THIC Inc.

The Premier Advanced Recording Technology Forum

DLT for the rest of us

Tim Gerchar
Benchmark Tape Systems Corporation
5665 Airport Blvd, Boulder CO 80301
Phone: +1-303-443-7358, FAX: +1-303-443-7359
E-mail: mkroner@benchmarktape.com

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Englewood CO 80112

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BENCHMARK
TAPE SYSTEMS

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Presentation Overview

- Current Status
- Product Line Overview
- Major Technology Improvements

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Benchmark Current Status

- First product shipped Q4 1999
- Customer acceptance high
  - OEM
    - 2 Committed
    - Strong interest by all platform OEM's
    - Executed "Automation Neutral" model
  - Distribution
    - Shipping worldwide
    - U.S.—Ingram Micro, Bell Micro, Merisel, Consan
    - Europe--CMS, Datacomp, Four Leaf
    - *More to come……*

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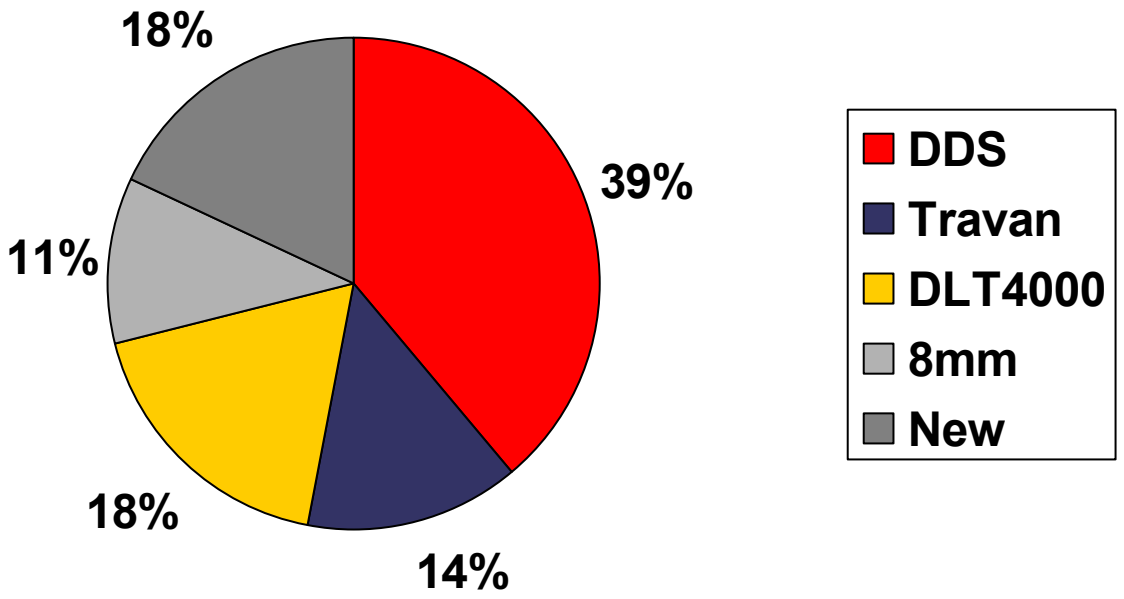
What is DLT1 Displacing?



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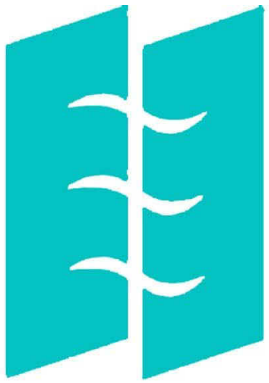
Library Partners

Supported Software Partners



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Benchmark DLT1 Tape Drive

- Capacity: 40/80* GB
- Sustained Transfer Rate: 3.0/6.0* MB/sec.
- Wide Ultra SCSI LVD Interface
- Backward read compatible with the DLT4000 Format using DLTtape™IV Media
- External and Internal Configurations Available
- Compatible with all Key Application Software Packages

* Assumes 2:1 Compression

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Benchmark DLT7 Autoloader

- 7 Cartridge Single Drive Autoloader
- Capacity: 280/560* GB
- Transfer Rate: 3.0/6.0* MB/sec.
- Wide Ultra SCSI LVD Interface
- Sequential or Random Access
- Available in Desktop or Rack Mount Configurations
- Compatible with all Key Application Software Packages

