adic Intelligent Storage™

# ADIC Scalar® 24
# Installation and Operation Guide

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Published: February 2004

Document Number: 62-2301-05 Rev A

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# 1

# Introduction

This manual contains information and instructions necessary for the operation of the Scalar® 24 library. It is intended for general use by anyone interested in learning about or using the Scalar 24.

The following documents are associated with this guide:

- *Scalar 24 Quick Start Guide*
- *SNC 450x User's Guide*
- *SNC 4000 User's Guide*
- *AMC 3.2 User's Guide*

The following symbols and highlighted passages note important information:

| Symbol | Definition | Description | Consequence |
|---|---|---|---|
|  | WARNING: | Imminent hazardous electrical situation | Death or serious injury |
|  | CAUTION: | Potential damaging situation | Possible damage to the product, data, or environment |
|  | NOTE: | Indicates important information that helps make better use of the system | No hazardous or damaging consequences |

The following is a list of formatting conventions used throughout this document:

| | |
|---|---|
| Italics | • Headline, e.g., *Chapter 2, Description*<br>• File name, e.g., *ERRORS.TXT* |
| Bold | • Special term, e.g., **Utilities**<br>• Operating element/key on the operator panel<br>• Terms appearing on the operator panel |
| `Courier` | • State of the equipment,e.g., `ONLINE`<br>• Switch position, e.g., `ON, OFF` |

An operator is responsible for ensuring that only qualified personnel perform the following procedures on the equipment:

- Prepare for operation
- Set-up
- Start-up
- Operate
- Shutdown
- Maintenance
- Restart

This manual provides sufficient training information for operation of your Scalar 24. It is recommend that you read through the manual before using your Scalar 24.

**CAUTION** **Operation on the Scalar 24 by untrained personnel can lead to equipment malfunction and void the warranty.**

**WARNING** **SOME WORK AND MODIFICATIONS CAN ONLY BE PERFORMED WITH THE APPROPRIATE QUALIFICATIONS AND TRAINING (FOR EXAMPLE, REPLACEMENT OF THE POWER SUPPLY). MOST IMPORTANTLY, KNOW AND OBSERVE ALL SAFETY RULES BEFORE WORKING WITH THE EQUIPMENT.**

## ADIC Technical Assistance Center

If problems cannot be solved with the aid of this document or for training information, contact the ADIC Technical Assistance Center (ATAC).

| | |
|---|---|
| In the USA: | 800.827.3822 |
| Outside the USA, toll free: | 00.800.9999.3822 |
| Internet: | www.adic.com |

# 2

# Safety

Read all safety and operating instructions before operating this product. Keep this manual for future reference. This unit is engineered and manufactured to assure your personal safety. Improper use can result in potential electrical shock or fire hazards.

Note — In addition to the safety instructions in this guide, local and professional safety rules apply.

This equipment is designed for processing magnetic tape cartridges. Any other application is not considered the intended use. ADIC shall not be held liable for damage arising from unauthorized use of the library. The user assumes all risk in this aspect.

To maintain the safeguards, observe the following basic rules for installation, use, and servicing of the Scalar 24:

- **Heed Warnings** - Adhere to all warnings on the product and in the operating instructions.
- **Follow Instructions** - Follow all installation and operating instructions.
- **Ventilation** - Situate the Scalar 24 so that its location or position provides adequate front and rear ventilation (at least two inches).
- **Heat** - Situate the product away from heat sources such as radiators, heat registers, furnaces, or other heat-producing appliances.
- **Power Sources** - Connect the Scalar 24 to a power source only of the type directed in the operating instructions or as marked on the product label.
- **Power Cord Protection** - Route the AC line cord so that it is not likely to be walked on or pinched by items placed upon or against it, paying particular attention to the cord at the wall receptacle, and the point where the cord exits from the product.
- **Object and Liquid Entry** - Take care to ensure that objects do not fall and liquids are not spilled into the product's enclosure through openings.
- **Servicing** - Do not attempt to service the product beyond that described in the operating and installation instructions. All other servicing should be referred to qualified service personnel.

## Intended Use

- Do not use oil, solvents, gasoline, paint thinners, or insecticides on the unit or near the unit. Vapors from these types of chemicals can damage the tape media components.

- Do not expose the unit to moisture or store unit in temperatures higher than 60 ºC (140 ºF), or to extreme low temperatures. See Specifications on page 137 for operating temperatures.
- Keep the unit away from direct strong magnetic fields, excessive dust, and electronic/electrical equipment that generate electrical noise.
- Hold the AC power plug by the head when removing it from the AC source outlet; pulling the cord can damage the internal wires.
- Use the unit on a firm, level surface free from vibration.
- The unit is designed for other Scalar 24s to be stacked on top of it (up to three). It is not recommended that you place any other objects on top of the unit.

# Safety Precautions

The Scalar 24 is equipped with the following protective devices:

- Mechanical Lock
- Front Power Switch

## Mechanical Lock

The library media access door can only be opened with a key from the outside. Authorized personnel are responsible for the security of the key.

## Front Power Switch

Switching off the front power switch removes power from the electronics which causes the picker to stop immediately. This switch also removes power from the drives.

**WARNING: THE FRONT POWER SWITCH FUNCTIONS AS A POWER INTERRUPT ONLY. TO COMPLETELY REMOVE ALL POWER, DISCONNECT THE AC LINE CORD FROM THE ELECTRICAL SOURCE.**

# Regulatory Notices

The regulatory notices for the Scalar 24 are provided below

## Federal Communication Commission Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.

- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that the equipment and the receiver are on different branch circuits.
- If necessary, consult a representative of ADIC or an experienced radio/television technician for additional suggestions.
- Obtain a copy of the following booklet:
  *FCC Interference Handbook*, 1996, available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00450-7.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

 NOTE: Use only shielded cables for connecting peripherals to this device to reduce the possibility of interference with radio and television reception. Using shielded cables ensures that you maintain the appropriate FCC radio frequency emissions compliance (for a Class A device) or FCC Certification (for a Class A device) of this product.

In compliance with FCC regulations, the following information is provided on the device or devices covered in this document.

| FCC Declaration of Conformity | |
|---|---|
| Product Name: | Scalar 24 |
| Model Number: | SC24 |
| Company Name: | **A**dvanced **D**igital **I**nformation **C**orporation<br>PO Box 97057<br>Redmond, WA 98073-9757 USA<br>(425) 881-8004 |

# IC Notice (Canada Only)

Most tape libraries are classified by the Industry Canada (IC) Interference-Causing Equipment Standard #3 (ICES-003) as Class A digital devices. To determine which classification (Class A or B) applies to your tape library, examine all registration labels located on the bottom, the back panel, or on the inside of the chassis below the magazines. A statement in the form of “IC Class A ICES-3” or “IC Class B ICES-3” will be located on one of these labels.

Note that Industry Canada regulations provide that changes or modifications not expressly approved by the tape library manufacturer could void your authority to operate this equipment.

This Class A (or Class B, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe A (ou Classe B, si ainsi indiqué sur l’étiquette d’enregistration) respecte toutes les exigences du Reglement sur le Materiel Brouilleur du Canada.

# EN 55022 Compliance (Czech Republic Only)

This device belongs to category A devices as described in EN 55022, unless it is specifically stated that it is a category B device on the specification label. The following applies to devices in category A of EN 55022 (radius of protection up to 30 meters). The user of the device is obliged to take all steps necessary to remove sources of interference to telecommunication or other devices.

Pokud není na typovém štitku počítače uvedeno, že spadá do třídy A podle EN 55022, spadá automaticky do třídy B podle EN 55022. Pro zařízení zařazená do třídy A (ochranné pásmo 30m) podle EN 55022 platí následující. Dojde-li k rušení telekomunikačních nebo jinych zařízení, je uživatel povinen provést taková opatření, aby rušení odstranil.

# CE Notice

Marking by the symbol CE indicates compliance of this tape library to the EMC (Electromagnetic Compatibility) directive of the European Community. Such marking is indicative that this tape library meets or exceeds the following technical standards:

EN 55022 Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment.

This system is an EN 55022 Class A device.

EN 50081-1 Electromagnetic compatibility - Generic emission standard Part 1: Residential, commercial, and light industry.

EN 55024:1998 Information Technology Equipment - Immunity characteristics - Limits and methods of measurement.

EN 61000-3-2 Harmonic current emissions test.

EN61000-3-3 Voltage fluctuations and flicker in low-voltage supply systems test.

EN 61000-4-2 Electrostatic discharge immunity test.

EN 61000-4-3 Radiated, radio-frequency, electromagnetic field immunity test.

EN 61000-4-4 Electrical fast transient/burst immunity test.

EN 61000-4-5 Surge immunity test.

EN 61000-4-6 Immunity to conducted disturbances, induced by radio-frequency fields.

EN 61000-4-8 Power frequency magnetic field immunity test.

EN 61000-4-11 Voltage dips, short interruptions and voltage variations immunity test.

EN 60950: 1999-2004 3rd Edition “Safety of Information Technology Equipment, including Electrical Business Equipment.”

EN 60825-1: 1996 “Safety of Laser Products.”

A *Declaration of Conformity* in accordance with the preceding standards has been made and is on file at ADIC Europe, ZAC de Basses Auges, 1, rue Alfred de Vigny, 78112 Fourqueux, FRANCE.

# VCCI Notices (Japan Only)

This is a Class A product based on the standard of the Voluntary Control Council for Interference for Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.Install and use the equipment according to the instruction manual.

Note that VCCI regulations provide that changes or modifications not expressly approved by the tape library manufacturer could void your authority to operate this equipment.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

## Declaration of Conformity

The signed Declaration of Conformity is on file with Advanced Digital Information Corporation, 17275 NE 67th Court, Redmond, Washington 98052, and ADIC Europe, ZAC des Basses Auges 1, rue Alfred de Vigny, 78112 Fourqueux, France.

# 3

# Description

The Scalar 24 is designed to provide optimal density in both rackmount and desktop environments while offering features and functionality only found in mid-range libraries. The library can provide over one month of unattended backup and fits in only 4U (7 inches) of rack space. For more information on capacity, see Table 1.

**Figure 1** Scalar 24


**Table 1** Scalar 24 Storage Capacity*

| | |
|---|---|
| **LTO-2** | **9.6 TB** |
| **LTO-1** | **4.8 TB** |
| **SDLT320** | **6.7 TB** |

*Values represent maximum compressed capacity with I/E slot included

The Scalar 24 is the next-generation, entry-level/mid-range product to meet the standards of ADIC customers. The ability to expand the Scalar 24 makes it an excellent investment. An additional drive sled can be added to double throughput and/or partition the library to multiple hosts. The library also comes standard with a barcode scanner that provides instant media verification and inventory. An optional Remote Management Unit (RMU) can be added for centralizing your data backup control. Finally, the available Storage Networking Controllers (SNCs) offer many features, such as the ability to manage your library in a Storage Area Network (SAN) and the ability to convert Fibre Channel and Gigabit Ethernet protocol to parallel SCSI protocol.

# Features

The following features are standard with your Scalar 24:

**Multi-function Operator Panel.** The operator panel, located on the right above the I/E slot, provides an easy-to-read bitmap display and a five-button keypad to permit you to monitor and control the operations of your library. The liquid crystal display (LCD) provides access to library status, commands, setup, and tools. See Front Panel Components on page 11 for more information. The operator panel is described in more detail in Operator Panel Keypad on page 43.

**Robotic System.** The robotic system is the media cartridge handling mechanism and responds to commands from the application software to move the cartridges between the storage slots, tape drives, and the I/E slot.

**Partitioning.** Partitioning enables your single Scalar 24 library to be logically partitioned so it will appear to a host as if it were two independent physical libraries. Each logical library (partition) can be independently controlled as though it were two different libraries.

**I/E Slot.** The I/E slot allows you to import and export tapes to the interior slots and drives without unlocking the media access door. See Interior Components on page 12 for more information. The I/E slot may also be configured by the user to act as a data storage slot.

**Magazines.** Removable cartridge magazines allow for the easy insertion and removal of tape cartridges.

**System Integrity.** The cartridge storage slots, drives, and robotic system are protected by a door that is lockable by key. Your library can also be configured for password access.

**Cartridge Inventory.** Whenever you power up your Scalar 24, it will perform a physical inventory of slots.

**Barcode Scanner.** The barcode scanner reads barcode labels and presents label IDs to the LCD and the host without losing storage capacity.

**Manual Cartridge Use.** Individual cartridges can easily be transported to the library by manually opening the I/E door and inserting the cartridge into the I/E slot. The operator panel is then used to load the cartridge into another slot.

**Reverse Cartridge Protection.** The magazines, I/E Slot, and rear storage slots employ a design that prevents the cartridges from being inserted incorrectly.

**Built-in Diagnostics.** Your Scalar 24 includes diagnostic firmware that alerts you when drive cleaning is required, reports diagnostic results, and drive operating status. Your library also includes real-time monitoring of data locations and several types of diagnostic tests.

**AutoClean.** AutoClean enables the library to automatically clean the drives when cleaning is required.

**Error Diagnosis.** Your Scalar 24 includes an Error Log that is accessible from the operator panel. An output log, available through the serial port, contains errors, diagnostic messages, and events.

**24 Hour Fast Exchange.** In the event your Scalar 24 needs to be serviced and you are unable to resolve the problem with the ADIC Technical Assistance Center, ADIC will provide you with a next business day advanced exchange to minimize down time.

**Stored Vital Product Data for Recovery.** Information about your library and settings (serial number, slot configurations, etc.) is stored on the RMU.

**Multiple Control Paths.** This feature allows your library to be controlled by more than one host system.

# Optional Features

The following features are optional. Where applicable, instructions for installing these features can be found in Installing Optional Hardware on page 29.

**Additional Drive.** You can add an additional drive to your Scalar 24, increasing data access speed.

**Rackmount Kit.** Your Scalar 24 may be easily converted to a rackmount configuration. The available rackmount kit can be installed on any Scalar 24.

**Remote Management Unit.** Your Scalar 24 is equipped for a Remote Management Unit (RMU), which provides remote library operation through a web browser.

**Storage Networking Controllers (SNCs).** The Scalar 24 offers two SNCs that provide many features. For example, they increase data transfer rates, enable you to use and manage your library in a Storage Area Network (SAN), provide Fibre Channel to SCSI connectivity or Gigabit Ethernet to SCSI connectivity.

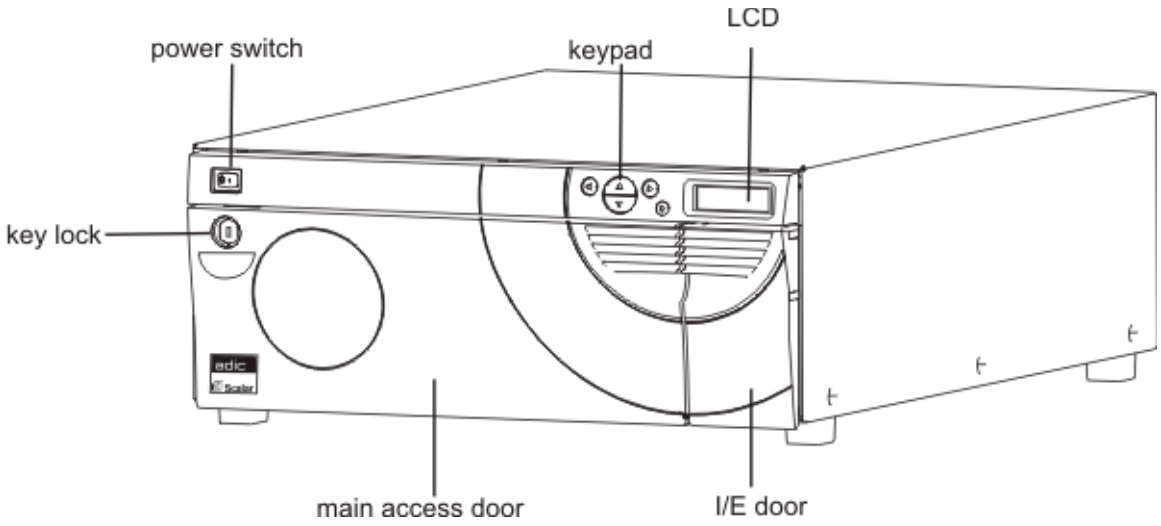
The available feature set depends on which SNC you integrate into your library. The Scalar 24 supports the SNC 4000 and the SNC 4501.

**Magazine and Dust Cover.** Extra magazine and snap-on dust cover and interlocked stacking for offline media storage.

# Front Panel Components

The following graphic shows the components located on the front panel of your Scalar 24.

