

**ENTERPRISE****Exceptional Performance**

- Ultra320 SCSI with AAF, Packetization and QAS for faster overall system performance and data reliability
- 4.5 ms seek time
- Large 8 MB cache buffer
- Maximum sustained interface transfer rate up to 55MB/sec
- High performance Atlas architecture that is ideal for cluster server environments

**Industry Leading Bandwidth**

- 320MB/sec bus speed

**Superior Reliability**

- Proven Atlas drive architecture and firmware
- Adaptive Active Filtering (AAF)
- Maxtor's breakthrough Shock Protection System™
- Data Protection System™
- Thermal and Shock Sensors
- S.M.A.R.T. Compliance features

**Atlas 10K III ULTRA320**  
SCSI**Industry-leading Performance for the Most Demanding High Bandwidth Applications****Setting the Standard**

Introducing Atlas™ 10K III-Ultra320, the next generation Maxtor SCSI hard disk drive providing full implementation of all mandatory and optional Ultra320 SCSI interface features as defined in T10/SPI-4 rev. 9 draft standard. These features include Adaptive Active Filtering (AAF), Packetization and Quick Arbitration and Selection (QAS). Adaptive Active Filtering is a Maxtor technology innovation that allows the drive to adapt to changing system configurations and components while optimizing signal quality. This translates into lower error rates, easier integration, and increased bus efficiency for optimal system performance. Ultra320 SCSI provides the highest ever data bus bandwidth and is designed to handle the most demanding enterprise server applications.

**Best-Fit Enterprise Applications**

Enterprise computer users will now have faster, more reliable data transfer rates for optimal use in: multi-stream video and audio, data warehousing applications, web servers, RAID applications, large file transfers, non-linear editing, high-end graphics, electronic cinema, scientific data processing, video servers, image processing, high definition play back, super computer, and 3D animation.

**Proven Full Inter-operability**

The Atlas 10K III-U320 has proven full inter-operability with major SCSI and SCSI RAID controller manufacturers and it is backwards compatible with prior SCSI interface standards.

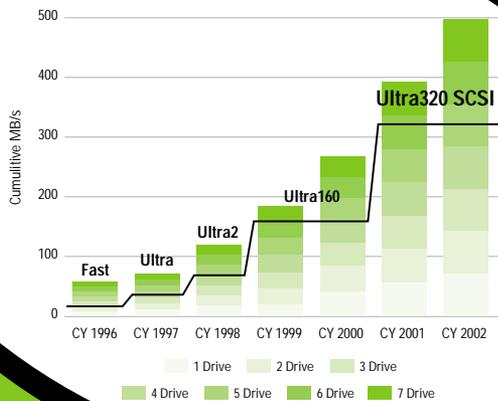
**18GB****36GB****73GB**

## Atlas 10K III-U320 and the Need for Speed

Maxtor continues to innovate and provide state-of-the-art solutions to its customers. Ultra 320 SCSI widens Maxtor's SCSI leadership.

- Ultra 320 SCSI is the latest evolution of SCSI and takes drive performance and reliability to the next level.
- As a rule of thumb, Bus Bandwidth needs to be 4X the drive throughput to attain optimal system performance—Ultra 320 SCSI makes it possible!
- Best-in-Class HDD max sustained interface transfer rates: 1999—28 MB/sec, 2000—42 MB/sec, 2001—55 MB/sec
- One Atlas 10K III drive can sustain 55 MB/sec peak data rate throughput. Therefore, as few as three drives can saturate an Ultra160 bus limiting your system performance.

### The Ultra320 Advantage

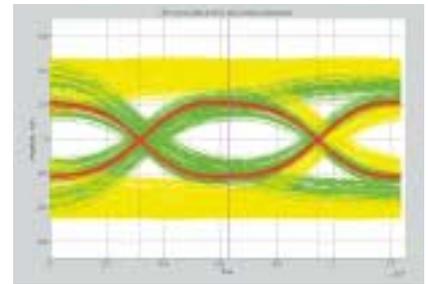


- Ultra 320 SCSI provides optimal system performance, extending your system advantage beyond 2003.

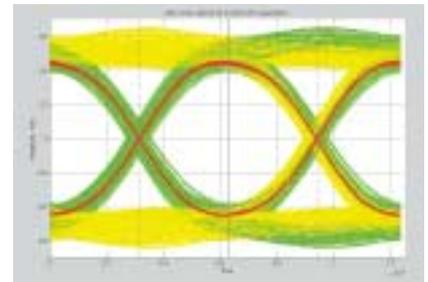
Atlas 10K III-Ultra320 provides all the advantages of the Ultra320 SCSI standard. Features like: free-running clock, training pattern, skew compensation and Adaptive Active Filtering (AAF), Packetization provide unsurpassed data and signal integrity. Quick Arbitration and Selection (QAS) and Flow control optimize system performance. These features are only available with the Ultra320 SCSI standard and the Maxtor Atlas 10K III-Ultra320.

