## **ESDI Disk Controller**

# WD1007A-WAH/WA2

#### Features

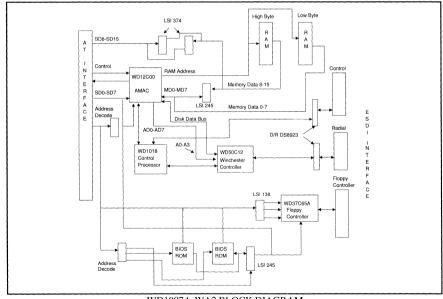
- IBM\* PC/AT\* compatible Winchester and floppy disk controller
- · ESDI drive Interface
- Utilizes maximum storage capacity of ESDI drives
- Controls two fixed disk drives and two floppy disk drives
- Optional BIOS ROM which provides drive parameter tables and low-level formatting
- Multiple sector read/write commands
- Supports 1:1 interleave and a data transfer rate of 10 Megabits per second
- · Supports NRZ data format
- Supports hard sector mode

- Provides software selectable 56-bit ECC
- Two 8192 x 8 RAMs for look-ahead read caching to reduce disk access time and increase data throughput
- XT\* height, 2/3 length

#### Description

The WD1007A storage controllers provide high performance host and drive interfaces. The 1007A architecture interfaces two ESDI Winchester disk drives with the IBM PC/AT and compatibles. Support for two 5.25 or 3.5 inch drives is optional. Look-ahead caching and 1:1 interleave significantly improve data throughput and reduce disk access time. The fixed disk section of the module includes the WD50C12 Winchester Disk Controller, the WD1018 Buffer Manager/Control Processor, the Sector Buffer RAM and associated control logic. The WD12C00A (AMAC) provides buffering and control. The AMAC reduces module logic and supports the 1:1 interleave format.

The WD37C65A Floppy Disk Controller implements the optional floppy disk control section.



WD1007A-WA2 BLOCK DIAGRAM

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## WD1007A-WAH/WA2 ESDI Disk Controller

#### WD50C12

The WD50C12 Winchester Disk Controller (WDC) is an advanced VLSI device that controls and coordinates the activity of the hard disk drive. The WDC supports 1:1 interleave and data transfer rates of 10 Megabits per second. The WDC offers software selectable 56-bit ECC. It supports the NRZ data format.

#### WD1018 Buffer Manager/Control Processor

The WD1018 Buffer Manager and Control Processor is an eight-bit microcontroller that operates with the WD50C12 and the AMAC logic array to facilitate processing of disk commands. It provides sector data buffer management, help in error recovery procedures, and performs module diagnostics. The processor chip includes internal RAM and ROM memory.

#### WD12C00A-22 Logic Array (AMAC)

The primary function of the AMAC logic is to provide host address and command decoding, task file control, and data buffering. The AMAC logic includes the data and address registers, memory read/write control, and WD50C12 task file image registers. It interfaces to both the system and module bus structures.

#### WD37C65A Floppy Disk Controller (FDC)

The optional WD37C65A Floppy Disk Controller (FDC) is a standard VLSI device that supports both single and double density diskette formats and provides data and control interfaces for the host and the floppy drive. The unit's major features include:

- Multiple sector and track read/write commands
- Host DMA and programmed I/O data transfers
- High performance digital data separation

#### **BIOS (P)ROM/RAM Option**

Controller circuitry accommodates a programmed BIOS device for special applications. One unique feature of this BIOS option is its shadow RAM. This shadow RAM feature allows the WFDC to interface with all types of ESDI drives without modifying the system BIOS. Option jumpers on board allow the BIOS to be mapped at one of four address ranges.

Specifications	
Size	3.75 x 8.0 inches
Voltage	+5 VDC
Current	+/- 5.0% 1.2 amperes
Operating Temperature	10° C to 50° C

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Western Digital 2445 McCabe Way Irvine, California 92714 (800)847-6181 (714)863-0102 FAX (714)660-4909 TLX 910-595-1139 WD1829S 3/88 45M

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