* Assumes 2:1 Compression

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Benchmark Cleaning Tape

- Developed Exclusively for Benchmark DLT1
- Proprietary Cleaning Tape for DLT1 Only
- Incompatible with All other DLT Products
- Non-Abrasive Woven Nylon Fabric
- DLT1 Drive Automatically Indicates Cleaning Required

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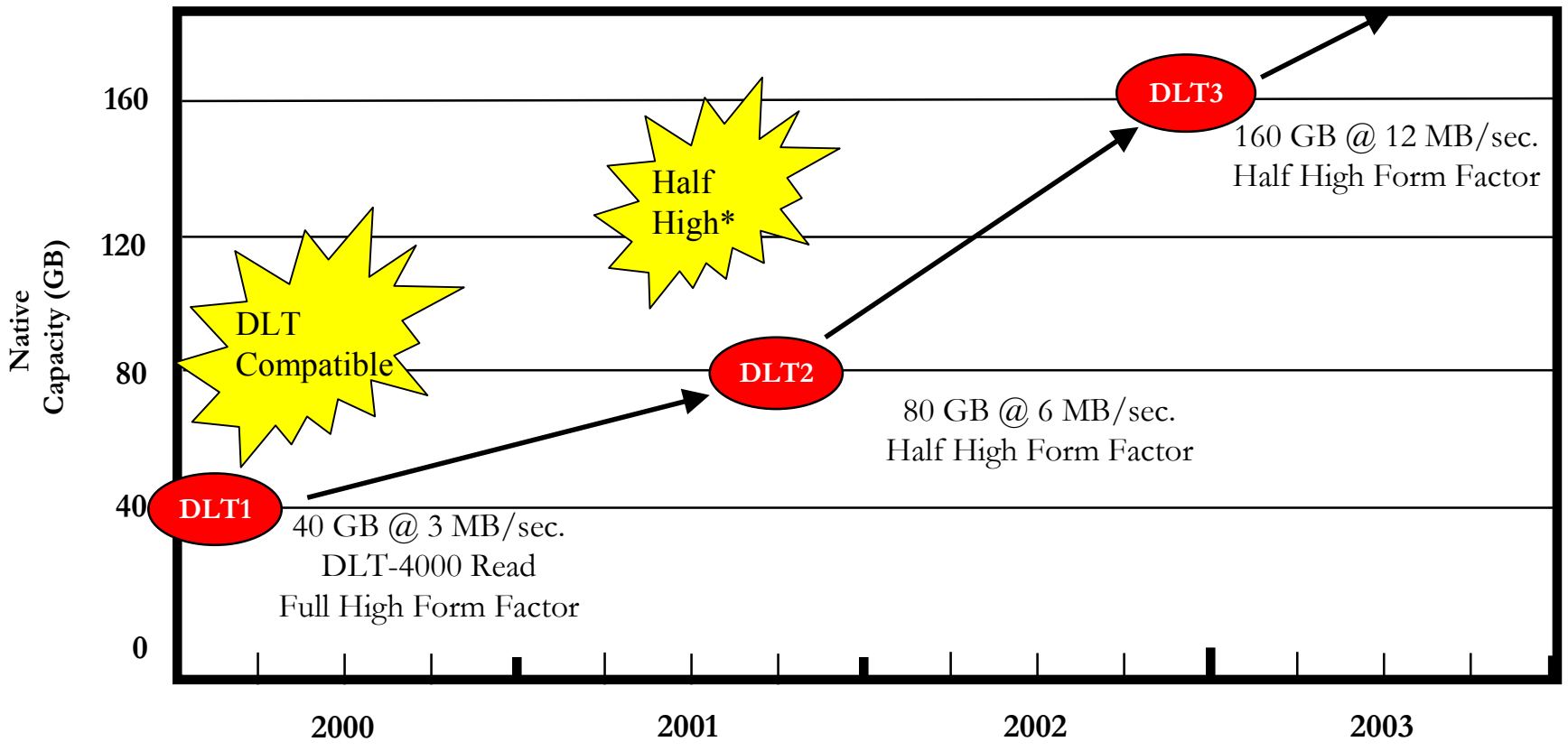
Benchmark Product Roadmap



