FUJITSU Storage
ETERNUS LT140 Tape Library

User's Guide -Site Planning-

FUJITSU

This page is intentionally left blank.

Preface

Fujitsu would like to thank you for purchasing our FUJITSU Storage ETERNUS LT140 Tape Library (hereinafter referred to as LT140).
The LT140 is designed to be connected to Fujitsu (PRIMEQUEST, PRIMERGY, Fujitsu M12/M10) or non-Fujitsu servers.
This manual describes the environmental requirements that are necessary to install and use the LT140.
This manual is intended for use of the LT140 in regions other than Japan.
Please carefully review the information outlined in this manual.

First Edition
December 2018

Organization

This manual is composed of the following three chapters:

● Chapter 1   Hardware Configuration

This chapter describes the main modules and related optional products that are installed in the LT140.

● Chapter 2   LT140 Installation

This chapter describes the installation specifications and the installation environment.

● Chapter 3   Connections

This chapter describes the configuration for each interface to connect to the LT140.

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

P3AG-3712-01ENZ0

Warning Notations

Warning signs are shown throughout this manual in order to prevent injury to the user and/or material damage. These signs are composed of a symbol and a message describing the recommended level of caution. The following explains the symbols, their levels of caution, and their meanings as used in this manual.

⚠ WARNING	This symbol indicates the possibility of serious or fatal injury if the LT140 is not used properly.
⚠ CAUTION	This symbol indicates the possibility of minor or moderate personal injury, as well as damage to the LT140 and/or to other users and their property, if the LT140 is not used properly.
IMPORTANT	This symbol indicates IMPORTANT information for the user to note when using the LT140.

The following symbols are used to indicate the type of warnings or cautions being described.

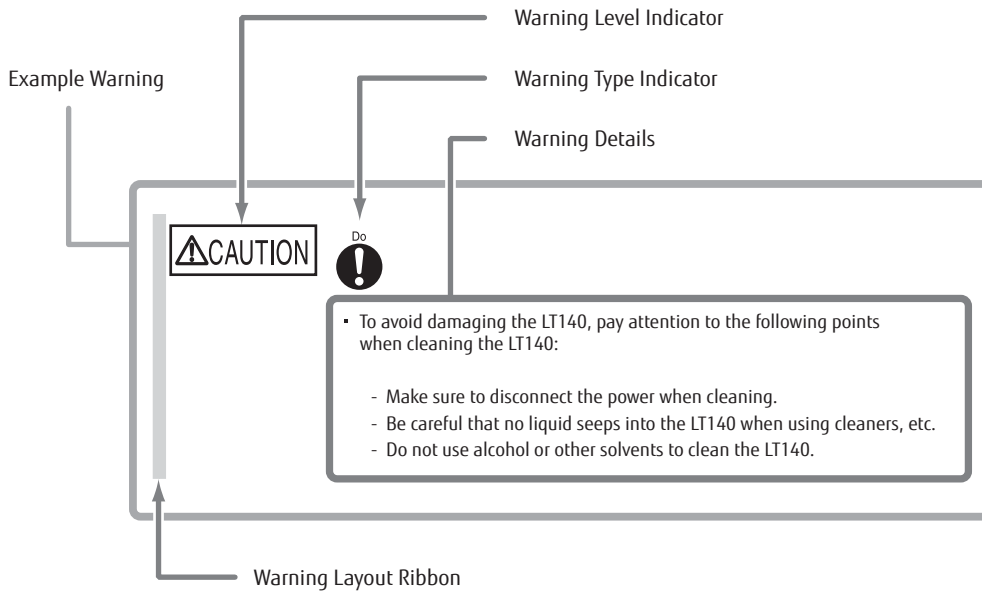|	
Electric Shock	△The triangle emphasizes the urgency of the WARNING and CAUTION contents. Inside the triangle and above it are details concerning the symbol (e.g. Electrical Shock).
No Disassembly	⊘The barred "Do Not..." circle warns against certain actions. The action which must be avoided is both illustrated inside the barred circle and written above it (e.g. No Disassembly).
Unplug	●The black "Must Do..." disk indicates actions that must be taken. The required action is both illustrated inside the black disk and written above it (e.g. Unplug).

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

P3AG-3712-01ENZ0

How Warnings are Presented in this Manual

A message is written beside the symbol indicating the caution level. This message is marked with a vertical ribbon in the left margin, to distinguish this warning from ordinary descriptions.
An example is shown here.

Warning Level Indicator

Example Warning

Warning Type Indicator

Warning Details

⚠CAUTION

Do

· To avoid damaging the LT140, pay attention to the following points when cleaning the LT140:

- Make sure to disconnect the power when cleaning.
- Be careful that no liquid seeps into the LT140 when using cleaners, etc.
- Do not use alcohol or other solvents to clean the LT140.

Warning Layout Ribbon

Naming Conventions

Symbols Used in This Manual

The following symbols are used throughout this manual:

▷ **Caution**   This symbol alerts operators to particularly important information. Be sure to read this information.
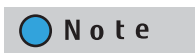
◯ **N o t e**   Functions and know how which can be useful when setting up or operating the LT140.

Abbreviations Used in This Manual

- "LT140" refers to the FUJITSU Storage ETERNUS LT140 Tape Library.
- Trademark symbols such as ™ and ® are omitted in this document.

Table of Contents

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

List of Figures

List of Tables

Chapter 1

Hardware Configuration

This chapter describes the hardware module configurations for the LT140.

All components such as operator panels, MailSlot, magazines, drive modules, cells, robots, tape drives, and power supply units are installed in System.
The following sections describe components that must be considered when installing the LT140.
Refer to "FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Installation & Operation-" for major components that are not described in this manual.

1.1   Module

Two types of Modules are available for the LT140: a Base Module and an Expansion Module.
Major components are installed in each module.
The following figures show various views of the LT140.

P3AG-3712-01ENZ0
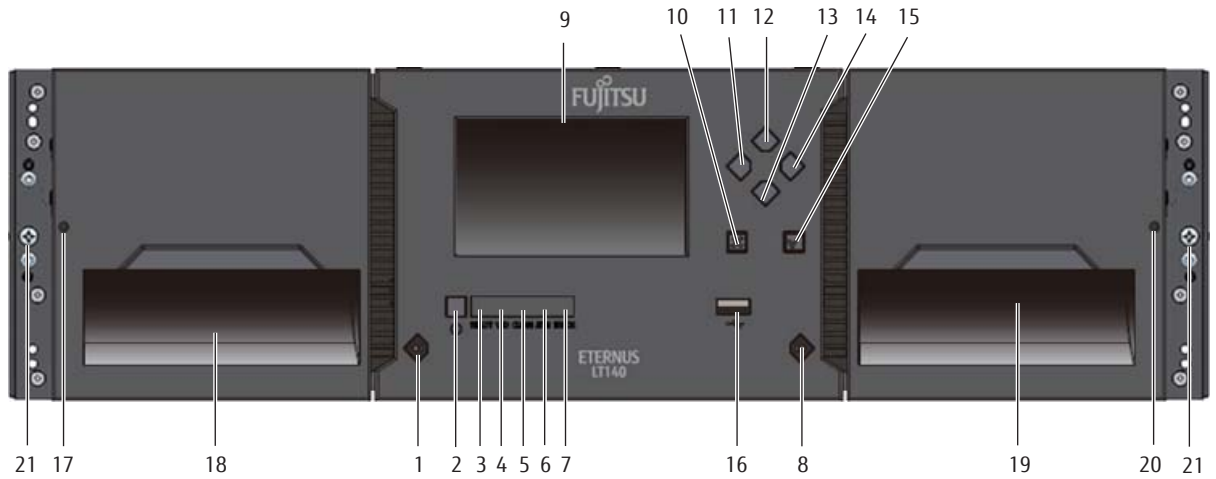
■ External view (front)

Figure 1.1   Base Module front view

Table 1.1   Name of each component (front side of the Base Module)

No.	Name	Detail
1	Button for opening the left magazine	Button with a status LED. Used for opening the left magazine. The status LED (blue) indicates the state of the left magazine.
2	Power button (*1)	ON/OFF power button.
3	LED panel (*1)	Ready LED (green)
4		Unit Identification LED (blue)
5		Clean LED (amber)
6		Attention LED (amber)
7		Error LED (amber)
8	Button for opening the right magazine or Mailslot	Button with a status LED. Used for opening the right magazine or Mailslot. The status LED (blue) indicates the state of the right magazine or Mailslot.
9	LCD screen (*1)	Display screen for the operator
10	Operation button (*1)	Back/Return [×] button
11		Left button
12		Up button
13		Down button
14		Right button
15		Enter [✔] button
16	USB port (*1)	For maintenance. Not used for normal operations.
17	Hole for manually releasing the left magazine	Used for manually unlocking the left magazine.
18	Handle for pulling out the left magazine	Used for pulling the left magazine out of the module.

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

No.	Name	Detail
19	Handle for pulling out the right magazine or Mailslot	Used for pulling the right magazine or Mailslot out of the module.
20	Hole for manually releasing the right magazine	Used for manually unlocking the right magazine.
21	Screw for attaching the LT140 to the rack	–

*1: Only installed for Base Modules.
     Expansion Modules do not have a power button, an LED panel, an LCD screen, operation buttons, and a USB port.

■ Rear view

Figure 1.2   Base Module rear view
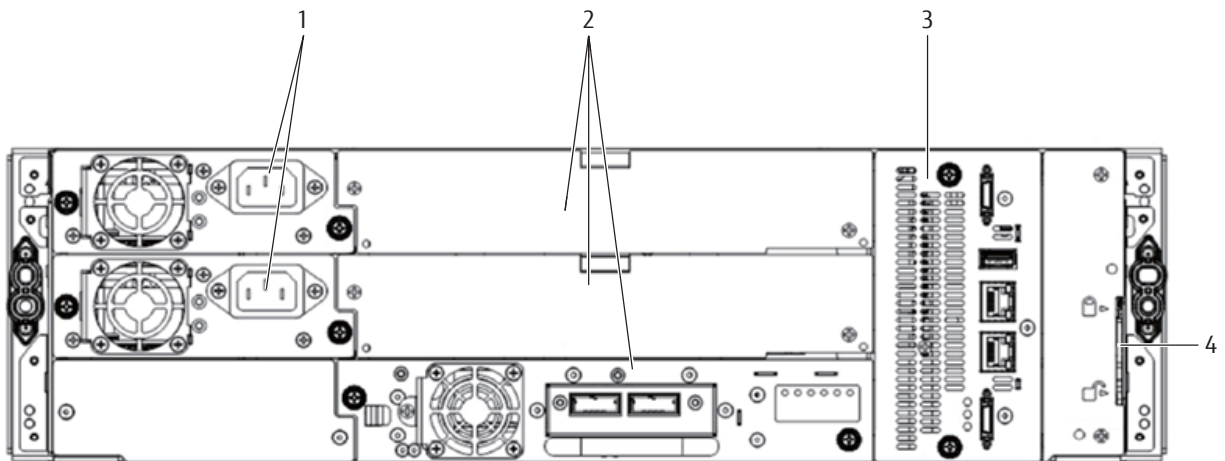
Table 1.2   Name of each component (rear side of the Base Module)

No.	Name	Detail
1	Power Supplies	• Base Modules are installed with a single PSU as standard. A second PSU for redundancy is optional. • Optional for Expansion Modules.
2	Half-Height Tape Drive Bays	A maximum of three half-height drives can be installed.
3	Library Controller (for Base Modules)	–
4	Module Alignment Mechanism	The mechanism for locating modules when connected.

