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You can read the recommendations in the user guide, the technical guide or the installation guide for MAXTOR ATLAS 10K III. You'll find the answers to all your questions on the MAXTOR ATLAS 10K III in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual MAXTOR ATLAS 10K III
User guide MAXTOR ATLAS 10K III
Operating instructions MAXTOR ATLAS 10K III
Instructions for use MAXTOR ATLAS 10K III
Instruction manual MAXTOR ATLAS 10K III

Maxtor®

Maxtor Atlas 10K III
Product Manual



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Manual abstract:

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1 BEFORE unpacking or handling a drive, take all proper electro-static discharge (ESD) precautions, including personnel and equipment grounding. Stand-alone drives are sensitive to ESD damage. 2 3 4 BEFORE removing drives from their packing material, allow them to reach room temperature. During handling, NEVER drop, jar, or bump a drive. Once a drive is removed from the Maxtor shipping container, IMMEDIATELY secure the drive through its mounting holes within a chassis. Otherwise, store the drive on a padded, grounded, antistatic surface. 5 NEVER switch DC power onto the drive by plugging an electrically live DC source cable into the drive's connector. NEVER connect a live bus to the drive's interface connector. 6 ELECTRICAL GROUNDING - For proper operation, the drive must be securely fastened to a device bay that provides a suitable electrical ground to the drive baseplate. 1.

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..... B-2 xvii Maxtor Atlas 10K III This chapter gives an overview of the contents of this manual, including the intended audience, how the manual is organized, terminology and conventions, and references.

The Maxtor Atlas 10K III Product Manual is intended for reference by original equipment manufacturers (OEMs) that are integrating the disk drive into a system or subsystem, developers, and disk drive installers. Its primary audience is the OEM technical staff that makes disk drive purchase and configuration decisions, and system integrators that are responsible for the SCSI interface. This manual is not intended for end-users and is not a users manual or an installation guide. The manual provides information about installation, interface command implementation, maintenance, and gives the general specifications of the drive. This manual is organized into the following chapters: · Chapter 1 About This Manual · Chapter 2 General Description · Chapter 3 Installation · Chapter 4 Specifications · Chapter 5 SCSI Description · Chapter 6 Feature Descriptions · Appendix A Quick Reference · Appendix B Negotiated Page Information Page Reference · Glossary . # 7 0# / 5 + *6 6 71 \$# TGVRC J% 01+6#<+0#)41 .#70#/ '%0'+&7# Maxtor Atlas 10K III 1-1 About This Manual Maxtor Atlas 10K III 501+60'801% &0# ;)1.10+ /4'6 In the Glossary at the back of this manual, you can find definitions for many of the terms used in this manual. In addition, the following abbreviations are used in this manual: · ASIC · Kbpi · dB · dBA · ECC · Kfci · Gbit · GB · Hz · KB · LSB · LVDS · mA · MB application-specific integrated circuit thousands of bits per inch decibels decibels, A weighted error correcting code thousands of flux changes per inch gigabit gigabyte hertz kilobytes least significant bit low voltage differential SCSI milliamperes megabytes (1 MB = 1,000,000 bytes when referring to disk transfer rates or storage capacities and 1,048,576 bytes in all other cases) megabits per second megabytes per second megahertz milliseconds most significant bit millivolts nanoseconds Small Computer System Interface tracks per inch microseconds volts · Mbit/s · MB/s · MHz · ms · MSB · mV · ns · SCSI · tpi · μs · V 2-1 About This Manual The typographical and naming conventions used in this manual are listed below.



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Conventions that are unique to a specific table appear in the notes that follow that table.

Typographical Conventions: · Names of Bits: Bit names are presented in initial capitals. An example is the Host Software Reset Bit. · Commands: Firmware commands are listed as all capitals. An example is MODE SELECT. · Parameters: Parameters are given as initial capitals when spelled out, and are given as all capitals when abbreviated.

Examples are Prefetch Enable (PE) and Cache Enable (CE). · Hexadecimal Notation: The hexadecimal notation is given in 9-point subscript form. An example is 30H. · Signal Negation: A signal that is non-active or is in its non-asserted state. · Messages: A message that is sent from the drive to the host is listed in all capitals.