* First Half-High DLT Product

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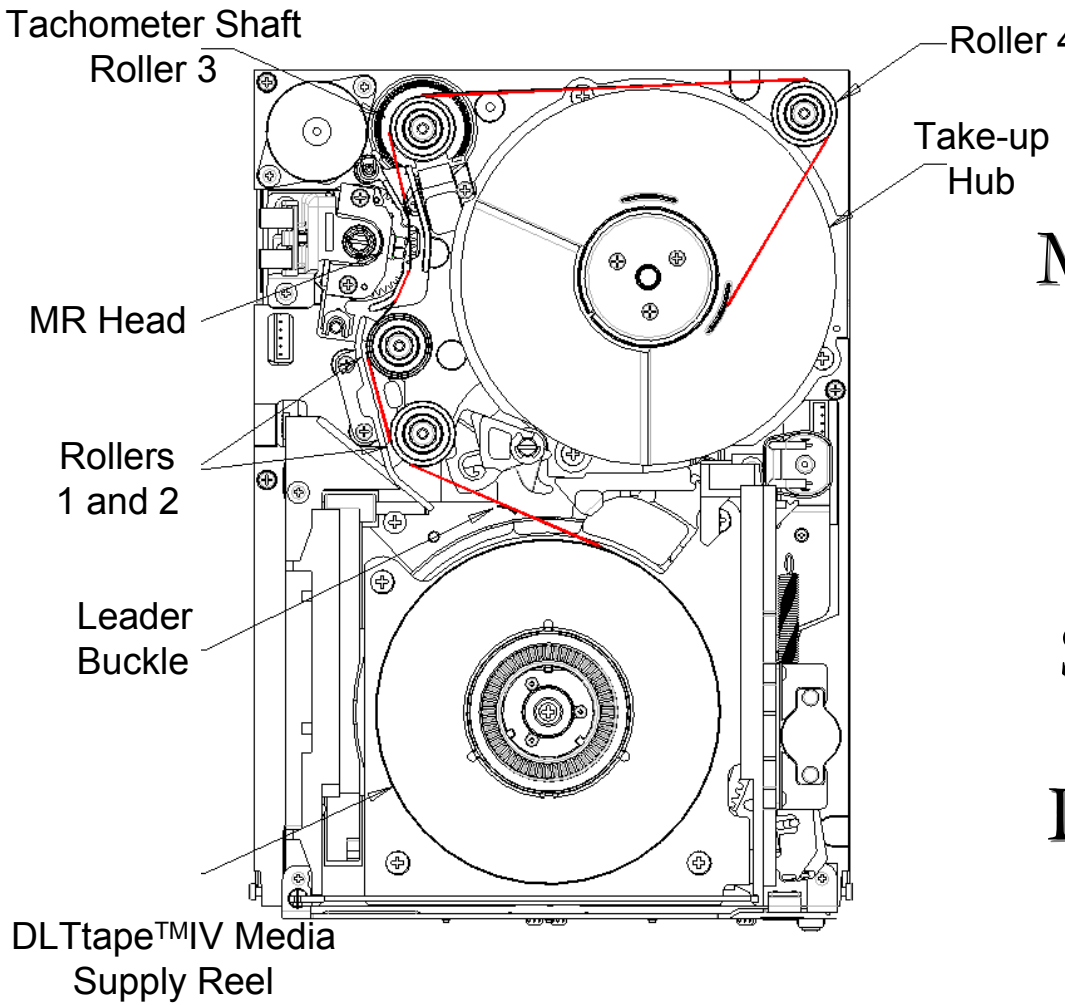
Major Technology Improvements



