JDC2000VL
Installation Guide

The JDC2000VL is a VL-Bus™* IDE and ISA floppy drive, serial port, parallel port and game port controller that uses the VL-Bus for rapid data transfer to and from an IDE hard disk while providing full ISA bus compatibility for other operations.

Main Components

The main components of the JDC2000VL controller are the following:

External BIOS
The external BIOS is an 8 KB on-board disk BIOS that helps to enhance IDE disk performance. The external BIOS supersedes the part of the system BIOS that normally controls hard disk operations.

Super I/O
The super I/O integrates the functions of a floppy disk controller, two serial ports, one parallel port, and one game port. The floppy disk drive, serial ports, parallel port and game port use conventional ISA protocol to communicate with the system board.

IDE VL-Bus Interface
This interface is used to link one or two standard IDE drives to the VL-Bus.
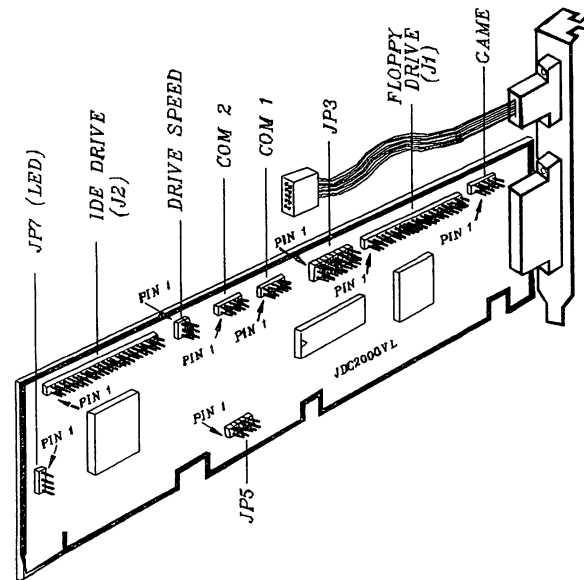
The JDC2000VL Controller

Installation Procedure

Consult the diagram above to determine the locations of the jumpers and connectors on the controller.

1. *Set IDE disk drive jumpers.* If you are using only one IDE disk drive, the jumper on the drive should be left in the factory default setting. If you are using two drives, set one as the master and the other as the slave drive. For further information, consult the installation guide furnished with the disk drive(s).

2. *Set external BIOS address jumper (JP5).* The default address of the external BIOS ROM on the JDC2000VL is D8000H, and the size of the BIOS is 8 KB. In most cases, the default address is satisfactory and you may skip this step. If, however, this address conflicts with that of another card (such as a network card) occupying reserved memory space in your system, you will need to change the address of

the BIOS by adjusting the settings of the five pairs of pins in the JP5 jumper block. Table 1 lists various alternative addresses for the external BIOS ROM and the corresponding jumper settings.

BIOS Address	Jumper Pins 2 4 6 8 A / 1 3 5 7 9
DE000	0 0 0 0 1
DC000	0 0 0 1 1
DA000	0 0 1 0 1
D8000	0 0 1 1 1
D6000	0 1 0 0 1
D4000	0 1 0 1 1
D2000	0 1 1 0 1
D0000	0 1 1 1 1
CE000	1 0 0 0 1
CC000	1 0 0 1 1
CA000	1 0 1 0 1
C8000	1 0 1 1 1
xxxx0	disabled
0 = open, jumper cap off 1 = short, jumper cap on x = don't care	

Table 1: JP5 External BIOS Address Settings

3. *Set drive speed jumper (JP6).* This jumper is used to set the data transfer rate for the IDE VL-Bus interface. There are three speeds to select from: speed 2, the fastest speed; speed 1, average speed; and speed 0, the slowest speed. Initially, the speed should be set to 0; use a higher speed only when you have confirmed that your IDE drive will operate properly at that speed. Table 2 lists the jumper settings used to select the drive speed.

Drive Speed	Jumper Pins Shorted
Speed 0	1-2 4-5
Speed 1	2-3 4-5
Speed 2	2-3 5-6

Table 2: JP6 Drive Speed Settings

4. *Set I/O address jumper (JP3)*. JP3 is a three-row, eight-column jumper block used to select the I/O addresses of the two serial ports and one parallel port, to select the hardware interrupt for the printer port, and to enable or disable the floppy drive controller. Serial port 1 can be configured as COM1, COM3, COM4, or disabled. Serial port 2 can be configured as COM2, COM3, COM4, or disabled. The parallel port can be configured as LPT1, LPT2, LPT3, or disabled. Table 3 lists the jumper settings for each of these configurations. In the table, "JP3-1" indicates the first column of jumper block JP3, "JP3-2" indicates the second column, and so on. "L" indicates that the top two pins in a particular column should be shorted; "H" indicates that the bottom two pins should be shorted.