1.2　Drive Module

The drive module is a module unit that contains the drive for recording data and external interface. When, for example, a drive fails, maintenance replacement is carried out in units of drive modules. The host interface supports the Fibre Channel (FC) and Serial Attached SCSI (SAS).

⚠ CAUTION

🚫 Do Not

Malfunction

Do not pull out the drive module. If necessary to pull out a faulty drive module for replacement, contact your maintenance engineer.

■　LTO-6 HH SAS, LTO-7 HH SAS, LTO-8 HH SAS

There are two types of rear panels for the SAS interface.

Figure 1.3　Rear view of LTO-6 HH SAS (Product ID: LT14ASKE, LT14ASKL),
　　　　　　Rear view of LTO-7 HH SAS (Product ID: LT14ASME, LT14ASML),
　　　　　　Rear view of LTO-8 HH SAS (Product ID: LT14ASNE, LT14ASNL)
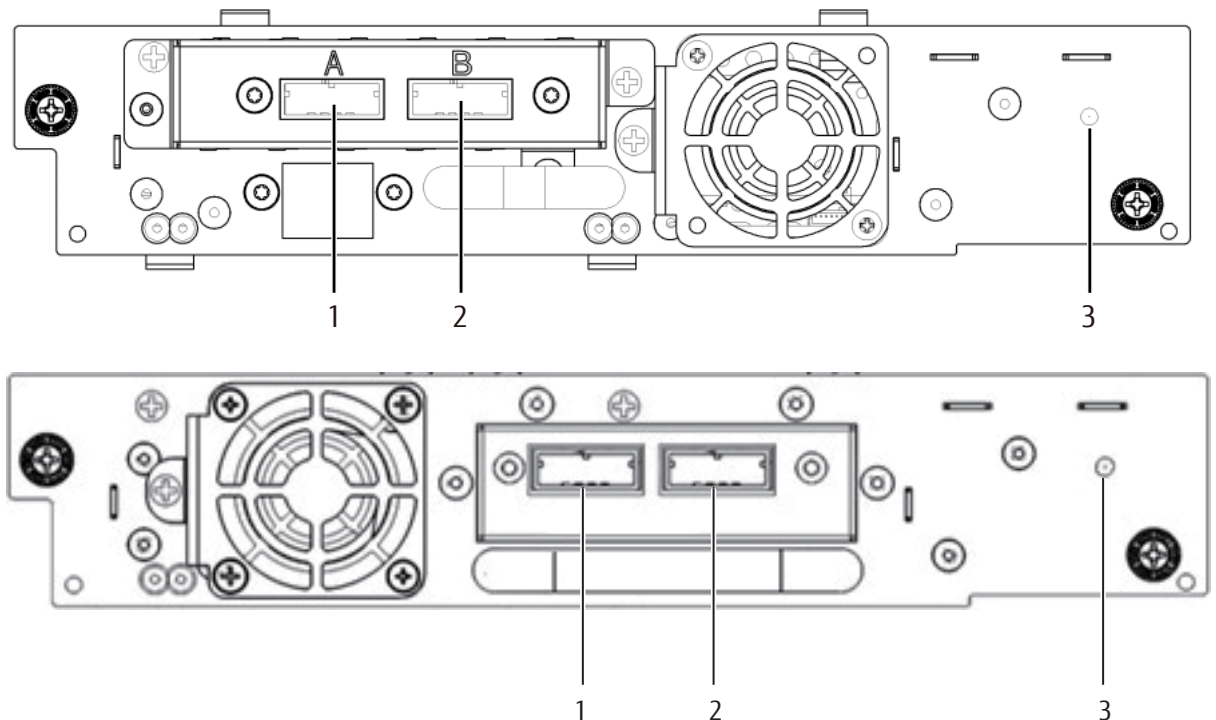
1	SAS Port A
2	SAS Port B (unavailable)
3	Tape Drive Power LED, Green

■   LTO-6 HH FC, LTO-7 HH FC, LTO-8 HH FC

Figure 1.4   Rear view of LTO-6 HH FC (Product ID: LT14AFKE, LT14AFKL),
             Rear view of LTO-7 HH FC (Product ID: LT14AFME, LT14AFML),
             Rear view of LTO-8 HH FC (Product ID: LT14AFNE, LT14AFNL)

1   FC Port A
2   FC Port B (unavailable)
3   Tape Drive Power LED, Green

1.3   Library Controller
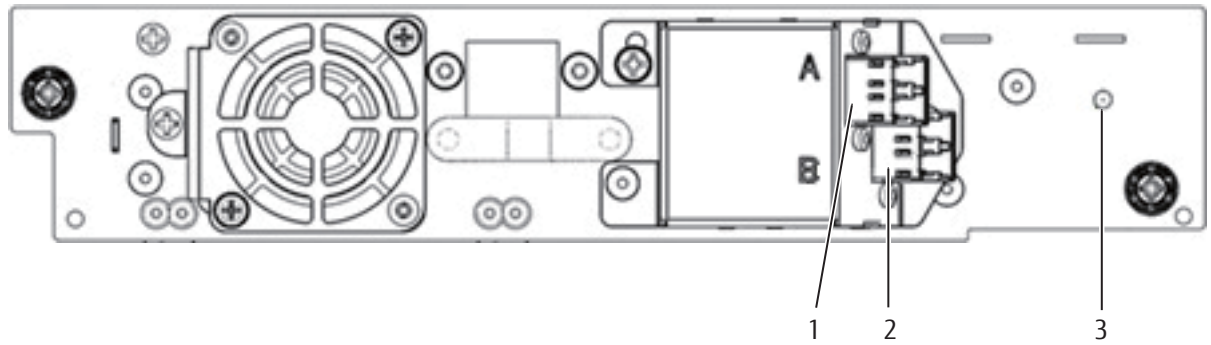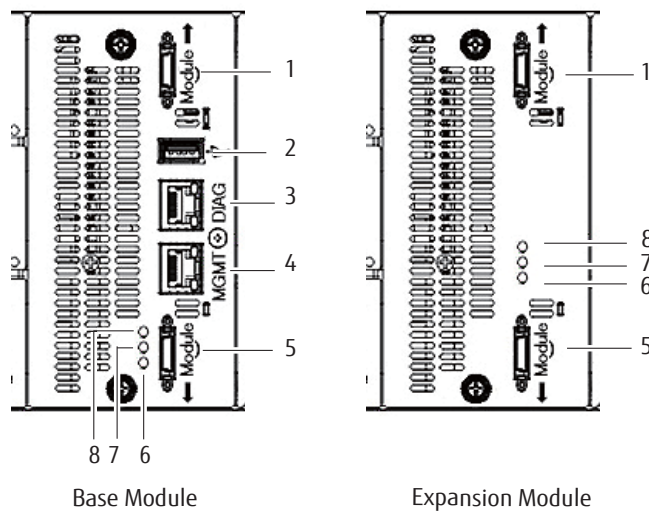
The library controller is located at the rear right of each module.
The library controller of the Base Module controls the system as the main controller.

The library controller of the Expansion Modules will not provide LAN ports and USB ports.

Figure 1.5   Library controller (Base Module/Expansion Module)

Base Module   Expansion Module

1	Module Interconnect (to top)
2	USB Port (service) (not used) (*1)
3	LAN Port (DIAG) (service) (not used) (*1)
4	LAN Port (MGMT) (remote panel) (*1)
5	Module Interconnect (to bottom)
6	Unit Identifier LED (blue)
7	Controller Error LED (yellow)
8	Controller Health Status LED (green)

*1:   Only installed for Base Modules.

Table 1.3   LED Meanings (library controller)

No.	LED state		Meaning
6	Unit Identifier	Blue	The LED of the Unit ID (UID) is controlled by the user with the [Maintenance > UID LED Control] screen of the operator panel or remote panel. The UID can be used for identifying the location of the data center library.
7	Controller Error	Yellow	When lit, the controller is not functioning.
8	Controller Health Status	Green	When the state of the library controller is normal, the LED flashes green.

1.4   Power Supply Unit (PSU)

The power supply unit (PSU) distributes the power that is supplied from an external power source to the LT140.
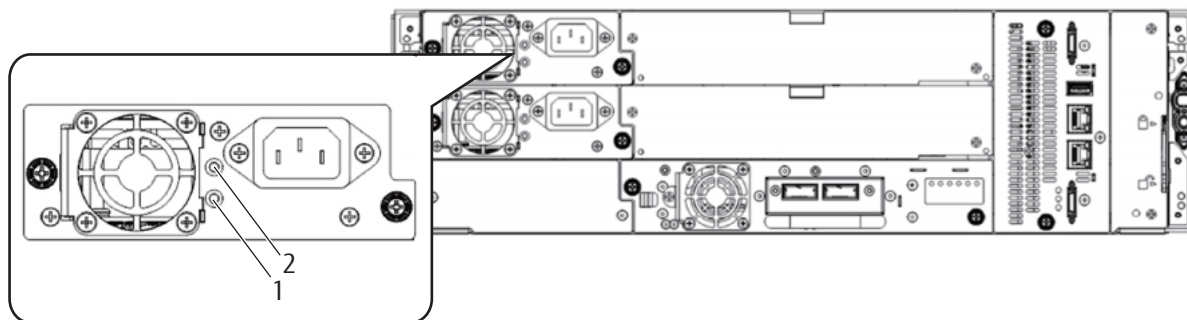
Figure 1.6   Power supply unit (PSU)

Table 1.4   LED Meanings (power supply unit)

No.	LED	Meaning
1	White	AC power is connected.
2	Green	Module is powered on.

Each PSU receives 100VAC – 240VAC. It converts AC power to DC power for the internal component, such as Backplane, DC-DC Board and Library Controller.
A single PSU that is installed in the Base Module can supply power to all of the drives and to the robot module that are installed in the Base Module. A single PSU is installed in the Base Module as standard. By adding an optional PSU, operations can continue even if one PSU fails.
PSUs are not installed in Expansion Modules as standard.

Chapter 2

LT140 Installation

This chapter describes the installation specifications and the installation environment.

2.1 Installation Specifications

The following table shows the installation specifications of the LT140.

Table 2.1   Installation specifications

Item		Spec	
Module		Base Module	Expansion Module (*1)
Tape drive	Max number installed	3	
External dimensions	Height	132 mm (3U)	
	Width	475 mm	
	Depth	892 mm	
Weight (*2)		22 kg	14 kg
Power	Voltage	100 - 240 V	
	Number of phases	Single	
	Frequency	50/60 Hz	
	AC input sources	1 (standard) or 2 (redundant)	0 (standard) or 1 – 2 (redundant)
Maximum power consumption		118W (147.5VA)	90W (112.5VA)
Maximum heat generation		424.8kJ/h	324.0kJ/h
Environmental conditions	Temperature — Operating	10 to 35° C	
	Temperature — In transport	-40 to 60° C (excluding media)	
	Humidity — Operating	20 to 80% RH	
	Humidity — In transport	10 to 80% RH (excluding media)	
	Altitude above sea level	5000 meters (16,450 feet)	
	Dust concentration	Less than 200 microgram / cubic meter	

*1:   The Expansion Module can be increased to one Base Module up to six.

*2:   For Base Modules, the value is for redundant PSU configurations. Excludes the weight of media and tape drives.
For Expansion Modules, the value when PSUs are not installed. Excludes the weight of media and tape drives.
A single drive is approximately 2 kg and a single PSU is approximately 1 kg.

2.2 Cushioning Material for Transportation

Cushioning material is placed in Base Modules to prevent the robot from being damaged.
Remove the cushioning material from the inside of the Base Module prior to installation.

> ▷ **Caution**

Powering on the LT140 without removing the cushioning material may cause failures.