Improved tape path

Multi-channel MR Head with MR Head Shield

TapeSense System

Soft Load Mechanism

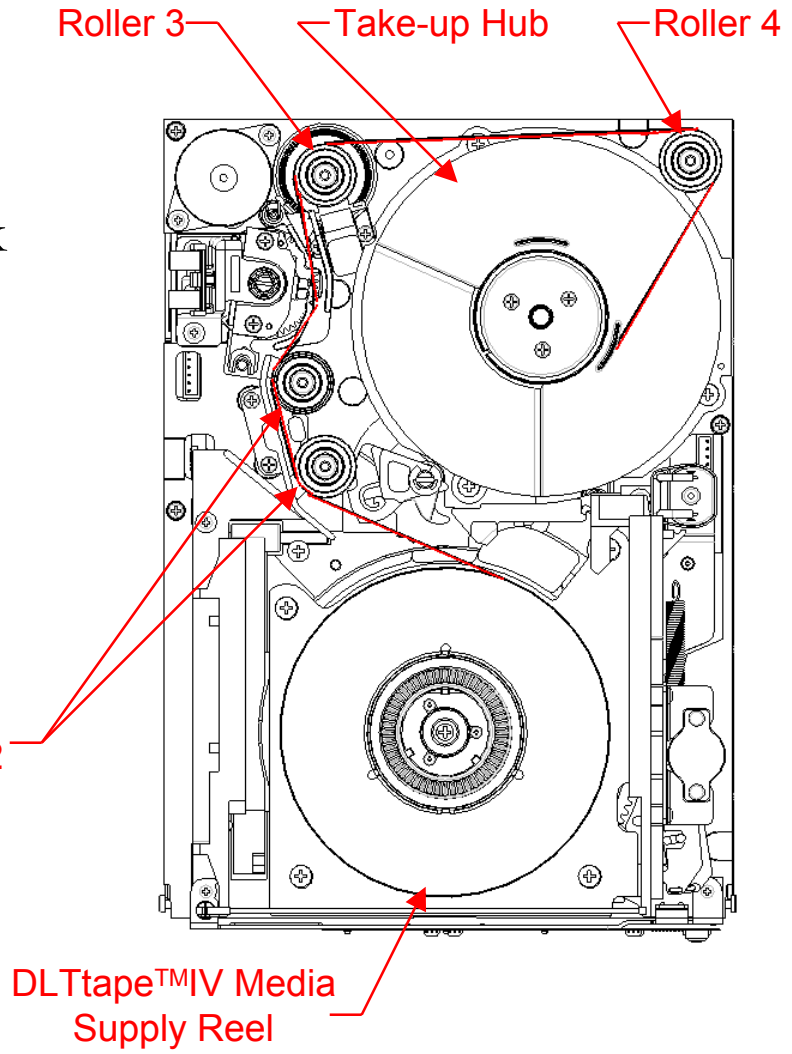
Drive Components and Manufacturability

BENCHMARK TAPE SYSTEMS

Major Technology Improvements

DLT1 Improved Tape Path

- Rigid One-Piece Cast Aluminum Deck
  - 4 Precision Tape Guiding Rollers vs. 6
    - Minimized LTM
- Fixed Take-Up Hub and Reel Motors
  - Integrated Servo and Buckling Mechanics
    - Significantly Reduces 'Dropped Leaders'



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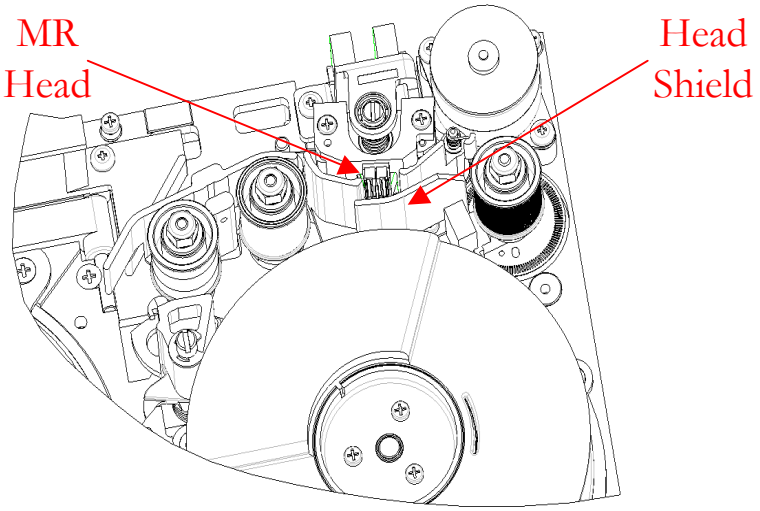
Major Technology Improvements

Thin-Film MR Head Design



- Benchmark Format Elements
  - Write Elements are Thin Film
    - Flux Density - 92.3 kfci
    - Track Density – 336 tpi (168 tracks)
  - Read Elements are Magneto-Resistive
  - 2 Channel Configuration
  - DLT 4000 Format Read Elements are Magneto-Resistive
- MR Head Shield
  - Activated during Load and Unload Process
  - Only allows DLTtape™IV Media to Contact Head Assembly
- Elements and Channel Electronics
  - Optimized for DLTtape™IV Media

