Quantum

User Reference Guide

Super DLTtape™ System

SUPER DLT TAPE

User Manual Statements for Class A Equipment (Internal Tape System)

This equipment generates, uses, and may emit radio frequency energy. The equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules, which are designed to provide reasonable protection against such radio frequency interference in a commercial installation.

Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Any modifications to this device—unless expressly approved by the manufacturer—can void the user's authority to operate this equipment under Part 15 of the FCC rules.

Note: Additional information on the need to interconnect the device with shielded (data) cables or the need for special devices, such as ferrite beads on cables, is required if such means of interference suppression was used in the qualification test for the device. This information will vary from device to device and needs to be obtained from the EMC (Electromagnetic Compatibility) group or product manager.

Warning!

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

User Manual Statements for Class B Equipment (Tabletop Tape System)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any modifications to this device—unless expressly approved by the manufacturer—can void the user's authority to operate this equipment under Part 15 of the FCC rules. Operation is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesirable operation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

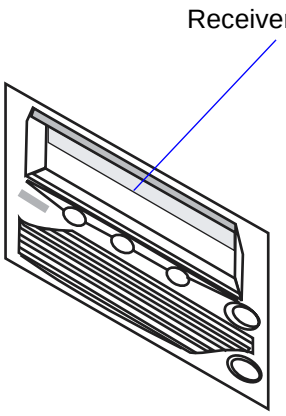
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Note: Additional information on the need to interconnect the device with shielded (data) cables or the need for special drives, such as ferrite beads on cables, is required if such means of interference suppression was used in the qualification test for the device. This information will vary from device to device and needs to be obtained from the EMC (Electromagnetic Compatibility) group or product manger.

Contents

A1

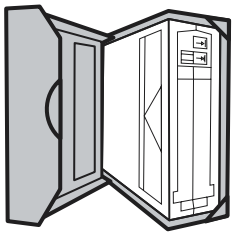
Super DLTtape™ Drive and Media Basics



Handling the Drive

! Do not place your hands inside the tape drive's receiver area. Hold the drive by the bottom but never by inserting your fingers into the receiver area on the front of the drive. Damage to the receiver area may occur if you lift or carry the drive in this manner.

- Do not stand the drive on its front panel.
- Always place the drive on a flat, stable surface.
- Avoid dusty, humid, or smoke-filled areas.
- Use proper Electrostatic Discharge (ESD) protection.
- Allow at least 6 inches of space behind the drive for ventilation.



Handling Media

- When not using them, store media cartridges in their plastic cases.
- Protect cartridges from shock, vibration, and magnetic fields.
- Avoid exposure to direct sunlight, heat, and moisture.
- Store media cartridges vertically.

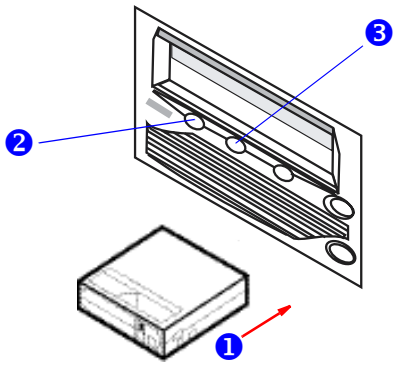
! Always visually inspect a media cartridge before placing it in the drive. If damage is apparent, do not use the cartridge. ⇨ B4

! Never shut off a Super DLTtape drive when there is a cartridge in the drive.

! Pay attention to these points. They are important for drive operation.

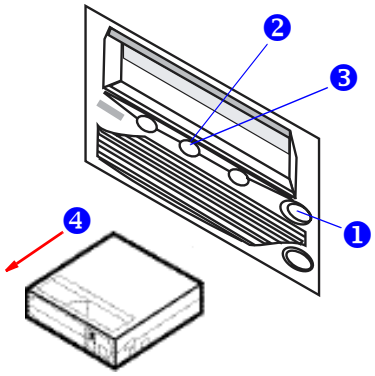
⇨ A1
Follow these cross references for more information on specific topics.

