FREEMAN REPORTS STUDY SHOWS LTO-BASED SUPER TAPE DRIVES CONTINUE MARKET SHARE LEADERSHIP

SILICON VALLEY, CALIF. — (July 28, 2005) — Certance (now owned by Quantum), HP and IBM Corporation – the three technology provider companies (TPCs) of the LTO Program – today announced that LTO technology continued to demonstrate strong success in 2004 as worldwide shipments of super tape drives based on the LTO Ultrium format led the market by a significant margin over competing technologies. According to a July 20, 2005 study by Freeman Report: Compact Tape Outlook, LTO Ultrium tape drives held a 71 percent share of the super drive market segment (100GB native capacity or higher) based on unit shipments. Separately, Freeman Reports notes that LTO technology held a 77 percent share of the super drive autoloader market. For more information on the report, please visit www.freemanreports.com.

“The LTO Ultrium format is a tape technology juggernaut that has continued to garner an even larger share of the super drive market during 2004,” said Robert C. Abraham, president, Freeman Reports. “Tape storage offers users low–cost and a removable technology to optimize data protection. Based on past performance of the LTO Ultrium tape format, we expect LTO technology to have an extremely productive 2005.”

“The Freeman Reports study confirms what the LTO Program has recognized over the past several years: overwhelming support for the LTO Ultrium format across all segments of the marketplace, from single server to enterprise-class server environments,” said Cindy Grossman, Vice President, Tape Storage Systems, IBM. “The research highlights the impressive adoption of LTO technology that can be attributed to several key LTO attributes, including high reliability and performance, an open format technology with multiple suppliers providing customer choice, and data interchangeability for investment protection.”
Storage administrators continue to seek more powerful tape performance, new technologies such as WORM (Write Once, Read Many) functionality to meet ever-growing business and regulatory requirements, and a roadmap vision for the future they can trust. The LTO Program has addressed these issues with the LTO Ultrium format generation 3, LTO WORM, and a roadmap extension including generations five and six.

**LTO Ultrium format generation 3**

The LTO Ultrium format generation 3 doubles physical storage capacity over generation 2, increasing to 800 GB from 400 GB (assuming a 2:1 compression). Transfer rates in generation 3 increase up to 160 MB per second (MB/s) from 80 MB/s in generation 2 (assuming a 2:1 compression) allowing for up to 576 GB of backup performance per hour. The LTO Ultrium format generation 3 drives also offer backwards-compatible read-and-write capability with the Ultrium format generation 2 cartridges and backward read capability with generation 1 cartridges, helping to protect the investment customers have made in LTO technology.

**LTO WORM**

The LTO Program WORM implementation is designed to provide users with a very cost effective means of storing data in a non-rewriteable format to address compliance regulations.

Robust algorithms using the Cartridge Memory (CM), in conjunction with low level encoding that is mastered on the tape media at the time of manufacture, are designed to prevent tampering. The LTO Ultrium format generation 3 specification includes the ability for WORM enabled and non-WORM enabled drives to co-exist. In addition, appending data at the end of a WORM cartridge which was previously written to is supported, thus allowing customers to take full advantage of the high capacity tape media.

**Extended LTO Ultrium Roadmap**

LTO Ultrium Generation 5

The LTO Ultrium format generation 5 is planned to double physical storage capacity over generation 4, increasing to 3.2 TB compressed (assuming a 2:1 compression). Transfer rates in generation 5 are planned to increase up to 360 MB/sec (assuming a 2:1 compression).

LTO Ultrium Generation 6

The LTO Ultrium format generation 6 is planned to double physical storage capacity over generation 5, increasing to 6.4 TB (assuming a 2:1 compression). Transfer rates in generation 6 are planned to increase up to 540 MB/sec (assuming a 2:1 compression). The complete roadmap can be found at [http://www.ultrium.com/newsite/html/format_roadmap.html](http://www.ultrium.com/newsite/html/format_roadmap.html).
How to License LTO Ultrium Technology
The LTO program offers several different license packages – from enhanced packages that provide the specifications and licenses to manufacture Ultrium products, to basic packages, providing Ultrium format specifications and guidelines for interchangeability.

Buyers seeking Ultrium format-compliant products should look for the Ultrium format compliance verification trademarks on both tape drives and data cartridges. Storage and media manufacturers interested in licensing LTO technology may obtain information by contacting the Law Offices of Ladas & Parry at (323) 934-2300, or by e-mail at LTO_INFO@ladasparry.com.

About Linear Tape-Open (LTO) Technology
LTO technology is a powerful, scaleable, adaptable open tape format created by technology providers Certance (now owned by Quantum), HP, and IBM Corporation to help meet the growing demands of data protection in the midrange to enterprise-class server environments. This ultra-high capacity generation of tape storage products is designed to deliver outstanding performance, capacity and reliability combining the advantages of linear multi-channel, bi-directional formats with enhancements in servo technology, data compression, track layout, and error correction.

The LTO Ultrium format has a well-defined roadmap for growth and scalability. The roadmap represents intentions and goals only. There is no guarantee that these goals will be achieved. Compliance verification is vital to meet the free-interchange objectives that are at the core of the LTO Program. Ultrium tape mechanism and tape cartridge interchange specifications are available on a licensee basis. For additional information on LTO technology, visit the LTO Program Web site at www.ultrium.com.

Note: Linear Tape-Open, LTO, the LTO logo, Ultrium, and the Ultrium logo are trademarks of Certance (now owned by Quantum), HP and IBM in the US and other countries or both.

###