

Hard Drive: MINISCRIBE: M8051A P4 41MB 3.5"/HH IDE / AT



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M 8 0 5 1 A   P 4   MINISCRIBE
NO MORE PRODUCED

                                     Native| Translation
                                     -----+-----+-----
Form                3.5"/HH          Cylinders   745| 981|   |
Capacity form/uniform  41/ 51 MB     Heads        4|  5|   |
Seek time / track    28.0/ 8.0 ms    Sector/track 28| 17|   |
Controller           IDE / AT        Precompensation
Cache/Buffer         32 KB           Landing Zone
Data transfer rate   1.000 MB/S int  Bytes/Sector 512
                   4.000 MB/S ext

Recording method     RLL 2/7          operating | non-operating
                                     -----+-----
Supply voltage      5/12 V           Temperature *C   4 50 | -40 65
Power: sleep        W                Humidity %       8 80 |   8 80
  standby           W                Altitude km     -0.061 3.048|   12.192
  idle              8.0 W            Shock g         10   |   80
  seek              W                Rotation RPM    3484
  read/write        W                Acoustic dBA    45
  spin-up           W                ECC Bit
                                     MTBF h         150000
                                     Warranty Month
Lift/Lock/Park     YES              Certificates    CSA,TUV
    
```

Layout

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+-----+
|                1+++++J4 |XX
|                2+++++  |XX
|                    |XX J1
|                JP1+++|XX
|                ++++|XX
    
```


All Task File registers are written in parallel to both drives. The interface processor on each drive decides whether a command written should be executed, depending on the type of command and which drive is selected. The drive not selected does not execute the command and does not activate the data bus in response to host I/O reads.

A master/slave relationship exists between the two drives: drive 0 is the master, and drive 1 the slave.

In response to the Execute Diagnostics command, both drives execute diagnostics; the slave reports its status to the master via the -PDIAG line. The master then combines the slave's status with its own before reporting status to the host.

Mode Jumpers

Jumpering J4.1 to J4.2 causes the 8051A to operate in the slave role. Remove this jumper when the drive is to function as the master, or is the only drive attached.

To emulate 2:1 interleave timing, jumper J4.3 to J4.4. This allows compatibility with some BIOS versions which cannot support 1:1 interleave transfers. For normal operation, remove this jumper.

In a two drive system, jumper J4.5 to J4.6 when the drive is operating as the master. The jumper is not installed on a slave or single drive.

Jumper J4.7 to J4.8 is not used, and should be not installed.

Jumpering J4.9 to J4.10 enabled the I/O Channel Ready signal onto the interface connector, pin 27.

NOTE

The 0851A may be shipped with a jumper between J4.1 and J4.3. This jumper has no effect, but merely provides a spare for use as described above.

Interface Board Jumper Configuration Table

JP1 Address Select REMOVED - (Default) Normal Operation
 INSTALLED - Secondary address 170 through
 177,376 through 377 decoded (for systems having

this capability)

JP2 I/O Channel Ready	INSTALLED - (Default) Gates I/O Channel Ready to the system bus.
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JP3 REMOVED - (Default) Normal operation

JP4 INSTALLED - (Default) Normal operation

JP5 REMOVED - (Default) Normal operation

JP6 Active	INSTALLED - (Default) Normal operation Enables activity LED on interface board. REMOVED - Disables interface board activity LED.
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Install

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Notes On Installation

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Recommended Mounting Configuration

The MiniScribe 8051A quarter size drive design allows greater shock tolerance than that afforded by larger, heavier drives.

To take full advantage of the shock mounts, provide a minimum 0.1" clearance on both the top and sides of the drive. This clearance allows for drive movement during acceleration.

The drive may be mounted in any attitude.

Mount the drive using size 6-32 screws with 1/8" maximum penetration.

Allow adequate ventilation to the drive to ensure reliable drive operation over the operating temperature range.

Ground Terminal

A Ground Terminal is provided in one of these locations. Attach ground wire (if provided with system) to the ground terminal during installation of the drive.

Power Connector

Power is applied through J3, a 4 pin AMP connector. The recommended mating connector is AMP P/N 1-480424-0, using pins AMP P/N 350078-4.