An example is BUS DEVICE RESET. **Naming Conventions:** · Host: In general, the system in which the drive resides is referred to as the host. · Computer Voice: This refers to items you type at the computer keyboard. These items are listed in 10-point, all capitals, Courier font. An example is FORMAT. #"" For additional information about the SCSI interface, refer to: · ANSI Small Computer System Interface-2 (SCSI-2) Specification, ANSI X3T9.2/86-109, Revision 10k. · ANSI Small Computer System Interface-3 (SCSI-3) Specification, ANSI X3T10, August 1994. · SPI-3 Specification Revision 6 Maxtor Atlas 10K III 1-3 About This Manual Maxtor Atlas 10K III 4-1 This chapter summarizes the general functions and key features of the Maxtor Atlas 10K III family of hard disk drives, as well as the applicable standards and regulations. Maxtor Atlas 10K III hard disk drives are part of a family of high performance, 1-inch-high hard disk drives manufactured to meet the highest product quality standards.

There are currently three models in the Maxtor Atlas 10K III series with capacities of 18.4, 36.7, and 73.4 gigabytes (GB). These hard disk drives use nonremovable, 3 1/2-inch hard disks and are available with the following SCSI configurations: · Ultra160 SCSI, Ultra2, Ultra SCSI 68-pin Wide (16-bit) · Ultra160 SCSI, Ultra2, Ultra SCSI 80-pin SCA-2 (16-bit) · Ultra320 SCSI, Ultra2, Ultra SCSI 68-pin Wide (16-bit) · Ultra320 SCSI, Ultra2, Ultra SCSI 80-pin SCA-2 (16-bit) The Maxtor Atlas 10K III hard disk drives feature an embedded SCSI drive controller and use SCSI commands to optimize system performance. Because the drive manages media defects and error recovery internally, these operations are fully transparent to the user. The innovative design of the Maxtor Atlas 10K III hard disk drives enables Maxtor to produce a family of low-cost, high-reliability drives. 5'476#(' ; ' The Maxtor Atlas 10K III hard disk drive includes the following key features: General · Formatted storage capacity of 18.4 GB (1 disk, 2 heads), 36.7 GB (2 disks, 4 heads), and 73.4 GB (4 disks, 8 heads). · Low profile, 1-inch height · Industry standard 3 1/2-inch form factor · Embedded SCSI controller Maxtor Atlas 10K III 2-1 01 +62+4%5' & .#4 ' 0') TGVRC J% 9'+84'81 6%7&142 General Description Performance · Average seek time of 4.5 ms for reads and 5.0 ms for writes · 10,000 RPM rotational speed · Average rotational latency of 3 ms · 8 MB SDRAM buffer.

Look-ahead DisCache feature with continuous prefetch and WriteCache write-buffering capabilities · Read-on-arrival firmware · Tagged Command Queuing with Reordering (ORCATM) · ECC on-the-fly · Highly automated SCSI protocol (including Auto Read/Write) · 1:1 interleave on read/write operations · High performance Ultra160 SCSI or Ultra320 SCSI interface · SCSI-2, and SCSI-3 supported · Ultra-2 SCSI-3 LVDS transfer rates supported · Fast Ultra and Ultra-2 SCSI transfer rates supported (SCSI-3 compliant) · S.M.A.R.T.

