VLIDE.SYS /T /D0:1

The following line will cause your MIO-400VL board to run in Fast mode:

DEVICE = C:\VLIDE.SYS /F

Note:

1) *If no parameter was specified, the MIO-400VL will run in its default operating mode, the Turbo mode.*

2) *Some IDE drives that support the read/write multiple commands may not function properly. If your MIO-400VL cannot properly access the attached hard disk drives in the default Turbo mode, you must specify the parameter "F" or "FAST", to run the MIO-400VL in the Fast mode.*

3) *"0" is the slowest speed and "7" is the fastest speed.*

4) *If your system fails to boot from your hard drive or an HDD error message appears, turn off your computer and set the IDE controller to a slower speed.*

5) *If you wish to change the current speed of your IDE controller to a faster speed, you must backup the data in your hard drive before doing so.*

6) *When using two IDE drives (master and slave), set your IDE controller to a slower speed.*

Driver for Microsoft Windows 3.1

The driver, VLIDE.386, contained in the "Promise PDC20230 IDE Device Driver" diskette is the driver for Microsoft Windows 3.1.

Although Microsoft's Windows 3.1 supports 32-bit disk access, the disk data transfer between the host and the IDE adapter is limited to the 16-bit ISA bus. If you want to speed up your hard drives under Windows using the 32-bit VL-Bus, you will need the VLIDE.386 driver. The driver will also allow your host to access the disk data through the read/write multiple commands.

To install:

1. Copy the VLIDE.386 driver to your hard drive. We recommend that you copy the driver to your Windows SYSTEM directory.

2. Check the [386Enh] section of your SYSTEM.INI file for the following.

```
[386Enh]
32BitDiskAccess=On
device=*int13
```


If they are missing, add them into the [386Enh] section. If they already exist but 32BitDiskAccess is set to "Off", change it to "On".

3. Delete the command line "device=*wdctrl" device setting from the [386Enh] section of your SYSTEM.INI file, if it exists.

4. Install the virtual device VLIDE.386.

   Add the following command lines in the [386Enh] section of the SYSTEM.INI file:

```
DEVICE = [DRIVE:] [\PATH\] VLIDE.386
DISKSACCESSMODE = [FAST or TURBO] [/W]
[/D0:N] [/D1:M]
```

Drivers for NetWare 3.10, 3.11 and 4.01

The "Promise PDC20230 IDE Device Driver" diskette contains the VLIDE310.DSK driver for NetWare 3.10, the VLIDE311.DSK driver for NetWare 3.11 and the VLIDE401.DSK driver for NetWare 4.01. Do not load ISADISK.DSK when installing any of these NetWare drivers.

Boot the NetWare server until the prompt ":" appears on the screen. Type the following command next to the ":" prompt:

```
:load VLIDE310 [/F or /T] [/W] [/D0:N] [/D1:M] port=1f0 int=e
```

Driver for OS/2 2.0, 2.1

The "Promise PDC20230 IDE Device Driver" diskette contains the VLIDE.ADD driver for OS/2 2.0 and 2.1. The VLIDE.ADD driver will allow your MIO-400VL VL-Bus IDE controller to take full advantage of its high performance 32-bit VL-Bus when running OS/2.

To install:

1. Copy the VLIDE.ADD file to the OS/2 directory of your system. Use a text editor to edit the CONFIG.SYS file by adding the following line:

   BASEDEV = VLIDE.ADD [/A:0 [/U:0 /SPEED:n] [/U:1 /SPEED:m]]

   Note:
   Do not include any drive or path to the above line.

[A]	the adapter number
[U]	the drive number
[SPEED]	defines the drive's speed setting
[n]	defines the speed of drive 0 from 0 to 15
[m]	defines the speed of drive 1 from 0 to 15

   For example, if you want your MIO-400VL to run with drive 0: speed 3 and drive 1: speed 5, add the following line to the CONFIG.SYS file:

   BASEDEV = VLIDE.ADD /A:0 /U:0 /SPEED:3 /U:1 / SPEED:5

2. Delete the "BASEDEV = IBM1S506.ADD" line from the CONFIG.SYS file.

3. Reboot your system.

Driver for Windows NT

The "Promise PDC20230 IDE Device Driver" diskette contains the driver for Windows NT. You will need this driver only if you want to use the Turbo mode under Windows NT.

To install:

1. Copy the following files to a formatted diskette:

   VLIDENT.SYS
   CITURBO.EXE
   NTINS.BAT
   NTUNINS.BAT
   PTIREG.EXE
   PTIUREG.EXE

2. Run the Windows NT program.

3. Insert the formatted diskette into drive A.

4. Type the following at the "Command Prompt" window:

   A:\NTINS

   The Windows NT driver will automatically be installed.

5. If you wish to change the operating mode, type the "CITURBO" command. The following message will appear on the screen:

   Will the controller be in TURBO or FAST mode (T/F)?

   Select "T" or "F". The default is Turbo mode. After making the changes, reboot your system.