**Figure 2** Front View

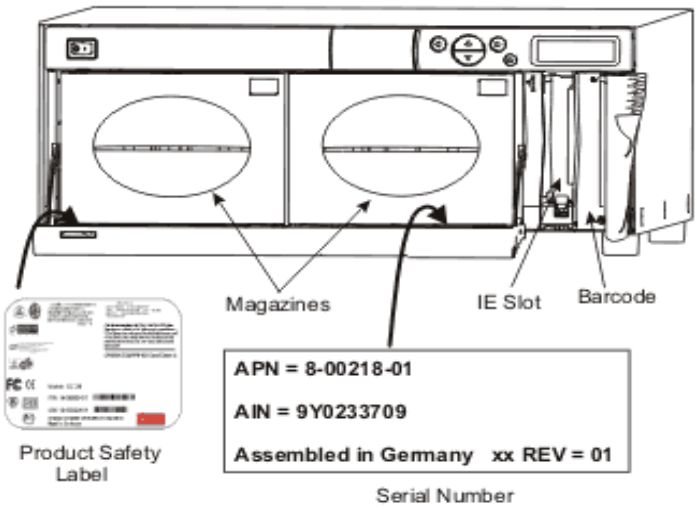



| | |
|---|---|
| Power Switch | Two-position switch that controls power to your Scalar 24. |
| Key Lock | Lock that prevents unauthorized media insertion and removal. |
| Media Access Door | Door for loading and removing tape magazines. Door can be locked to prevent media insertion and removal. |
| I/E Door | Door for access to the I/E slot. The I/E feature allows you to import or export tape cartridges with the media access door locked. |
| LCD and Keypad (operator panel) | The high-contrast LCD and keypad allow you to view the operational status of the library, perform system configuration, and execute commands. The LCD provides an easy-to-read bitmap display with backlighting. |

# Interior Components

The following graphic shows the components located behind the media access and I/E doors of your Scalar 24:

**Figure 3** Interior View

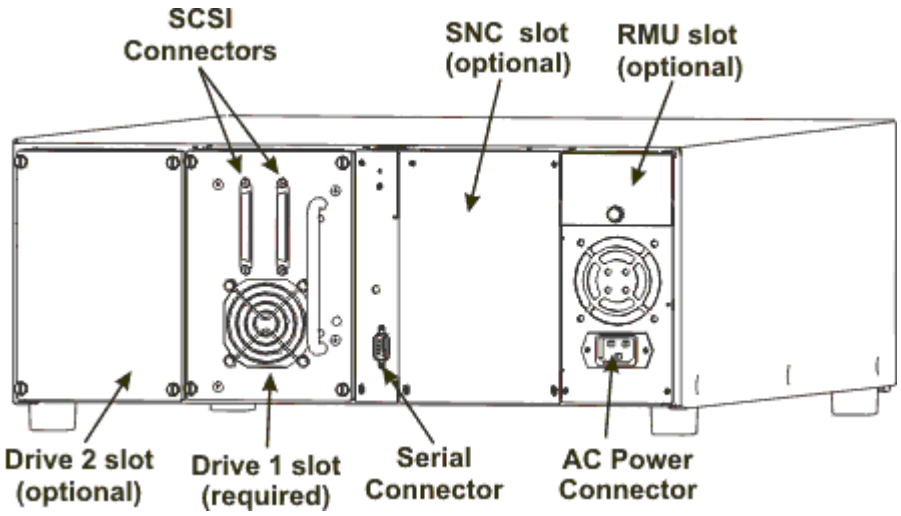



| | |
|---|---|
| Magazines | Removable cartridge magazines allow for the easy insertion and removal of tape cartridges. The magazines include transparent windows that enable for easy media viewing. The magazine handle is designed to allow for single-handed magazine installation and removal. When not in use magazines can be stacked for easy storage. |
| I/E Slot | Allows insertion and ejection of cartridges without interrupting the normal operation of the library. |
| Barcode Scanner | Barcode scanner that reads barcode labels and presents label IDs to the LCD and the host. |
| Product Safety Label | The product safety label is located below the left magazine. |
| AIN Serial Number | The AIN is a 9-character serial number located on a label below the right magazine. The label also provides product identification information, including a barcode, the ADIC Part Number (APN), the country of manufacture, and a patent number. |

# Rear Panel Components

The following graphic shows the components located on the rear panel of your Scalar 24:

**Figure 4** Rear View




| | |
|---|---|
| AC Power Connector | Receptacle for AC power cord. |
| SCSI Connectors | Connections for the interface cable that connect the unit with the host computer and/or other devices on the SCSI channel (including other Scalar 24 units). |
| Serial Connector | Bi-directional RS-232 port for diagnostic purposes and firmware upgrades. |
| Drives | Tape cartridge drives. Your Scalar 24 can contain one or two drives. |
| Remote Management Unit (RMU) slot | Slot for optional, user-installable RMU that enables remote access to the library by means of a Web browser. |
| Storage Networking Controller (SNC) slot | Slot for an optional SNC component. |

# Drives

Your Scalar 24 can be equipped with either one or two drives. The tape drives are packaged in a common drive module that is designed so that you can easily add an additional drive or replace a drive. For more detailed information on the drives, see Specifications on page 137.

# Media and Media Protection

The following media types are supported:

Table 2 Supported Media Types

| Media Type | Capacity[a] | Transfer Rate[a] |
|---|---|---|
| LTO-2 | 400 GB | 70 MB/s |
| LTO-1[b] | 200 GB | 30 MB/s |
| SDLT320 | 320 GB | 32 MB/s |

Table 2 Supported Media Types

| Media Type | Capacity[a] | Transfer Rate[a] |
|---|---|---|
| DLT IV[c] | 80 GB | 12 MB/s |

a. 2:1 compression rate.
b. LTO-1 media can be used in LTO-2 drives; however, the capacity and transfer rates will be at LTO-1 levels. LTO-2 media cannot be used in LTO-1 drives.
c. DLT IV media can be used in the SDLT320 drive as read only.

# Media Protection

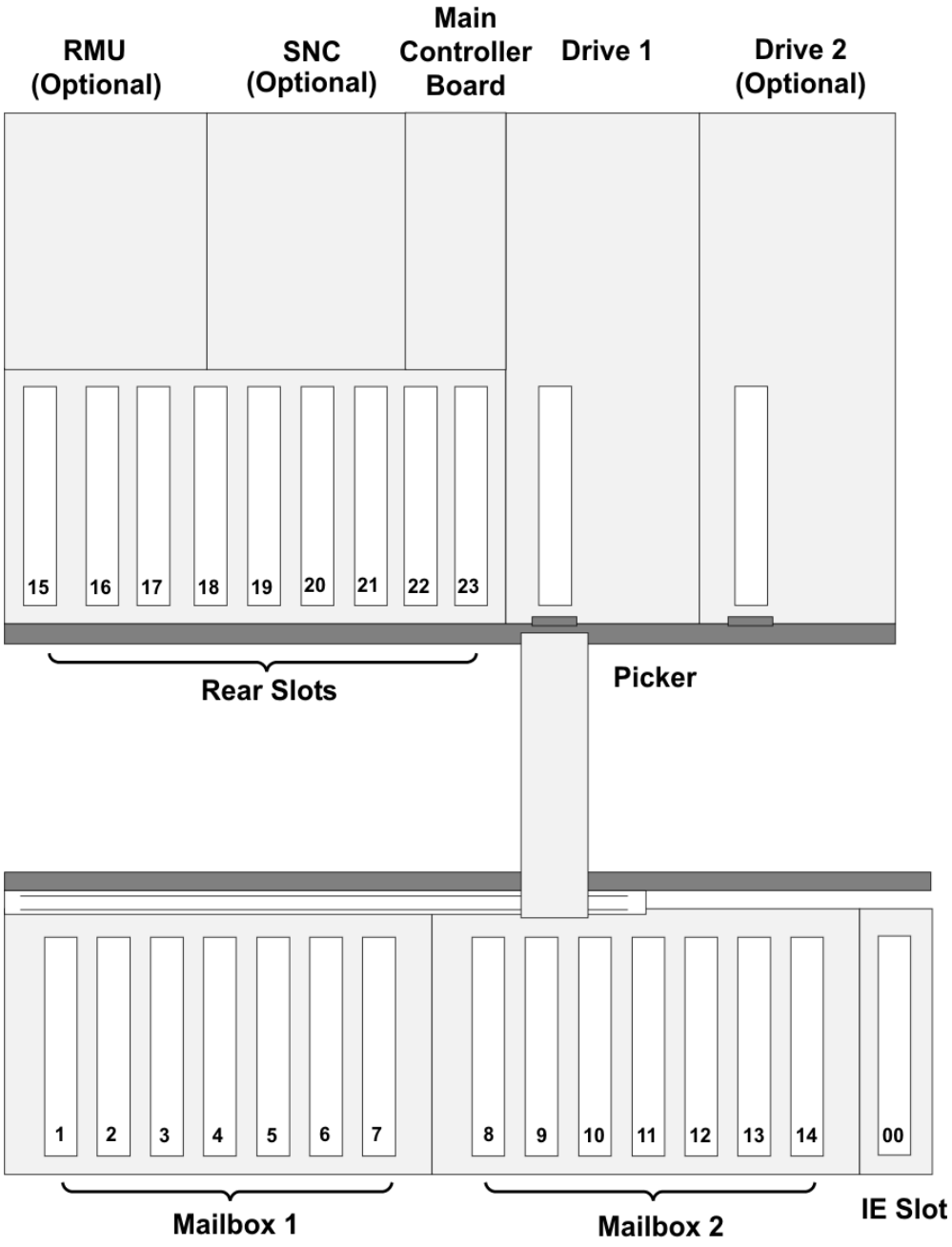
The write-protect switch is used to prevent recording over existing data. To prevent recording or deleting, place the write-protect switch to the closed position. The drive senses the position of the switch and will not allow writing in this position. When inserting cartridges in the Scalar 24, place the switch in the open position, unless you do not wish to record on a specific cartridge.

Note Store data cartridges in a dry, cool environment.

**CAUTION** **Never reset or power down your computer or Scalar 24 while a function is in process or a tape is moving.**

The following diagram provides a representational view of media storage as it is laid out in a library configured for LTO media.

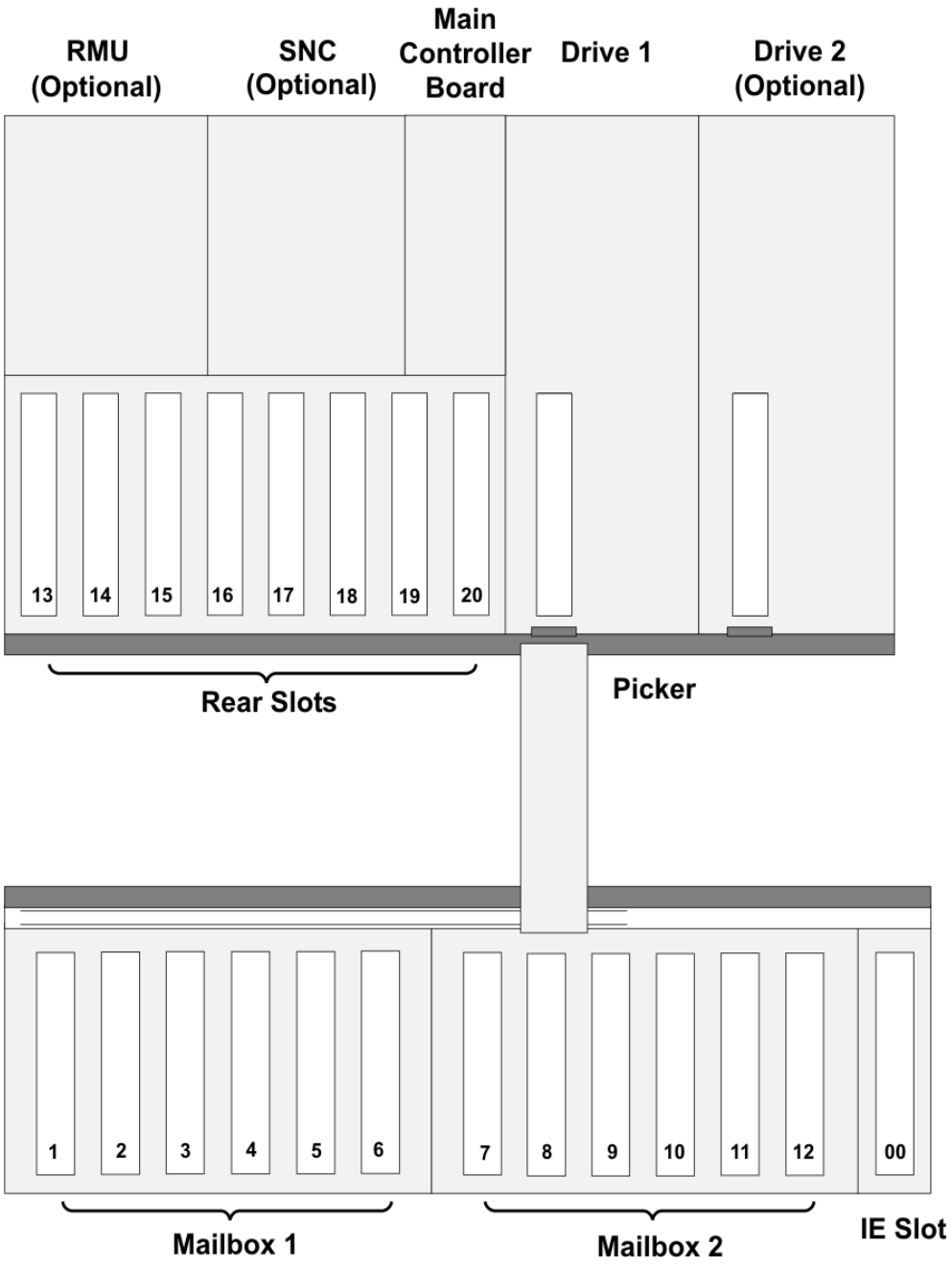
**Figure 5** Top View of Storage Media Layout for LTO Library.




## LTO Storage Configuration

The following diagram provides a representational view of media storage as it is laid out in a library configured for SDLT media.

**Figure 6** Top View of Storage Media Layout for SDLT Library




**SDLT Storage Configuration**

# Host Interface

The Scalar 24 is a SCSI target device and can be connected to a Low Voltage Differential (LVD) SCSI bus Both ends of the bus must be terminated.

The Scalar 24 can also be connected to a Storage Area Network (SAN) by means of an optional Storage Networking Controller (SNC). The SNC converts either Fibre Channel protocol or Gigabit Ethernet (GbE) protocol to parallel SCSI protocol.

## Host Adapter

Your Scalar 24 library can be connected to either an integrated SCSI host or a separate SCSI interface (host adapter) card installed in the host computer–either directly to the I/O connector on the card or as part of an existing SCSI chain.

The host adapter you choose will depend on your system requirements and needs. If you are not sure about your host adapter requirements, please call ADIC's Technical Assistance Center (ATAC) and ask for assistance. Before you connect the Scalar 24 library, the interface must be installed along with the required drivers. For information about drivers see Library Driver Installation on page 25.

## Terminator

If the Scalar 24 is the last device on the SCSI chain, a terminator is required. The terminator attaches to the SCSI connector on the drive module. Be sure to use an LVD terminator. For information on installing the terminator, see Connecting to a SCSI Bus on page 20.

## Application Software

A variety of backup and data storage software is available for use with your Scalar 24. The software you use will depend upon your storage needs and the system you are using. Please check with ADIC Sales or Customer Assistance if you have a question on the compatibility of a particular software package.

Be sure that any versions of third-party software installed on your library are current and compatible with your library. Please check with your third-party vendor if you have a question regarding the compatibility of a particular software package, drive, or patch.

## SCSI Cables

Cables of various lengths and connector types are available through ADIC to match your specific requirements. A Scalar 24 drive has an LVD HD68 SCSI connector. Typically, a host bus adaptor (HBA) will have either an HD68 or VHDCI connection. SCSI cables connecting the host HBA to the library should not exceed 20 feet in length.

Now you are ready to connect the Scalar 24 to your host computer. Follow the instructions provided in Getting Started on page 19.

# 4

# Getting Started

This section describes how to install and set up the Scalar 24. The steps involved in installation include:

- Unpacking and inspecting
- Checking the accessories
- Installing Scalar 24 hardware
- Setting up your Scalar 24 library
- Preparing the host computer

## Unpacking and Inspecting

Unpack all items from the carton. Save the packing materials in case you need to move or ship the system in the future.

**CAUTION** **You must ship the Scalar 24 in the original or equivalent packing materials or your warranty may be invalidated.**

Use the link on the *Scalar 24 Documentation and Software* CD to register the product. The serial number is available through the operator panel and is also on the inside your Scalar 24, below the right magazine. In order to see the serial number label, remove this magazine.

## Checking the Accessories

Check to make certain that the following items are included with your Scalar 24 and that none of them are damaged:

- US power cord
- European power cord
- One 1-foot SCSI cable (dual drive version only)
- Active 68-pin SCSI bus terminator
- Two keys for the front door
- *Scalar 24 Documentation and Software* CD
- Quick Start Guide

Note — Store the CD-ROM and keys in a safe location for preventative maintenance or service activity.

# Installing Scalar 24 Hardware

This section provides step-by-step instructions for installing the standard Scalar 24 hardware. Standard hardware installation includes:

- Connecting to a SCSI bus
- Connecting the power cord
- Inserting tape cartridges in magazines

For instructions on installing optional hardware, see Installing Optional Hardware on page 29.

## Connecting to a SCSI Bus

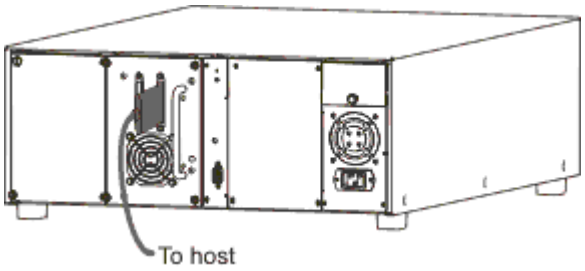
If your host computer system does not have native SCSI capability and the host adapter you are using is not installed, please install it. Refer to the manual that came with your host adapter for specific directions. When the host adapter card is installed, return to this point in the manual.

Check to ensure that the interface cable you are using has the appropriate connectors on each end. The Scalar 24 uses a 68-pin LVD SCSI connector on the rear panel.

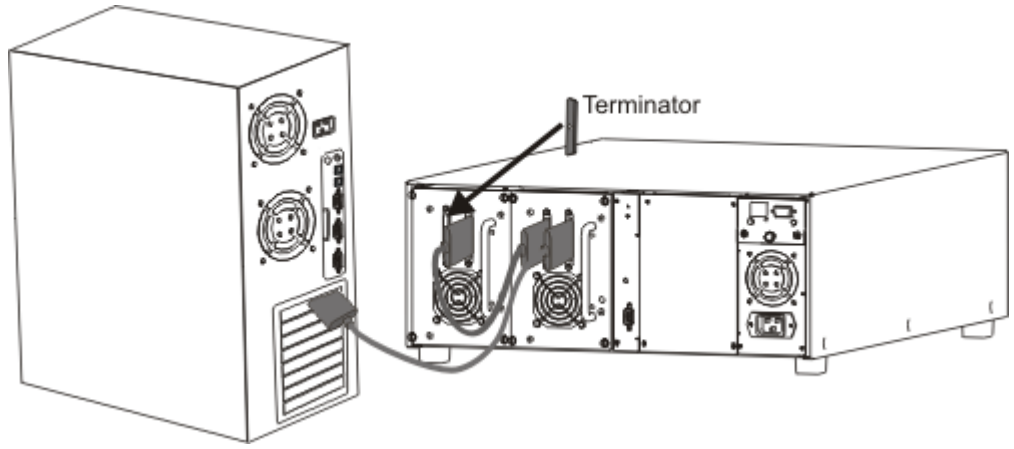
- If your host computer's SCSI connector is different from the one on the Scalar 24, you will need to obtain an adapter or a different cable. Consult your dealer or ATAC if you need help.
- The interface cable must be shielded–ADIC can supply you with the correct type.

Follow the procedure below to connect the SCSI cable and terminator:

**1** Connect the SCSI cable to either of the SCSI connectors on the rear panel of the Scalar 24.



2 Connect the free end of the SCSI cable to the connector on the host computer's SCSI adapter.




3 If you wish to connect one or more additional devices to the bus after the Scalar 24, connect an appropriate cable between the remaining SCSI connector on the rear panel of the Scalar 24 and the next device.

4 Terminate the last device in the chain.

**CAUTION** **Ensure that you are using the proper terminator for your type of SCSI device.**

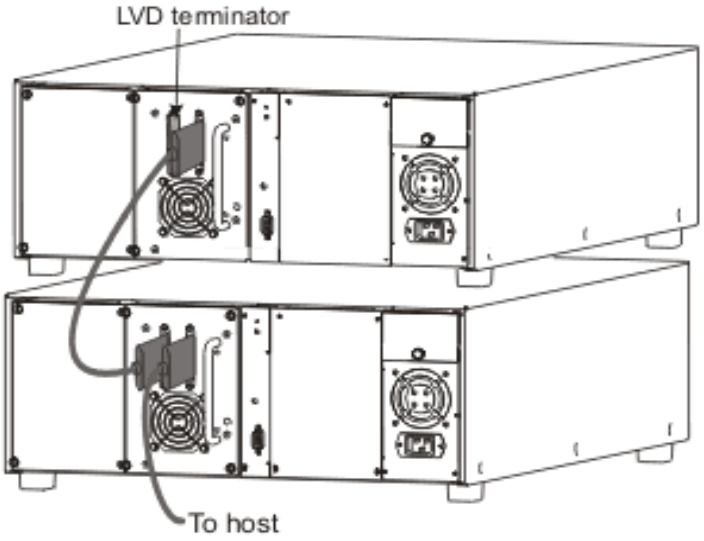
5 Make sure that the SCSI cable between the host adapter and the Scalar 24 is secure and the connections are fastened correctly.