Keep the removed cushioning material in a safe place to reuse when relocating the LT140.

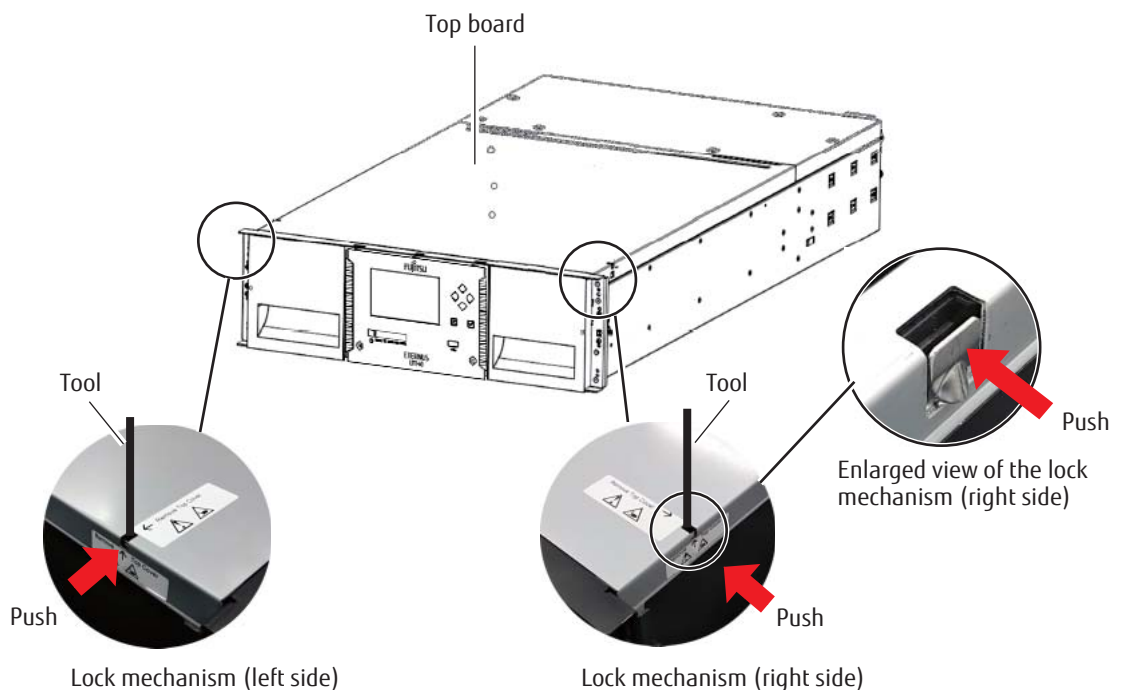## 2.2.1 Procedure for Removing the Cushioning Material for Transportation

Procedure

1 Removing the top board.

1-1 Push the locking mechanism on both sides at the front of the Base Module into the LT140 to release the lock securing the top board.
  - To release the lock, use a tool with a metal point, such as a flathead screwdriver and a Hex Key.
  - A tool with a 2 – 4mm point is ideal for releasing the lock.

> ▷ **Caution**

The specialized tool for releasing the lock is not provided with the LT140.

Top board

Tool

Tool

Push

Enlarged view of the lock mechanism (right side)

Push

Push

Lock mechanism (left side)

Lock mechanism (right side)

1-2 While pushing the locking mechanism on both sides, lift the top board from the front side of the LT140.

1-3 Remove the top board by sliding it towards the frond of the LT140.
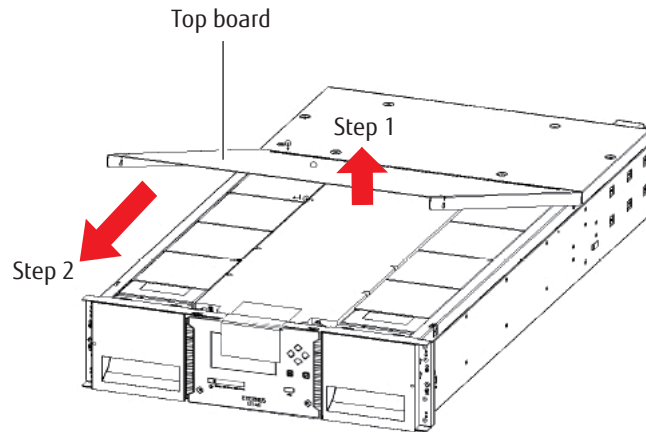
2 Removing the cushioning material for transportation.

Lift the cushioning material to remove it from the inside of the LT140.
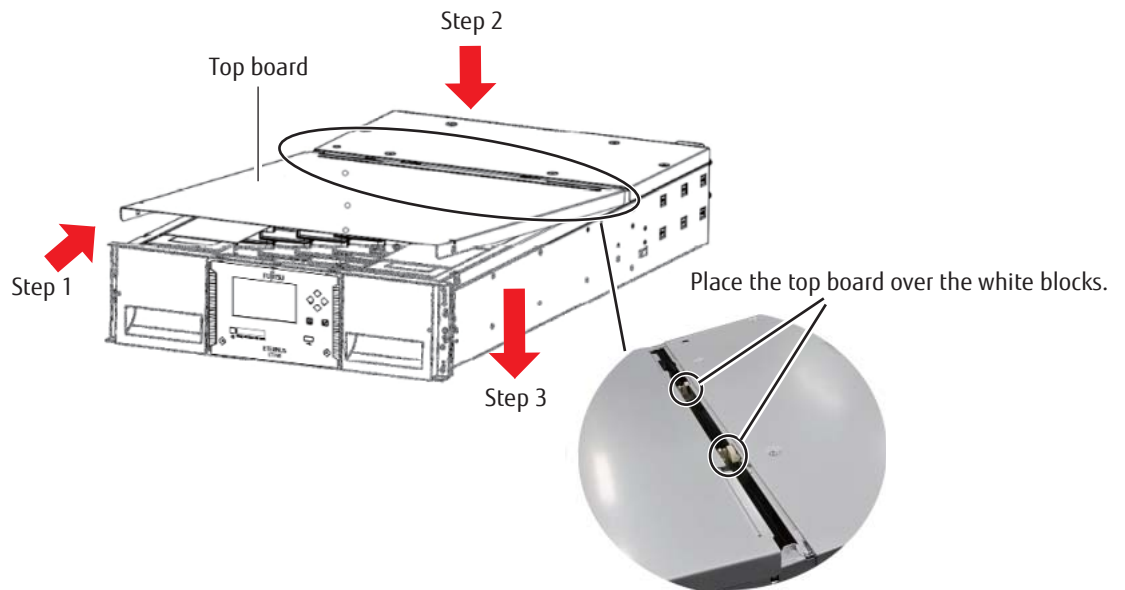
> ▷ **Caution**

Do not touch the robot or components in the LT140. In addition, keep foreign substances from entering inside of the LT140. Failure to do so may cause failures.

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-
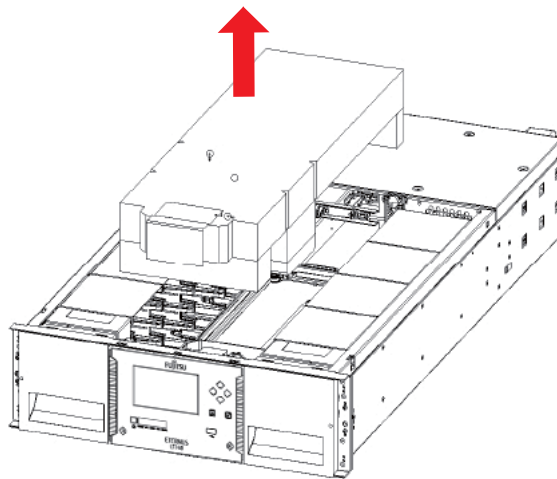
3   Reattaching the top board.

3-1   Angle the top board and slide it towards the rear of the LT140 until it does not move.

3-2   Confirm that the edge of the top board can slide over the white blocks of the LT140.
When the top board is adjacent to the white blocks, lift the top board up and place it on the white blocks.

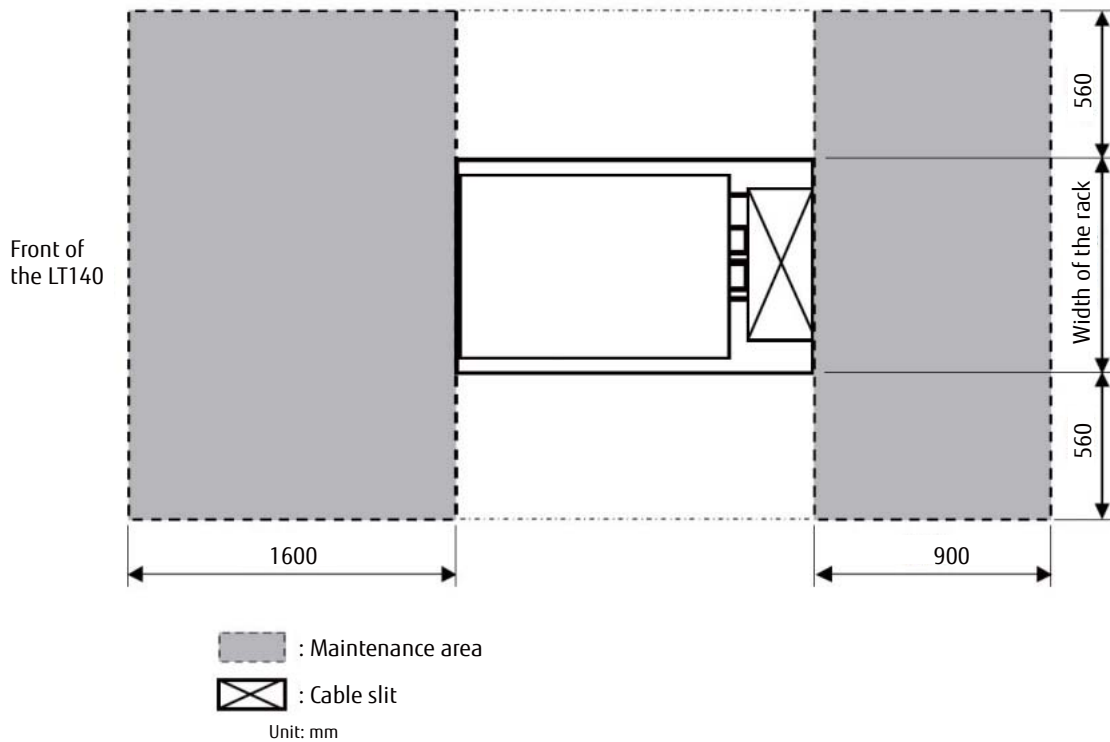**3-3**   Lower the front of the top board to attach it.

End of procedure

2.3　Installation Area

It is necessary to secure a place for the maintenance area as shown in <u>Figure 2.1</u>.

Figure 2.1　Maintenance area

▷ **Caution**

- Be careful not to have the rack to fall due to the weight of the LT140 during maintenance.
- The maintenance area of the width direction is dependent on the size of the rack.
  Reference: the minimum width of our rack is 590mm
- Make sure to have ventilation holes for cooling on the front and rear doors of the rack.
  If the door has the specifications with no ventilation holes of perforated metal or mesh metal, make sure that the temperature inside the rack does not exceed the temperature limit.

2.3.1   Location Requirements

Choose a location that meets the criteria in Table 2.2.

⬤ N o t e

- The library was designed for rack installation and must be installed using the provided rack rails. Installation on a table top or other similar surface could result in library operation errors.
- Select a rack with access to the host server.

