FUJIFILM

FLASH TECHNICAL SUPPORT
MAGNETIC MEDIA, OPTICAL DISCS AND OTHER DATA STORAGE PRODUCTS

LTO Ultrium Drive and Data Cartridge Q & A

Question   Can I degauss (bulk erase) an LTO Ultrium data cartridge and then reuse it?

Answer   **No**. LTO Ultrium data cartridges have magnetic servo tracks recorded on the media during manufacturing. Ultrium media will be unusable, if the magnetic servo tracks are bulk erased (degaussed). Data storage products with pre-recorded magnetic servo signals should not be degaussed, unless data erasure *and* destruction of the media is desired. See Technical Flash, Degaussing Data Tapes, for more information.

Question   Can I assume that I will get the advertised **2:1** compressed capacity & transfer rate?

Answer   **No**; you will get more or less!   A more definitive statement for advertising capacity and transfer rate, which "assumes 2**:**1 data compression," would be:

"Assuming **Your Data** Compresses 2**:**1."See the *"Tape Drive Data Compression Q & A"* Technical Support Flash for more information about data compression.

Question   Is the LTO Universal Cleaning Cartridge (LTO-UCC) compatible with all LTO drives?

Answer   **Yes**, the Universal Cleaning Cartridge is compatible with all LTO drives, generations one through the current fifth generation. The UCC began shipping in May of 2002. The UCC is compatible with all Ultrium drives; however, LTO-1 drives manufactured before the middle of 2002 may require a firmware upgrade to use the UCC.

Question   Why does an LTO Universal Cleaning Cartridge (UCC) go into my drive and immediately eject without performing a cleaning cycle?

Answer   As mentioned above, specific revisions of the drive's firmware are needed for proper operation of the UCC in 1st generation dives (LTO-1) manufactured before mid-2002.

Another possibility is that you have already used the cleaning cartridge its maximum number of times. All drives immediately reject an expired cleaning cartridge; discard a cleaning cartridge that has reached the maximum number of uses for your drive.
The number of drive-cleaning uses is dependent on the drive; see your drive manual or contact the drive manufacturer or your system vendor for specific information.

Also, some drive models do not allow cleaning unless the drive is requesting to be cleaned.   If you insert a cleaning cartridge when the drive has not requested one, these drives will automatically reject the cleaning cartridge.

Other drive models do allow periodic cleaning, but NOT when the drive has been cleaned too recently (the drive is preventing excessive cleaning, which can cause wear on drive heads). If the drive is not requesting to be cleaned and you insert a cleaning cartridge too soon after the last cleaning, these drives automatically reject the cleaning cartridge.

Finally, there are different UCC bar code schemes and media ID's based on specific library make/model, drive generation, and firmware revision. An incorrectly bar code labeled UCC will be rejected by the library.

Again, contact your drive manufacturer or system vendor for information specific to your drive and library models.

Question   Will X-ray inspection damage LTO data cartridges or the recorded data?

Answer   No, It is theoretically impossible for X-rays to erase magnetic media because X-rays are non-magnetic! It is safe to permit X-ray examination of all magnetic media, both recorded and unrecorded.

The National Bureau of Standards (NBS) conducted experiments to test this theory. Various recorded media were tested in the NBS Radiation Physics Laboratory; the magnetic media was subjected to extremely high (lethal) X-ray doses without any loss of data. Recorded media was also subjected to airport X-ray inspections – without any loss of data. The National Bureau of Standards is now known as the National Institute of Standards and Technology (NIST).

Question   For calculating the capacity of LTO Ultrium data cartridges, does one GB (gigabyte) equal 1,073,741,824 bytes or 1,000,000,000 bytes?

Answer   The second value is correct. For LTO Ultrium and other data storage tapes, as well as data storage disks, 1 GB (gigabyte) equals 1,000,000,000 bytes (1 billion bytes) and 1 MB (megabyte) equals 1,000,000 bytes (1 million bytes).

Question   What is the estimated life of LTO tape media?

Answer   For Fujifilm LTO tape media, a combination of a stable and tough binder technology and stable magnetic particles of the magnetic media coating *and* the gentle media handling by the linear technology drive transport – has virtually eliminated both environmental wear and use-generated wear. See the *"Data Longevity- Tape Archives"* Technical Support Flash for more about tape media archival life.

Question   Where can I get more information about having bar code labels pre-applied on LTO Ultrium or other data cartridges?

Answer   Please visit our computer products website www.fujifilmusa.com/tapestorage for forms and information about cartridges with factory pre-applied bar code labels that can be ordered from your local computer products dealer.

Question   Why do some call it LTO while others call it Ultrium and/or LTO Ultrium?

Answer   The Linear Tape-Open (LTO) founders allowed for multiple tape technology families under the LTO umbrella. The first was named Ultrium. As a practical matter, since no other different product was developed and none currently expected, either refers to just one family of tape drive and media products.

LTO ULTRIUM MEDIA AND DRIVE COMPATIBILITY

Tape Media Capacity, Length	LTO-1 Tape Drive	LTO-2 Tape Drive	LTO-3 Tape Drive	LTO-4 Tape Drive	LTO-5 Tape Drive
LTO Ultrium 1 100/200 GB, 609m	**Full Read/Write Compatibility**	**Full Read/Write Compatibility**	**Read-Only**	NOT COMPATIBLE	NOT COMPATIBLE
LTO Ultrium 2 200/400 GB, 609m	NOT COMPATIBLE	**Full Read/Write Compatibility**	**Full Read/Write Compatibility**	**Read-Only**	NOT COMPATIBLE
LTO Ultrium 3 400/800 GB, 680m	NOT COMPATIBLE	NOT COMPATIBLE	**Full Read/Write Compatibility**	**Full Read/Write Compatibility**	**Read-Only**
LTO Ultrium 4 800/1600 GB, 820m	NOT COMPATIBLE	NOT COMPATIBLE	NOT COMPATIBLE	**Full Read/Write Compatibility**	**Full Read/Write Compatibility**
LTO Ultrium 5 1500/3000 GB, 846 m	NOT COMPATIBLE	NOT COMPATIBLE	NOT COMPATIBLE	NOT COMPATIBLE	**Full Read/Write Compatibility**
LTO UCC	**Compatible**	**Compatible**	**Compatible**	**Compatible**	**Compatible**

For more Data Storage Tape Technical Support Documents and Product Information, go to: www.fujifilmusa.com/tapestorage

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