Serial Port			Printer Port	
Serial Port 1 JP3-1/3-2	I/O Address	Serial Port 2 JP3-3/3-4	JP3-5/3-6	I/O Address
L/H	COM1 (3F8H)	–	L/L	LPT1 (3BCH)
–:	COM2 (2F8H)	L/H	L/H	LPT2 (378H)
H/L	COM3 (3E8H)	L/L	H/L	LPT3 (278H)
L/L	COM4 (2E8H)	H/L	H/H	Disabled
H/H	Disabled	H/H	–	–

FDC			IRQ Selection		
JP3-7	L	Enabled	JP3-8	L	IRQ5
	H	Disable		H	IRQ7

L = short pins 1-2 H = short pins 2-3

Table 3: JP3 Settings

Once JP3 is properly configured, connect the COM port cable to JP1 (serial port 1) or JP4 (serial port 2). Be sure to align the colored band with pin 1.

5. *Install the JDC2000VL and the disk drives*. First, plug the JDC2000VL into a VL-Bus slot on your system board. Next, connect the IDE cable to J2, the IDE drive connector, and use the floppy drive cable to connect J1, the floppy drive connector, to the floppy disk drives. Be sure the colored bands on the cables are aligned with pin 1 on the connectors. Last, connect the cable from the front panel disk activity LED to JP7 (the positive pin may be connected to either pin 1 or pin 4).

6. *Run the system set-up utility*. Enter the correct information on the drive geometry of your IDE drive(s) and the type of floppy disk drive(s) you have installed.

7. *Partition and format the IDE disk drive(s)*. DOS users will need to use the DOS FDISK and FORMAT utilities.

8. *Select a disk operating mode*. Each time your system is booted, the external BIOS on the JDC2000VL will prompt you to select a disk operating mode. Three modes are available: Normal (N), Fast, (F), and Turbo (T).

In Normal mode, the original system BIOS is used to access the IDE drive(s) to avoid potential compatibility problems. Although the system BIOS operates in the same manner as a conventional ISA system, the system still runs at the VL-Bus speed (33 MHz or higher), which is much faster than the standard 8 MHz ISA bus speed.

In both Fast mode and Turbo mode, the system will not only use the external BIOS, but the BIOS will be copied into and executed from the system DRAM (the BIOS is stored in the highest area in the standard memory). The Turbo mode will also use 32-bit VL-Bus I/O and read multiple and write multiple commands supported by certain new IDE drives. However, the Fast mode only uses the 32-bit VL-Bus I/O command. If your disk drive does not support read multiple and write multiple commands, the Turbo mode will not work no matter what speed setting you are using.

Note that if you do not specify a disk operating mode when the external BIOS prompts you to, the BIOS will automatically select Turbo mode.

CORRECTION NOTICE

Because of a change in one of the components on the JDC2000VL, the jumpers used to configure Serial Port 1 and Serial Port 2 have been changed.

Originally, Table 3 on page 4 of the Installation Guide indicated that JP3-1 and JP3-2 were used to configure the address for Port 1 and JP3-3 and JP3-4 were used to configure the address for Port 2.

Serial Port		
Serial Port 1 JP3-1/3-2	I/O Address	Serial Port 2 JP3-3/3-4
L/H	COM1 (3F8H)	−
−	COM2 (2F8H)	L/H
H/L	COM3 (3E8H)	L/L
L/L	COM4 (2E8H)	H/L
H/H	Disabled	H/H

L = short pins 1-2   H = short pins 2-3

Original Version of Table 3

Table 3 should now be revised to indicate that JP3-3 and JP3-2 are used to configure the address for Port 1 and JP3-1 and JP3-4 are used to configure the address for Port 2.

Serial Port		
Serial Port 1 JP3-3/3-2	I/O Address	Serial Port 2 JP3-1/3-4
L/H	COM1 (3F8H)	−
−	COM2 (2F8H)	L/H
H/L	COM3 (3E8H)	L/L
L/L	COM4 (2E8H)	H/L
H/H	Disabled	H/H

L = short pins 1-2   H = short pins 2-3

Revised Version of Table 3