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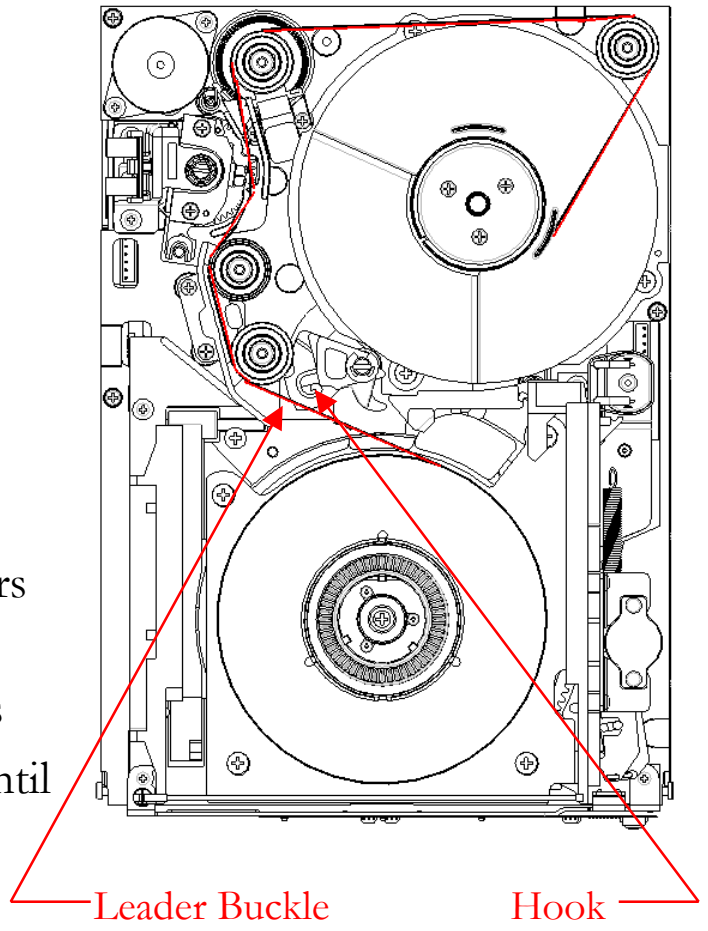
Major Technology Improvements

Benchmark TapeSense System

- Virtually Eliminates 'Dropped Leaders'
- Ensures Proper Cartridge Buckling
- Integrated Servo System & Buckling Mechanics
  - Properly Manages Drive Leader to Cartridge Interface
    - Senses Missing or Damaged Cartridge Leaders
    - Accurately Manages the Servo to Mechanics Timing & Tension via Load Position Sensors
    - Drive Leader Forced to Remain 'Hooked' Until a Successful Buckle is Detected



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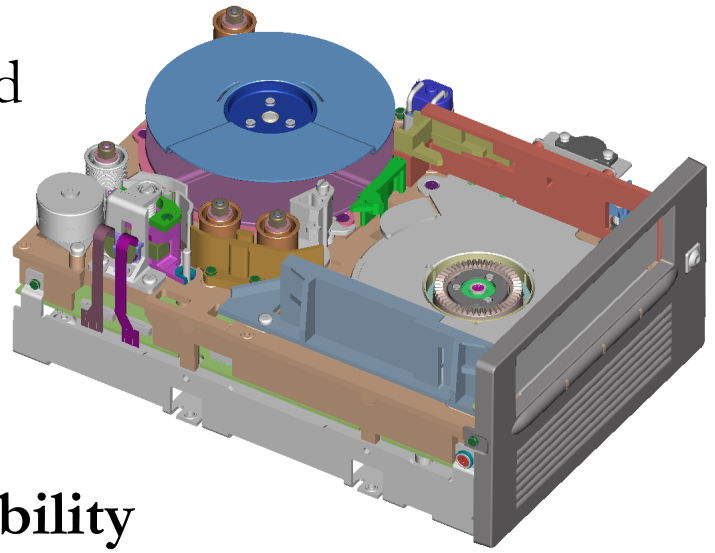
Major Technology Improvements

Soft Load Mechanism

- Handle-less Cartridge Load/Un-load Mechanism
  - One button soft eject
  - Automation Ready
  - Single DC Motor



Drive Components & Manufacturability

- Single PCBA w/Minimized Interconnects
- Low Electrical & Mechanical Parts Count
- Low Cost Contract Manufacturing Plant

= Low Cost DLT Drive for the Rest of us..

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Thank You For the Time to Present!

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