

# Technical White Paper for the Data Destruction of LTO Media

## Summary

In 1995, the Department of Defense (DoD) National Industrial Security Program Operating Manual (NISPOM) classified LTO tape cartridges having coercivity values greater than 750 Oersteads, like LTO1 and LTO2 media, as “Type III”.

This document, published 11 years ago, states that Type III media cannot be “sanitized” for reuse by degaussing (as this destroys the servo tracks rendering the cartridge useless) and must be destroyed by crushing or incineration.

Now this is no longer the case. The Data Media Source’s LTO Data Eraser System employs a specially designed four-databand erase head (Figure 1) that applies a full saturation DC data erasing high-density magnetic field only over the four databands on the tape from the beginning of the tape (BOT) to the end of the medium (EOM). This process eliminates 6 bits minimum to 8 bits maximum from each byte that has been written on the tape from BOT to EOM. This renders virtually all of the data on the tape permanently unrecoverable.

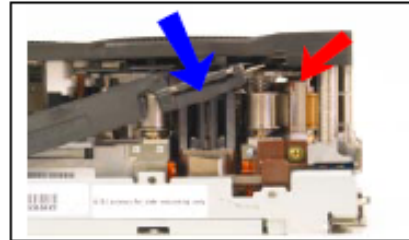


Figure 1: The Data Media Source’s LTO Tape Eraser . The path showing the LTO 16-track Read/Write head (blue arrow) and the four band DC eraser head (red arrow).

HIPAA’s “Electronic Protected Health Information” (EPHI) deletion policies requiring complete deletion are also met and/or exceeded by The Data Media Source’s LTO Tape Eraser System. In addition, the operation is automatic so that Each cartridge is sanitized with the identical level of steady-state flux density, saturating the tape across its four databands in about four minutes per cartridge.

## Theory of Operation

Figure 2 illustrates how the four databand erasers in the specially designed and fabricated erase head work. Each databand records two tracks per pass, hence two bits of every byte stored are recorded in each databand. Approximately 85% to 100% of the bits of each byte are completely destroyed in one pass from BOT to EOM. Massive losses of nearly all the bits in each byte stored, renders the data completely unrecoverable. The DC magnetic field of the erase heads completely saturates the databand area, removing any possibility of any residual dynamic flux field following the erase pass.

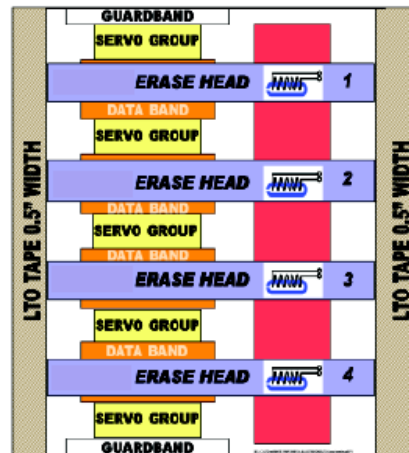


Figure 2: The erase head covers the databands with tolerance to ensure the servo tracks are not corrupted. Two data tracks are recorded in each databand per pass. One or both tracks are erased completely, rendering all data destroyed in one pass.

## Certification of Quality

A yellow erase indicator on the front panel is turned on as the erase head is energized and follows the read/write head as it moves from BOT to EOM. If a write error is detected as the read/write head moves along the tape toward the EOM, the red fail indicator on the front panel turns on. One error will cause the tape to be rejected and set aside for evaluation.

An important advantage of this data erasure process is the controlled manner of erasing the magnetic flux application. Unlike conventional “eraser units”, the quality of data removal is a function of the operator’s handling of the cartridge.

The Data Media Source’s LTO Tape Eraser automatically loads the cartridge, runs the tape over the erase head, tests for errors, rewinds, and resets the EOD to 0 as a new tape would appear.

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