## Connecting More than One Scalar 24

If you are connecting more than one Scalar 24 on the same SCSI channel, connect each unit to the previous unit with an additional shielded interface cable. It does not matter which SCSI connector on each Scalar 24 you connect the interface cable to. Make sure that you configure each Scalar 24 unit with a unique drive SCSI ID and library ID. Your Scalar 24s will not function properly if they have the same SCSI IDs. For more information on setting SCSI IDs, see Set SCSI IDs on page 80.

Note Ensure the cable is a 68-pin HD cable and is at least 2 feet (61 cm) in length.

**Figure 7** Daisy-chained units




Note It is recommended that you daisy-chain no more than two Scalar 24s or two drives together, otherwise the data transfer rate may be reduced.

## Connecting the Power Cord

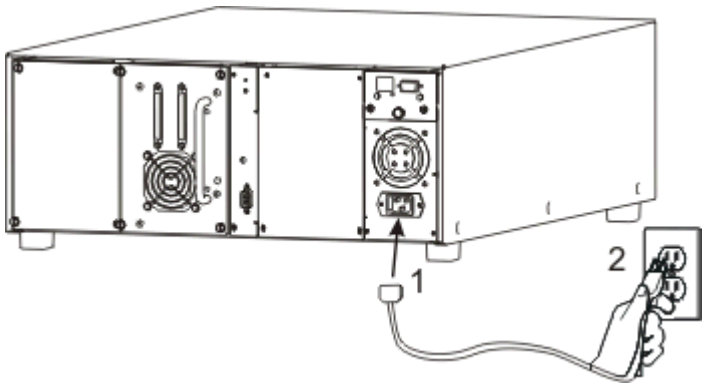
Follow the procedure below to connect the power cord to your Scalar 24.

1 Make sure the power switch on the front of the library is off (the ⏻ is pressed).

2 Plug the power cord into the AC receptacle on the rear panel of your Scalar 24.

**WARNING** **USE CAUTION WHEN PLUGGING THE POWER CORD INTO AN ELECTRICAL OUTLET. HAZARDOUS VOLTAGES ARE PRESENT IN THE SOCKETS OF THE OUTLET.**

3 Plug the power cord from the Scalar 24 into a grounded electrical socket.



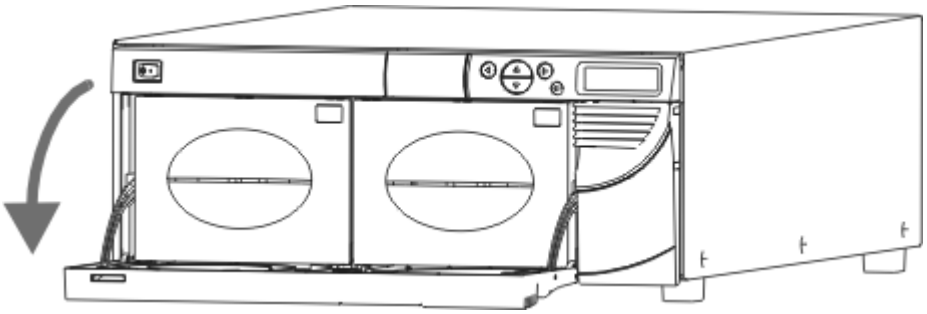
**CAUTION** **Ensure that the AC line cord from the library is plugged directly into the socket. Extension cords should not be used.**

# Inserting Tape Cartridges

Make sure that the write-protect switch is set appropriately on each cartridge. Slide the switch to the appropriate position by pushing it with your finger.

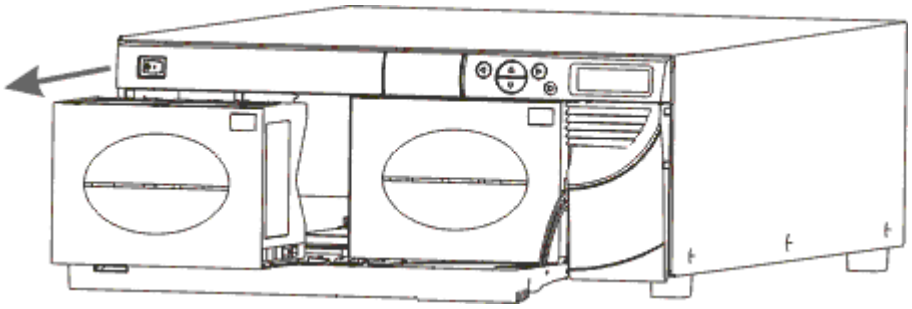
Follow the procedure below to insert data cartridges.

**1** Open the media access door.



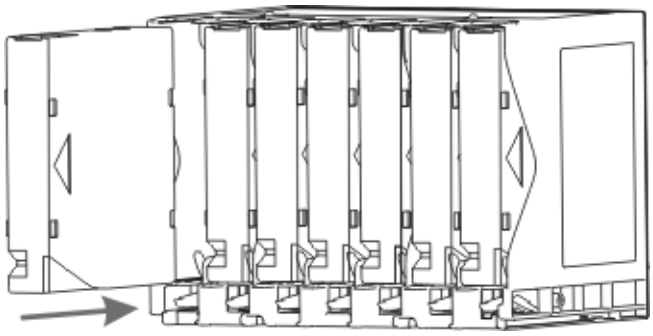
**2** Insert your fingers in the magazine handle and slide out the magazines.

Note You may need to pull firmly to remove the magazines.



**3** Fill the magazines with cartridges. Ensure the correct orientation. The magazine is designed to protect against improper insertion. If the cartridges do not insert easily, do not force them, the orientation is probably incorrect. For more information on proper media insertion and removal, see Inserting and Removing Media on page 46.

Note Media barcode labels can be viewed through the magazine window.



**4** Re-install the magazines into the Scalar 24.

Note You will need to push firmly to fully insert the magazines.

**5** Close the media access door.

Refer to Bulk Load on page 103 for instructions on loading cartridges from the magazines into the rear slots. You can also use your host application to move the cartridges from the magazines to the rear slots. Refer to Move Media on page 100 for instructions on loading cartridges into the drive.

**CAUTION** **Before power up, the library should be free of any obstruction. Ensure that all tapes are fully inserted into the storage slots and do not extend out of drives.**

# Setting up your Scalar 24

After you have set up your host computer, you need to configure your library. Your Scalar 24 provides you with the unique ability to set up the library using a **Setup Wizard**. The **Setup Wizard** guides you step-by-step through the setup process ensuring that all elements are configured in the proper order.

Your library is shipped with a default configuration that you can use. The default settings are as follows:

| Option: | Setting: | Description: |
|---|---|---|
| I/E Slot | Import/Export | The host will see one import/export slot and 23 data slots for LTO or 20 data slots for SDLT. |
| Partitioning | Disabled | The host will see the entire library. |
| AutoClean | Disabled | The library will not clean the drives automatically when cleaning is required. |
| SCSI Mode | Random | The host will have access to any tape cartridge randomly. Most host software use this mode. |

| Option: | Setting: | Description: |
|---|---|---|
| I/E Slot | Import/Export | The host will see one import/export slot and 23 data slots for LTO or 20 data slots for SDLT. |
| Library SCSI ID | 0 | |
| Drive 1 SCSI ID | 1 | |
| Drive 2 SCSI ID | 2 | |
| Inquiry | Scalar 24 | The inquiry string returned to the host in a SCSI inquiry command will be “Scalar 24.” |
| Timeout Interval | 9 minutes | After nine minutes of inactivity on a submenu, the library will return to the **Main** menu. If a password is set, it will have to be re-entered to access the library. |
| Password | Disabled | A password is not required to access your Scalar 24. |
| Key Click | Disabled | An audible tone will not be heard when buttons on the keypad are pressed. |
| Scanner | Enabled | The barcode scanner will scan barcode labels. |

If you wish to change any of these configuration settings, you can either use the **Setup Wizard** or change them manually using the **Setup** menu. For more information on any of these options or to change the default settings, refer to Setup Wizard on page 64 or Setup Menu on page 64.

# Preparing the Host Computer

All device drivers for your Scalar 24 are located on the CD included with the library and are also available on the ADIC support website.

At this point, you need to refer to your software installation guide for instructions on installing the backup/controlling software for the Scalar 24 onto the host computer.

When using Microsoft® Windows® 2000 or Windows Server 2003 native backup, ensure that the proper drivers for the library and drives are installed. Under Microsoft Windows NT® 4.0, only the driver for the drives is needed; there is no medium changer support when using Windows NT native backup. If any doubt exists about the proper drivers residing on the system, use the following procedures to install the appropriate drivers.

## Library Driver Installation

1. Connect the library to the host and restart the machine.
2. Insert the *Scalar 24 Documentation and Software* CD-ROM into the CD drive.
3. Start the Windows® Device Manager.

4 In the Device Manager select **Medium Changers**.

5 Right click on the **Unknown Medium Changer device**.

6 Select **Properties** from the pop-up menu.

7 Select **Driver** tab on the properties page.

8 Click the **Update Driver...** button. This will start the **Upgrade Device Driver Wizard**. Click **Next**.

9 Select the option **Search for a suitable driver for my device**. Click **Next**.

10 In **Optional search locations** check **only CD-ROM drives**. Click **Next**.

11 Setup will select the installation file, *Scalar24.inf*. Click **Next**.

Required files will be installed for the driver now.

12 Click **Finish**.

13 Click **Close** on the **Properties** page.

14 Make sure that in Device Manager, under **Medium Changers**, *ADIC Scalar 24 Tape Library* is listed.

# Tape Driver Installation

## Windows 2000 or Windows Server 2003 Driver File Installation

1 Start the Windows Device Manager.

2 Find the appropriate device. Available options are:

| | |
|---|---|
| LTO-2: | IBM ULTRIUM-TD2 SCSI Sequential Device |
| LTO-1: | IBM ULTRIUM-TD1 SCSI Sequential Device |
| SDLT320: | Quantum SDLT320 SCSI Sequential Drive |

3 Right-click the tape drive.

4 Select **Properties** from the pop-up menu.

5 Select the **Driver** tab on the properties page.

6 Click the **Update Driver...** button. This will start the **Upgrade Device Driver Wizard**. Click **Next**.

7 Select the option **Search for a suitable driver for my device**. Click **Next**.

8 In **Optional search locations** check **only CD-ROM drives**. Click **Next**.

9 Setup will select the installation file, *magtape.inf*. Click **Next**.

Required files will be installed for the driver now.

10 Click **Finish**.

11 Click **Close** on the **Properties** page.

12 In Device Manager, make sure that the appropriate device is listed under **Tape Devices**. Available options are:

| | |
|---|---|
| LTO-2: | IBM ULTRIUM-TD2 SCSI Sequential Device |
| LTO-1: | IBM ULTRIUM-TD1 SCSI Sequential Device |
| SDLT320: | Quantum SDLT320 SCSI Sequential Drive |

## Windows NT® 4.0 Driver File Installation

1 Click the **Start** button, point to **Settings**, then click **Control Panel**.

2 Double-click the **Tape Devices** icon.

Note — If the host server or workstation already has drivers installed, continue with the next step, otherwise, skip the next two steps.

3 Click the **Drivers** tab.

4 Click the **Add** button.

5 Click the **Have Disk** button.

6 Type in the path to the appropriate drivers on the *Scalar 24 Documentation and Software* CD, replacing x: with the drive letter of the CD-ROM drive. Available options are:

| | |
|---|---|
| LTO-1: | x:\drivers\nt4\LTO |
| LTO-2: | not supported |
| SDLT320: | x:\drivers\nt4\SDLT |

7 Click on the appropriate drive entry and then click the **OK** button. Available options are:

| | |
|---|---|
| LTO-1: | IBM Ultrium Tape Drives (OEM) |
| LTO-2: | not supported |
| SDLT320: | Quantum DLT/SuperDLT Driver for NT4 - Ver 2.0 |

8 When the **New SCSI Tape Device Found** dialog box opens, click **OK**.

Required files will be installed for the driver now.

9 If you have multiple drives of this type, click **OK** at each prompt to install the driver for each device.

10 When the driver has been installed for all devices, click the **OK** button in the **Tape Devices** dialog box.

11 Restart the host server or workstation.

12 After restarting, click the **Start** button, point to **Settings**, click **Control Panel**, double-click the **Tape Devices** icon, and verify that the drivers were properly loaded.

# 5

# Installing Optional Hardware

This section describes how to install the Scalar 24 optional hardware. The optional hardware includes:

- Additional Drive
- Remote Management Unit
- Rackmount Kit
- Storage Networking Controller
  - For information on installing one of the available SNC components, refer to the applicable manual on the Scalar 24 product CD or www.adic.com.

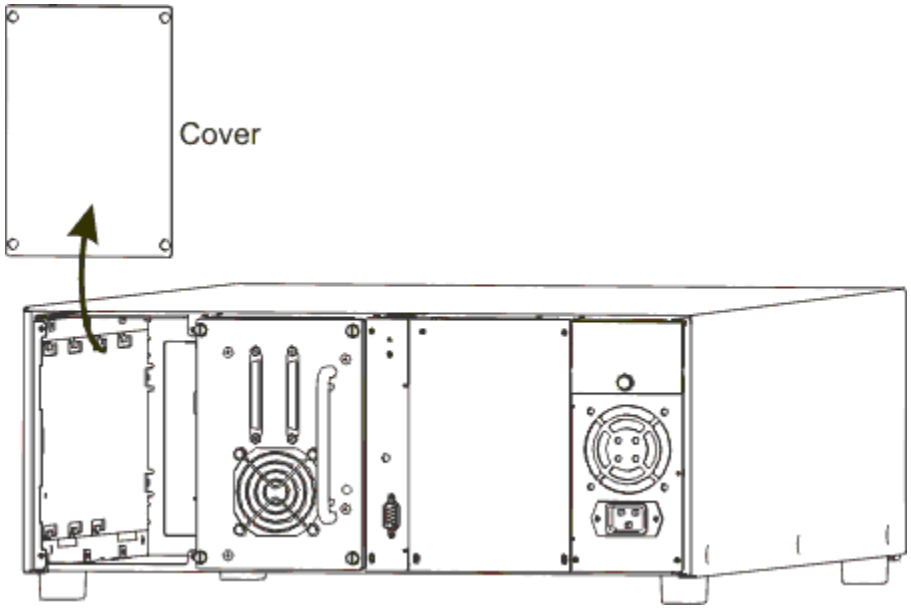
## Installing an Additional Drive

Your Scalar 24 comes with either one or two drives. If you have one drive, you can install an additional drive by following the procedure below. Your Scalar 24 can contain up to two drives.

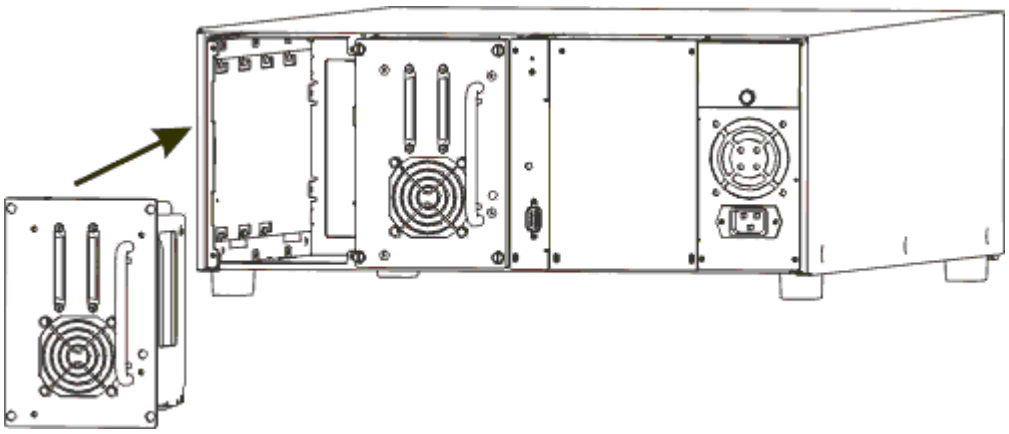
Note — This procedure applies to both SCSI and Fibre Channel drives. SCSI drives are shown in the following figures.The library does not support mixing drive types, including LTO-1 and LTO-2 drives.

**1** Remove the drive module from the packaging.

2 From the rear of the Scalar 24, locate the available drive slot. Loosen the four thumbscrews on the cover plate and remove the cover plate. Store the cover plate in a convenient place. It is required for proper operation and cooling of the library if the optional drive is ever removed.




3 Slide the drive module into position being, careful to ensure that the metal edge on the drive module is inserted into the plastic guide on the left side of the drive bay.



4 Tighten the four thumbscrews. Make sure the rear plate is flush with the chassis and all screws are fully tightened.

5 Connect the SCSI bus cable to the drive sled SCSI connector.

6 Connect the second SCSI cable or SCSI terminator if the device is last on the SCSI bus.

Note A drive must always be present in the first slot (shown on the right in the figure above).

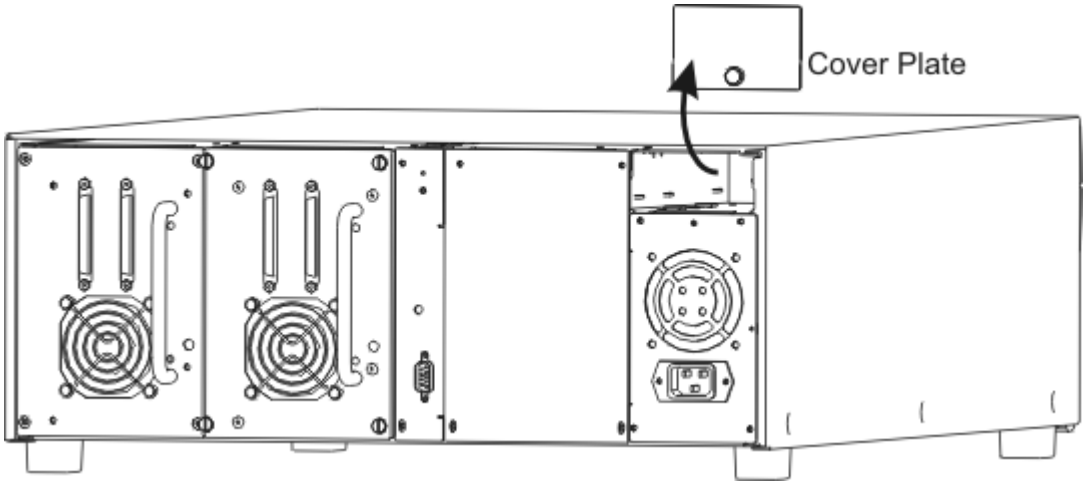
For information on setting up a specific SCSI address for the new drive, see Set SCSI IDs on page 80.