Loading and Unloading Cartridges



To Load a Cartridge

1. Insert the cartridge into the receiver on the front of the tape drive.
2. Push the cartridge completely into the drive receiver.
3. The green LED blinks to show that the tape is loading. When the tape reaches the Beginning Of Tape (BOT) marker, the LED lights steadily. The tape is now ready for use.



To Unload a Cartridge

1. Press the Eject button on the front panel. The drive completes writing data to the tape.
2. The green LED blinks as the tape rewinds.
3. When the tape is finished rewinding, the drive ejects the cartridge and the green LED lights steadily.

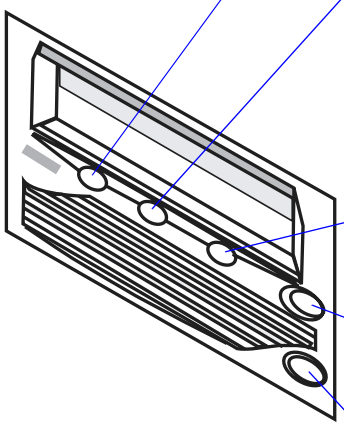
! **Wait until the drive ejects the cartridge and the green LED lights steadily before removing the cartridge.**

4. Remove the cartridge from the drive and return it to its plastic case.

A2 Indicators and Controls

This section describes drive and cartridge conditions communicated by the indicators and controls located on the front panel of the Super DLTtape drive.

Use the Eject button on the right of the faceplate to remove media cartridges.



LEDs

	Color	LED	Action	Explanation
1	Amber	SDLT 220 Write Protect	On	Tape is Write-Protected
			Off	Tape is Write-Enabled
		SDLT 320 Drive Density	On	Tape is 220-formatted
			Off	Tape is 320-formatted
2	Green	Drive Status	On	The drive is idle. There may or may not be a cartridge in the tape drive.
			Off	There is no off state.
			Blinking	The drive is in use. This includes several functions: • The tape is moving. • The drive is calibrating, reading, writing, or rewinding the tape. • The drive is loading or unloading.
3	Yellow	Cleaning Required	On	Cleaning is required.

Controls

	Button	Description
4	Eject	Press this button to eject the cartridge from the drive. When you press the button, the drive completes any writing of data to the tape, then ejects the cartridge.

	Port	
5	Infrared Communication	This infrared port, also known as the Global Storage Link (GSLink), provides a wireless remote testing base for customers and integrators to access system diagnostic information.

B1 Super DLTtape Media

From the outside, the Super DLTtape I cartridge looks very similar to the DLTtape IV cartridges. The basic geometry, write-protect switch, and label space are unchanged from the DLTtape IV cartridge. This simplifies the integration of Super DLTtape into existing operating environments and into automated tape libraries.

The Super DLTtape I cartridge is easy to recognize; it has a different color (green) than the DLTtape IV cartridge (charcoal) and contains a distinctive pattern molded into the shell. The Super DLTtape I cartridge has a keying feature to ensure that it cannot be loaded into previous generation DLTtape drives.

Both the SDLT 220 and SDLT 320 drives feature an optional backward-read compatibility (BRC) mode. When in BRC mode, the drives are capable of reading DLTtape IV tapes with DLT4000, DLT7000, DLT8000, and DLT 1 formats. The Backward-Read Compatibility table below lists BRC rates for the Super DLTtape drive.