### Adaptive Active Filtering—the Maxtor Advantage

Maxtor's Atlas 10K III-U320 AAF implementation improves signal integrity and as a consequence maximizes system performance. Signals with AAF are crisper and have a better peak-to-peak amplitude definition. AAF enhances electrical signal margins reducing the negative effect of signal losses in back-planes and cables.



Signal Integrity-Without AAF



AAF-Improves Signal Integrity

## Features and Benefits

### Exceptional Performance

10,000 RPM, 4.5 ms seek time, large 8 MB cache buffer, and peak 55MB/sec sustained data throughput. Atlas 10K III-U320 offers 320MB/sec bus speed at industry leading acoustic levels.

### Exceptional Value

18.4GB/platter leads the way for the next generation of SCSI drives. Higher data densities allow for higher reliability and customer value. Atlas 10K III-U320 comes in 18.4GB, 36.8GB and 73.6GB capacity points with SCA (80-pin) or WIDE (68-pin) interfaces.

### SCSI Investment Protection

Atlas 10K III-320 has an automatic SCSI mode configuration for U320, U160, Ultra2, Ultra, and Fast SCSI interfaces. It is backwards compatible with prior SCSI interfaces standards.

### Superior Reliability

To ensure flawless and consistent performance, the Atlas 10K III-U320 drive features Maxtor's breakthrough Shock Protection System. SPS protects the drive from mistreatment during handling and integration. For systems integrators, SPS III results in fewer returns, lower total cost of ownership, and satisfied customers. Data Protection System, Thermal and Shock Sensors, S.M.A.R.T. Compliance features are also included in the Atlas 10K III-U320 to ensure the highest data and system reliability possible. We confidently stand behind the Atlas 10K III-U320 with a five-year warranty.

# Maxtor's SCSI Leadership

Introduced First  
Ultra SCSI HDD

Introduced First  
Ultra2 SCSI HDD

Introduced First  
Ultra160 SCSI HDD

Introducing First  
Ultra320 SCSI HDD  
Atlas 10K III-320

1995

1997

1999

2002

## Ultra 320 SCSI Feature Set

Required Features	Maxtor	Customer Benefit
Double-transition (DT) data transfer	√	<b>PERFORMANCE</b> Doubles the clocking rate, hence increasing the data transfer rate of the drive.
Free-running clock (FRC)	√	<b>DATA INTEGRITY AND RELIABILITY</b> Improves the integrity of the clock signal. Used with DT to attain 320 MB/s transfer rate. Reduces signal cross talk.
Training pattern	√	<b>RELIABILITY</b> Enables skew compensation and signal tuning such as adaptive active filtering (AAF) to enhance signal integrity and system performance.
Skew compensation of data signals	√	<b>RELIABILITY</b> Minimizes errors and retries when relative to clock signal transferring data.
Cyclic redundancy check (CRC)	√	<b>DATA INTEGRITY AND RELIABILITY</b> Improves data protection for the parallel SCSI bus by creating check bytes and comparing it to the received data.
Domain validation	√	<b>PERFORMANCE</b> Query targets to determine capabilities, like maximum transfer rate, system configuration, etc.
Information unit transfer	√	<b>PERFORMANCE</b> Minimizes overhead and enables both (packetized transfers) command and data transmission at 320MB/s speeds. Increases overall system performance.
Transmitter pre-compensation	√	<b>DATA INTEGRITY AND RELIABILITY</b> Compensates with cutback for signal loss during data transmission resulting in a better signal.
Backward compatibility	√	<b>PROTECTS CUSTOMER'S SCSI INVESTMENT</b> Supports legacy systems running at transfer rates and protocols defined by prior SCSI interface standards.
Optional Features	Maxtor	Customer Benefit
Adaptive Active Filtering (AAF)	√	<b>DATA INTEGRITY AND RELIABILITY</b> A closed loop method of improving received signals. It is capable of adjusting to changes in system conditions (e.g. adding a new device to the bus, changing electrical characteristics of the cable plant, etc).
Quick Arbitration and Selection (QAS)	√	<b>PERFORMANCE</b> Reduces arbitration overhead hence increasing system performance.
SCSI bus fairness	√	<b>PERFORMANCE</b> Guarantees that all devices have an opportunity to access the bus.
Flow Control	√	<b>PERFORMANCE</b> Signals the end of data transmission. Increases system performance.
Asynchronous Information Protection (AIP)	√	<b>DATA INTEGRITY AND RELIABILITY</b> Provides an enhance error detection method and protects data being transfer.