# Installing the Remote Management Unit

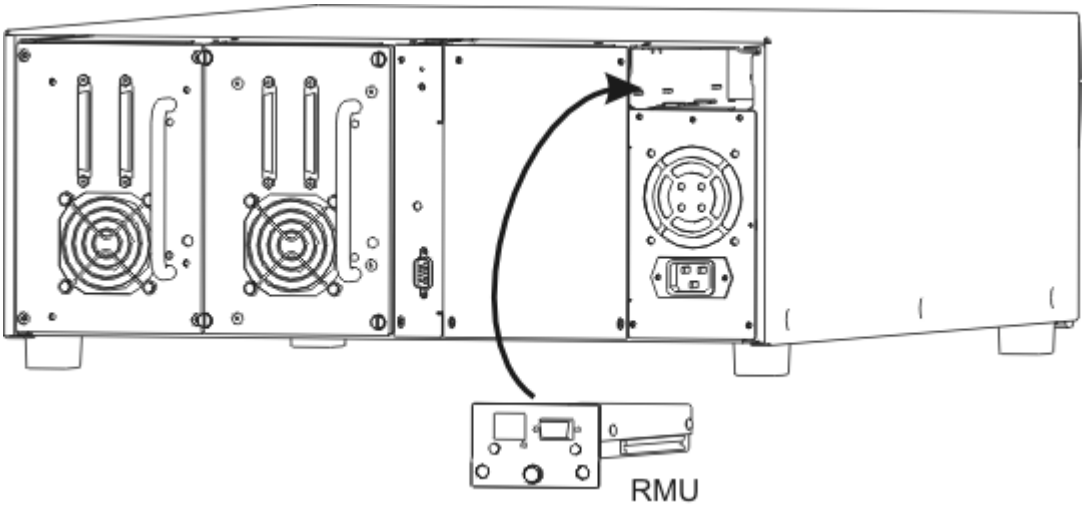
The Remote Management Unit (RMU) allows you to access your Scalar 24 through a Web browser. Follow the procedure below to install the RMU.

1 Remove the RMU from the packaging.

2 From the rear of the Scalar 24, locate the available RMU slot. Loosen the thumbscrew on the cover plate and remove the cover plate. Store the cover plate in a convenient place. It is required for proper operation and cooling of the library if the RMU is ever removed.




3 Slide the RMU into position and tighten the thumbscrew.




The library will detect the presence of the RMU. You will need to set the IP Address, Subnet Mask, and Gateway Address before the RMU will function. You can do this through the Setup Wizard on page 64 or Configure RMU on page 87.

# Installing the Scalar 24 in a Rack

Your Scalar 24 can easily be converted to a rackmount configuration. Follow the steps below to install your Scalar 24 into a rack.

Special care should be taken when installing a Scalar 24 into a rack. Heed the following guidelines:

- For continued safe operation, the recommended maximum internal ambient temperature of the rack should not exceed 100° F (38° C).
- While installing a rack mounted unit, do not block or otherwise restrict airflow to the front or rear vents.
- To maintain rack stability, consider the mechanical loading of the rack to ensure a low center of gravity.
- Before installing a unit into a rack, consider the overall loading of the branch circuit supplying power to the rack.
- Since this unit is intended to be attached to an earth ground, ensure that a reliable path to earth ground is maintained within the rack.

**Tools required**: #3 Philips screwdriver and #1 Philips screwdriver

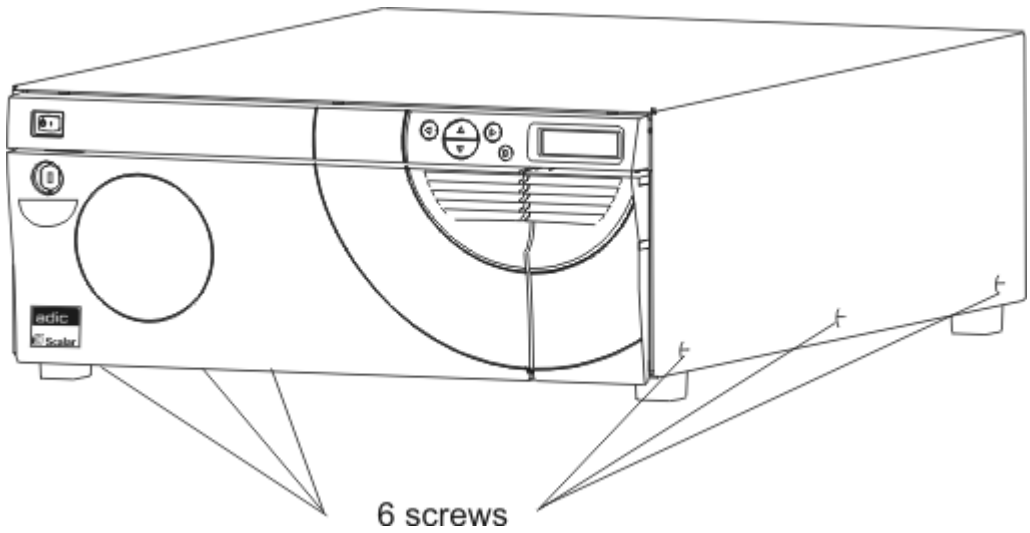
**1** The Scalar 24 requires a 4U (7-inch) space in a standard 19-inch rack. Ensure that this amount of space is available in the rack. Measure and mark the holes to simplify the subsequent steps.

**2** Remove the rackmount assembly from packaging.

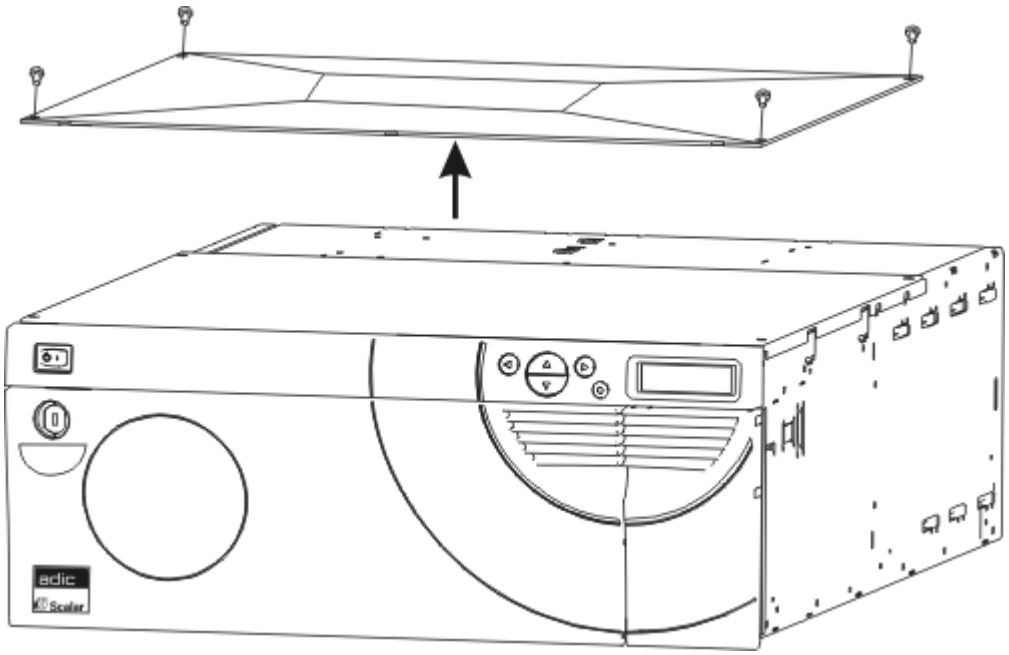
**3** Power down your Scalar 24 and disconnect the AC line cord from the AC source outlet.

**4** Disconnect the SCSI cable from the rear panel of your Scalar 24.

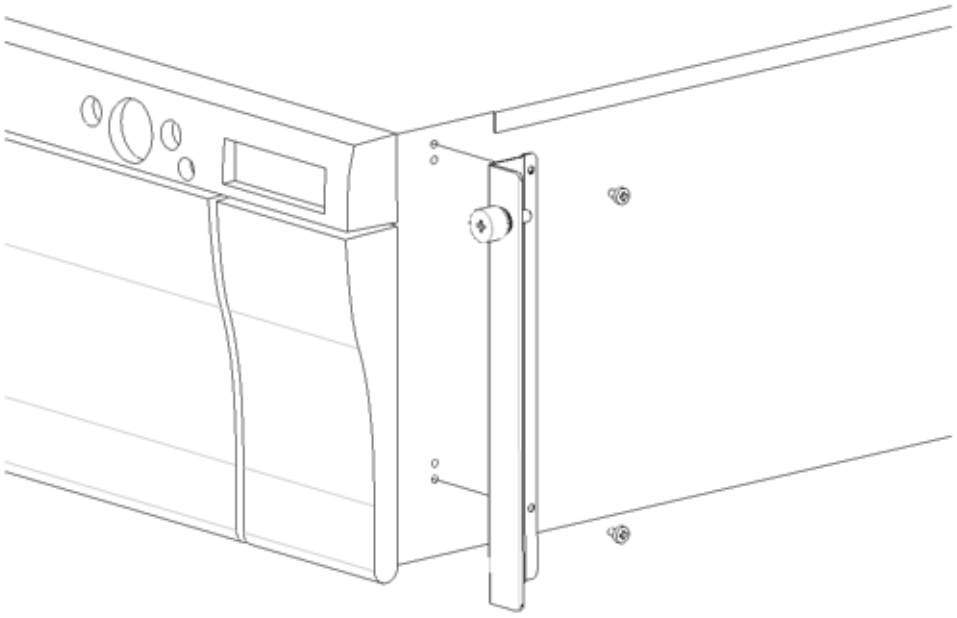
**5** Using a #1 Philips screwdriver, take off the cosmetic cover of the Scalar 24 by removing the six screws (3 per side) on the sides of the cover. Slightly bend the sides and lift the bottom edge of the cover away from the unit. Lift the cover up to remove it.



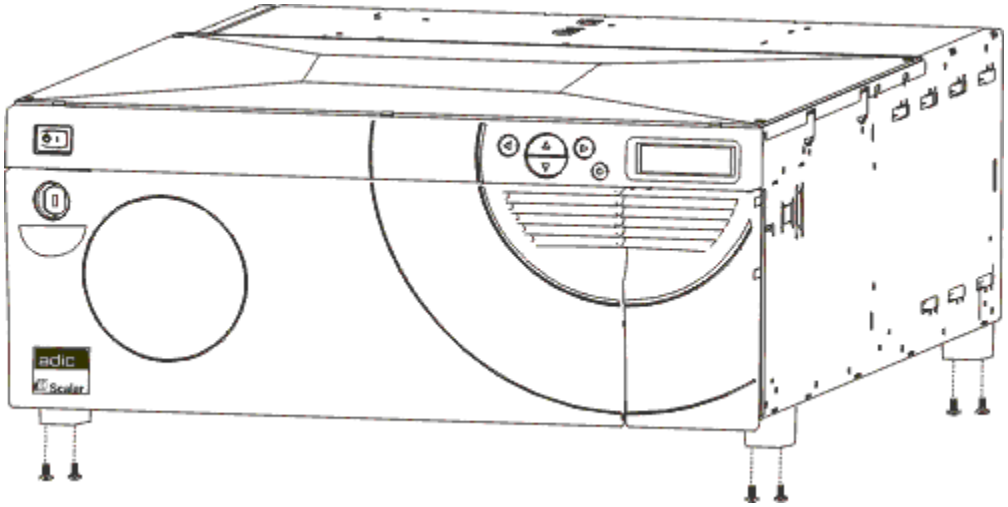
**6** Using a #1 Philips screwdriver, remove the interior front support plate by removing the four screws on the plate. There is another front plate below this plate that should not be removed.



**7** Using a #1 Philips screwdriver, attach the two securing brackets to the front sides of the Scalar 24 using one screw for each bracket as shown below.

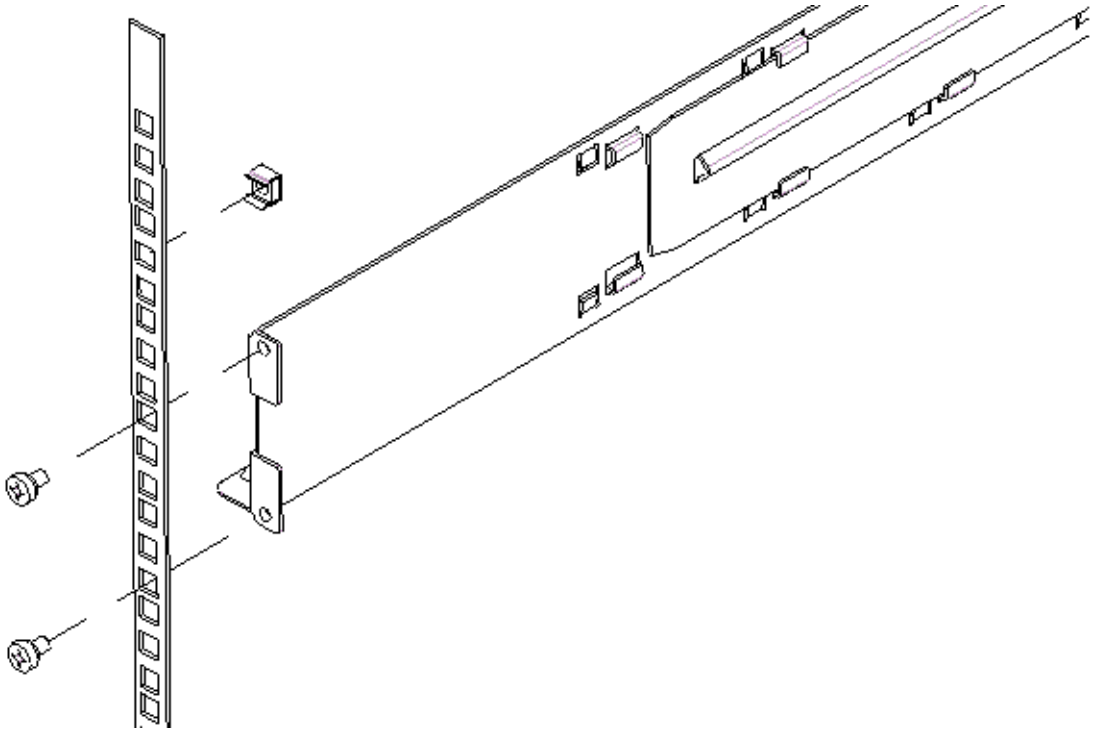


**8** Using a #1 Philips screwdriver, remove the cosmetic feet by removing the two screws on each foot.

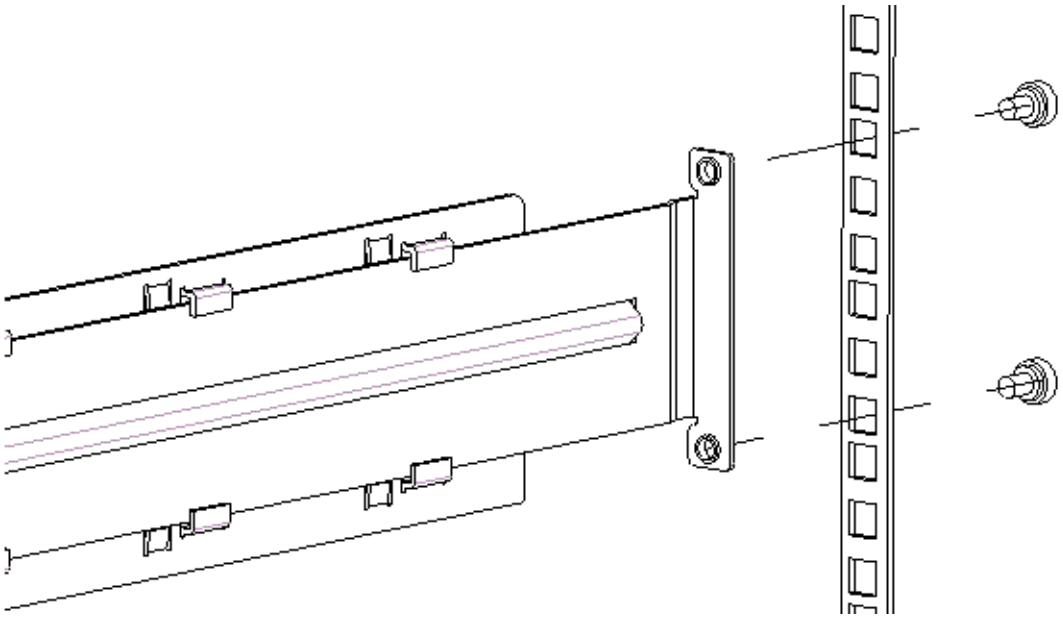


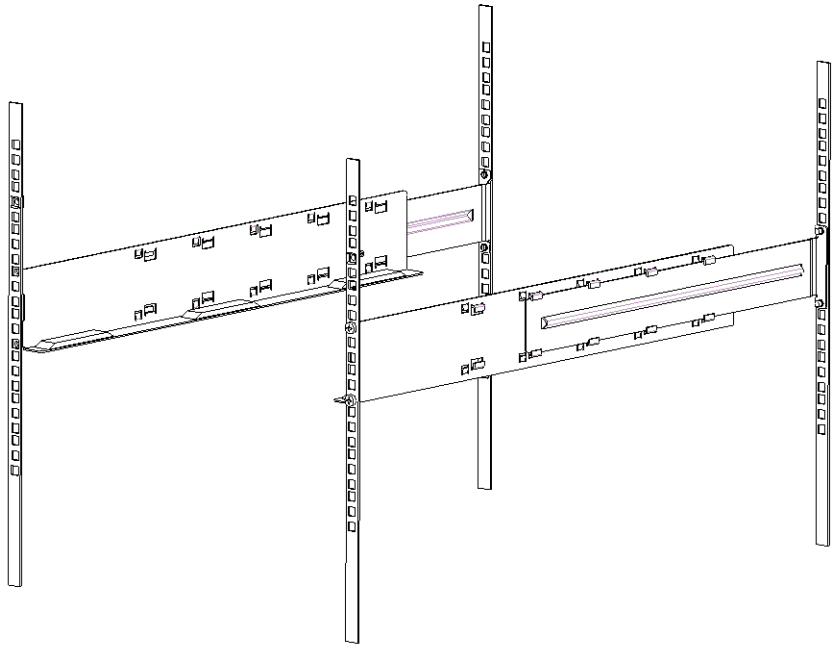

**9** Locate the mounting holes on the rack where you want to install the library.

**10** Using a #3 Philips screwdriver, attach the side rails to the front of the rack using two screws per rail (four total). You may need to use a caged nut to secure the rail to the rack.