Backward-Read Compatibility

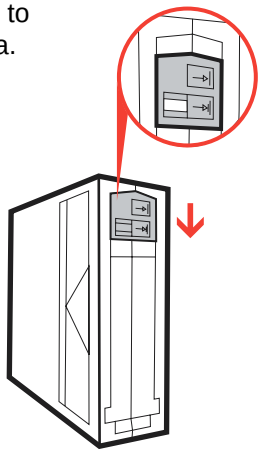
Format	Cartridge Type	Native Capacity (GB)	Native Read Transfer Rate (MB/second)
SDLT 320	SDLT I	160	16.0
SDLT 220	SDLT I	110	11.0
DLT 8000	DLT IV	40	4.0
DLT 7000	DLT IV	35	3.5
DLT 4000	DLT IV	20	1.5
DLT 1 (Benchmark)	DLT IV	40	3.0

Notes:

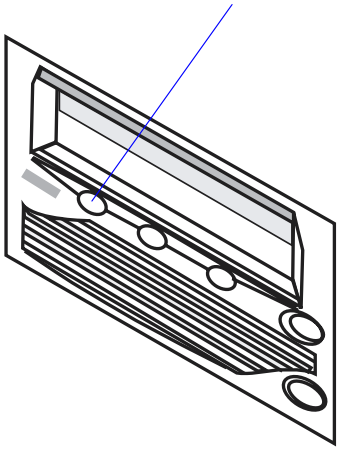
- Transfer rates quoted are nominal, measured reading uncompressed data.
- Non-SDLT drives will eject a cartridge written in SDLT 320 format.
- The SDLT 320 can read and write the SDLT 220 format at the native SDLT 220 transfer rate of 11.0 MB/s.

B2 Write-Protecting Media

Move switch down to write-protect media. Orange indicates write-protected.



SDLT 220 - Write Protect LED
SDLT 320 - Drive Density LED



To prevent accidental erasure of your data, each media cartridge has a write-protect switch. When active, this switch prevents data from being written to the cartridge.

! For valuable data, always make sure that the cartridge is write-protected before inserting it into the drive.

To enable write-protection, move the switch on the front of the cartridge down, so that the bright orange rectangle is visible.

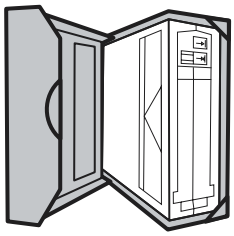
To disable write-protection, move the switch up so that the orange rectangle is not visible.

On the SDLT 220 tape drive, when you insert a write-protected cartridge into the drive, the amber LED on the front panel turns on.

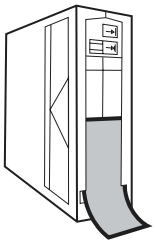
On the SDLT 320 tape drive, the amber LED indicates the format of the tape: Light on or blinking indicates SDLT 220 density; light off indicates SDLT 320 density.

B3 Media Care Guidelines

Store media vertically and in plastic cases.



Use slide-in label.



Super DLTtape I cartridges are engineered to be reliable, robust, and durable. They are manufactured to withstand 1,000,000 passes, and have a shelf life of 30 years. For best results, follow these guidelines for media care:

- Protect cartridges from shock, vibration, moisture, and magnetic fields.
- Keep media in protective cases at all times.
- Store cartridges vertically when not in use.
- Use the sliding labels provided. Do not use adhesive labels or Post-it® notes, and do not write on the cartridge.
- Never touch the tape or tape leader. Dust and oils from your skin contaminate the tape and affect performance.
- If you drop a cartridge, perform a visual media inspection before inserting it into the drive. ⇨ B4

! The safety of your data relies on proper care and handling of media cartridges.

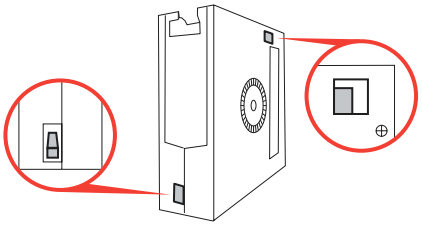
! Refer to the environmental specifications provided in the plastic cartridge case for detailed media information.

B4 Visual Media Inspection

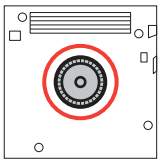
Improper media handling is the primary reason for tape drive problems. Mishandled and damaged cartridges lead to damaged drives.