Table 2.2   Location requirements

Criteria	Definition
Rack requirements	EIA standards, universal pitch 19-inch rack
Rack space requirements	3U for the Base Module and 3U for the Expansion Module
Room temperature	10-35° C (50-95° F)
Power source	• AC Power Voltage: 100-240 VAC • Frequency: 50/60 Hz • Library Located near AC Outlet(s) The AC power cord is the library's main AC disconnect device and must be easily removable at all times.
Air quality	• Place the library in an area with minimal sources of particulate contamination • Avoid areas near frequently used doors and walkways, stacks of supplies that collect dust, printers, and smoke-filled rooms • Excessive dust and debris can damage tapes and tape drive
Humidity	20-80 percent RH non-condensing

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

P3AG-3712-01ENZ0

2.3.2   Notes of Mounting in the Rack

- The rack must be a 19 inch rack and meet the EIA standard universal pitch.

- The dimension of the prop for fixing the rack must meet Figure 2.2 and Figure 2.3.

- The dimensions of the protruding objects such as props in the rack must meet Figure 2.2 and Figure 2.3.

- The hole geometries of the props must be 9mm corner holes or 6.8mm round holes.

- There must be a vent hole in the anteroposterior position and the library must be coolable enough. (The temperature in the rack not to exceed the limited temperature. Refer to "Operating" under "Temperature" in Table 2.1 for details.)

- Take measures to ensure the physical stability of the entire rack (including the pulled out status of modules from a rack). If the rack is equipped with the anti-toppling feature, be sure to use it. In addition, mount the LT140 to the lowest position available. The ideal installation height is under 24U (1.2m). If the LT140 is mounted with other devices, the heavier devices must be mounted at the very bottom and the ideal total installation height is under 31U (1.5m).

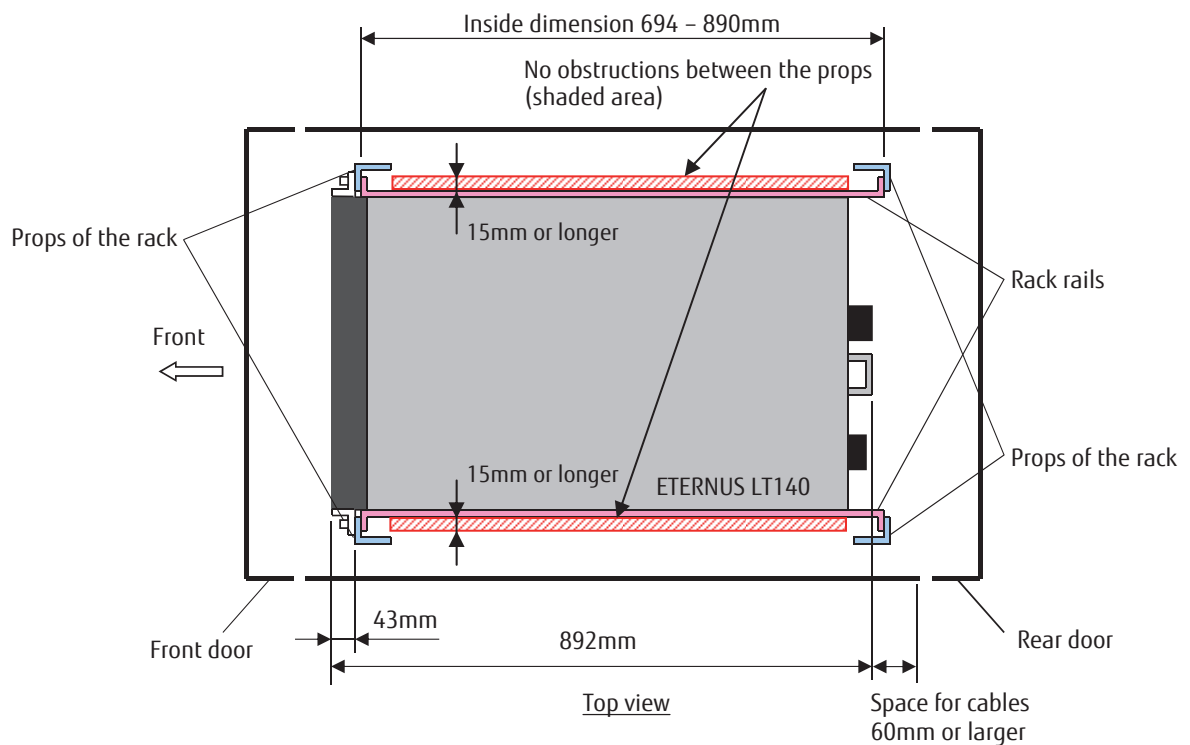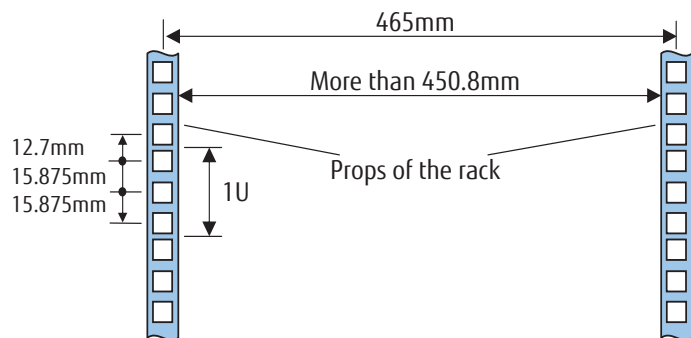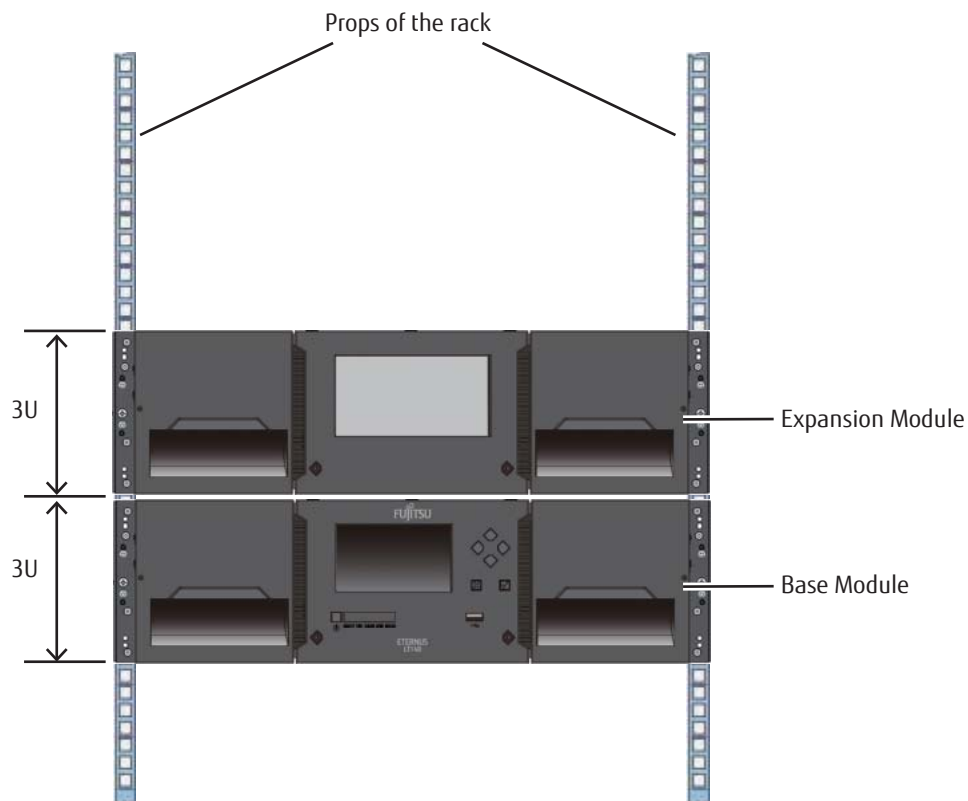Figure 2.2   Explanation drawing of the dimensions (top view)

Figure 2.3   Explanation drawing of the dimensions (front view)

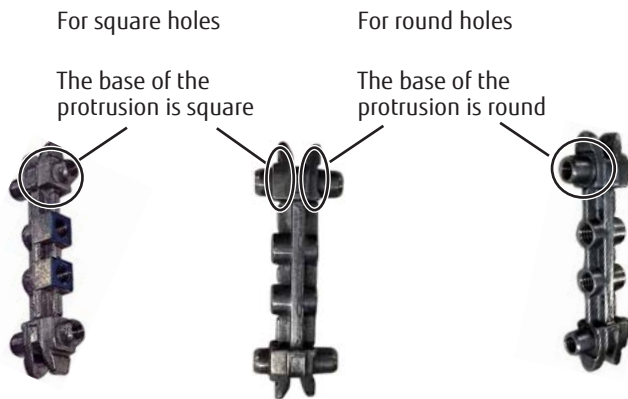## 2.3.3   Mount in the Rack

Figure 2.4   Mount in the rack

2.3.3.1   Adapter block

Adapter blocks are parts used to mount rack rails in 19-inch racks.
Mount an adapter block to the prop in each corner of the rack where the LT140 is to be installed.

> ▶ **Caution**
>
> The direction in which to mount the adapter blocks varies depending on whether the 19-inch rack prop have square mounting holes or round mounting holes.
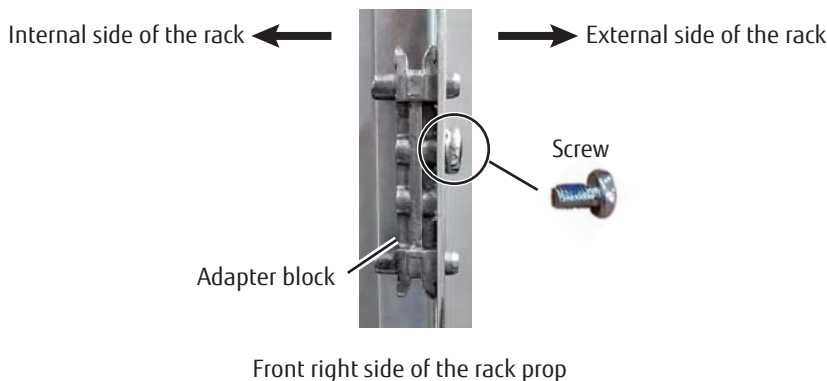> Adapter blocks are vertically symmetrical.

For square holes   For round holes

The base of the   The base of the
protrusion is square   protrusion is round

■ **Mounting adapter blocks (square holes)**

Face the blue side of the adapter block towards the external side of the 19-inch rack and mount it using a single set screw.

> ▶ **Caution**
>
> Confirm that there is no space between the adapter block and the prop of the 19-inch rack after mounting the adapter block.

Internal side of the rack ◀━━━   ━━━▶ External side of the rack

Screw

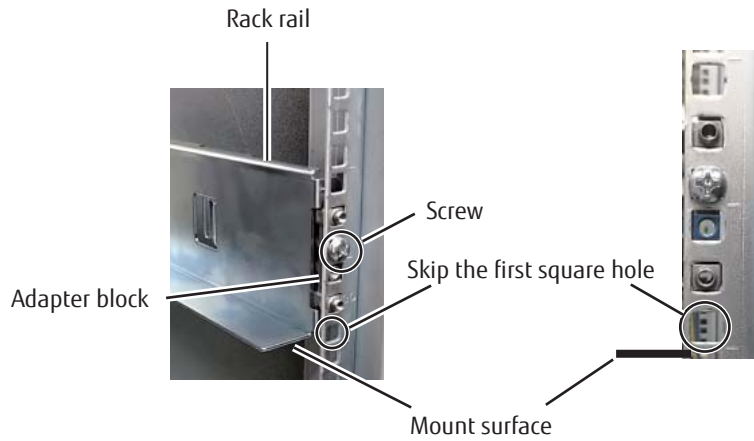Adapter block

Front right side of the rack prop

> ● **N o t e**
>
> If the prop of the 19-inch rack has round holes, the opposite side of the adapter block must be set.