2 (Self-Monitoring, Analysis and Reporting Technology) · SCSI bus active negation drivers · SCAM Level 2 · Data transfer rate of up to 6.0 MB/s asynchronous, 40 MB/s Ultra SCSI, 80 MB/s Ultra2 SCSI, 160 MB/s Ultra160 SCSI, and 320 MB/s Ultra320 SCSI. · SCSI bus fairness · Ultra 320 Performance Enhancements ~ Adaptive Active Filter (AAF) ~ Transmitter Pre-Compensation with Cutback ~ Double Transition (DT) Data Transfers ~ Free Running Clock (FRC) ~ Skew Compensation ~ Cyclic Redundancy Check (CRC) ~ Domain Validation ~ Information Unit (IU) Transfers 2-2 Maxtor Atlas 10K III General Description Reliability · Automatic retry on read errors · 360-bit, interleaved Reed-Solomon Error Correcting Code (ECC), with cross checking correction up to three separate bursts of 32 bits each totalling up to 96 bits in length · Self-diagnostic firmware · Patented Airlock® automatic shipping lock and dedicated landing zone · Transparent media defect mapping · High performance, in-line defective sector skipping · Reassignment of defective sectors discovered in the field, without reformatting · Shock Sensing prevents the drive from writing data to the disk when the drive is subjected to excessive external shock · Thermal Sensing monitors the drive temperature to ensure on-going drive reliability · Shock Protection System II (SPS II) protects the drive against specific types of handling events that could cause damage to the drive. Versatility · Downloadable firmware · Plug-and-Play SCSI · SCSI-2, Ultra160 SCSI, and Ultra320 SCSI compatibility UFTCFPCV5 GEPCKNROQ% [TQVCNWIG4 Maxtor Corporation's disk drive products meet all domestic and international product safety regulatory compliance requirements. Maxtor's disk drive products conform to the following specifically marked Product Safety Standards: · Underwriters Laboratories (UL) Standard 1950. This certificate is a category certification pertaining to all 3.5 of 5.25 inch series drives models. · Canadian Standards Association (CSA) Standard C.22.

2 No. 1950. This certificate is a category certification pertaining to all 3.5 of 5.25 inch series drives models. · TUV Rheinland Standard EN60 950. This certificate is a category certification pertaining to all 3.5 of 5.25 inch series drives models. Maxtor Atlas 10K III 2-3 General Description 2-4 Maxtor Atlas 10K III 560/'4+73'4 '4#9&4#* UPQKVCEKHKNCW3 5/'+' VEWFTQ2 · CE Mark authorization is granted by TUV Rheinland in compliance with our qualifying under EN 55022:1994 and EN 50082-1:1997.

· C-Tick Mark is an Australian authorization marked noted on Maxtor's disk drive products. The mark proves conformity to the regulatory compliance document AS/NZS 3548: 1995 and BS EN 55022: 1995. · Maxtor's disk drives are designed as a separate subassembly that conforms to the FCC Rules for Radiated and Conducted emissions, Part 15 Subpart J; Class B when installed in a given computer system.



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The Maxtor Atlas 10K III hard disk drive is compatible with host computers and controllers that provide a 68-pin Wide, or 80-pin SCA-2 interface. A 50-pin to 68-pin adapter is required to use the 68-pin Wide drive in a 50-pin cabling configuration.

Termination is required on the Maxtor Atlas 10K III Hard disk drives as they do not support on-board SCSI termination. This chapter explains how to unpack, configure, mount, and connect the Maxtor Atlas 10K III hard disk drive prior to operation. It also explains how to start up and operate the drive. For your safety, follow all safety procedures described here and in other sections of the manual. · Remove power from the computer system (or expansion unit) before installing or removing the drive to prevent the possibility of electrical shock or damage to the drive.

Unplug the unit containing the drive to provide an added measure of safety. · Read, understand, and observe all label warnings. Damage to the drive can occur as the result of careless handling, vibration, shock, or electrostatic discharge (ESD). Always handle the drive with care to avoid damage to the precision internal components. A 1/4-inch drop onto a hard surface can damage the drive. Follow these guidelines to avoid damage to the drive: · Always observe prescribed ESD precautions. · Keep the drive in its anti-static bag until ready to install. · Always use a properly fitted wrist strap or other suitable ESD protection when handling the drive. · Hold drive only by its sides. Do not touch any components on the PCBA.

01+6%'6142 '4#*%5+& %+6#65146%' 01 +6 #.# 65 0+ TGVRC J%)0+.&0#* ;6'(#5 UPQKVWCEGT2 [VGHC5 01 + 67 #%' IPKNFPC* Maxtor Atlas 10K III 3-1 Installation · Always handle the drive carefully and gently. A drop of 1/4 inch onto a bench or desktop can damage a drive. · Do not bump, jar, or drop the drive. Use care when transporting the drive. · Always gently place the drive flat, PCB side down, on an appropriate ESD-protected work surface to avoid the drive being accidentally knocked over. · Do not pack other materials with the drive in its shielded bag.