If the cartridge does not pass the following criteria, do not use it.

Check reel locks.



Inspect spring-loaded hub for proper tension.



To Inspect a Cartridge

1. Inspect the exterior of the cartridge for physical damage, cracks, or broken parts.
2. Gently shake the cartridge. Listen for rattling of loose pieces.
3. Check to make sure that both reel locks on the cartridge are visible. One reel lock is located on the end of the cartridge that is inserted into the drive. The other is on the bottom of the cartridge.
4. Confirm that the spring-loaded hub on the bottom of the cartridge is centered. Press the hub to ensure that the spring is functioning properly.
5. Verify that the orange write-protect switch is enabled and undamaged.

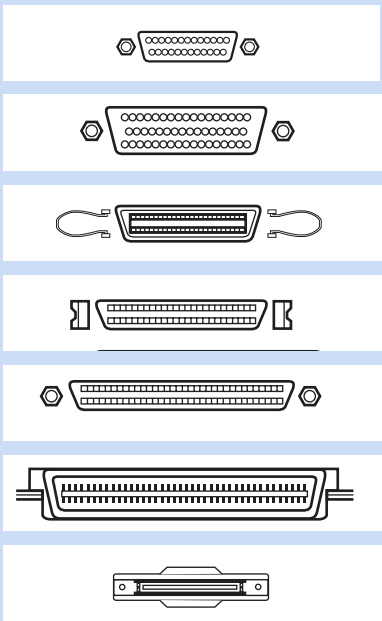
C1 SCSI Connectors

The Super DLTtape drive has two SCSI-2 connectors on the back of the drive. If you are unsure of your host system's SCSI connector, use the guide below to identify it and purchase the appropriate cable.

! Always ensure that SCSI cables are in good working order and pins are not bent or damaged.

! When connecting or disconnecting SCSI cables, always ensure that the host computer and SCSI devices are turned off.

SCSI Connectors



DB–25 MAC 25-pin

Sun and Data General Proprietary

Low-density 50-pin Centronics

High-density 50-pin Micro DB50 or Mini DB50

High-density 68-pin Micro DB68 or Mini DB68

SCA 80-pin Hot Swap Connector

Very High-density Interconnect

C2

SCSI Controller Interfaces

You can configure the Super DLTtape drive with one of two possible SCSI interface cards. These cards can provide one of three possible SCSI interface types. The multimode single-ended (MSE) card provides either a low-voltage differential (LVD) mode running at 80 MB/second or single-ended (SE) mode running at 40 MB/second. The high-voltage differential (HVD) mode runs at 40 MB/second.

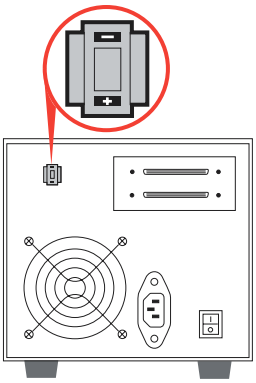
A single-ended drive only works with a single-ended SCSI controller card. A differential drive only works with a differential SCSI controller card.

- Single-ended SCSI interfaces support up to 7 devices on the SCSI chain using cable lengths up to 3 meters.
- Differential SCSI interfaces support up to 15 devices on the SCSI chain using cable lengths up to 25 meters.

! A low-voltage differential SCSI interface only works with a single-ended device if the controller is switched to single-ended mode.

! For more information on SCSI interfaces and SCSI bus settings, visit www.superdlttape.com.

C3 Setting the SCSI ID



Each device connected in a SCSI chain must have a unique SCSI ID number. The factory preset SCSI ID for the Super DLTtape drive is 3. Ensure that your drive's SCSI ID is unique on your SCSI chain.

! If the drive is the only SCSI device, leave the SCSI ID set to 3, the default setting.

! Do not use a SCSI ID of 7. This setting is typically reserved for the SCSI controller.