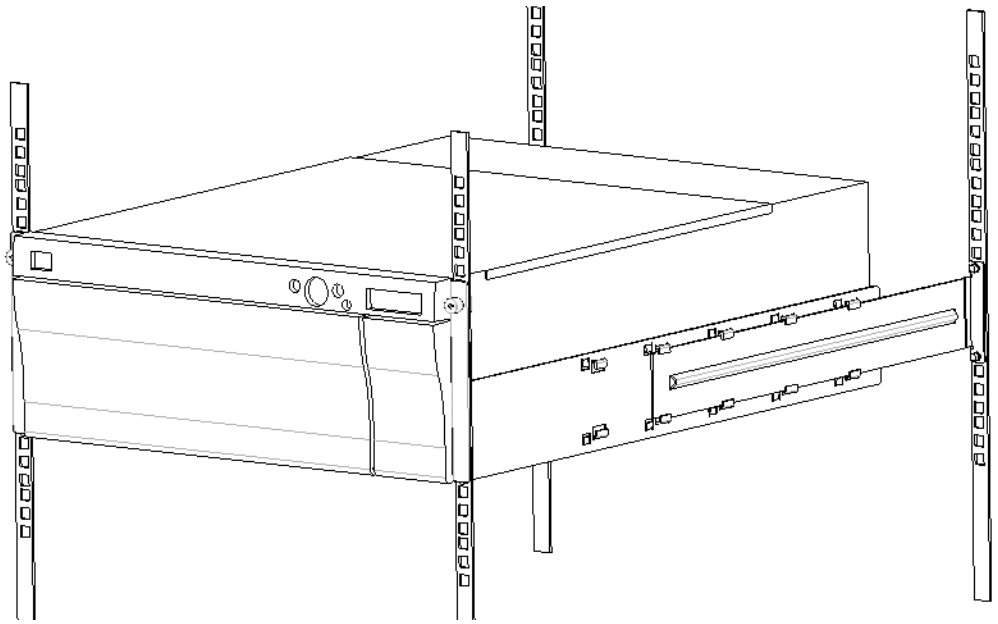
**11** Using a #3 Philips screwdriver, attach the side rails to the rear of the rack using two screws per rail (four total). If the rails are not long enough to reach the back of the cabinet, extend the rails to the desired length.





**12** Slide the Scalar 24 onto the rackmount hardware until it stops.

**13** Attach the securing brackets on the front Scalar 24 to both sides of the rack by tightening the thumbscrews on the securing brackets.



**14** Tighten the screws on the side rails to the rack.

**15** Connect the SCSI cable to the rear of your Scalar 24.

**16** Connect the second SCSI cable or SCSI terminator if it is the last device on the SCSI bus.

**17** Plug the power cord into a grounded electrical socket.

**18** Power on the Scalar 24.

# 6

# Frequently Asked Questions

This section provides a reference of commonly asked questions and their answers.

## FAQs When Getting Started

The following are questions you may encounter when first setting up your Scalar 24.

### What Operator Panel menus are required to get started?

You can use the **Setup Wizard** to walk you through configuring your Scalar 24. Refer to Setup Wizard on page 64. You can also configure your Scalar 24 manually by using the **Setup** menu. Refer to Setup Menu on page 64 for step-by-step instructions and descriptions of each submenu.

### How do I set a SCSI ID?

Your Scalar 24 has two types of SCSI IDs. There is one for the library and a separate SCSI ID for each drive. Refer to Set SCSI IDs on page 80.

### What type of SCSI card is required?

The Scalar 24 supports a Low Voltage Differential (LVD) SCSI interface. When installing a SCSI interface card on the host computer, install a card that supports LVD. A label on the back of the drive module next to the connectors indicate their type. For more information, see Connecting to a SCSI Bus on page 20.

### How do I cable the library to the SCSI card?

First, make sure that your host computer has a SCSI interface card. If your host computer did not come with SCSI capability, you will need to install a SCSI adapter. Refer to the manual that comes with your host adapter for specific directions.

Once the card is installed, locate the 68-pin LVD SCSI cable that came with your Scalar 24. For information and diagrams of cabling to the SCSI card, see Connecting to a SCSI Bus on page 20.

## What type of terminator is required?

Your Scalar 24 comes with a compatible terminator. The Scalar 24 is a LVD SCSI device, so only use an LVD terminator. There are several different types of terminators. Some terminators have LEDs. If you are using a terminator with an LED and it is illuminated in red, check the LED key on the terminator and ensure that you have the correct type of terminator.

For more information on connecting a terminator to your Scalar 24, see Connecting to a SCSI Bus on page 20.

## Where are the drivers located?

Drivers for your Scalar 24 can be found on the CD-ROM in the *drivers* directory. If you need assistance installing the drivers, please contact ATAC. For information about the latest drivers visit the Web site for your application or operating system.

## How do I manually remove a tape?

There are four places within the Scalar 24 where you may want to manually remove a tape. You can remove a tape manually from a drive, the rear slots, the magazines, and the picker. Refer to Manual Removal of Tapes on page 47.

# More FAQs

The following are questions you may encounter when operating your Scalar 24.

## Where are the Error Messages defined?

Hard errors are listed in the Error Log which can be accessed through the **Status** menu. All errors, diagnostic alerts, and events are accessible by outputting logs to the serial port. For more information on outputting logs, see Output Logs on page 127.

For more information on specific error messages, see Scalar 24 Error Messages on page 132.

## How do I upgrade firmware?

Your Scalar 24 contains firmware for the main controller application, robotics, RMU, drives, main controller boot code, and the robotics boot code. For information about viewing the firmware version, see Display Firmware Version on page 110.

You can find drive and library firmware upgrades on the ADIC website at **www.adic.com** under the “Service & Support” section. You will need to contact ATAC to receive a password. For more information on contacting ATAC, see How do I get help? on page 41.

There are four ways that you can upgrade your firmware:

| | |
|---|---|
| Firmware Upgrade Tape | You can upgrade the library, which includes the main controller application and robotics, and drive firmware using a Firmware Upgrade (FUP) tape. For more information, see Load Firmware on page 120. |

| | |
|---|---|
| Serial Port | You can upgrade the library firmware using the serial port. When you go to the ADIC website (www.adic.com) to download the firmware, instructions are provided on how to use the serial port to perform the upgrade. |
| RMU | If you have an RMU installed, you can upgrade the library, RMU, and drive firmware from the *Firmware* tab of the RMU interface. For more information, see Updating Firmware on page 57. |

## How do I clean a drive?

There are three ways to clean a drive on your Scalar 24: manually, using AutoClean, and host controlled.

- For information about manually cleaning the drive, see Clean Drive on page 119.
- For information about AutoClean, see Configure AutoClean on page 89.
- Host controlled allows a host application to control drive cleaning. The cleaning tapes are managed by the host application, instead of your Scalar 24.

The following table tells you when to use the cleaning cartridge:

| If... | It means... | You should... |
|---|---|---|
| • The icon appears on the operator panel LCD | The drive head needs cleaning or the data cartridge is bad | Use the cleaning cartridge to clean the drive head. When cleaning is complete, log the cleaning onto the label. |
| • A data cartridge causes the icon to appear on the operator panel LCD | The data cartridge may be damaged | Back up the data from this cartridge onto another cartridge, it may be damaged. A damaged tape cartridge may cause unnecessary use of the cleaning cartridge. |
| • The icon re-appears after performing a cleaning and reloading the data cartridge. | Cleaning was not accomplished because the cleaning tape cartridge has exhausted all cleaning cycles.<br>**OR**<br>The data cartridge may be damaged | Replace the cleaning cartridge.<br><br>Back up the data from this cartridge onto another cartridge, it may be damaged. A damaged cartridge may cause unnecessary use of the cleaning cartridge. |

## What is the life span of the cleaning tape?

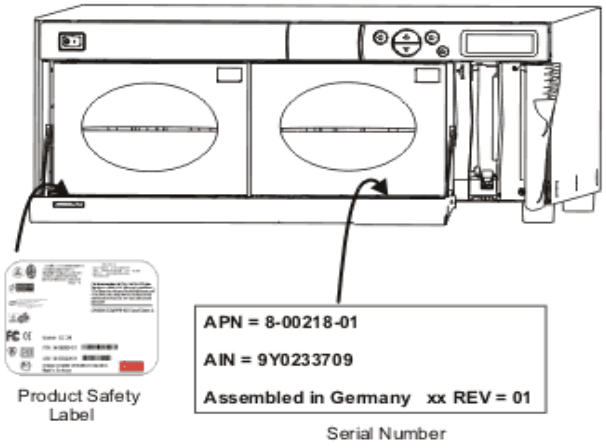
Use the cleaning tape when the icon appears in the drive status field of the LCD.

Your Scalar 24 will keep track of each time a cleaning tape is used and tell you when it has expired. After you first import an LTO cleaning tape into a drive, the life span can be read from the **Inventory** menu. From the operator panel, select **Status** menu > **Inventory** menu. An LTO cleaning cartridge can be used approximately 50 times, and the inventory count shows 50 cleans remaining until you load the tape into a drive for the first time.

An SDLT cleaning cartridge can be used approximately 20 times. For more information on cleaning the drive, see Clean Drive on page 119.

## Where is the Serial Number located?

The serial number for your Scalar 24 can be found by using the operator panel. For instructions, refer to Display Serial Number on page 117. The serial number can also be found on the inside of your Scalar 24 below the right magazine. You will need to remove the magazine to view the label.




Use the serial number when contacting ATAC for assistance.

## What is partitioning?

Partitioning is the way to allow your single Scalar 24 library to be logically partitioned so it will appear to a host as if it were two independent physical libraries. Each logical library (partition) can be independently controlled as though it were a separate library.

The Scalar 24 allows you the flexibility to change the partition size, share the I/E slot, as well as share cleaning tapes between partitions.

The following table lists the partitioning operating modes that can be used with various drive types.

**Table 1** Partition Operating Modes

| Partition | LTO-1/LTO-2 | SDLT320 |
|---|---|---|
| Unpartitioned | • Random<br>• Sequential<br>• LUN | • Random<br>• Sequential |
| Partition 1-Partition 2 | • Random-Sequential<br>• Sequential-Sequential<br>• LUN-LUN<br>• LUN-Sequential<br>• Sequential-LUN | • Random-Sequential<br>• Sequential-Sequential |

## How many characters can be on the barcode?

The Scalar 24 will read barcodes with a minimum of 5 characters and a maximum of 16 characters. The barcode scanner will read and report the information that it scans and will display this information on the operator panel. The library will report the barcode information to the host according to the mode it is configured for and will display alert messages on the operator panel LCD if the scanned barcode does not match the barcode length and media identifier requirements of the mode.

Three different types of barcode label modes are supported in the Scalar 24:

| | |
|---|---|
| Default: | The scanner will expect to read and will report to the host six characters. If one or two character optional media identifiers are present they will not be reported. |
| Media ID: | The scanner will expect to read and will report to the host seven or eight characters (six plus the media identifier). |
| Extended: | The scanner will read and report to the host between 5 and 16 characters. |

For more information on configuring barcode label modes, see Configure Barcode Scanner on page 91.

## What format should I use for my barcodes?

The Scalar 24 currently supports Code 39 type barcode labels. ADIC barcode labels are recommended. For more information, see Barcode Labels on page 48.

## What do I do if I lose my password?

Call ATAC and they will tell you how to reset the password.

| | |
|---|---|
| In the USA: | 800.827.3822 |
| Outside the USA, toll free: | 00.800.9999.3822 |
| Internet: | www.adic.com |

## What should I do if I lose power during a backup?

If the power is lost during a backup and is then restored, the library should recover and re-inventory. If power remains out, turn the switch off until a reliable power source is obtained. Once the power to the library is turned back on, the library will recover. You will need to re-run your backup using your application software.

**CAUTION**

**Prior to power up after a power outage, check to make certain the library is free of any obstruction. If the power failure occurred while the library was in motion, a tape may be extending out of a drive or storage slot and may not be movable by the picker. You may need to clear the tape manually. See Manual Removal of Tapes on page 47 for more information.**

## How do I get help?

ADIC has a Technical Assistance Center known as ATAC. You can reach ATAC using the following methods:

| | |
|---|---|
| In the USA: | 800.827.3822 |
| Outside the USA, toll free: | 00.800.9999.3822 |
| Internet: | www.adic.com |

For the latest information and accessories on the Scalar 24, visit the product website at www.adic.com/scalar24. The most recent versions of all documents are also located here.

# 7 Operation

This chapter provides information on operating your Scalar 24.

## Operator Panel Keypad

The Scalar 24 includes an easy-to-read bitmap LCD and a five-button keypad, called the operator panel, which allows you to interactively control library operations. Using the operator panel, you can set library options, check operating statistics, and diagnose errors. The buttons on the keypad are described in more detail below.

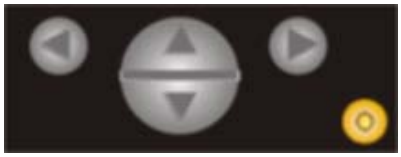


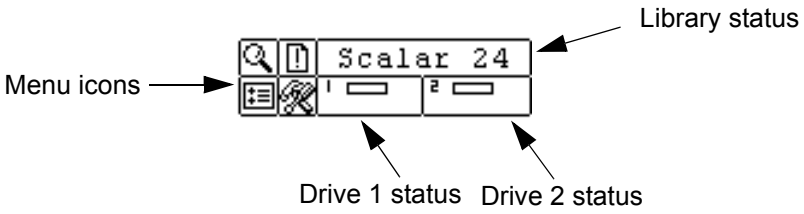
**Table 1** Keypad buttons

| Selection | Button | Description |
|---|---|---|
|  | Left Arrow | Navigate Menu Left |
|  | Right Arrow | Navigate Menu Right |
|  | Up Arrow | Scroll Value Up |
| | Down Arrow | Scroll Value Down |
|  | Action button | Execute Menu Option |

## Icon Definitions

The LCD on the Scalar 24 uses icons to provide graphical representations of menu items. From the **Main** menu, you can view menu icons as well as drive and tape status icons.

**Figure 1** Main Menu Icons




# Menu Icons

A list of the menu icons and their descriptions are provided in the table below.

**Table 2** Icon Menu Tree

| Icon | Description | Icon | Description |
|---|---|---|---|
| | STATUS Menu | | SETUP Menu |
| | Display Firmware Version | | Setup Wizard |
| | Display Inventory | | Configure Slots |
| | Display Motion Counts | | Set SCSI IDs |
| | Display Retry Counts | | Library SCSI ID |
| | Display Sensor Status | | Drive SCSI ID |
| | Errors | | Access Mode |
| | Serial Number | | Set Inquiry |
| | COMMAND Menu | | Configure User Interface |
| | Import Media | | Timeout |
| | Import Data Media | | Password |
| | Import Cleaning Media | | Key Click |
| | Export Media | | Configure RMU |
| | Export Data Media | | Configure AutoClean |
| | Export Cleaning Media | | Configure Scanner |
| | Dismount Drive | | Reset Configuration |
| | Move Media | | TOOLS Menu |
| | Bulk Load Media | | Clean Drive |
| | Bulk Unload Media | | Load Firmware |
| | Sequential Mode | | Demo Test |
| | Start Loop | | Self Test |
| | Start Single | | Drive Maintenance |
| | Stop | | Manufacturing Test |

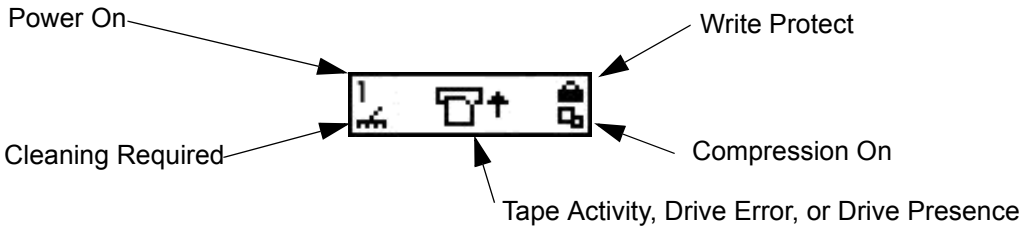
**Table 2** Icon Menu Tree

| Icon | Description | Icon | Description |
|---|---|---|---|
| | Resume | | Position Picker |
| | | | Output Logs |
| | | | Drive Power On/Off |

# Drive Status Icons

The following shows the icons that are displayed on the LCD indicating drive status.

**Figure 2** Drive Status Icons




| Icon | Description |
|---|---|
| **1** or **2** | A tape drive is present in drive slot 1 or 2. |
| | Drive cleaning is required. |
| | Tape activity. See Tape Activity Icons on page 45. |
| !6 | Drive error message. The character after the ! represents the error indicator on the drive LCD. See the drive manufacturer documentation for an explanation of the error. |
| | The tape drive is compressing data on tape. |
| | The tape is write protected. |

# Tape Activity Icons

The following shows the icons that are displayed on the LCD indicating tape activity.

| Icon | Description |
|---|---|
| | A tape drive is loading a cartridge. |
| | A tape drive has a cartridge loaded. |
| | A tape drive is rewinding a cartridge. |
| | A tape drive is unloading a cartridge. |
| | A tape drive has unloaded a cartridge. |

| | |
|---|---|
|  | A tape drive is reading data from a cartridge. |
|  | A tape drive is writing data to a cartridge. |
|  | A tape drive is erasing data from a cartridge. |
|  | A tape drive is locating data on a cartridge. |

# Online and Offline Modes

Your library can operate in an online or offline mode. Typically, the library is in the online mode. When you access the **Command**, **Setup**, or **Tools** menus from the operator panel, a message notifies you that the library will go to offline mode and you must verify that you want the library to operate in offline mode before proceeding. When the library is offline, the SCSI host has limited access to the library. The host can retrieve information from the library but cannot execute any new commands that change the state of the library, such as writing data or moving media. Commands in progress will be completed before the library goes offline. Entering the **Main** menu automatically returns the library to the online mode. All status information is available in offline mode.

# Inserting and Removing Media

Your Scalar 24 has been designed to make media insertion a simple and accurate process. There are three ways to insert and remove media from the Scalar 24:

- Remove the magazines and load it with tapes.
- Load the magazines with tapes and use the **Bulk Load** feature in the **Command** menu. For more information, see Bulk Load on page 103. To remove media, you can unload the tapes from the rear slots to the magazines by using the **Bulk Unload** feature in the **Command** menu. For more information, see Bulk Unload on page 104.
- Use the **Import/Export** features in the **Command** menu to load tapes from the I/E slot. For more information, see Import Media on page 93 and Export Media on page 97.

 **CAUTION** **Do not manually insert/remove media to/from the rear slots. If you choose to insert/remove media directly to/from the rear slots and the picker is blocking the slots, use the Position Picker tool to move the picker. Do not move the picker manually or you may damage it.**

 Note Media barcode labels can be viewed through the magazine window.

The magazines and rear storage slots are designed to prevent the cartridges from being inserted incorrectly. The magazines and rear storage slots also include cartridge locks that prevent media from falling out of the slots when the magazines are inverted or the library is transported. To remove the tapes from the rear slots and the magazine, lift up on the green lever to release the locking mechanism.

The rear storage slots contain sensors that detect the presence of cartridges and automatically update library inventory when cartridges are inserted or removed. Sensors also detect the presence/absence of the magazines and the inventory is updated when the magazines are inserted or removed.