· Place the drive in the anti-static bag before placing in shipping container. · Do not stack objects on the drive. · Never force the drive or the mounting brackets into the drive bay. · Do not expose the drive to moisture. · Do not damage any seals on the drive; doing so may void the warranty.

3-2 Maxtor Atlas 10K III POKVEGVQT2 &5' GITCJEUK& EKVCVUQTVEGN' Various electrical components within the disk drive are sensitive to static electricity and Electrostatic Discharge (ESD). Even a static buildup or discharge that is too slight to feel can be sufficient to destroy or degrade a component's operation. To minimize the possibility of ESD-related damage to the drive, we strongly recommend using both, a properly installed workstation anti-static mat and a properly installed ESD wrist strap. When correctly installed, these devices reduce the buildup of static electricity which might harm the drive. · Observe the following precautions to avoid ESD-related problems: · Use a properly installed anti-static pad on your work surface.

· Always use a properly fitted and grounded wrist strap or other suitable ESD protection when handling the drive and observe proper ESD grounding techniques. · Hold the drive only by its sides. Do not touch any components on the PCBA. · Leave the drive in its anti-static bag until you are ready to install it in the system. · Place the drive on a properly grounded anti-static work surface pad when it is out of its protective anti-static bag. · Do not use the bag as a substitute for the work surface anti-static pad. The outside of the bag may not have the same anti-static properties as the inside. It could actually increase the possibility of ESD problems. · Do not use any test equipment to check components on the electronics module. There are no user-serviceable components on the drive.

Installation 560/'4+73'4 '%#25 G T WIK(The Maxtor Atlas 10K III hard disk drive is shipped without a faceplate and comes in the following SCSI interface configurations: · 68-pin Wide SCSI · 80-pin SCA-2 SCSI Figure 3-1 shows the mechanical dimensions of each of the drives. Shock Foot (typical) 25.59 mm 146.50 mm 101.60 mm Shock Foot (typical) 25.59 mm 146.50 mm 101.60 mm Dimensions for the Maxtor Atlas 10K III Hard Disk Drives Maxtor Atlas 10K III 3-3 Installation 3-4 Maxtor Atlas 10K III 501+6%'74650+)0+-%#207 1. Open the shipping container and remove the packing assembly that contains the drive. 2.

Remove the drive from the packing assembly. During shipment and handling, the antistatic electrostatic discharge (ESD) bag prevents electronic component damage due to electrostatic discharge. To avoid accidental damage to the drive, do not use a sharp instrument to open the ESD bag. Save the packing materials for possible future use. 3.

When you are ready to install the drive, remove it from the ESD bag. 01 + 67 #'% 01 + 67 #'% VGG(MEQJ5 Maxtor Atlas 10K III hard disk drives are outfitted with plastic shock feet on the bottom edge of the base casting, near the corners, beneath the side mounting holes (translucent), and near the corners of the top cover next to the screws (black). The shock feet give an additional level of isolation to prevent the head and disk damage that occasionally occurs during unpacking, staging, and installation. The shock feet attenuate the short-pulse shocks that occur when placing the drive on a hard surface. If the drive is tested on a hard surface, it should be supported such that the shock feet are not in contact with a hard surface (the drive should be supported in the middle, between the shock feet).

Note: To provide optimal protection the shock feet are designed to exceed the form factor when uncompressed. The maximum limits for physical shock can be exceeded if the drive is not handled properly. Special care should be taken not to bump or drop the drive. Installation Figure 3-2 shows the packing assembly for a single Maxtor Atlas 10K III hard disk drive. Shipping containers of 10, 12, and 20-pack are available for multiple drive shipments. Drive Packing Assembly G T W I K (Maxtor Atlas 10K III 3-5 Installation 3-6 Maxtor Atlas 10K III \$%2 GFK9 PK2 GJV PQ UPQKVR1 TGROW, UPQKVEGPPQ% FPC UTGROW, POKVCTWIKHPQ% This section includes setup and configuration information for Maxtor Atlas 10K III drives. These disk drives include · The 16-bit multimode Ultra160 SCSI, wide version with 68-pin SCSI connector, · The 16-bit multimode Ultra160 SCSI, version with SCA-2 80-pin connector. · The 16-bit multimode Ultra320 SCSI, wide version with 68-pin SCSI connector, · The 16-bit multimode Ultra320 SCSI, version with SCA-2 80-pin connector.