You can change the SCSI ID using the push-button switch on the back of the drive. Press the switch buttons above or below the number display with the point of a pencil to increase or decrease the ID number.

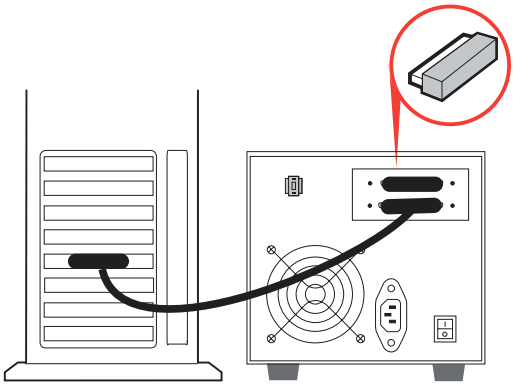
C4

Connections: Single Drive

If the Super DLTtape drive is the only SCSI device to be connected to the SCSI bus, follow these steps:

! Before connecting any SCSI device to the host computer, ensure that the computer and all peripheral devices are turned off.

Terminate upper SCSI port.



❶ Connect the terminator to the upper SCSI connector on the back of the drive.

Ensure that the SCSI bus is terminated correctly. The SCSI controller provides termination at one end. The last device connected to the SCSI bus, when terminated correctly, completes the SCSI chain.

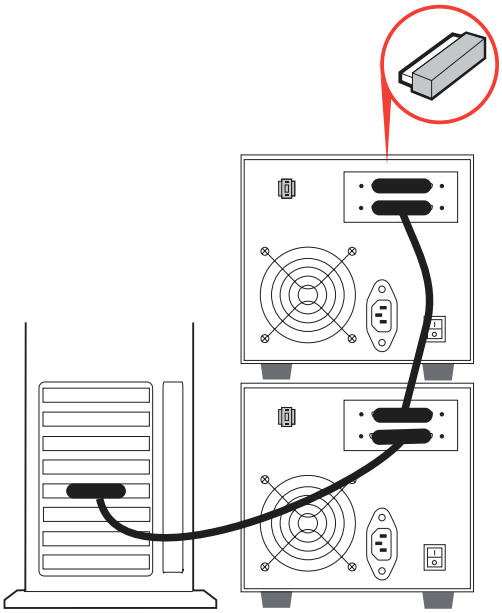
❷ Connect one end of the SCSI cable to the lower connector on the back of the drive.

❸ Connect the other end of the SCSI cable to the SCSI connector on the host computer.

! For optimum performance, the Super DLTtape drive should be the only device connected to the SCSI bus.

C5

Connections: Daisy Chain



If you are adding your Super DLTtape drive to an existing SCSI daisy chain, follow these steps:

1. Connect the SCSI cable from the host computer to the lower SCSI connector on the back of the drive.
2. Connect the SCSI cable to additional devices on the SCSI chain using the upper SCSI connector.
3. If the Super DLTtape drive is the last device in the chain, connect the terminator to the upper SCSI connector.

! If you have several devices connected to the SCSI bus and are experiencing errors, remove all devices from the SCSI bus. Then connect the drive to the host computer directly and terminate it. Confirm that the drive and host computer are communicating properly before adding additional devices.

4. Ensure that all devices have a unique SCSI ID.
5. Ensure that the SCSI bus is terminated correctly. The SCSI controller provides termination at one end. On the other end, you must terminate the last device connected to the SCSI bus to complete the SCSI chain.

D1 Troubleshooting Overview

If you are experiencing problems with your Super DLTtape drive, these steps help you conduct some basic troubleshooting:

1. Visually inspect the cartridge or try a new cartridge. ⇨ B4
2. Disconnect the drive from all SCSI connections, and perform a self-diagnostic test. ⇨ D2
3. Isolate the drive and host computer. Remove additional SCSI devices and network connections and attempt a sample back-up.
4. Check the SCSI connections to ensure that the cables are secure and in good working order, the SCSI devices have unique ID numbers, and the drive is terminated correctly. ⇨ C4, C5
5. Ensure that your operating system (modules, patches, and drivers), back-up software, and tape drive are compatible. Visit www.quantum.com/SDLT for the most current compatibility information.