■ Mount position of the adapter block (square holes)

Mount the adapter block in the second square hole from the LT140 mount surface by skipping the first square hole.
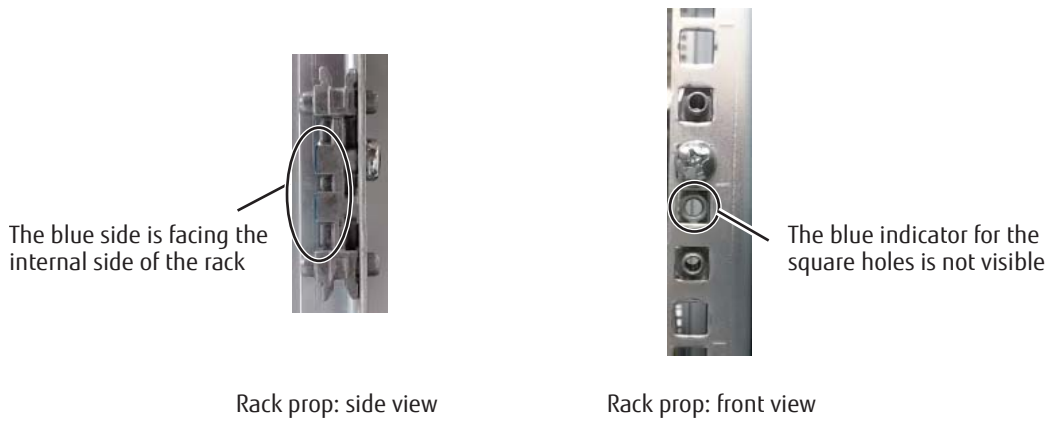
Rack rail

Screw

Skip the first square hole

Adapter block

Mount surface

> **◯ N o t e**
>
> If the prop of the 19-inch rack has round holes, the opposite side of the adapter block must be set.

■ Incorrect mounting (square holes)

• The adapter block is mounted with the circular hole side to the prop with square holes.

The blue side is facing the internal side of the rack

The blue indicator for the square holes is not visible

Rack prop: side view   Rack prop: front view

- The adapter block is not inserted correctly in the square holes due to the gap between the adapter block and the rack prop.

There is the gap between the adapter block and the rack prop

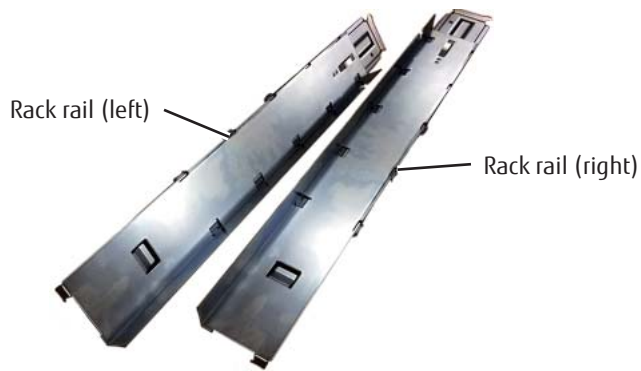The adapter block is not inserted correctly in the square holes

Rack prop: side view   Rack prop: front view

- The adapter block is mounted in the first square hole from the bottom of the mount surface.

Mount surface

2.3.3.2   Rack Rails

- External view of the rack rails
  A pair of left and right symmetrical rack rails is used for a single module.

Rack rail (left)

Rack rail (right)

- Rack rail hooks
  Both ends of the rack rail have hooks that are used to hook into an adapter block.

Rear side

Rack rail (right)

Hook (top)

Front side

Hook (top)

Hook (bottom)

Hook (bottom)
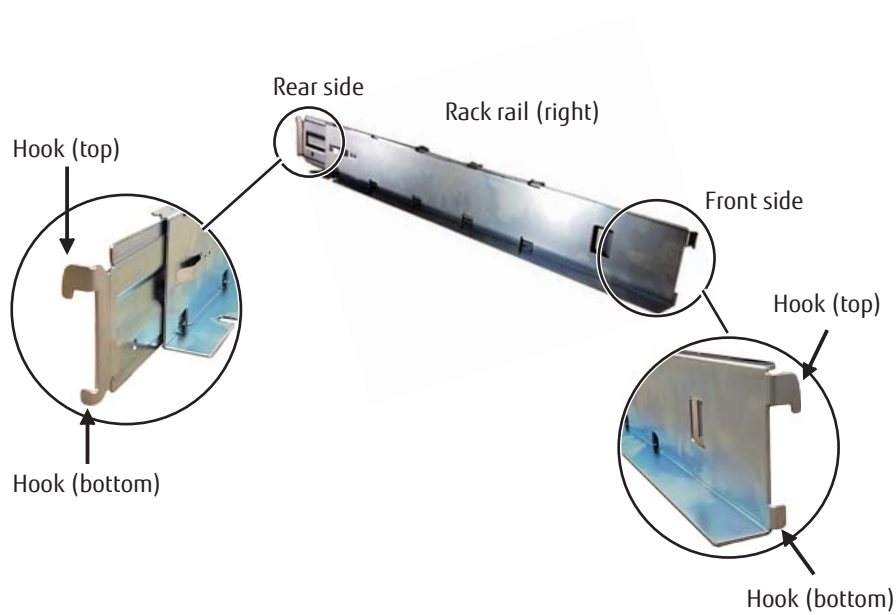
■ Mounting rack rails

Procedure

1 Check the hook portion on top of the rack rail and the groove on the adapter block.

Rack rail hook (top)
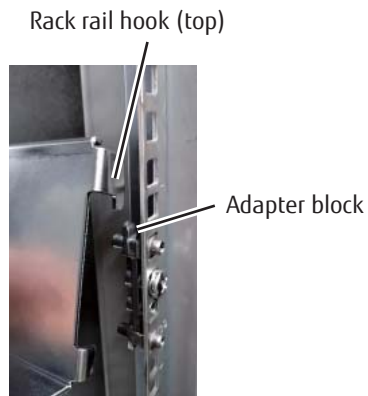
Adapter block

2 Hook the top of the rack rail on the groove of the adapter block.

3 Insert the bottom of the rack rail in the groove of the adapter block.

End of procedure

■ **Incorrect mounting**

- The hook portion of the rack rail is not inserted correctly into the groove of the adapter block (there is no space between the rack rail and the rack prop)

The rack rail hook is on the edge of the adapter block

2.3.3.3　Mount position examples for adapter blocks and rack rails

Figure 2.5　Mount position examples for adapter blocks and rack rails

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

Copyright 2018 FUJITSU LIMITED　　　　　　　　　　　　　　P3AG-3712-01ENZ0
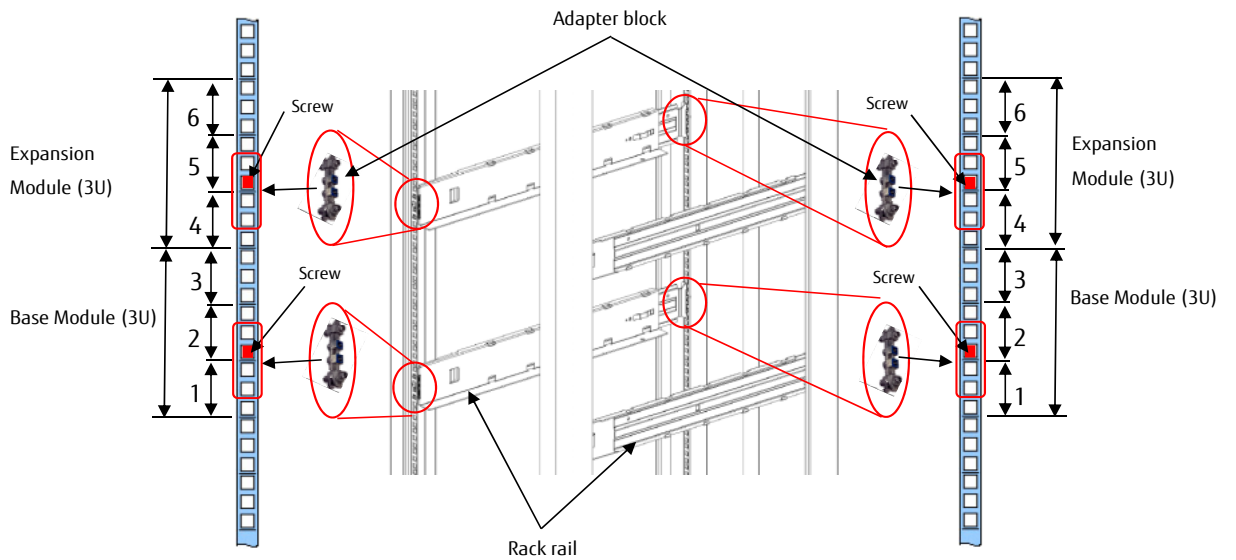
2.3.4   Supported Library Configurations

The following configurations are supported for module libraries:

> ▷ **Caution**

- The library will generally display logical element numbering of modules, storage slots and tape drives starting with number one from the bottom up.
- When the amount and the position where the component is installed are changed, the re-setting of the backup software is needed.
- Install tape drives from the bottom up for each module.
- If tape drives are installed in the Expansion Module, the PSU option must be added.

■ **1Module Library (Base Library)**
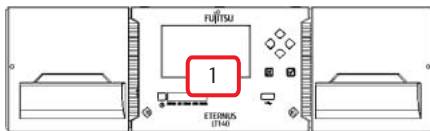
Logical element numbering of modules
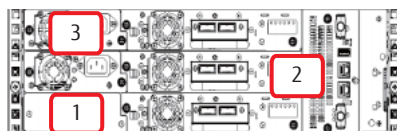
Example of the logical element numbering of tape drives

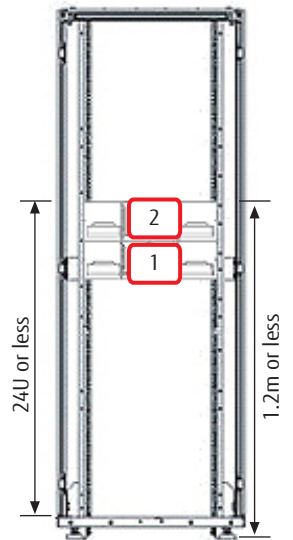Installation example to a 19-inch rack (42U)