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Specific individual settings for each drive type are described in Sections 3.5.

1 through 3.5.4. Before you begin, review the Safety, ESD, and Handling precautions described at the beginning of this manual to avoid personal injury or damage to equipment. 01 + 6 7 #% 501+621 '4#9&4#* This section describes how to configure the jumpers on Maxtor Atlas 10K III disks with 68-pin SCSI interface connectors. The following features are jumperselectable: · A0, A1, A2, A3 SCSI Bus Device Identification · FO Fault Out (Remote LED) · DS Delay Spin · SE Force SE (Single-Ended, Disable LVD) · BO Busy Out (Remote LED) · WP Write Protect · SS Stagger Spin · NW No Wide (Enable Narrow Mode) · TERMPWR Termination Power Note: The disk drive does not support on-board SCSI termination. Installation The drives are shipped from the factory with the jumpers installed across the A1 and A2 locations. This is the default configuration. The rest of the jumper positions are open. The configuration of a Maxtor Atlas 10K III hard disk drive depends on the host system in which it is to be installed.

Figure 3-3 shows the printed circuit board (PCB) assemblies for 68-pin SCSI configurations, indicating the jumpers that control some of these options. J1 - 12-pin Option Connector (side view) A0 A1 A2 A3 NC +5V 1 2 11 12 FAULT GND GND BUSHY GND NC 4-pin Power Connector 12-pin Option Connector 1 4 1 12 Options Header Front of Drive 12 68-pin SCSI Connector GND GND GND GND GND GND GND GND GND GND GND GND GND GND GND GND GND TERMPWR Back of Drive J3 - Option Header (side view) SCSI ID (3) SCSI ID (2) SCSI ID (1) SCSI ID (0) NO PIN PRESENT DELAY SPIN FORCE SE NC BUSHY OUT WRITE PROTECT STAGGER SPIN NO WIDE RESERVED TERMPWR 27 28 Jumper Locations on the 68-Pin Wide SCSI Drive PCB G T W I K (Maxtor Atlas 10K III 3-7 Installation SCSI ID Selection on Option Connector (68-Pin SCSI Connector Drives) redaeH noitpO 3J noitacoL repmUJ 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Configure the drive for remote (external) SCSI ID selection by removing the SCSI ID jumpers (if present) from the referenced SCSI ID pins. Then connect the leads from the external selection switch to the referenced pins. Observe the following guidelines while doing so: · ID bit 0, at Pin 8, is the Least Significant Bit. · SCSI ID bits 0, 1, 2, and 3 (pins 8, 6, 4, and 2, respectively) are active LOW signals.

That is, the bit is a 1 if the corresponding remote switch is closed to ground. · Use pins 1, 3, 5 and 7 as the associated ground returns for ID bits 3, 2, 1, and 0, respectively. To configure Write Protection for the drive, install a jumper across pin pair 19/20 on the J3 Option Header. To disable Write Protection on the drive, remove the jumper. 3-8 Maxtor Atlas 10K III 2/1 riaP niP 4/3 riaP niP 6/5 riaP niP 8/7 riaP niP P QKV EGV Q T2 G VKT 9 DI I S C S GN D C 6 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 Installation & 8.