! Quantum Technical Support and Customer Service: 1-888-827-3378. Please have the model and serial number of your drive available when you call. Find these numbers on the bottom of the drive. The model number begins with “TR” and the serial number, containing eight characters, usually begins with “MX.”

D2 Self-Diagnostic Test (POST)

The Super DLTtape drive performs a self-diagnostic test, also called a Power On Self Test (POST), each time you turn it on. This test helps you detect problems with your drive.

1. POST completes in approximately 10 seconds. While POST is running, the tape system responds BUSY to SCSI commands. The tape system also responds to various messages during POST.

   During this time, if a host tries to negotiate Synchronous or Wide transfers, the tape system negotiates to Asynchronous or Narrow. It may take longer than the duration of the POST for the drive to become ready.

2. When POST is complete, the green LED lights steadily.

3. If the self-diagnostic test is not successful, confirm the following conditions:

   - There is no cartridge in the drive.
   - The drive is receiving adequate power (try a new cord or different plug).
   - The drive is properly connected to the host computer or other SCSI devices.

4. If you have followed the above steps and the drive still fails POST, refer to additional troubleshooting information in the *SDLT 220 and SDLT 320 Product Manual*, a separate document available on the enclosed CD-ROM.

! Do not attempt to open the drive enclosure. Only a qualified SDLTtape drive technician should perform service.

D3 SCSI Troubleshooting

If the drive passes POST with no power or media cartridge problems, but the drive is still not performing, check for the following SCSI issues. ⇨ D2

SCSI Troubleshooting

Possible Problem	Solution
SCSI cables are worn or broken.	Check that SCSI cables are in good condition and that there are no missing or bent pins in the connectors.
Your system is not configured to see the SCSI ID.	Check your system and SCSI bus settings. Configure your system to recognize the drive.
The SCSI ID is not unique.	Change the SCSI ID. The new ID will take effect the next time you turn the drive on. ⇨ C3
The parameters for your SCSI adapter are incorrect.	Check your SCSI adapter card. Ensure that the SCSI interface (single-ended or differential) matches that of your drive.
The SCSI signal cable is loose.	Ensure that the connector on each end of the cable is fully seated. ⇨ C1
The SCSI terminator is absent or loose.	Install a terminator (if none exists) and make sure that it is fully seated.
The SCSI bus is not terminated correctly.	Confirm that a terminator is installed on the device at the end of the SCSI chain. ⇨ C4, C5
The SCSI bus is too long.	For single-ended SCSI mode, limit the length of the bus to 6 meters (19 feet). For differential SCSI cards, limit the length to 25 meters (82 feet).
Too many devices are connected to the SCSI bus.	Limit the number of external devices. Try using the tape drive as a stand-alone device. ⇨ C2

D4 Drive Optimization

Many factors contribute to Super DLTtape drive performance. Host machine factors can include processor speed, SCSI adapter performance, bus configurations, and software.

If you are concerned about the performance of your Super DLTtape drive, check the following items:

1. Ensure that your drive is properly defined for the host system. If the drive is not defined within the system, the SCSI adapter does not interact well with the drive.
2. De-fragment your hard disk on a regular basis. Fragmented disks and files take much longer to back up.
3. Check your host block size. Super DLTtape drives support block sizes up to 16 MB. In general, the larger the block size, the better the throughput. Many older software applications default to a 512-byte block size, often resulting in poor performance.
4. Check to make sure you are using the correct cartridge for best performance. ⇨ B1

D5 Error Checking

The Super DLTtape drive provides both Sense Key and Bugcheck event information. Sense Key is information about the SCSI controller, devices, and data transfer. Bugcheck is information about error events that have occurred within the drive.