24U or less

1.2m or less
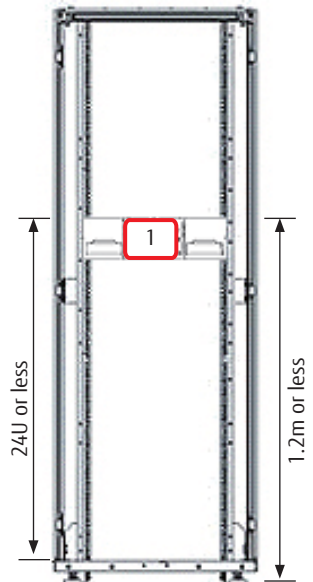
■ 2Module Library (Base Library + 1 Expansion Module)
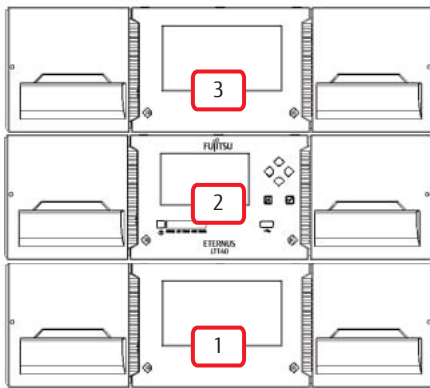
Logical element numbering
of modules
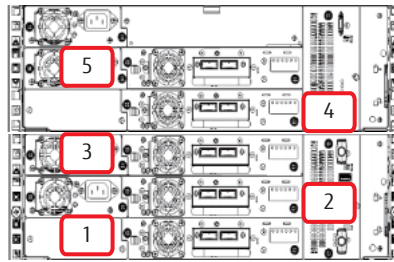
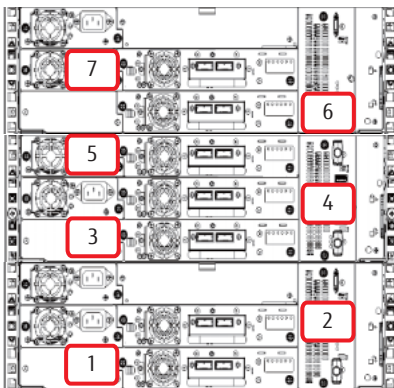Example of the logical
element numbering of
tape drives

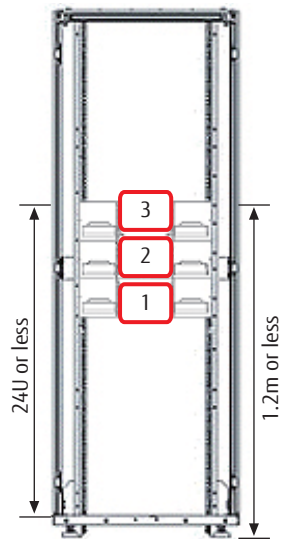Installation example to
a 19-inch rack (42U)

■ 3Module Library (Base Library + 2 Expansion Modules)
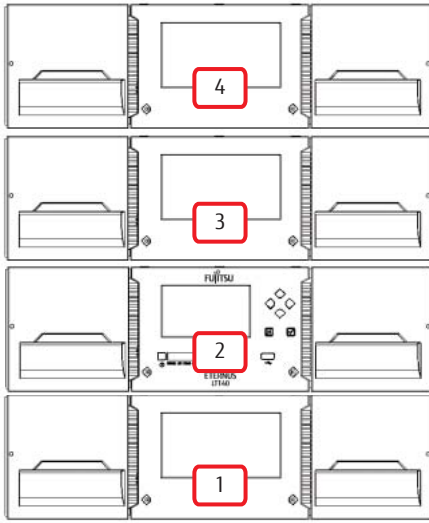
Logical element numbering
of modules

Example of the logical
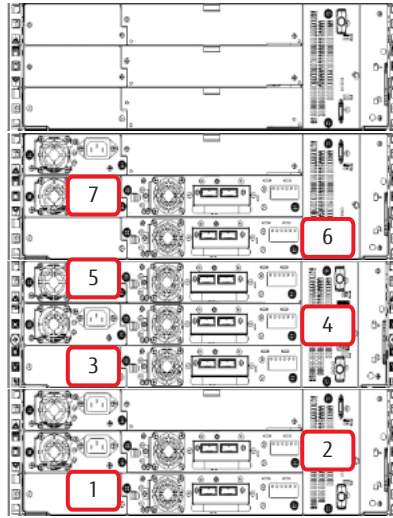element numbering of
tape drives

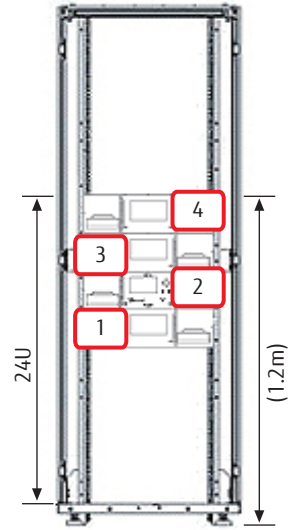Installation example to
a 19-inch rack (42U)

■ 4Module Library (Base Library + 3 Expansion Modules)

Logical element numbering
of modules

Example of the logical
element numbering of
tape drives

Installation example to
a 19-inch rack (42U)

■ 5Module Library (Base Library + 4 Expansion Modules)

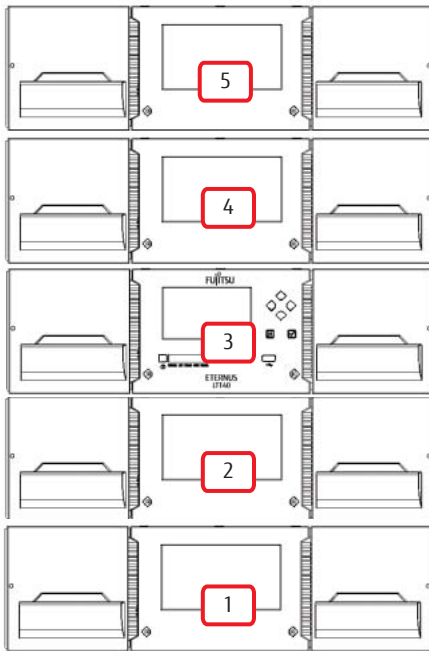Logical element numbering
of modules

Example of the logical
element numbering of
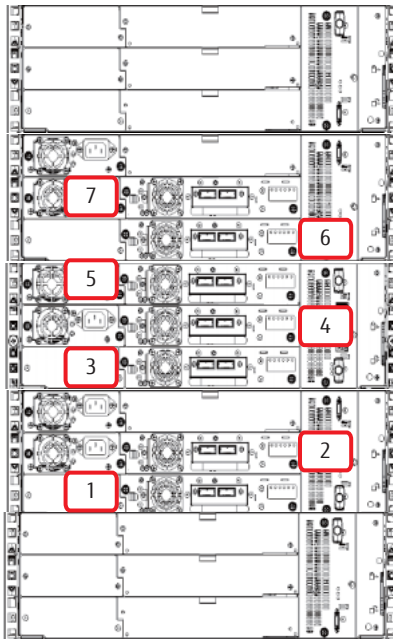tape drives

Installation example to
a 19-inch rack (42U)

■ 6Module Library (Base Library + 5 Expansion Modules)

Logical element numbering
of modules

Example of the logical
element numbering of
tape drives

Installation example to
a 19-inch rack (42U)

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

■ 7Module Library (Base Library + 6 Expansion Modules)
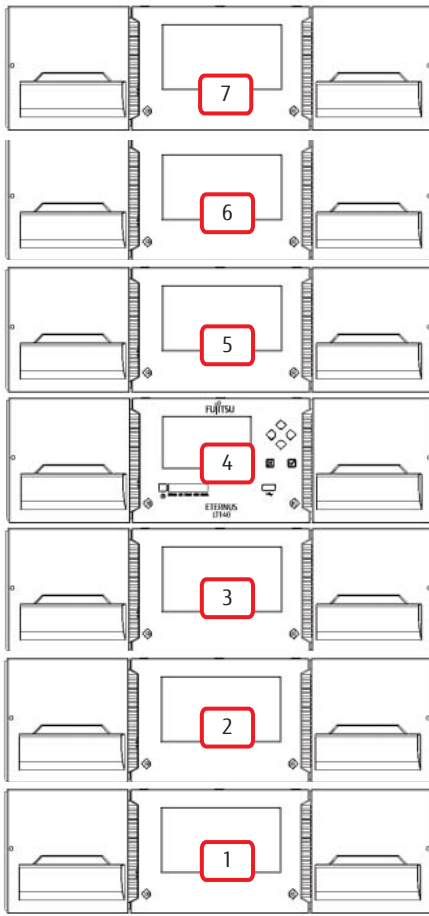
Logical element numbering
of modules

Example of the logical
element numbering of
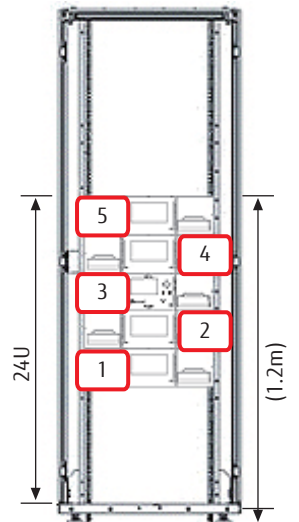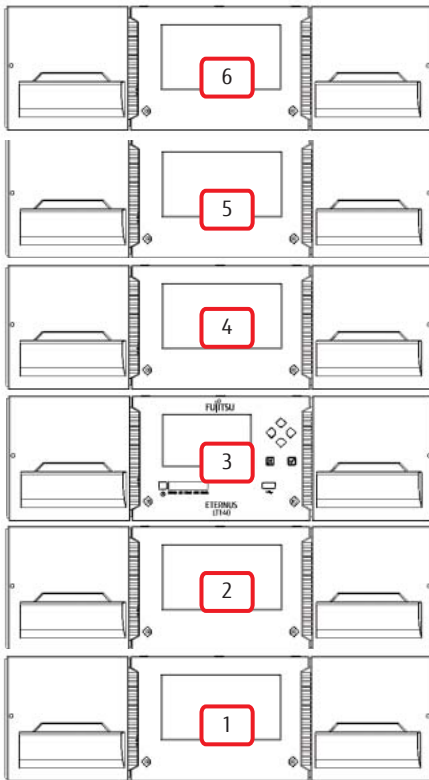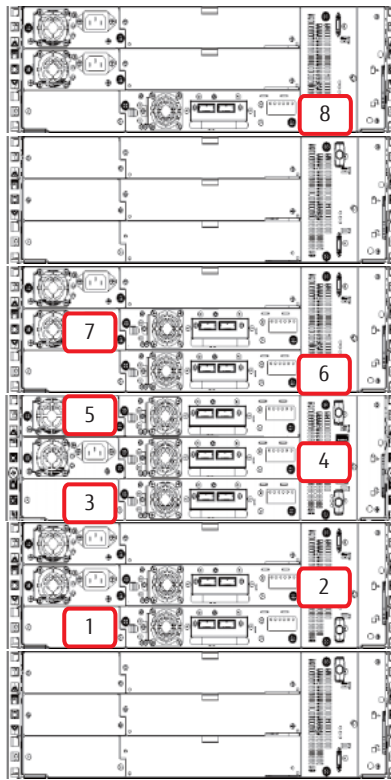tape drives

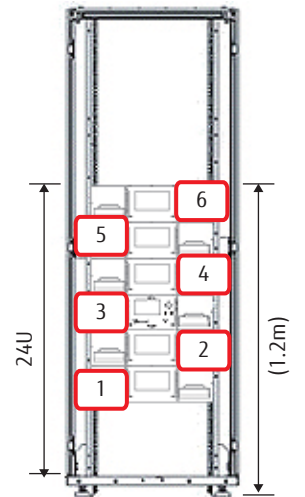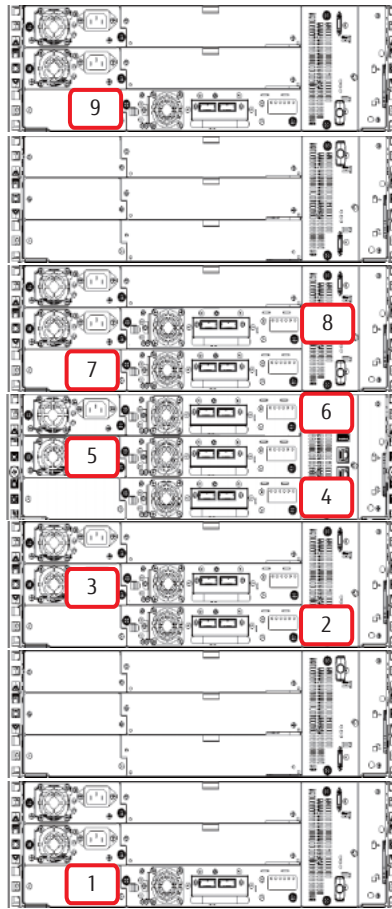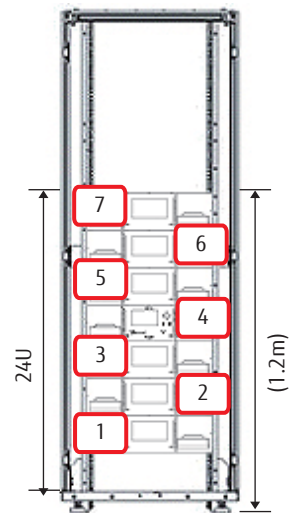Installation example to
a 19-inch rack (42U)

2.3.5　Supported Module Configurations

Table 2.3 describes the supported configurations for each module type – Base Module and Expansion Module.