GN D C UK & ' 5 G E T Q (P Q K V C T G R I F G F P ' GN I PK 5 F GNN C V U PK T G R O WL PK R 5 T G I I C V 5 P Q K V R I F GNN C V U PK T G R O WL PK R 5 [C N G & P Q K V R I 5 5 PK R 5 T G I I C V 5 5 & P K R 5 [C N G & Maxtor Atlas 10K III drives have three Spin Up modes: U [C N R U K & V N W C (F P C [U W \$ G V Q O G 4 FGN N C V U PK U T G R O WL Q 0 P Q K V R I G F Q / Y Q T T C 0 GN D C P ' G F K 9 Q 0 & ' . V N W C (G V Q O G 4 & ' . [U W \$ G V Q O G 4 Spin up immediately when power is applied. Verify that no jumper is installed across the Delay Spin pin pair of the J3 Option Header. Spin up after a predetermined delay following power on: Install the jumper across pin pair 21/22 (GND/Stagger Spin) on the J3 Option Header. Set the delay parameters with the MODE SELECT command, Maxtor (Vendor) Special Function Control Page (39h). The delay is equal to a user-specified multiplier, multiplied by the numerical SCSI ID of the drive. This will give a staggered spin-up in multiple-drive installations. Spin up on START STOP UNIT command: Install the jumper across pin pair 11/12 (GND/Delay Spin) on the J3 Option Header. Remove any jumper from pin pair 21/22 (GND/Stagger Spin) if a jumper is installed there, on the Secondary Option connector.

Install a jumper across pin pair 13/14 (SE) on the J3 Option Header to operate the disk drive as a single-ended device. Remove the SE jumper for LVD operation and monitoring of the DIFFSENS signal. Busy and Fault status of the drive can be monitored remotely by connecting a remote (external) Busy and/or remote Fault display LEDs to the appropriate pins on the J3 Option Header or the J1 Option Connector. On the J3 Option Header, connect the cathode side of the remote Busy LED to pin 18, Busy Out. Connect the anode side of the LED to pin 17, +5V. On the J1 Option Connector, connect the cathode side of the remote Busy LED to pin 8, Busy Out. Connect the anode side of the LED to pin 11, +5V. On the J3 Option Header, connect the cathode side of the remote Fault LED to pin 9, Fault LED. Connect the anode side of the LED to pin 17, +5V. On the J1 Option Connector, connect the cathode side of the remote Fault LED to pin 2, Fault LED.

Connect the anode side of the LED to pin 11, +5V. Wide Data Transfer (WDTR) negotiations can be limited to 8-bit transfers by installing a jumper across pin pairs 23/24 (No Wide) of the J3 Option Header. This can also be done by setting byte 5, bit 4 in the Maxtor (Vendor) Unique Mode Page (39h) via the Mode Select command (15h). Maxtor Atlas 10K III 3-9 Installation 3-10 Maxtor Atlas 10K III 4 9 2 / 4 ' 6 T G R O W , T G Y Q 2 P Q K V C P K O T G 6 U W \$ + 5 % 5 The TERMPWR jumper enables the active termination circuit to receive power from an external host when installed. Figure 3-4 shows the termination power circuitry.

Termination Power Circuitry UPQKUTG8 TQVEGPPQ% PK2 #%5 U T Q V C E K F P + V N W C (F P C [U W \$ F T C Q D P 1 The drive has an on-board green 'Busy' LED and a yellow 'Fault' LED. This section describes the SCA-2 (Single Connector Attachment) 80-pin connector for Maxtor Atlas 10K III drives with the following features: · SCSI ID · Spin Up · Activity LED displays G T W I K (Installation Use Figure 3-5 to locate the appropriate pins for configuring the drive. Note that Figure 3-5 does not call out each of the 80 pins on the connector, but rather illustrates the layout of the pins. Note: The SCA-2 Connector version of the disk drives does not provide the following jumper configuration: TERMPWR, Active Termination, or Write Protection. 4. 60±0.50 U P Q K U T G 8 T Q V E G P P Q % # % 5 P K 2 G J V T Q H P Q K V C P K O T G 6 These versions of Maxtor Atlas 10K III disk drives cannot be configured to provide bus termination.