# Atlas 10K III

Specifications	18.4	36.7	73.4
Form Factor	3.5"	3.5"	3.5"

Interface	U320 and U160. Backwards compatible to Ultra2, Ultra SCSI. In 68-pin wide and 80-pin SCA-2		
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Formatted Capacity (MB <sup>1</sup> )	18,400	36,700	73,400
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## Disk Drive Configuration

Disks	1	2	4
Head/Recording Surfaces	2	4	8
Bytes per Sector	512		
Maximum Areal Density (Gb/sq. in.)	17.9		
Encoding/Detection Method	50/52 RLL PRML		

## Performance Specifications

### Typical Seek Times<sup>2</sup> (ms)

Average	4.5
Track-to-Track	0.3
Full Stroke	11

Average Rotational Latency (ms)	3.0
Rotational Speed (RPM)	10,000
Internal Data Rate (Mb/sec)	350 to 622
Sustained Throughput (MB/sec)	33 to 55

### Maximum Burst Interface Transfer Rate

Ultra320 SCSI (MB/sec)	320
Ultra160 SCSI (MB/sec)	160
Ultra2 SCSI (MB/sec)	80
Ultra SCSI (MB/sec)	40
Buffer Size (MB)	8

1. Maxtor defines a megabyte (MB) as 10<sup>6</sup> or 1,000,000 bytes. 2. Seek times are at nominal conditions and include settling. 3. This warranty is standard when products are purchased directly through authorized Maxtor distributors/dealers. End-user warranties provided by computer manufacturers may vary.

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For more information on Maxtor storage products, visit our website at [www.maxtor.com](http://www.maxtor.com)

All Maxtor products are backed by the No Quibble Service<sup>®</sup> policy—the benchmark for service and support in the industry.

No Quibble Service includes:

- Advance replacement in 2 business days
- MaxFax<sup>®</sup> 24-hour automated technical support
- Maxtor's commitment to total customer satisfaction
- Product support representatives available Monday-Friday

Specifications	18.4	36.7	73.4
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## Reliability Specifications

### Data Errors (per bits read)

Recoverable	<10 per 10 <sup>12</sup>
Nonrecoverable	<10 per 10 <sup>16</sup>

Error-Correction Method	360-bit non-interleaved Reed Solomon ECC with on-chip correction
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Warranty <sup>3</sup> (years)	5
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## Physical Specifications

### Dimensions—inches (mm)

Width	4.00 (101.6)
Length	5.787 (147.0)
Height	1.028 (26.1)
Weight—pounds (kg)	max - 1.54 (0.7)

## Environmental Limits

### Operating

Temperature (°C)	5 to 55		
Non-Condensing Humidity (%)	5 to 95		
Vibration (G, 5 to 500 Hz)	0.5		
Acoustics (bels, Idle)-typical	3.1	3.4	3.6

### Non-Operating

Temperature (°C)	-40 to 70
Non-Condensing Humidity (%)	5 to 95
Shock (G, 2 ms, 1/2 sine)	250
Vibration (G, 5 to 500 Hz)	2.0

## Power Specifications

Voltage Requirements (V)	+5V DC±5% +12V DC ±5%
Typical Power Draw (W, Idle) SCSI	10
Peak Current (A on +5V/+12V) Start-up	0.9/2.2

## Order Information

Part Number	Capacity	Interface	Connector
KU018L2	18.4	Ultra 320	68-pin Wide LVD
KU018J2	18.4	Ultra 320	80-pin SCA-2
KU036L4	36.7	Ultra 320	68-pin Wide LVD
KU036J4	36.7	Ultra 320	80-pin SCA-2
KU073L8	73.4	Ultra 320	68-pin Wide LVD
KU073J8	73.4	Ultra 320	80-pin SCA-2



To speak with a Maxtor product support representative in the U.S. and Canada, call 1-800-2MAXTOR, Mon.-Fri. from 5 a.m. to 5 p.m (PST).

In Europe, call +353 1 204 1111 Mon.-Thur. from 9:30 a.m. to 6 p.m (CET) and Fri. 9:30 a.m. to 5 p.m. (CET).

In Asia/Pacific, call +61 2 9369 3662 Mon.-Fri. from 8 a.m. to 5:30 p.m. (GMT+8).

**Maxtor**<sup>®</sup>