Table 2.3　Supported module configurations

Module Type	PSUs	Half-Height Tape Drives
Base Module	1 (standard) 2 (redundant option)	1 – 3
Expansion Module	0 (standard)	0
	1 (option) 2 (redundant option)	1 – 3

2.4　Earthquake Resistance

Take the necessary measures (e.g. secure the cabinet to the floor or wall) to prevent the LT140 from falling down when earthquakes occur.
Earthquake countermeasures vary depending on the installation location, the floor conditions, and the number of connected Expansion Modules.
Contact your installation contractor for more details regarding earthquake countermeasure methods and how work should be conducted.

Chapter 3
Connections

This chapter describes the configuration for each interface to connect to the LT140.

3.1 Host Connection

3.1.1 Host Preparation

⚠ CAUTION	**Do** ⚠ **Static Sensitive** **Risk of damage to devices** • A discharge of static electricity damages static-sensitive devices or micro circuitry. • Proper packaging and grounding are necessary precautions to prevent damage.

Follow these general guidelines:
- Check with a system administrator before powering off the host computer.
- For a SAS library, confirm availability or install a SAS HBA that supports multiple LUNs.
- For a direct-attach Fibre Channel library, confirm availability of install an FC HBA.
- For connection of a Fibre Channel library through a compatible switch, verify that sufficient ports are available.

◯ N o t e

- Use an appropriate HBA for your tape drive due to performance requirements.
  If the transfer rate of the HBA is low, performance may degrade when moving highly compressible data to a tape drive with a higher transfer rate.
- In a SAN installation, all switches between the host and the library must be of the appropriate type.
  If the transfer rate of the switch on the path is low, performance may degrade. Configure zoning so only the backup servers may access the library.

■ LAN Connection

The LT140 requires a LAN connection for status monitoring, operation management, and maintenance of various devices.

Figure 3.1   Example of a LAN connection
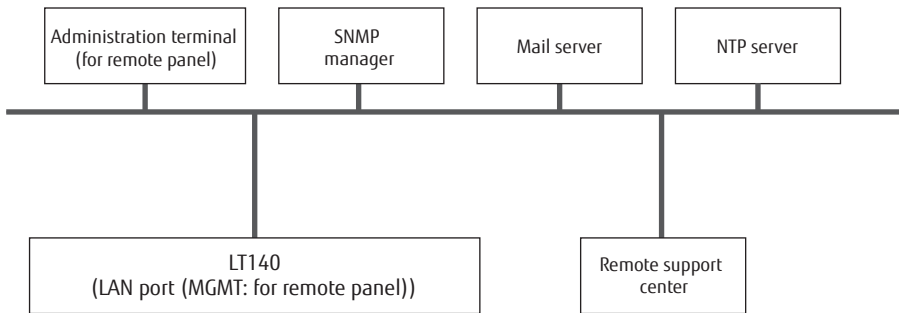
■ LAN for operation management

By using a LAN, checking the LT140 status from the remote panel, sending the SMTP (e-mail sending) in the event of a failure, and NTP (time correction) are available. In addition, functions that are provided by the management/monitoring server on the LAN, such as SNMP (device monitoring) can be used.

3.1.2   Fibre Channel Configuration Requirements

The Fibre channel tape drive can be connected directly to the server with a host bus adapter (HBA) or through a storage area network (SAN).
The installation requires one Fibre Channel cable for each tape drive. The tape drives all utilize an LC-style connector. Some drives will have two FC ports, but only one cable connection is needed per drive.
Supported speeds by drive generation are listed in the table below.

Table 3.1   Supported Fibre Channel speeds

LTO generation	Supported speeds
LTO-6	2 Gbit/s, 4 Gbit/s, 8 Gbit/s
LTO-7	2 Gbit/s, 4 Gbit/s, 8 Gbit/s
LTO-8	2 Gbit/s, 4 Gbit/s, 8 Gbit/s

FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Site Planning-

3.1.3   SAS Configuration Requirements

Serial Attached SCSI (SAS) is a computer bus technology mainly used to transfer data to and from storage devices, including disk drives and tape drives. SAS is designed to transfer data at up to 6 Gbit/s.

SAS uses serial connections, with a direct connection between the host server and each of the storage devices. This eliminates the need to configure SCSI busses and assign SCSI IDs, as is required for parallel SCSI devices.

The host server must have a SAS host bus adapter with an external connector. The HBA uses multiple LUNs to communicate with the library. Verify that your HBA supports multiple LUNs, as most RAID controllers do not. Most SAS HBA ports have four SAS channels. A tape drive uses one channel, so each HBA port can support up to four tape drives. You can use a cable with one connector on each end, but only one channel will be used.

Supported speeds by drive generation are shown in the table below.

Table 3.2   Supported SAS speeds

LTO generation	Supported speeds
LTO-6	1.5 Gbit/s, 3 Gbit/s, 6 Gbit/s
LTO-7	1.5 Gbit/s, 3 Gbit/s, 6 Gbit/s
LTO-8	1.5 Gbit/s, 3 Gbit/s, 6 Gbit/s

> ▷ **Caution**

- High quality SAS cables rated at the transfer rate the SAS drives are required. Always verify that the SAS cable you are using is rated for the data transfer speed of the interface of your components. SAS cables described as "equalized" may not support 6 Gbit/s data rates and should not be used with LTO-6 or later generation tape drives unless these cables are verified for 6 Gbit/s data rates.
- The library has one or more mini-SAS connectors on each SAS tape drive. Mini-SAS connectors are keyed. Do not force a SAS cable's mini-SAS connector into the tape drive as it might be keyed differently.

A SAS tape drive is identified by a unique identifier called a World Wide Name (WWN) or World Wide Identifier (WWID). The library assigns the WWID to the drive bay. When a tape drive is replaced, the WWID is re-assigned to the new tape drive.
The operating system tracks the WWID for the tape drive on each HBA channel. Each of the drive connectors on the fan-out cable is associated with an HBA channel. Once a tape drive has been plugged in, it should remain on the same channel to retain the association between the HBA channel and WWID.

3.2 Direct FC-AL/SAS Connection to the Server

This section provides an example of direct FC-AL/SAS connection between the LT140 and the server.

🔵 **N o t e**

The methods and settings for the backup operation depend on which backup software is used. For details, contact the support department of the backup software vendor.

3.2.1 Connection to a Single Server

This section provides an example of zoning when the LT140 is connected to a single server.

Figure 3.2   Direct FC-AL/SAS connection, a single server connection
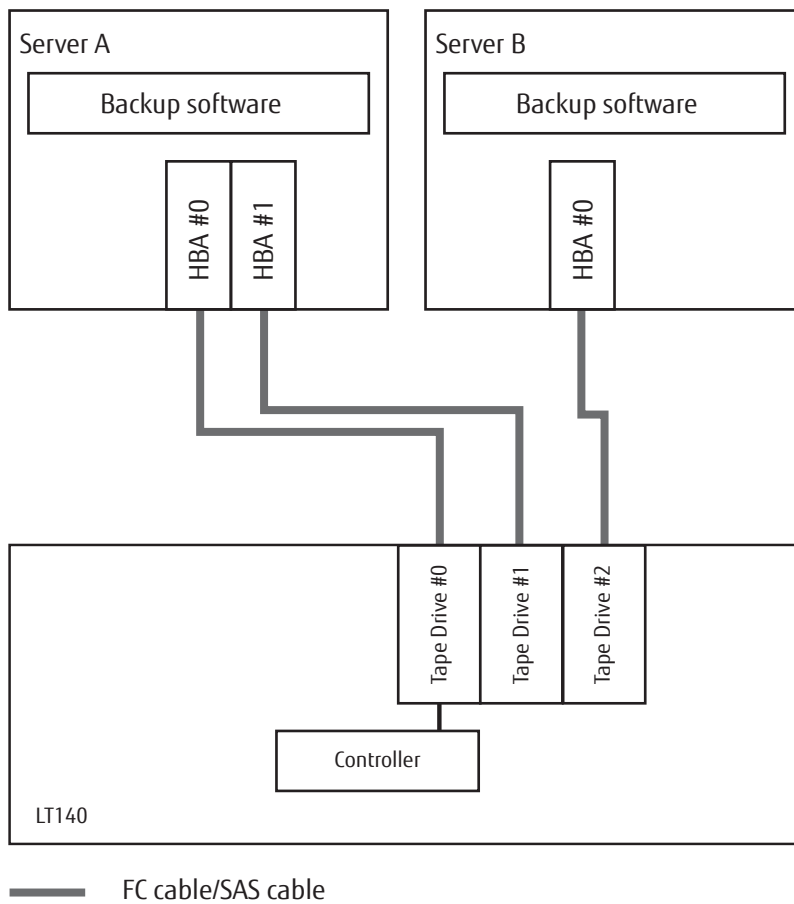

FC cable/SAS cable
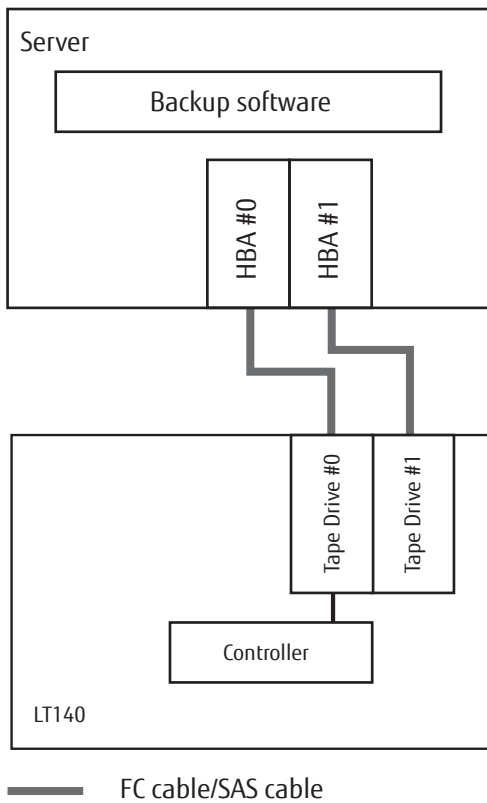
3.2.2   Connection to Multiple Servers

■ Tape library shared but not drives

The following figure shows an example of zoning when the LT140 is shared by two servers. In this case, all the servers use the same backup software, and the LT140 is shared by the functions of this backup software. However, the drives are not shared but individually belong to each server. Only one server controls the LT140 controller.