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Therefore, be sure to properly terminate the SCSI bus on which this drive is installed. U P Q K U T G 8 # % 5 T Q H & + + 5 % 5 G T W I K (0 1 + 6 7 # % Note: Refer to your system or SCSI controller documentation regarding any additional recommendations regarding drive placement on the SCSI bus and SCSI bus termination. Each SCSI device on the bus must have a unique SCSI ID number assigned to it. The drive can be configured for SCSI ID numbers that range from 0 through 15. Configure the SCSI ID by providing the proper open or ground signal inputs to the referenced pins of the drive's 80-pin new version SCA-2 connector (Figure 3-5). Refer to Table 3-2 for SCSI ID pin assignments. Note: Refer to your system or SCSI controller documentation for specific recommendations about assigning SCSI ID numbers for your specific system. Pin 2 Pin 1 Pin 80 Pin Locations on SCA-2 Connector Maxtor Atlas 10K III 3-11 Installation SCSI ID Pin Assignments (SCA-2 Connector Versions of the Disk Drive) rotcennoC ACS noitacoL 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Note: 0 indicates an open circuit from +2.

4 V to Vcc +0.5 V, and 1 indicates ground from 0.5 V to +0.4 V. Maxtor Atlas 10K III drives have three Spin Up modes: Option 1 Spin up occurs immediately when power is applied. Option 2 Drive spin up occurs after a predetermined delay following power on. Set the delay parameters with the MODE SELECT Command, Maxtor (Vendor) Special Function Control Page (39h). The delay is equal to a user-specified multiplier multiplied by the numerical SCSI ID of the drive. This will give a staggered spin-up in multiple-drive installations. Option 3 Drive spin up is controlled by the START STOP UNIT command. 3-12 Maxtor Atlas 10K III 93 niP - 0DI 9 7 n i P - 1 DI U P Q K U T G 8 T Q V E G P P Q % # % 5 PK 2 G J V T Q H R 7 PK R 5 04 niP - 2DI 08 niP - 3DI DI I S C S G N D C 6 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 Installation Configure the desired spin up option (Table 3-3) by setting the state of the DELAY_SPIN (Pin 38) and STAGGER_SPIN (Pin 78) inputs on the 80-pin SCA2 connector (Figure 3-5). The states of these signals are set by using either hardwired connections at the backplane or backplane logic. Spin Up on Power On Options)83 niP(NIPS_YALED Open Open Ground Ground Spin Up When Power is Applied Spin Up After Delay Spin Up on START Command Reserved The drive provides the output BUSY_OUT signal to power a user-supplied activity LED. The output indicates the drive is performing a SCSI operation. To use this output, connect a user-supplied LED cathode to the BUSY_OUT connection, pin 77 on the SCA Connector (Figure 3-5).

The LED anode must be attached to the proper +5 VDC supply through an appropriate current-limiting resistor.)87 niP(NIPS_REGGATS Open Ground Open Ground U P Q K U T G 8 T Q V E G P P Q % # % 5 T Q H & ' . [VKXK VE # G N D C 6 noitp O P Q K V R 1 P Q K V R 1 P Q K V R 1 Maxtor Atlas 10K III 3-13 Installation 3-14 Maxtor Atlas 10K III %2 # % 5 PK 2 G J V P Q , TGROW, Note: Force Single Ended Jumper needs to be across 2 lower pins in the magnified 4-pin diagram. G T W I K (When the J7 SE jumper is installed, it forces single-ended SCSI operation, and disables LVD mode and auto switch capabilities. When the jumper is not installed it allows auto switch to single-ended SCSI or LVD SCSI operation.

