

## LT90H USB + UNITEX ArchiveLT



Reliable Long-Term Storage  
for High-Value Medical Research Data  
Supporting Future Healthcare Innovation

## Background & System Overview

The Karolinska Institutet, located in Sweden, is one of the world's leading medical research institutions. Renowned for selecting the Nobel Prize laureates in Physiology or Medicine since 1901, the institute conducts groundbreaking research across a wide range of fields - from basic medical science to clinical medicine and public health.

Particularly in the areas of cancer research, regenerative medicine, neuroscience, and infectious diseases, the Karolinska Institutet is recognized as a global center of excellence. With a vast number of laboratories and an ever-growing volume of research data, the need for a reliable, long-term data preservation solution became increasingly critical.

To address the challenge of securely storing research data for over a decade, the institute sought alternatives to conventional storage media such as HDDs, which did not meet their requirements. Their search led them to LTO magnetic tape technology, known for its high capacity - up to 45TB per cartridge - and long-term durability of over 30 years. The decision to adopt UNITEK's LTO solution was driven by its ease of use, allowing researchers to simply connect via USB.

Today, the Karolinska Institutet utilizes the UNITEK LT90H USB LTO tape drive in combination with the UNITEK ArchiveLT software to archive a wide range of data, including microscope imagery and other critical research in medicine, biology, and life sciences.

## LT90H USB + UNITEK ArchiveLT

### Features

- Long-term preservation of large-scale data with highly reliable LTO tapes
- Capable of storing vast amounts of image data generated daily, ranging from hundreds of gigabytes to several terabytes
- Ideal for long-term storage of research data due to the short lifespan of hard disks

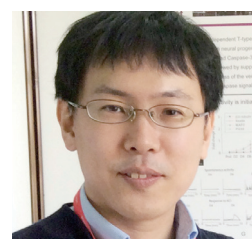
### Recommended for Customers Like These

- Those in industries such as broadcasting, video production, surveillance cameras, and healthcare, considering the storage or utilization of large-scale data
- Those exploring solutions for storing massive amounts of images, such as surveillance footage or sensor data
- Those seeking media capable of transferring and sharing large-scale data with other organizations

*For more details, please contact us.*

## Implementing Research Institution

### Karolinska Institute



Dr. Shigeaki Kanatani  
Facility Manager • Research Specialist



Dr. Kimiharu Takamatsu  
Postdoctoral Fellow

While many researchers wanted to use LTO, the complexity of SAS interfaces made it a challenge. UNITEX's USB-connected LTO system has been a game-changer - a true solution for those, like us, who had nearly given up on implementation.

**At the Karolinska Institutet, there is a responsibility to securely store large volumes of critical data generated through medical and biological research.**

Karolinska Institutet hosts a large number of research laboratories, where vast amounts of essential data related to medical and biological sciences are generated on a daily basis. Historically, image data and other research outputs were stored on external hard drives. However, this approach presented several challenges:

#### [Increasing Data Volumes]

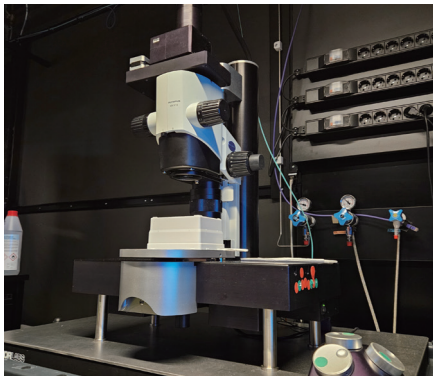
Microscopic imaging data from a single experiment can range from several hundred gigabytes to multiple terabytes. The capacity of external hard drives quickly reached its limits.

#### [Limited Lifespan of Hard Drives]

External hard drives typically have a lifespan of only 4 to 5 years, making them unsuitable for long-term data preservation, especially when retention periods exceed 10 years.

#### [Data Transfer Speed and Storage Costs]

Transferring large datasets to cloud storage was time-consuming, and the cost of long-term cloud storage proved to be impractical for large-scale research data archiving.



Three-dimensional tissue imaging microscope (Light Sheet Microscope) within the institute

**For researchers, spending less time on data storage tasks means more time to focus on their core scientific work - a highly appreciated benefit.**

Results Achieved with the Introduction of UNITEX's USB-Connected LTO Tape Drive at Karolinska Institutet

#### [Long-Term Storage of Large-Scale Data]

With the ability to store up to 45TB per compact cartridge, LTO tape enabled efficient archiving of massive volumes of

image data. Compared to hard drives, LTO offers a significantly longer lifespan - over 30 years - making it an ideal solution for preserving critical research data.

#### [Improved Data Transfer Speeds]

The UNITEX LTO tape drive delivers high-speed data writing performance comparable to traditional hard drives. This significantly reduced data transfer times and improved overall research workflow efficiency.

#### [Reduced Operational Burden]

Thanks to its USB connectivity and portable design, the UNITEX LTO tape drive can be easily used across different laboratories and PCs. Its plug-and-play functionality allows for flexible deployment. Additionally, the ability to automate data archiving has minimized the time researchers need to spend on storage tasks, allowing them to focus more on their core research activities.



"BIC" is the logo of the Biomedicum Imaging Core, to which Mr. Kanatani belongs.

**Moving forward, we plan to actively utilize USB-connected LTO tape drives to further enhance the efficiency of our research data management.**

Karolinska Institutet plans to continue leveraging LTO technology not only for research data but also for a wide range of institutional data requiring long-term preservation. To support this, the institute is actively utilizing UNITEX's USB-connected LTO tape drives, aiming to further streamline and secure its data management processes.

#### [Enhancing Storage Efficiency]

As data volumes continue to grow, the institute is considering the adoption of higher-capacity LTO tape drives to accommodate increasingly large datasets, such as high-resolution microscopy images.

#### [Building a Comprehensive Data Management System]

A new system is being planned to manage the expanding volume of research data, enabling easier indexing, search, and access across departments and projects.

#### [Facilitating Secure Data Sharing]

The institute also aims to establish a secure framework for sharing LTO-archived research data with other institutions and researchers, maximizing the impact and reach of its scientific findings.

As a leading medical university, Karolinska Institutet not only strives for groundbreaking discoveries but also bears the responsibility of preserving and passing on those achievements to future generations. In this context, UNITEX's USB-connected LTO tape drives play a vital role across the institute's operations. By continuing to expand their use, the institute aims to maintain its position as a global leader in medical research and contribute to the advancement of healthcare worldwide.

UNITEX remains committed to supporting Karolinska Institutet - and research institutions and healthcare organizations around the world - by delivering optimal, reliable solutions for long-term data preservation.



Founded in 1810, the Karolinska Institute has earned an excellent reputation in the fields of medical education and research. Additionally, it offers comprehensive international education programs and hosts numerous top-tier research laboratories.

#### Customer Information Karolinska Institute

Postal address: Karolinska Institutet, 171 77 Stockholm  
URL <https://ki.se/en/about-ki/contact-or-visit-ki>



- **Medical Research**  
The Karolinska Institute is a world-leading institution in medical research, conducting numerous groundbreaking studies and making significant discoveries.
- **Education**  
As a university dedicated to training healthcare professionals, it provides high-quality education in fields such as medicine, nursing, and pharmacy.
- **Healthcare**  
The Karolinska University Hospital is one of Sweden's largest hospitals, offering advanced medical care and working closely with the university.
- **Social Contribution**  
The Karolinska Institute actively engages in various initiatives to contribute to society, including advising on healthcare policies, promoting public health, and fostering global medical collaborations.

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