The Super DLTtape drive has the ability to store up to 14 error event logs in semi-permanent, non-volatile memory (EEPROM).

To access this diagnostic information, download a copy of GSLink from the www.quantum.com web site. Online help for GSLink is also available.

Quantum frequently provides new and updated tools to use with its tape drives. All tools are available on Quantum's web site, http://www.quantum.com. New tools and utilities get added frequently. Follow the path **Service and Support =>DLTtape Drives and Software** and look at the list to see what is available.

E1 Specifications

Dimensions

The tables in this section list dimensions, physical specifications, functional specifications, and maximum data transfer rates.

Description	Internal Version	Tabletop Version
Height	82.55 mm (3.25 in.) without front bezel 86.36 mm (3.40 in.) with front bezel	160.02 mm (6.30 in.)
Width	146.05 mm (5.75 in.) behind front bezel 148.34 mm (5.84 in.) with front bezel	175.26 mm (6.90 in.)
Depth	203.20 mm (8.00 in.) measured from back of front bezel; 212.09 mm (8.35 in.) including front bezel	325.12 mm (12.80 in.)
Weight*	2.38 kg (5 lbs 4 oz)	6.27 kg (13 lbs 13 oz)
Shipping Weight	3.77 kg (8 lbs 5 oz)	9.90 kg (21 lbs 13 oz)

* Weights depend on configuration. The packaging may change depending on the shipping weight. Note: Mounting hole pattern for the bottom and sides of the system is industry standard.

Physical Specifications

The following table lists operating limits and accuracy for SDLT drives.

Data Integrity	
Error Type	**Frequency**
Error Rates Recoverable Read	<1 error in 10^6 bytes read
Detected, Unrecoverable Read	<1error in 10^{17} bits read
Undetected Read	<1 error in 10^{27} bits read
Rewrite Errors	<5 per 10^6 bytes written
Temperature	
Operating	10 °C to 40 °C (50 °F to 104 °F)
Storage	-40 °C to 66 °C (-40 °F to 150 °F)
Humidity	
Operating	20% to 80% non-condensing
Storage	10% to 95% non-condensing
Safety Certifications	
	Meets UL 1950, CSA C22.2 No. 950, GS mark, and EN60950/IEC 950 standards
Operating Air Velocity	
	125 LFM average air velocity measured directly in front of the bezel
Electrical Rating	
	100 to 240 VAC, 65 W (internal rating) maximum, 47 to 63 Hz
Communication Interface	
	SCSI MSE (LVD or SE) or HVD, 8-bit single-ended or differential

Functional Specifications

The following table lists tape capacity, SCSI bus transfer rates, and reliability factors.

Capacity: Super DLTtape I Formatted Cartridge

	SDLT 220	SDLT 320
Native	110 GB	160 GB
Compressed (2:1)	220 GB	320 GB
SCSI Bus Transfer Rates		
Load to BOT	12 s (typical) 40 s (unformatted tape)	
Unload from BOT	12 s	
Average access time	70 s (from BOT)	
Max access time	142 s (from BOT)	
Average rewind time	69 s	
Max rewind time	140 s	
Read/Write tape speed	122 ips	
Rewind tape speed	160 ips	
Linear search tape speed	160 ips	
Reliability Factors		
Warranty	3 years	
Head life	30,000 tape motion hours	
MTBF	250,000 power-on hours	
Tape life	1,000,000 passes	

Maximum Data Transfer Rate

The following tables show the maximum and burst data transfer rates for SDLT 320 and SDLT 220 tape drives.