Note

If you remove and then reinsert the magazines very rapidly, the sensors may not be able to detect the presence of the magazines. Ensure that you fully insert the magazines and do not remove and reinsert them very rapidly.

**CAUTION**

**Do not directly insert media into the picker. If media is inserted into the picker incorrectly, it may damage the picker.**

# Manual Removal of Tapes

You can remove a tape manually from a drive, the rear slots, the front magazines, and the picker. You can position the picker to move it out of your way to be able to reach the back interior of your library. You can also position the picker when you want to remove a tape from the picker by following the procedure below.

1 From the **Tools** menu, highlight and press .


2 Press ▲ and ▼ to select the target slot to move the picker to.

3 Press ◀ to highlight Execute ( ) and then press .

## Manual Removal of a Tape From a Drive

**To manually remove a tape from a drive**

1 Position the picker to the left, which is away from the drive, using the operator panel. Refer to the procedure above.

2 Open the front door and remove the two magazines.

3 Press the eject button on the drive and remove the tape.

4 If the tape cannot be removed, send the drive to ADIC to be repaired.

## Manual Removal of a Tape From a Rear Slot

**To manually remove a tape from one of the rear slots**

1 Position the picker to the far right. Refer to the procedure above.

2 Power off the library.

3 Open the front door and remove the two magazines.

4 Reach into the back of the Scalar 24 and press up on the green lever to release a tape from the rear slot.

5 Gently pull the tape out toward you.

## Manual Removal of a Tape From the Picker

**To manually remove a tape from the picker**

1 Position the picker to an easily accessible position. Refer to the procedure above.

2 Power off the library.

3 Open the front door and remove the two magazines.

4 If the tape cartridge is toward you, grasp it and remove it gently. However, if the tape cartridge is away from you, gently push it into a rear slot with a long narrow object like a ruler.

Note If a cartridge is partially in the drive and partially in the picker, contact ATAC for removal instructions.

# Barcode Labels

Cartridges to be scanned must have an external label that is machine readable to identify the volume serial number. A barcode must use only uppercase letters A to Z and/or numeric values 0 to 9. The Scalar 24 currently supports Code 39 type barcode labels.

Three different types of barcode label modes are supported in the Scalar 24:

| | |
|---|---|
| Default: | The scanner will expect to read and report to the host six characters. If optional one or two character media identifiers are present they will not be reported. |
| Media ID: | The scanner will expect to read and will report seven or eight characters (six plus the media identifier) to the host. |
| Extended: | The scanner will read and report between 5 and 16 characters to the host. |

The barcode scanner will read and report the information that it scans and will display this information on the operator panel. The library will report the barcode information to the host according to the mode it is configured for and will display alert messages on the operator panel LCD if the scanned barcode does not match the barcode length and media identifier requirements of the mode.

Note ADIC brand barcode labels are recommended.

For customers who wish to print the barcode labels, the individual media labels are supported if the labels meet the ANSI MH10.8M-1983 standard and other additional requirements. The requirements are:

- ANSI MH10.8M–1983 Standard
- Number of digits: 5–16 (based on mode)
- Background reflection: at least 25%
- Print contrast: at least 75%
- Ratio: at least 2:2
- Module: 250 mm
- Print tolerance: ± 57 mm

Additional Requirements:

- Length of the rest zones: 5.25 mm ± 0.25 mm.
- No black marks can be present in the intermediate spaces or rest zones.
- No white areas may be present on the bars.
- Bars should read in a uniform direction. Nonuniform reading directions have a detrimental effect on performance.

- Quality Testing

Compliance with these specifications can be checked and documented with the Ergilaser 3000 High Density barcode measuring device that is manufactured by the Laetus Company.

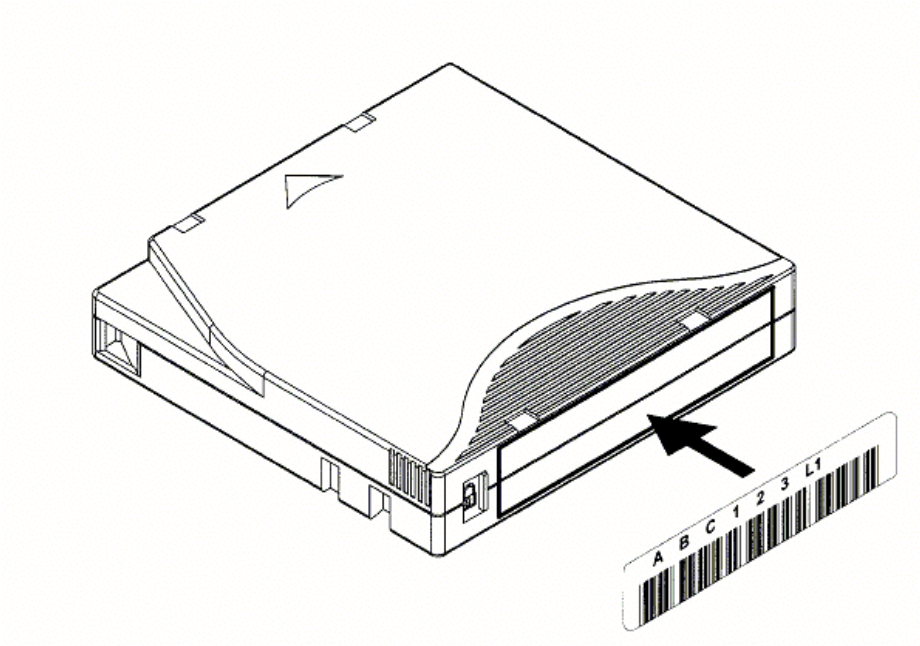
## Applying the Label

All barcode scanning labels should be applied to the front of the cartridge in the upper right corner of the tape cartridge recess (when oriented vertically). Depending on the media type, barcode labels are either stickers that are adhered to the front of the tape cartridge or cutouts that you slide into an indentation on the front of the cartridge. To aid in readability, apply the labels so that the numbers are at the top of the label.

**To install the barcode labels**

1. Peel off the label and place it on the cartridge.
2. Verify that the label is oriented so that the numbers appear rightside up and above the barcode.

   The following figure shows label application on LTO media.




**CAUTION** **Be careful not to apply barcode labels upside down.**

# Menu Navigation

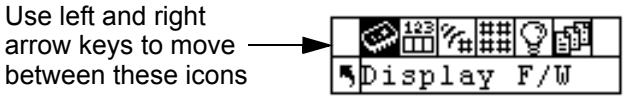
Use tabbing and scrolling to navigate between menus and within a particular menu item. Tabbing and scrolling are described in more detail below.

# Main Menu Navigation

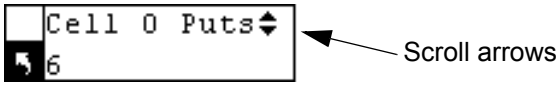
You can tab between the four icons in the **Main** menu by pressing the left and right arrow keys (◀ and ▶). Once you have highlighted the menu item, press the **Action** key ( ) to select it.


# Submenu Navigation

There are two levels of submenu navigation. The first level allows you to move between the various submenu items. This type of tabbing works the same as the **Main** menu tabbing, using the left and right arrow keys (◀ and ▶) to move between items, and using the **Action** key ( ) to select items.

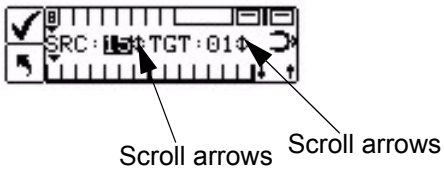



Once you have selected an item in a submenu, there may be several options for that item. This is the second level of submenu navigation called scrolling. When scrolling within a submenu item is available, a set of arrows will be present on the right side the LCD as shown below.

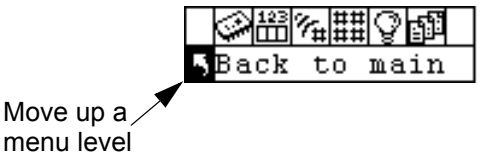



The presence of these arrows indicates that there are more items available to view or change. You use the up and down arrow keys on the keypad (▲ and ▼) to scroll up and down through the list or to change the value.

On some screens, there is more than one item to view or change. Each of the items will have its own set of scrolling arrows. Highlight the field, and then use the up and down arrow keys on the keypad (▲ and ▼) to scroll up and down through the list or to change the value. Use the left and right arrow keys (◀ and ▶) to move (tab) between items.




If you want to exit a submenu and go up a menu level, you use the back to previous icon, indicated by on the bottom left of the LCD. You need to press the left arrow key to select , and then press Action ( ).



# Normal Operations

Once your Scalar 24 and your choice of application software are installed and configured, you can automatically perform backup and restore operations through the application software. You do not need to intervene unless you need to replace cartridges.

Always follow these general operating guidelines:

- Use only the recommended types of media cartridges.
- Clean the drive whenever the  icon appears on the display (signifying a cleaning request).

# 8

# Using the Remote Management Unit

The Remote Management Unit (RMU) is a component in your library that provides remote access to the library by means of a Web browser. Microsoft Internet Explorer version 5.0 and above, as well as Netscape Navigator versions 4.01 for Unix only, and 4.7X for all environments are supported by the RMU. All functions listed here are available without the need of a dedicated server (or separate software).

The RMU performs the following functions:

- Provides remote operation of all library operator panel functions by using a Web browser.
- Allows you to check the status of the system, firmware levels, and other useful information.
- Updates RMU and Library Controller firmware for all drive types.
- Updates drive firmware for libraries with LTO drives only.
- Supports Simple Network Management Protocol (SNMP) version 1.0 and acts as an SNMP-server, generating SNMP traps and responding to SNMP requests.
- Supports ADIC Library Management Information Base (MIB) version 2.0.
- Acquires Tape Alert 3.0 information from the library for the library and drives over the serial interface port and sends that information to an SNMP server.
- Detects a power loss and generates an SNMP trap for notification.
- Enables the retrieval of library logs and library, drive, and RMU diagnostic files.
- Allows RMU configuration changes such as network, users, and date/time changes.
- Provides online access to documentation.

## Getting Started

The following sections describe the RMU prerequisites, setting up the RMU, and how to run the RMU.

### RMU Prerequisites

The RMU requires a network address that consists of an Internet Protocol (IP) address, subnet mask, and gateway IP Address.

Once these are established, input this information to the RMU by using the operator panel. For more information, see the discussion that follows.

## Setting up the RMU

Once you have established a network address for the RMU, input this information to the RMU by using the operator panel.

**To configure the RMU**

1 From the **Setup** menu, highlight  and press  .

2 Set the IP address, subnet mask, and gateway address by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move to the next field.

3 When complete, highlight Execute (  ) and press  .

## Starting the RMU

Before you begin using the RMU, make certain you have configured your RMU with the correct network address.

**To start the RMU**

1 Open a Web browser.

2 Point your browser to the RMU IP address, excluding any leading zeros.

For example if your IP address is 182.073.056.502 on the operator panel LCD, go to the following address: http://182.73.56.502

The RMU user interface is now displayed.

 Note

For information on determining or setting your RMU IP address, see Configure RMU on page 87.

# Using the RMU

The following sections describe how to set up features of the RMU, use the RMU to control the library, and use the RMU to monitor library status.

## Logging into the RMU

Some of the features of the RMU require you to log in.

 Note

The default login and password are *admin* and *password*, respectively.

**To log into the RMU**

- When prompted, enter your login name and password.

 Note

The login name and password are case sensitive.

# Checking Status and General Information

You can use the RMU to remotely check the status of a library and obtain general information about the library. For example, you can check drive status or get the firmware level of your library. The library automatically backs up vital product data every time you move from an offline to an online state in order to preserve configuration information.

**To check status and obtain general information**

1 Click the **Status** tab.

The following information is displayed:

- **Library Status** — indicates whether the library is online or offline.
- **Drive Status** — indicates the type and quantity of tape drives in the library.
- **RMU User** — indicates the name and location of the user.
- **Hostname** — indicates the hostname used for the RMU connection.
- **IP Address** — indicates the IP address for the RMU connection.
- **MAC Address** — indicates the Media Access Control (MAC) address of the RMU. This is also the serial number of the RMU.
- **Library Serial #** — indicates the library serial number. The physical serial number, which appears on the product safety label, is embedded in this number. This number also includes the vendor ID and the partition.
- **SNMP** — indicates whether the SNMP feature is on or off.
- **SNMP Alerts** — indicates whether the SNMP Alert notification feature is on or off.
- **Library Firmware** — indicates the current level of library firmware.
- **RMU Firmware** — indicates the current version level of RMU firmware.

# Configuring Network Parameters

You can reconfigure the hostname, IP address, subnet mask, and gateway address through the RMU. This feature requires you to login to the RMU. See Logging into the RMU on page 54 for more information.

**To configure the network parameters**

1 Click the **Configuration** tab.

2 In the **Network Configuration** area, enter the new hostname, IP address, subnet mask, and gateway address.

3 Click **Submit** and review your changes (indicated in red).

4 Enter your password and click **Confirm** to complete the procedure.

The new values are saved. Note that you may need to redirect your Web browser.

# Configuring SNMP

Simple Network Management Protocol (SNMP) is a set of protocols used to manage nodes on an IP network. You can configure the RMU to run a SNMP management application.

**To configure SNMP**

1 Click the **Configuration** tab.

2 In the **SNMP Configuration** area, do the following:

- To enable or disable the feature, select **ON** or **OFF** in the **SNMP Enabled** drop-down.
- To enable or disable SNMP alerts, select **ON** or **OFF** in the **Alerts Enabled** drop-down.
- In **Manager**, enter the SNMP server address.
- In **Public Name**, enter the name of the read-only SNMP community.
- In **Private Name**, enter the name of the read/write SNMP community.

3 Click **Submit** and review your changes (indicated in red).

4 Enter your password and click **Confirm** to complete the procedure.

The new values are saved. Note that you may need to redirect your Web browser.

5 You will be instructed to reboot the RMU. Click **Done** to reboot.

### Downloading the SNMP MIB File

The SNMP Management Information Base (MIB) file will allow an SNMP management application to understand the SNMP traps generated by the RMU. If you are running an SNMP management application and need the library MIB, you can download it by using the RMU.

#### To download the SNMP MIB file

1 Click **SNMP MIB** in the left pane of the RMU interface.

2 Right-click **Download SNMP MIB** and click **Save Target As**.

3 Browse to your SNMP management server and click **Save**.

You will need to load the MIB file into the SNMP management application.

## Configuring RMU User Accounts

You can add unique users to the RMU. Only one administrator account is allowed, which maintains the login of *admin*.

### Adding/Removing Users

Only the admin account can add or remove users.

#### To add or remove a user

1 Click the **Configuration** tab.

2 In the **User Configuration** area, do one of the following:

- If you are adding a user:
  a. In the **Management Action** drop-down, click **Create User**.
  b. In **Edit New**, enter the user name.
  c. In **Password**, enter the login password and then confirm it in **Re-enter Password**.
- If you are deleting a user:
  a. In the **Management Action** drop-down, click **Delete User**.
  b. In **Select One**, select the user you want to remove.

3 Click **Submit** and review your changes (indicated in red).

4 Enter your password and click **Confirm** to complete the procedure.

### Changing a Password

You can change your RMU password at any time. If you are the admin, you can change users' passwords.

**To change a password**

1 Click the **Configuration** tab.

2 In the **User Configuration** area, select **Change User Password** from the **Management Action** drop-down.

3 If not already selected, select the appropriate user account from the **Select One** drop-down.

Note Only the admin can modify another user's password.

4 Click **Submit** and review your changes (indicated in red).

5 Enter your password and click **Confirm** to complete the procedure.

## Configuring the Time and Date

You can configure the date and time for the RMU. The date and time will be used in the RMU log file to report when events occurred.

**To configure the date and time**

1 Click the **Configuration** tab.

2 Enter the date and time in the **Date and Time** area.

3 Click **Submit** and review your changes (indicated in red).

4 Enter your password and click **Confirm** to complete the procedure.

### Synchronizing with an NTP server

You can connect the RMU to a network time (NTP) server to automatically set the time.

**To synchronize with an NTP server**

1 Click the **Configuration** tab.

2 In the **Date and Time** area, select **ON** from the **Sychronization with NTP server** drop-down menu.

3 In the **NTP Server IP Address** field, enter the IP address of the NTP server.

4 In the **Timezone** filed, enter the time zone deviation for the NTP server. To get a list of timezone variants, click list of **timezones**.

5 Click **Submit** and review your changes (indicated in red).

6 Enter your password and click **Confirm** to complete the procedure.

## Updating Firmware

You can update firmware for the RMU, library, and drives. Before you update firmware, you need to have the firmware file in a location that is accessible from the RMU interface. Firmware updates can be found on www.adic.com.

**To update firmware**

1 Click the **Firmware** tab.

2 Select the firmware you would like to update.

Note: Some drives, such as SDLT320, do not support remote firmware update. If drive firmware can be updated by using the RMU, the drive name will appear in the list of targets.

3 Click **Browse** and browse to the location of the firmware update file.

Note: Downloading firmware can take several minutes. For details on how long it will take to download firmware, click **some time** above the **Update Firmware** button.

4 Click Update Firmware.

The firmware will be updated and the RMU will reboot.

# Viewing Diagnostic Files

From the RMU, you can view the diagnostic information for the attached library and RMU. This information can assist technical support personnel when they are diagnosing problems.

**To view diagnostic files**

1 Click the **Diagnostics file** tab.

2 Select the file you would like to view. The available options are:

| | |
|---|---|
| Library Command Log | Provides command logs for the library. |
| Library Error Log | Provides error logs for the library. |
| RMU Support Log | Provides support logs for the RMU. |
| RMU Error Log | Provides error logs for the RMU. |
| Drive Error Log | Downloads the drive error log to a host machine for submittal to support personnel. Drive error logs can be output from LTO drives only. |
| Drive Dumps | Downloads all drive logs to a host machine for submittal to support personnel. Drive dumps can be output from LTO drives only. |

3 Click **Retrieve selected file**.

The file will be loaded.

4 Click **Display File** to view the file in a separate browser window.

# Rebooting the RMU

The RMU can be rebooted through the **Configuration** tab.

**To reboot the RMU**

1 Click the **Configuration** tab.

2 In the **Reboot** area, click the link to reboot the RMU.
The RMU will reboot.

# Using the Operator Panel (over the RMU)

The RMU provides access to a virtual operator panel for managing the library.

**To use the operator panel**

- Click the **Operator Panel** tab.

  A graphical representation of the operator panel will be displayed. You can click the buttons and control the library the same way that you would from the front of the library. For more information on the operator panel, see Operation on page 43.

# Viewing Logs

You can view the most current entries in the library command log without having to download the entire log file.

**To view the log**

- Click the **Logs** tab.

The command log is displayed with the most recent entry at the top of the list.

# Getting Help

The RMU provides access to help for the following items:

| | |
|---|---|
| Contents | Provides a description of each of the tabs on the RMU interface. |
| Documentation | Provides a link to the user documentation for the library. |
| SNMP MIB | Provides information on the SNMP MIB file. For more information, see Configuring SNMP on page 55. |
| Support | Provides information on contacting technical support. |
| Version | Provides the current revision level of the RMU firmware. |

**To get help**

- Click the item in the left pane of the RMU interface.