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/-----\ P3-1 = +12 Volts DC
| 4 3 2 1 | P3-2 = +12 Volts Ground Return
+-----+ P3-3 = + 5 Volts Ground Return
          P3-4 = + 5 Volts DC
```

Interface Connector

The integrated drive interfaces to the host computer via a 40 position ribbon cable connector.

Features

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Introduction

The MiniScribe 8051A disk drive is a 41 megabyte (formatted), half-height 3.5" random access storage device with an integrated AT controller.

Proven microprocessor spin control and voice coil actuator ensure high performance and reliability. Superior mechanical construction and a sophisticated integrated PCB contribute to maintenance-free operation throughout the life of the device.

A sealed enclosure houses heads, disks and actuator assemblies. The enclosure contains recirculating and breather-type filters which can supply clean air to the head and disk environment.

The drive interfaces to an 80286 or 80386 AT-type system via the system's onboard 40 pin AT connector, or through a MiniScribe AT

interface board.

Auto Park and Head Lock

Immediately following power down, dynamic braking of the spinning disks delays momentarily. This allows time for the heads to move into the landing zone - a safe area, away from stored data.

The head actuator assembly then mechanically latches into position, and the disks spin down.

Disk Caching

A disk cache involves the temporary storage of information from the hard disk to the faster 32K RAM.

Subsequent host requests for the same information are met more quickly by cache memory than by repeated, direct accesses to the hard disk.

Cache "hits" refer to information requests satisfied from cache memory. As cache memory accesses increase, system performance improves.

Drive Mechanism

A brushless DC direct drive motor rotates the spindle at 3484 RPM. The dynamically balanced motor/spindle assembly ensures minimal mechanical runout to the disks. A dynamic brake provides a fast stop to the spindle motor upon power removal.

Air Filtration System

Over the life of the drive, a 0.3 micron filter and breather filter (located within the sealed enclosure) maintain a clean, above-atmospheric pressure environment to the heads and disks.

MiniScribe AT Interface Boards

To use the 8051A with an AT system that does not incorporate address decoding or buffering on its motherboard, you must use a MiniScribe AT interface board. (Otherwise, simply interface via the system's on-

board 40 pin AT connector.

MiniScribe AT interface boards serve two primary functions:

1. Buffer signals between host and drive
2. Provide address decoding for the drive.

General

MAXTOR IDE INSTALLATION

INSTALLATION PROCEDURE FOR AN IDE DRIVE

1. Install a 40 pin Data Cable ensuring that pin 1, which can be identified by the striped edge of the cable, is closest to the power connector on the drive.
2. Install a DC power cable to the back of the drive.
3. Verify the jumper configurations for Master/Slave operation (Note: Master will be the bootable drive. The slave will not be bootable.) Also make sure the existing C: drive is jumped to be the Master in a two drive system, not the only drive in the system.
4. Apply power to the computer.
 - 4a. When memory test is complete go into your system's Standard CMOS set-up.
(Note: There are various ways to get into CMOS set-up, please refer to system's manual for instructions.)
 - 4b. If your system's BIOS supports a user programmable drive type, program the BIOS with the default parameters of your drive. If your system does not support a user programmable drive type choose parameters that closely match but do not exceed the drives MegaByte capacity. Escape from set-up then choose write to CMOS and exit.

5. Boot from a DOS diskette that has FDISK.EXE and FORMAT.COM on it. At the A> prompt type in FDISK. At the menu options select option 1 to create a DOS partition. Another menu will appear and from those options choose 1 to create a Primary DOS partition. Select yes to make 1 large partition and it will automatically become active. Then escape from FDISK.

6. At the A> prompt type in FORMAT C:/S This does a high-level format on the drive and transfers the system files in order for the drive to be bootable. (Note: IDE drives are low-level formatted from the manufacturer and only need a high-level format).

To configure the drive as a slave drive repeat steps 1-4 and proceed with steps 5a. and 6a. as follows:

5a. At the C> prompt type in FDISK. When the menu options appear select option 5 to switch to the second drive. Enter fixed disk drive number 2. Then choose option 1 to create a DOS partition, then select option 1 again to create a Primary DOS partition or option 2 to create an Extended DOS partition. (Note: C and D drives will always be the Primary partitions but only the Primary partition on C: will have a status of active).

6a. Proceed with a high-level format on the drive by typing FORMAT D: (Note: Make sure the correct drive letter has been selected for format).

7. The drive is now bootable. As a test remove the DOS diskette from A and press reset to reboot the computer, a C> should be displayed, the drive is now ready for operation.