Figure 3.3   Direct FC-AL/SAS connection, a multiple server connection, a shared library, and tape drives that are not shared

3.3 Connection to a Server via a FC Switch

When the tape library is connected to a server via a FC switch, set the zoning for the FC switch. Refer to "FUJITSU Storage ETERNUS LT140 Tape Library User's Guide -Server Connection-" for details.

3.3.1 Connection to a Single Server

This section provides an example of connecting the tape library to a single server.

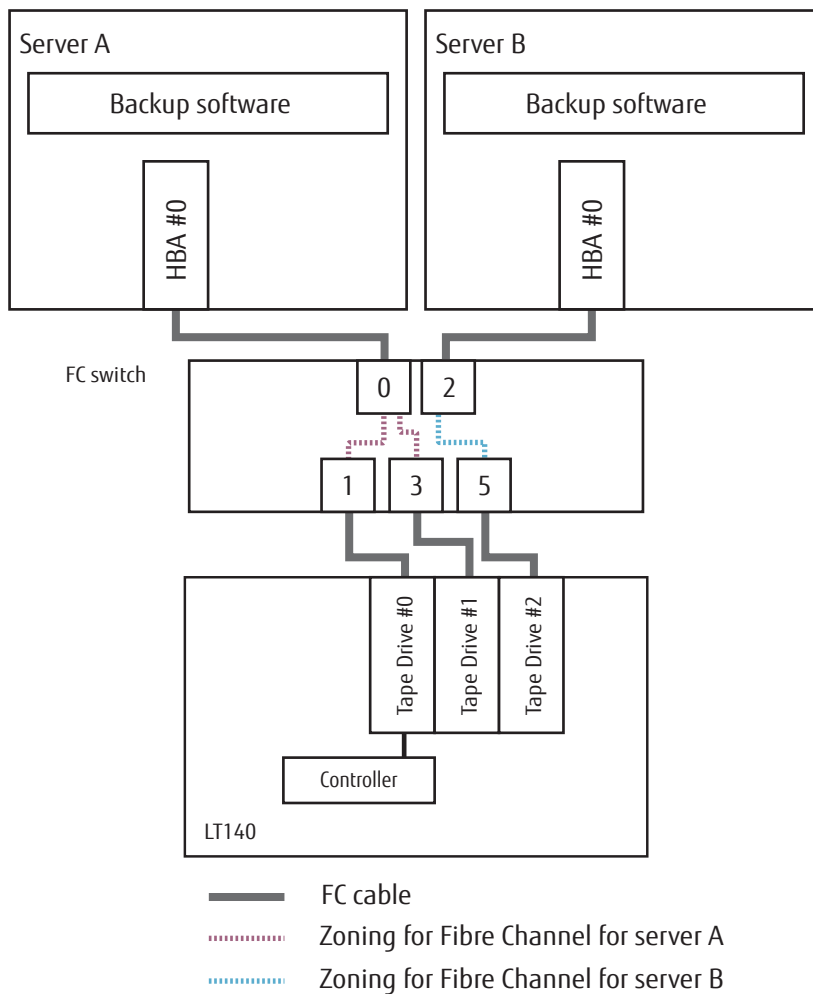Figure 3.4   FC switch connection, a single server connection
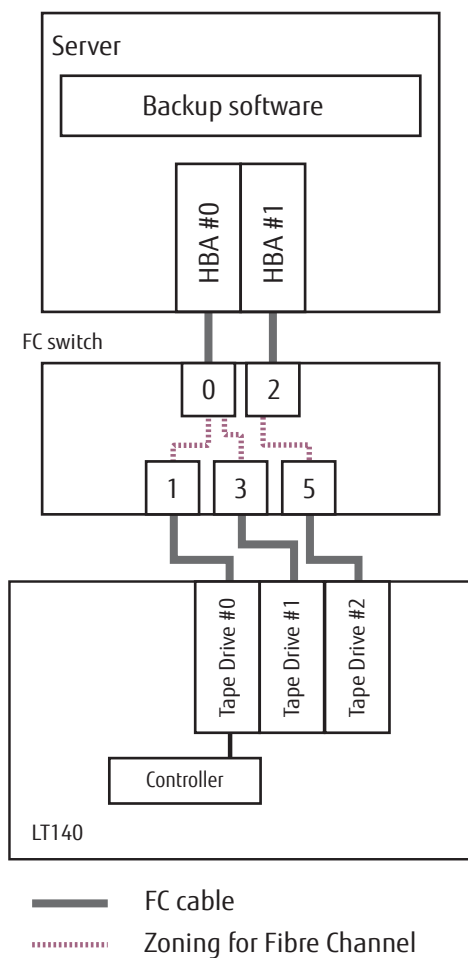
3.3.2   Connection to Multiple Servers

■ Tape library shared but not drives

The following figure shows an example of zoning when the LT140 is shared by two servers. In this case, all the servers use the same backup software, and the LT140 shared by the function of the backup software. However, the drives are not shared but individually belong to each server. Only one server controls the LT140 controller.

Figure 3.5   FC switch connection, a multiple server connection, a shared library, and tape drives that are not shared

■ Tape library and drives shared

The following figure shows an example of zoning when the LT140 is shared by two servers. In this case, each server uses the same backup software and the drives are shared through the function of backup software. However, only one server controls the LT140 controller.

Figure 3.6   FC switch connection, a multiple server connection, a shared library, and tape drives that are shared
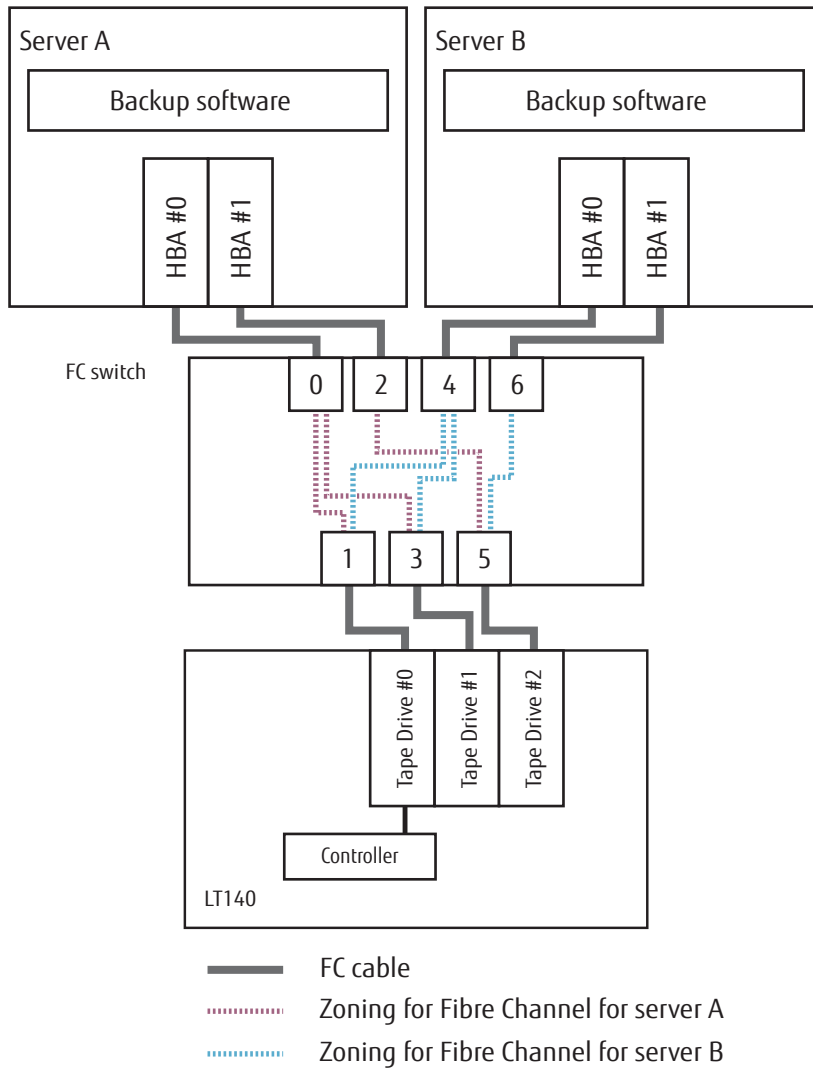
■ Cluster system

The following figure shows an example of zoning when the LT140 is connected to a cluster system (standby configuration). Both servers recognize the LT140 controller and drives as the same configuration.

Figure 3.7   FC switch connection, a cluster system configuration
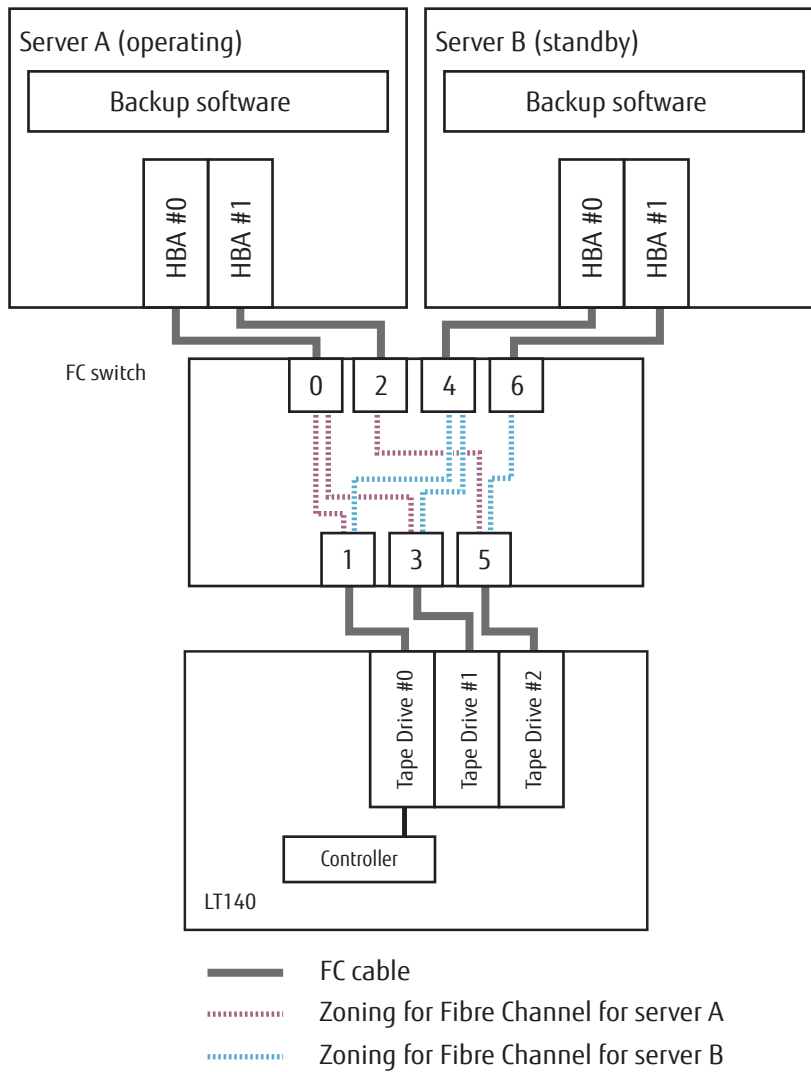
3.4   Using Partitions

If using partitions you can connect multiple servers. Each server will handle the Partition of the LT140 like an independent Library, no exchange between Partitions is possible by using Backup Software. If partitions are create, each master drive can control the library.

FUJITSU Storage ETERNUS LT140 Tape Library
User's Guide -Site Planning-

P3AG-3712-01ENZ0

Date of issuance: December 2018
Issuance responsibility: FUJITSU LIMITED

FUJITSU