  The information will be displayed in a separate browser window.

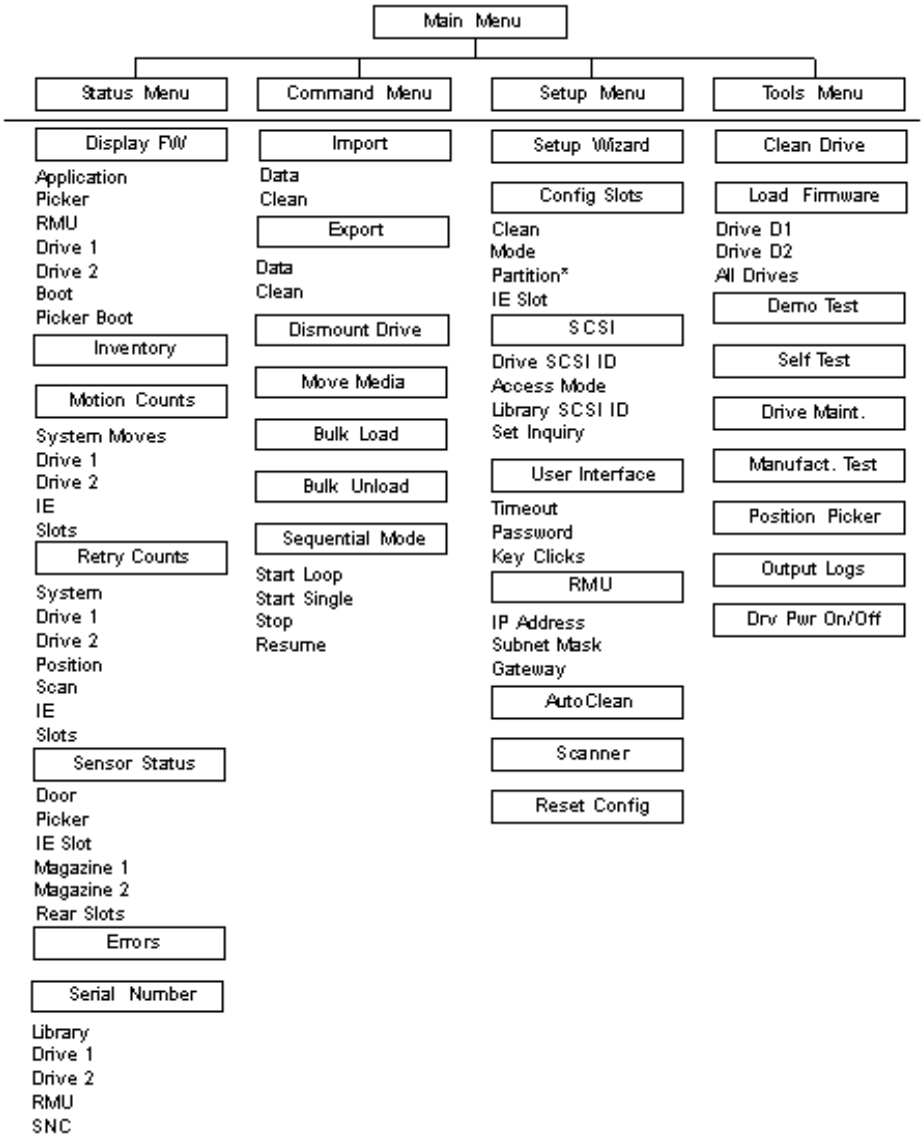
# 9

# Using the Menus

The operator panel provides a menu-driven operator interface to the Scalar 24. The menus allow you to view and set the operating parameters of the Scalar 24.

## Menu Tree Structure

Each menu is accessible through the operator panel keypad. Refer to Operator Panel Keypad on page 43 for an illustration and definition of the keypad. The menu tree map is provided on the next page.

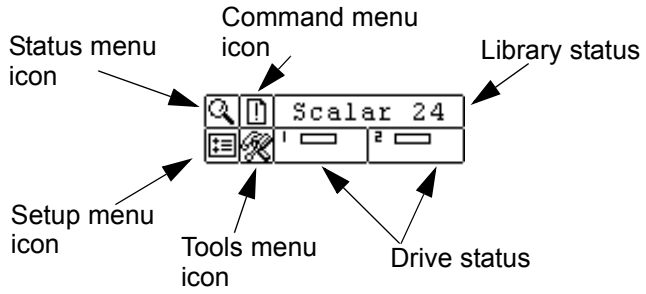


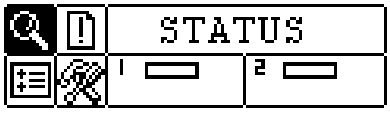

**Partition* will only appear in the **Configure Slots** menu if you have specified Rnd-Seq, Seq-Seq, LUN-Seq, Seq-LUN, or LUN-LUN mode (LUN modes can be specified only on libraries with LTO drives). For more information, see Configure Modes on page 74.

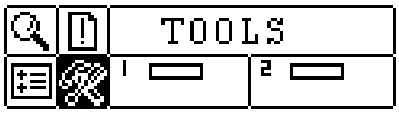
# Main Menu

The **Main** menu is the initial screen that allows you to access to the **Status**, **Command**, **Setup**, and **Tools** menus.

**Figure 1** Main Menu




| Menu | Description |
|---|---|
|   | The Status Menu on page 109 provides selections to:<br>• Display Firmware Version on page 110<br>• Display Inventory Information on page 111<br>• Display Motion Counts on page 113<br>• Display Retry Counts on page 114<br>• Display Sensor Status on page 115<br>• Display Errors on page 116<br>• Display Serial Number on page 117 |
|   | The Command Menu on page 93 provides selections to:<br>• Import Media on page 93<br>• Export Media on page 97<br>• Dismount Drive on page 100<br>• Move Media on page 100<br>• Bulk Load on page 103<br>• Bulk Unload on page 104<br>• Sequential on page 106 |
|   | The Setup Menu on page 64 provides selections to:<br>• Setup Wizard on page 64<br>• Configure Slots on page 73<br>• Set SCSI IDs on page 80<br>• User Interface on page 84<br>• Configure RMU on page 87<br>• Configure AutoClean on page 89<br>• Configure Barcode Scanner on page 91<br>• Reset Configuration on page 92 |

| Menu | Description |
|---|---|
|  | The Tools Menu on page 118 provides selections to:<br>• Clean Drive on page 119<br>• Load Firmware on page 120<br>• Demo Test on page 120<br>• Self Test on page 122<br>• Drive Maintenance Test on page 123<br>• Manufacturing Test on page 125<br>• Position Picker on page 126<br>• Output Logs on page 127<br>• Drive Power On/Off on page 128 |

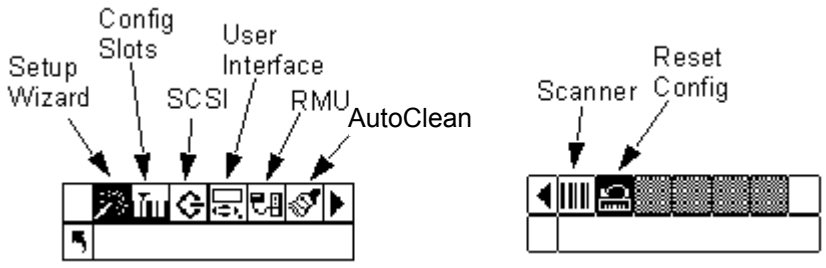
The following sections provide descriptions of each menu and instructions on how to use the options in each menu. This information is presented in the order that you would want to access information and configure options when you first set up your library.

# Setup Menu

The **Setup** menu allows you to make library system settings. From the **Setup** menu you can:

- Use the Setup Wizard
- Configure Slots
- Set SCSI and Fibre IDs
- Configure the User Interface
- Configure the RMU
- Configure AutoCleaning
- Configure the Barcode Scanner
- Reset the Library to the default settings

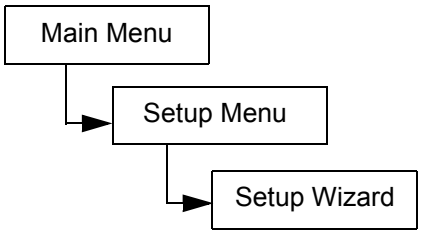
**Figure 2** Setup Menu




# Setup Wizard

**Setup Wizard** walks you through the process of configuring your library. Using the wizard, you can configure all of the desired settings from one location in the menu instead of going to each individual item in the menu. You must go through the complete **Setup Wizard** to save changes.

Path:




## Cancelling the Setup Wizard

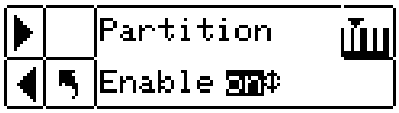
If you do not use the Setup Wizard to configure your library and do not want to be prompted to use it each time you power up your library, you can cancel it by following the steps below.

| Selection | Description/Result |
|---|---|
|  <br>**1** At the Setup Wizard prompt, press ▶ to select ↰ (return arrow). Press ◉. | Cancels the **Setup Wizard**. |
|  <br>**2** You will be prompted to cancel the Setup Wizard. Press ▼ to select `Do Not Show`. | |
| **3** Press ▶ to highlight Execute (✓) and then press ◉. | The **Setup Wizard** closes and will not be shown again at power up. To access the **Setup Wizard**, go to the **Setup** menu. |

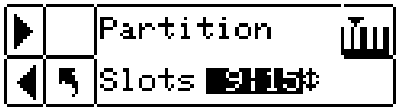
## Configuring your Library with the Setup Wizard

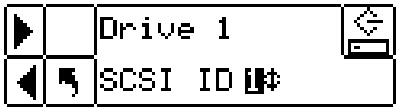
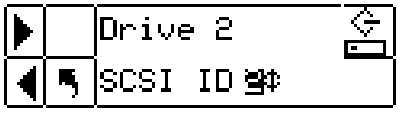
At any time, you can select ↰ (return arrow) to exit the Setup Wizard and cancel changes.

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight ✨ and press ◉. | Runs the **Setup Wizard**. |

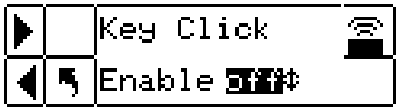
| Selection | Description/Result |
|---|---|
|  <br>**2** Press ◎ to begin using the Wizard. | |
|  <br>**3** Press ▲ and ▼ to select the configuration of the I/E slot. | Available options are:<br>• **Import/Export:** host will see one import/export slot and 23 data slots for LTO or 20 data slots for SDLT.<br>• **Storage**: appears as a valid storage location to the host application (host will see 24 data slots). If partitioning is enabled, this slot will be in Partition 1.<br>Recommended: Import/Export |
|  <br>**4** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**5** Press ▲ and ▼ to enable/disable partitioning. | Available options are:<br>• **on**: library is split into two partitions. The host will be affected (reduced slot/drive count) based on which partition it is attached to.<br>• **off**: host sees entire library<br>Recommended: off<br>If you want to use partitioning, configure it using the **Config Slots** submenu. For more information, see Configure Slots on page 73.<br>If you enable partitioning through the Setup Wizard, you will need to set the items shown in **Step 12** through **Step 16**. |

| Selection | Description/Result |
|---|---|
|  <br><br>**6** Press ▲ and ▼ to enable/disable AutoClean. If you do not enable AutoClean, skip to Step 12. | Available options are:<br>• **on**: The library will automatically clean the drives when cleaning is required. Overall slots available for data cartridges will be reduced. Host software cleaning features MUST be turned off.<br>• **off**: AutoClean is disabled<br>Recommended: off<br>If you want to use AutoCleaning, configure it using the **Config Slots** submenu. For more information, see Configure Slots on page 73.<br>If you enable AutoCleaning through the Setup Wizard, you will need to set the items shown in **Step 7** through **Step 11.** |
| **7** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br><br>**8** Press ▲ and ▼ to select the mode for AutoClean. | Available options are:<br>• **Both**: Cleans both partitions<br>• **Part 1**: Only cleans Partition 1<br>• **Part 2**: Only cleans Partition 2 |
| **9** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br><br>**10** Press ▲ and ▼ to select the number of cleaning slots you would like to configure. | You can allocate up to four slots to be used for cleaning.<br>Slots 20 - 23 can be used as cleaning slots for LTO; slots 17 - 20 for SDLT. For more information, see Configure Cleaning Slots on page 73. |
| **11** Press ▶ and then ◎ to accept the changes and move to the next option.<br>If you did not enable partitioning, skip to Step 18. | |

| Selection | Description/Result |
|---|---|
|  <br>**12** If you enabled partitioning, press ▲ and ▼ to select the number of slots for Partition 1 and Partition 2. | The slots in the magazine on the left are always Partition 1 and the slots in the magazine on the right are always Partition 2.<br>LTO<br>You can designate a minimum of 8 slots for each Partition (7 magazine slots and 1 rear slot).<br>You can designate a maximum of 16 slots for Partition 1 (7 magazine slots, 8 rear slots, and the I/E slot, if configured as a data slot). You can designate a maximum of 15 slots for Partition 2 (7 magazine slots and 8 rear slots). If you configure cleaning slots, the total number of rear slots available will be reduced. See Step  for more information.<br>SDLT<br>You can designate a minimum of 7 slots for each Partition (6 magazine slots and 1 rear slot).<br>You can designate a maximum of 14 slots for Partition 1 (6 magazine slots, 7 rear slots, and the I/E slot, if configured as a data slot). You can designate a maximum of 13 slots for Partition 2 (6 magazine slots and 7 rear slots). If you, the total number of slots available for Partition 2 will be reduced. See Configure Cleaning Slots on page 73 for more information. |
| **13** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**14** Press ▲ and ▼ to select the mode for Partition 1. | LTO<br>• **Random**: Allows your backup software to access any tape cartridge randomly. This is the mode that most host software will use.<br>• **Sequential**: Requires the backup software write the data to each of the tape cartridges sequentially, starting with the first one. This mode is used if your host only recognizes tape drives and not libraries.<br>• **LUN**: Allows the host backup software to access the library on a different logical unit than the drives.<br>SDLT<br>• **Random**: (see description above)<br>• **Sequential**: (see description above) |

| Selection | Description/Result |
|---|---|
| **15** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**16** Press ▲ and ▼ to select the mode for Partition 2. | LTO<br>• **Sequential**: Requires the backup software write the data to each of the tape cartridges sequentially, starting with the first one. This mode is used if your host only recognizes tape drives and not libraries.<br>• **LUN**: Allows the host backup software to access the library on a different logical unit than the drives.<br><br>SDLT<br>• **Sequential**: (see description above) |
| **17** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**18** Press ▲ and ▼ to set the SCSI ID of the Library. | You must choose a number between 0 and 7.<br>Recommended: 0 |
| **19** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**20** Press ▲ and ▼ to set the SCSI ID for Drive 1. | You must choose a number between 0 and 15.<br>Recommended: 1 |
| **21** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**22** Press ▲ and ▼ to set the SCSI ID for Drive 2, if applicable. | You must choose a number between 0 and 15.<br>Recommended: 2 |
| **23** Press ▶ and then ◎ to accept the changes and move to the next option. | |

| Selection | Description/Result |
|---|---|
|  <br>**24** Press ▲ and ▼ to set the Inquiry mode. | Sets the inquiry string returned to the host in a SCSI inquiry command.<br>Available options are:<br>• Scalar 24<br>• Scalar 100<br>• Scalar 1000<br>• Scalar 10K<br>Recommended: Scalar 24 |
| **25** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**26** Press ▲ and ▼ to set the number of minutes for the timeout value. | Sets the duration of inactivity on a submenu which will cause the menu to go back to the Main screen and online state.<br>The timeout window is represented in minutes. You must specify a value between 1 and 9.<br>The default setting is 9 minutes.<br>If you have set a password, after the timeout window has expired, the password will need to be re-entered to access the secure menu features. |
| **27** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**28** Press ▲ and ▼ to enable/disable a Password. | Available options are:<br>• **on**: the password is required to enter any menu except **Status**<br>• **off**: password is disabled<br>NOTE: If the password has been enabled by the SCSI host, you cannot modify or disable the password using the LCD display. |
| **29** Press ▶ and then ◎ to accept the changes and move to the next option. | |
|  <br>**30** If you enabled a password, set the password by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. If you did not enable a password, skip to Step 32. | The current field will be highlighted. You must select a numeric value between 0 and 9 for all four fields. |
| **31** Press ▶ and then ◎ to accept the changes and move to the next option. | |

| Selection | Description/Result |
|---|---|
|  <br>**32** Press ▲ and ▼ to enable/disable Key Clicks. | Available options are:<br>• **on**: an audible tone will be heard when buttons are pressed on the keypad<br>• **off**: key clicks disabled<br>Recommended: off |
| **33** Press ▶ and then ● to accept the changes and move to the next option. | |
|  <br>**34** Press ▲ and ▼ to enable/disable the barcode scanner. If you disable the scanner, skip to Step 38. | Available options are:<br>• **on**:all media will be scanned for barcodes. Unlabeled or unreadable labeled media will generate a user message<br>• **off**:barcode scanner is disabled<br>Recommended: on |
| **35** Press ▶ and then ● to accept the changes and move to the next option. | |
|  <br>**36** Press ▲ and ▼ to select the barcode scanner mode. | Available options are:<br>• **Default**: The scanner will expect to read and will report to the host six characters. Optional one or two character media identifiers can be present but will not be reported.<br>• **Media ID**: The scanner will expect to read and will report to the host seven or eight characters (six plus the media identifier).<br>• **Extended**: The scanner will read and report to the host between five and sixteen characters.<br>Recommended: Extended |
| **37** Press ▶ and then ● to accept the changes and move to the next option. | |

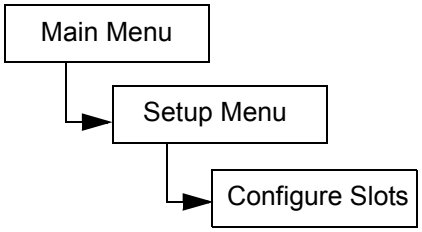
| Selection | Description/Result |
|---|---|
| If an RMU is not installed, skip to Step 42.<br><br>NOTE: The IP Address, Subnet Mask, and Gateway options are only present if a RMU is installed. These items set up the network configuration of the RMU.<br><br>  <br><br><br>**38** Set the **IP Address** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. Make sure you enter a valid number for each field. |
|  <br><br><br>**39** Set the **Subnet mask** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. Make sure you enter a valid number for each field. |
|  <br><br><br>**40** Set the **Gateway** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. Make sure you enter a valid number for each field. |
|  <br><br><br>**41** From the last field of the Gateway address, press ▶ to set the Gateway mask and highlight Execute (☑). | |
|  <br><br><br>**42** You have now completed the Setup Wizard. Press ◎ to accept all values and exit the wizard. | |

| Selection | Description/Result |
|---|---|
|  <br>**43** Press to exit the wizard. | |

# Configure Slots

**Configure Slots** allows you to set up specific slots of your library to be allocated for various functions, such as cleaning and partitioning.