Back of Drive Front of Drive SCA J1 Connector J7 Jumper J7 NC SE J7 Jumper Location on the 80-Pin SCA PCB Installation , 416%'001% '%#(4'60+ The configuration of J1 is different for the 68-pin and 80-pin SCSI variations. Figure 3-7 shows the various connector styles. J1 SCSI (68-Pin)/DC (4-Pin)/Auxiliary (12-pin) Combination Connector 12-Pin Option Connector Pin 1 4-Pin DC Power Connector 4 AMP G T W I K (Pin 2 68-Pin SCSI-Bus Interface Connector Pin 1 3 2 1 Pin 68 Pin 12 Pin 2 J1 SCSI (80-Pin) SCA Connector Pin 2 Pin 1 Bottom 4.6±0.50 2.25±0.1 Pin 80 Top J1 Interface Connector Configurations Maxtor Atlas 10K III 3-15 Installation +DB (12) +DB (13) +DB (14) +DB (15) +DB (P1) +DB (0) +DB (1) +DB (2) +DB (3) +DB (4) +DB (5) +DB (6) +DB (7) +DB (P) GROUND DIFFSENS TERMPWR TERMPWR RESERVED GROUND +ATN GROUND +BSY +ACK +RST +MSG +SEL +C/D +REQ +I/O +DB (8) +DB (9) +DB (10) +DB (11) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 DB (12) DB (13) DB (14) DB (15) DB (P1) DB (0) DB (1) DB (2) DB (3) DB (4) DB (5) DB (6) DB (7) DB (P) GROUND GROUND TERMPWR TERMPWR RESERVED GROUND ATN GROUND BSY ACK RST MSG SEL C/D REQ I/O DB (8) DB (9) DB (10) DB (11) Note: The conductor number refers to the conductor position when using 0.635 mm (0.025 inch) centerline flat ribbon cable. Other cable types may be used to implement equivalent contact assignments.

The cable plug connector that mates with the 68-pin hard disk drive connector is the AMP AMPLIMITE .050 Series III, part number 749925-5. 3-16 Maxtor Atlas 10K III EM AN L A N G I S REBMU N TCATNOC RO TCE N NOC REBMU N RO TCU D NOC ELB AC & 8. TQVEGPPQ% +5%5 GFK9 PKR 68-Pin Wide LVD Pin Assignments T Q V E G P P Q % I P K V C / G F K 9 PK 2 GN D C 6 REBMU N TCATNOC RO TCE N NOC EM A N L A N G I S Installation 80-Pin SCA-2 LVD Pin Assignments EMAN LANGIS DNA TCATNOC ROTCENNOC NIP-08 REBMU N RO TCU D NOC ELB AC NOT APPLICABLE (L) 12V CHARGE (S) 12V (S) 12V (S) 12 V (S) OPT 3.3 VOLTS (S) OPT 3.3 VOLTS (S) DB (11) (S) DB (10) (S) DB (9) (S) DB (8) (S) I/O (S) REQ (S) C/D (S) -SEL (S) MSG (S) RST (S) ACK (S) BSY (S) ATN (S) DB (P0) (S) DB (7) (S) DB (6) (S) DB (5) (S) DB (4) (S) DB (3) 1 4 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 & 8. TQVEGPPQ% +5%5 # % 5 PKR GND C6 EMAN LANGIS DNA TCATNOC ROTCENNOC NIP-08 (L) 12V GROUND (L) 12V GROUND (L) 12V GROUND (S) MATED 1 (L) L OPT 3.3V CHARGE (L) DIFFSNS (S) +DB (11) (S) +DB (10) (S) +DB (9) (S) +DB (8) (S) +I/O (S) +REQ (S) +C/D (S) +SEL (S) +MSG (S) +RST (S) +ACK (S) +BSY (S) +ATN (S) +DB (P0) (S) +DB (7) (S) +DB (6) (S) +DB (5) (S) +DB (4) (S) +DB (3) 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 Maxtor Atlas 10K III 3-17 Installation (S) DB (2) (S) DB (1) (S) DB (0) (S) DB (P1) (S) -DB (15) (S) DB (14) (S) DB (13) (S) DB (12) (S) 5V (S) 5V (L) 5V CHARGE (L) SPINDLE SYNC (L) RMT START (L) SCSI ID (0) (L) SCSI ID (2) 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 (S) +DB (2) (S) +DB (1) (S) +DB (0) (S) +DB (P1) (S) +DB (15) (S) +DB (14) (S) +DB (13) (S) +DB (12) (S) MATED 2 (L) 5V GROUND (L) 5V GROUND (L) ACTIVE LED OUT (L) DLYD_START (L) SCSI ID (1) (L) SCSI ID (3) 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 (S) = Short pin (L) = Long pin 3-18 Maxtor Atlas 10K III U T Q V E G P P Q % I P K V C / # % 5 PK 2 The compatible 80-pin mating connectors are: . Right-angle receptacle, AMP CHAMP, .



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