SDLT 220 Sustained

Configuration		Native	Compressed*	SDLT 220 Burst Max†
HVD (Ultra 1 SCSI)	Narrow	11 MB/s	20 MB/s	20 MB/s
	Wide	11 MB/s	22 MB/s	40 MB/s
LVD (Ultra 2 SCSI)	Narrow	11 MB/s	22 MB/s	40 MB/s
	Wide	11 MB/s	22 MB/s	80 MB/s

SDLT 320 Sustained

Configuration		Native	Compressed*	SDLT 220 Burst Max†
HVD (Ultra 1 SCSI)	Narrow	16 MB/s	20 MB/s	20 MB/s
	Wide	16 MB/s	32 MB/s	40 MB/s
LVD (Ultra 2 SCSI)	Narrow	16 MB/s	32 MB/s	40 MB/s
	Wide	16 MB/s	32 MB/s	80 MB/s

* The SCSI bus, not SDLT 2220 or SDLT 320 design or SDLTtape, limits burst speeds.

† The compression rates shown assume an industry standard 2:1 compression ratio. Actual compressions ratios achieved depend on the redundancy of data files being compressed.

E2 Regulatory Information

Electromagnetic Emissions

The integratible version of the drive complies with FCC Class A in a standard enclosure; the tabletop version complies with the FCC Class B limits. The following table provides regulations and certifications held by the tape drives.

Type	Regulation/Certification
EEC Directive 89/336 CE	BS6527 (UK) EN55022 (EU) EN55024 (EU)
CFR 47, 1995	FCC Rules Part 15B Class B (MDOC)
IECS-003	Canada
V-3/97.04	VCCI Class B (Japan)
AS/NZS 3548	Australia / New Zealand (C-Tick Mark)
CNS 13438	BSMI Class A (Taiwan)

Conducted Emissions

Limits for Class B equipment are in the frequency range from 0.15 to 30 MHz.

Frequency Range	Limits dB	
	Quasi-peak	Average
0.15 to 0.50 MHz	66 to 56*	56 to 46
0.50 to 5 MHz	56	46
5 to 30 MHz	60	50

* The limit decreases linearly with the logarithm of the frequency.

Radiated Emissions

The following table lists limits of radiated interference field strength, in the frequency range from 30 MHz to 1000 MHz at a test distance of 10 meters, for Class B equipment.

Frequency Range	Quasi-peak limits dB (µV/m)	
	Class A	Class B
30 to 230 MHz	40	30
230 to 1000 MHz	46	37
Above 1000 MHz	54	Not applicable

Acoustic Noise Emissions

The following table lists limits of acoustic noise emissions both as noise power and sound pressure.

Acoustics – Preliminary declared values per ISO 9296 and ISO 7779/EN27779

Mode	Noise Power Emission Level (LNPEc) Internal Version	Tabletop Version
Idle	Not applicable	5.4 Bel
Streaming	5.9 Bel	5.9 Bel

Mode	Sound Pressure Level (LPAc) Internal Version	Tabletop Version
Idle	Not applicable	42 dB
Streaming	47 dB	53 dB

Susceptibility and ESD Limits

The following table lists the conducted susceptibility and ESD failure level limits for the tape system.

Type	Specifications	Comments
Radiated Immunity: High Frequency, Electric Fields	3 V/m (rms), 80% modulated, 1 kHz, 26-1000 MHz	No errors* No screen distortion
Magnetic Radiated: Low Frequency, Magnetic Bursts	3 A/m @ 230V/50 Hz	No errors * No screen distortion
EFT: Fast Transient (Bursts) for Power and Data Cables	2 kV	No errors*
PLT: High Energy Transient Voltage For Power Cables	1.2 kV (Differential) 2.5 kV (Common Mode)	No errors*
Low-Level Conducted† Interference for AC and DC Cables	3 V/m (rms) 80% modulated, 1 kHz, 0.15-80 MHz	No errors * No screen distortion

* The SDLT system shall maintain normal operation both in Read/Write and in Standby conditions. No errors attributable to the test shall be encountered.

† Conducted: The transient voltage is the actual peak voltage above the normal AC voltage from the power source. The maximum energy in a single pulse must be limited to 2.5 W.

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Publication Number: 81-81110-01-A01