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USER'S GUIDE

WD1003V-MM1 Winchester Disk Controller
WD 1003 V-MM2 Winchester/Floppy Disk Controller

Important Information
Do Not Discard

WESTERN DIGITAL

Product Description

This document describes the hardware and software installation of the WDl003V-MMl and WDl003V-MM2, 16-bit disk controllers for the IBM* Personal Computer AT* or AT compatible computer. Both controllers' Winchester interface conform to ST506/ST412 specifications. The WD1003V-MM2 's floppy controller supports four floppy drive types (360 KB, 720 KB, 1.2 MB, and 1.44 MB. Do not confuse the number of drive types with the number of floppy drives that can be connected to the WDl003V-MM2. Only two internal floppy drives may be daisy chained to J1.) The WDl003V- MM2 supports "intelligent" 1.44 MB media drives. These intelligent drives obtain the drive type and data rate from the drive's media and do not depend upon the state of J1 pin 2 for this information.

Installation

This section briefly describes the installation of the controller board. Do NOT use the WD1003V-MM2 with an AT configured, AT compatible, or XT* floppy controller in the same system. Removal of the extra floppy controller is necessary for proper operation of the WD1003V-MM2. Disabling the floppy controller on the WD1003V-MM2 is **NOT** possible.

A minor incompatibility exists between the WDl003V-MM1 (or WD1003-WA2) and the WDl003-WAH (or WDl003-WA2). If the drive contains more than eight heads, e.g. a 16 head drive, the WD1003-WAH numbers heads 8 through 15 as 0 through 7 in media's ID fields. The WD1003V controllers number heads 8 through 15 as 8 through 15. To correct this problem, install a jumper on Wl pin 7-8 when using the WD1003V controller on a drive formatted with the WD1003-WAH (WD1003-WA2). This problem is not manifested in drives with less than eight heads.

CAUTION

Handle the controller board by the ends of the board. Some of the chips are static sensitive and damage may occur if the board is incorrectly handled.

1. Verify the controller jumper settings. Only verify the settings. Modification of the standard factory settings is rarely necessary. Modify jumpers only under the direction of a qualified individual; i.e. your dealer. Figure 1 illustrates the jumper locations for both controller boards. Refer to Table 1 for further information on jumper settings.

2. Verify termination on last drive. Verify proper setting of drive select switches. Consult the drive technical manual for proper drive termination and selection information.

*IBM and AT are registered trademarks and XT is a trademark of International Business Machines Corporation.

3. Remove the blank expansion slot bracket. Put the bracket away and save it for possible future use. The screw will be used to hold the new controller board in place. It is best to locate the controller in the closest available expansion slot relative to the drive.

4. Attach the drive control cable connector to J5.

5. Attach the control cable to drive(s).

6. Attach drive 0 data cable connector to J4.

7. Attach data cable to drive 0.

8. Attach drive 1 data cable connector to J3.

9. Attach data cable to drive 1.

10. For WDlOO3V-MM2 users, attach the floppy cable connector to J 1.

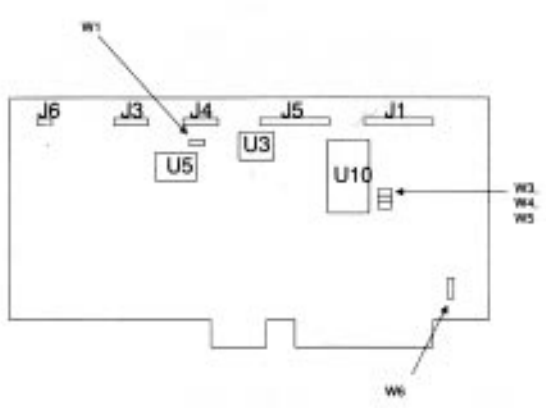
11. For WD1003V-MM2 users, attach cable to floppy drive(s).

12. Attach the Winchester activity cable connector to J6.

13. Check the cable connections carefully . Ensure that pin 1 on the board connectors mates with pin 1 on the cable connectors. Pin 1 on the cable connectors is usually on the color coded side.

14. Install the controller board into the expansion slot. Make sure that the board is seated properly by pressing down on both ends of the board. Secure the board with the bracket screw.

15. Remove or disable any other floppy controller in your system. The WD floppy controller can not be disabled.



All jumpers OFF for factory defaults.

Figure 1. Jumper Locations

TABLE 1. JUMPER SETTINGS

Jumper/ Pin number	Position	Description
W1/		
1-2	OFF	Winchester(s) in latched mode.
	ON	Winchester(s) in non-latched mode.
3-4	OFF	Four byte ECC.
		ON reserved.
5-6	OFF	Cacheing enabled.
	ON	Cacheing disabled.
7-8	OFF	Format **incompatible** with WD 1003-WAH (WD1003-WA2)
	ON	Format **compatible** with WF 1003-WAH (WD1003-WA2).
W3/		
1-2	OFF	Primary Winchester I/O addresses
	ON	Secondary Winches-ter I/O addresses
W4/		
1-2	OFF	Primary floppy I/O addresses
	ON	Secondary floppy I/O addresses
W5/		
1-2	OFF	Single speed drives.**
	ON	Dual speed drives.**
W6/		
1-2	OFF	Bracket ground op-eration not used.
	ON	Connects bracket to board ground

*Not all jumper headers are installed. Modify jumpers only under the direction of a qualified individual

**Do not combine single and dual speed drives in the same system.

Software Installation

This section contains instructions for low level formatting the Winchester drives.

1. Insert our Advanced diagnostic diskette (or equivalent or AT compatibles).

2. Turn on the power.

3. Boot the diagnostic and select the setup option.

CAUTION

Avoid system damage by consulting your system technical reference manual to ensure that your Winchester drive type is supported by the host BIOS drive tables. Not all AT compatibles share the same drive tables as IBM.

4. Select proper drive type. Consult the technical reference manual for further information on these parameters.

CAUTION

Step 5 requires execution of low level format. Use of the IBM Advanced Diagnostic (or similar program for IBM compatibles) is necessary since these controllers contain no on-board Basic Input/Output System (BIOS) ROM. Furthermore, the low level format destroys all data on the drive. If the drive contains useful data, backup the drive before executing the low level format program.

5. Insert the Advanced Diagnostic diskette and execute the low level format.

6. Load and execute the FDISK and FORMAT programs.

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