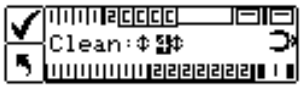
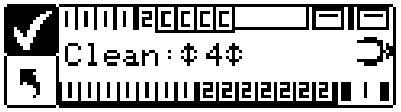
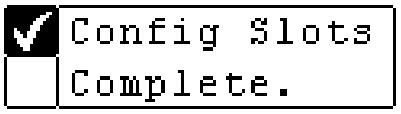
Path:




## Configure Cleaning Slots

This option allows you to designate specific rear slots to be used as cleaning slots. If you wish to enable AutoCleaning, you must configure at least one cleaning slot. For more information on AutoCleaning, see Configure AutoClean on page 89.

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight and press . | Configures cleaning slots. |
|  <br>**2** Press ▲ and ▼ to select **Clean**. | |
| **3** Press ▶ to move to the next field. | |

| Selection | Description/Result |
|---|---|
|  <br><br>**4** Press ▲ and ▼ to select the number of slots you would like to allocate as cleaning slots. | You can allocate up to four slots to be used for cleaning.<br>Slots 20 - 23 can be used as cleaning slots for LTO or slots 17 - 20 for SDLT. When a slot is configured for cleaning, a C appears in that slot.<br>configured as a cleaning slot<br>  <br><br>NOTE: If partitioning is configured, the number of rear slots may be limited to allow at least one slot in Partition 2.<br>Be sure to remove storage media from a slot before designating it as a cleaning slot. |
|  <br><br>**5** Press ▶ to highlight Execute (☑) and then press ◉ . | |
|  <br><br>**6** A confirmation screen displays. Press ◉ to dismiss. | The cleaning slots are now configured. |

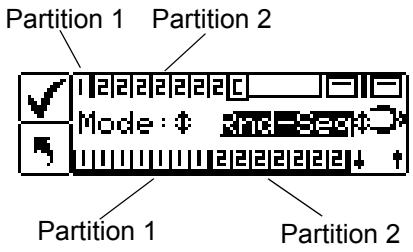
## Configure Modes

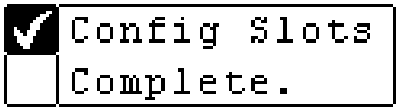
This option allows you to set up your library to run in Random, Sequential, or LUN modes.

| | |
|---|---|
| Random | This mode is used when you are connected to host application software that recognizes a library media changer device. It allows your host application software to access any tape cartridge randomly and permits you to logically divide the cartridge usage to satisfy particular storage needs. This is the default setting and the mode that most host software will use.<br>If you are connected to a host, ensure you are in Random mode. |

| | |
|---|---|
| Sequential | Sequential mode is used with host software applications that recognize tape drives, but do not recognize a library media changer. In this mode, the library (not the host application software) keeps track of the tape locations and manages the insertion and removal of tape media to the drives. When a backup is preformed using Sequential mode, data is written to the tapes in the order they are stored in the library.<br><br>If you are operating in Sequential mode, your library will not be recognized by a host. You must use the **Command** menu to start and stop this mode.<br><br>If you set your mode to Sequential, you will need to configure the sequential options. For more information on configuring sequential options, see Sequential on page 106. |
| LUN | LUN mode is used with host software applications that recognize the Medium Changer Logical Unit presented by a tape drive with LUN-1 capability. It is the capability of a tape drive to present both a SCSI Streaming device on Logical Unit Number 0 (LUN-0) as well as a SCSI Medium Changer device on LUN-1, that allows an application to communicate with and control both devices by using a single path to the drive. This capability is independent of the physical transport layer, and allows more than one control path to library. |

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight  and press  . | Configures library operational access modes. |
|  <br>**2** Press ▲ and ▼ to select **Mode**. | |
| **3** Press ▶ to move to the next field. | |

| Selection | Description/Result |
|---|---|
|  <br>**4** Press ▲ and ▼ to select the backup mode. | The mode setting options are:<br>• **Rnd:** sets the library to Random mode<br>• **Seq:** sets the library to Sequential mode<br>• **Rnd-Seq:** sets Partition 1 to Random mode and Partition 2 to Sequential mode. Selecting this mode creates a partitioned library.<br>• **Seq-Seq:** sets both partitions to Sequential mode with each partition having its own starting point. Selecting this mode creates a partitioned library.<br>The LUN mode options are available only for libraries supporting LTO-1 and LTO-2 drives.<br>• **LUN:** configures the library as one partition library in LUN mode.<br>• **Seq-LUN:** sets Partition 1 to Sequential mode and Partition 2 to LUN mode.<br>• **LUN-LUN:** sets both partitions to LUN mode. Selecting this mode creates two logical libraries.<br>• **LUN-Seq:** sets Partition 1 to LUN mode and Partition 2 to Sequential mode.<br>If you choose any of the partition modes, the LCD will show you which slots have been designated for Partition 1 and Partition 2 by placing numbers in the slots. You can change the partitioning setup using Configure Partitions on page 77.<br>  |
|  <br>**5** Press ▶ to highlight Execute (✓) and then press ◉. | The library is configured to the specified modes. |

| Selection | Description/Result |
|---|---|
|  <br>**6** A confirmation screen displays. Press to dismiss. | |

## Configure Partitions

Partitioning is used to allow your single Scalar 24 library to be logically partitioned so it will appear to a host as if it were two independent physical libraries. Each logical library (partition) can be independently controlled as though it were a separate library. The partitioning types available are random-sequential, sequential-sequential, LUN-sequential, LUN-LUN, and sequential-LUN; random-random is not supported at this time.

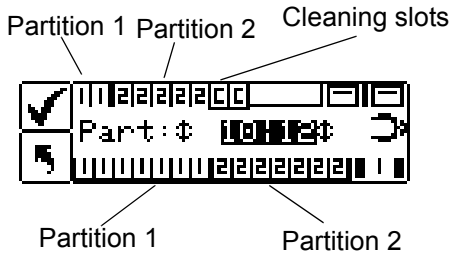
Partition 1 can operate in random, sequential, or LUN (LTO only) modes.

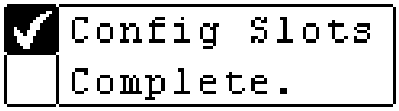
Partition 2 can operate in sequential or LUN (LTO only) modes.

The partition size is configurable. Each partition is assigned one of the front magazines but may have a configurable number of rear slots (minimum 1) assigned. The first drive module is assigned to the first partition and the second drive module is assigned to the second partition. If the library is not partitioned, all data slots and drive modules are assigned to a single partition. Follow the procedure below to configure partitions.

NOTE: Partition will only appear in the Configure Slots menu if you have specified Rnd-Seq, Seq-Seq, LUN-Seq, Seq-LUN, or LUN-LUN mode. LUN modes can be specified only on libraries with LTO drives. Otherwise your Scalar 24 will operate as a single library.

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight and press . | Configures partitions. |
|  <br>**2** Press ▲ and ▼ to select **Partition**. | |
| **3** Press ▶ to move to the next field. | |

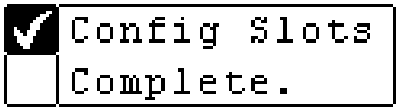
| Selection | Description/Result |
|---|---|
|  <br>**4** Press ▲ and ▼ to select number of slots you would like to designate for Partition 1 and Partition 2. | The slots in the magazine on the left are always Partition 1 and the slots in the magazine on the right are always Partition 2.<br>LTO<br>You can designate a minimum of 8 slots for each Partition (7 magazine slots and 1 rear slot).<br>You can designate a maximum of 16 slots for Partition 1 (7 magazine slots, 8 rear slots, and the I/E slot, if configured as a data slot). You can designate a maximum of 15 slots for Partition 2 (7 magazine slots and 8 rear slots). If you configure cleaning slots, the total number of slots available for both partitions will be reduced. See Configure Cleaning Slots on page 73 for more information.<br>SDLT<br>You can designate a minimum of 7 slots for each Partition (6 magazine slots and 1 rear slot). You can designate a maximum of 14 slots for Partition 1 (6 magazine slots, 7 rear slots, and the I/E slot, if configured as a data slot). You can designate a maximum of 13 slots for Partition 2 (6 magazine slots and 7 rear slots). If you configure cleaning slots, the total number of slots available for Partition 2 will be reduced. See Configure Cleaning Slots on page 73 for more information.<br>As you scroll through the list of slots, the LCD will dynamically show you which slots are designated for Partition 1 and Partition 2 by placing numbers (*1* or *2*) in the slots.<br>  <br> |
|  <br>**5** Press ▶ to highlight Execute (☑) and then press ◎. | The library is configured for the specified partitions. |

| Selection | Description/Result |
|---|---|
|  <br>**6** A confirmation screen displays. Press to dismiss. | |

## Configure I/E Slot

This option allows you to configure the I/E slot as either a storage slot or an Import/Export slot. If it is configured as a storage slot, it will appear as a valid storage slot to the host application.

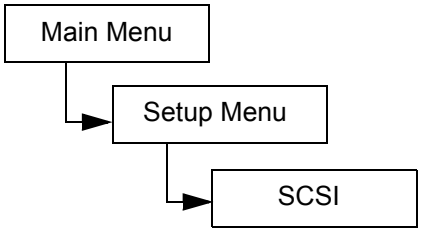
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight and press . | Configures I/E slot. |
|  <br>**2** Press ▲ and ▼ to select **I/E slot**. | |
| **3** Press ▶ to move to the next field. | |
|  <br>**4** Press ▲ and ▼ to select configuration option. | Available options are:<br>• **ST:** appears as a valid storage location to the host application (host will see 24 data slots for LTO or 21 for SDLT). If partitioning is enabled, this slot will be in Partition 1.<br>• **I/E:** host will see one import/export slot and 23 data slots for LTO or 20 for SDLT. |
|  <br>**5** Press ▶ to highlight Execute (✓) and then press . | The I/E slot is configured. |

| Selection | Description/Result |
|---|---|
|  <br>**6** A confirmation screen displays. Press to dismiss. | |

# Set SCSI IDs

**SCSI** allows you to set the SCSI ID for the library and drives. The SCSI ID identifies which ID the library and drives respond to when communicating with the host.

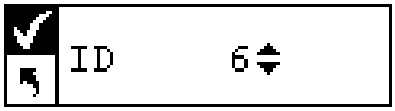
Path:




## Set Library SCSI ID

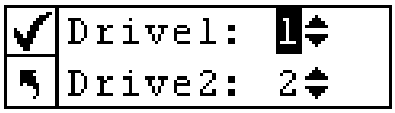
The SCSI ID of the library identifies which ID the library uses to communicate with the host.

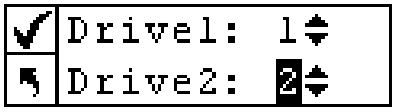
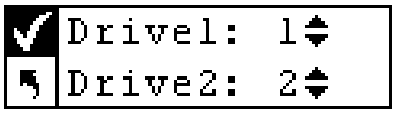
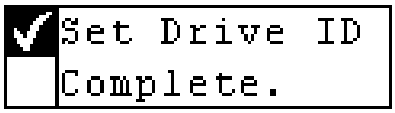
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight and press . | Sets SCSI IDs. |
|  <br>**2** Highlight and press . | Sets the library SCSI ID. You must have at least one partition set to Random mode to use this option. See Configure Modes on page 74 for more information. |
|  <br>**3** Press ▲ and ▼ to select the number you would like to set for the library. | You must choose a number between 0 and 7. Ensure that the ID you choose is different than the drive IDs. The default ID is 0. |

| Selection | Description/Result |
|---|---|
|  <br>**4** Press ▶ to highlight Execute (☑) and then press ◎. | The library SCSI ID is set. |
|  <br>**5** A confirmation screen displays. Press ◎ to dismiss. | |

## Set Drive SCSI IDs

The SCSI IDs of the drives identify which IDs the drives use to communicate with the host.

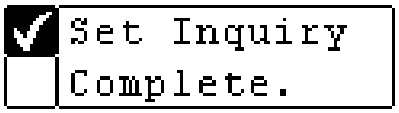
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight ⇔ and press ◎. | Sets SCSI IDs. |
|  <br>**2** Highlight ⇔ and press ◎. | Sets the drive SCSI IDs. |
|  <br>**3** Press ▲ and ▼ to select the ID you would like to set for the Drive 1. | You must choose a number between 0 and 15. The default ID is 1. |
| **4** If you have two drives installed, press ▶ highlight Drive 2. | |

| Selection | Description/Result |
|---|---|
|  <br>**5** Press ▲ and ▼ to select the ID you would like to set for the Drive 2. | You must choose a number between 0 and 15. Ensure that this ID is different from the IDs you set for Drive 1 and the library. The default is 2. |
|  <br>**6** Press ▶ to highlight Execute (☑) and then press ◎. | The drive SCSI IDs are set. |
|  <br>**7** A confirmation screen displays. Press ◎ to dismiss. | |

## Set Inquiry

**Set Inquiry** allows the host to see your library as another ADIC Scalar product. This can be useful if the host software does not currently include drivers to communicate with the Scalar 24.

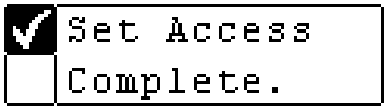
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight ⇦ and press ◎. | Sets SCSI IDs. |
|  <br>**2** Highlight ? and press ◎. | Sets Inquiry string. |

| Selection | Description/Result |
|---|---|
|  <br>**3** Press ▲ and ▼ to select product you would like you Scalar 24 to appear as to the host. | Sets the inquiry string returned to the host in a SCSI inquiry command.<br>Available options are:<br>• Scalar 24<br>• Scalar 100<br>• Scalar 1000<br>• Scalar 10K |
|  <br>**4** Press ▶ to highlight Execute (☑) and then press ◎. | The inquiry string is set. |
|  <br>**5** A confirmation screen displays. Press ◎ to dismiss. | |

## Access Mode

**Access Mode** allows you to set additional control paths, which allows the library to be controled by more than one host.

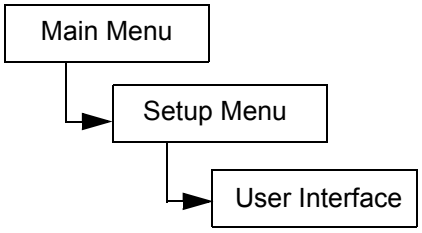
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight ◇ and press ◎. | Sets SCSI IDs. |
|  <br>**2** Highlight ▣ and press ◎. | Sets Access Mode. |

| Selection | Description/Result |
|---|---|
|  <br>**3** Press ▲ and ▼ to enable/disable the Control Path Mode. | Enables or disables the selected Control Path Mode.<br>Available options are:<br>• Enabled<br>• Disabled |
|  <br>**4** Press ▶ to highlight. Execute (☑) and then press ◎. | The access mode is set. |
|  <br>**5** A confirmation screen displays. Press ◎ to dismiss. | |

# User Interface

**User Interface** allows you to configure the LCD timeout, password, and key click settings.

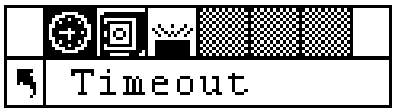
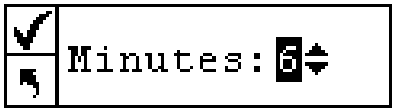
Path:




## Set Timeout

**Timeout** selects how long the library is available for operator menu selections before it automatically returns to the Main menu due to screen inactivity. This feature is designed to provide security for your system.

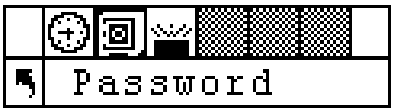
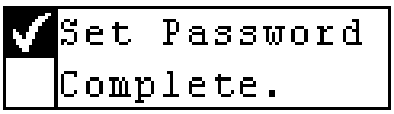
Note — Once the timeout period ends, the library returns to an online status, and it is once again accessible by a SCSI host.

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight and press . | Sets timeout window. |
|  <br>**2** Highlight and press . | |
|  <br>**3** Press ▲ and ▼ to select the value of the timeout window. | The timeout window is represented in minutes. You must specify a value between 1 and 9.<br>The default setting is 9 minutes.<br>If you have set a password, after the timeout window has expired, the password will need to be re-entered to access the library. |
|  <br>**4** Press ▶ to highlight Execute ( ) and then press . | |
|  <br>**5** A confirmation screen displays. Press to dismiss. | The timeout value is set. |

## Set Password

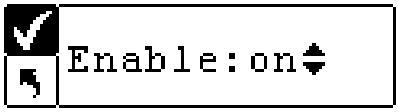
**Password** allows you to enable or disable a password for access to the library. This enables you to prevent unauthorized personnel from disrupting the operation of the Scalar 24. If you have set a password, it must be used to view or execute any of the options in the **Setup**, **Command**, or **Tools** menus. If you have set a timeout value, after the specified number of minutes of inactivity, you will be automatically logged out and you will have to re-enter your password. By default, there is no password set on your Scalar 24.

Note — If the password has been enabled by the SCSI host, you cannot modify or disable the password using the LCD display on the Scalar 24.

| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Setup** menu, highlight and press . | |
|  <br><br>**2** Highlight and press . | Sets password. |
|  <br><br>**3** Press ▲ and ▼ to Enable/Disable the password function. | Available options are:<br>• **on:** password will be required to access secure menu features<br>• **off:** disabled<br>NOTE: If the password has been enabled by the SCSI host, you cannot modify or disable the password using the LCD display. |
| **4** Select ▶ to move to the Password field. | |
|  <br><br>**5** Set a password by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. You must select a numeric value between 0 and 9 for all four fields. |
|  <br><br>**6** From the last field of the password, press ▶ to highlight Execute (☑) and then press . | The password is set. |
|  <br><br>**7** A confirmation screen displays. Press to dismiss. | Once you have set a password, you can turn it on and off by following Steps 1–3 above. You can change the password by following Steps 1 through 6. |

### Set Key Clicks

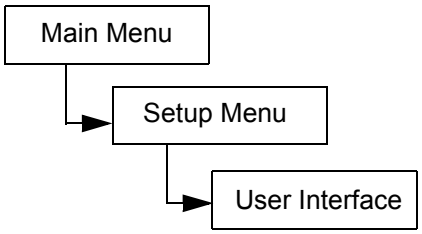
**Key Click** allows you to enable or disable an audible tone when the keys on the keypad are pressed.

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight  and press  . | |
|  <br>**2** Highlight  and press  . | Sets key clicks. |
|  <br>**3** Press ▲ and ▼ to Enable/Disable the key click function. | Available options are:<br>• **on:** turns on audible tone<br>• **off:** disabled |
|  <br>**4** Press ▶ to highlight Execute () and then press  . | Key clicks are set. |
|  <br>**5** A confirmation screen displays. Press  to dismiss. | |

# Configure RMU

The optional Remote Management Unit (RMU) provides remote host operation through a Web browser. Once you have installed the RMU, you configure it using this menu option. For more information on installing/replacing the RMU, see Installing the Remote Management Unit on page 31.

Path:




| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Setup** menu, highlight and press . | Configures the RMU.<br>An error will appear if an RMU is not installed or is not functioning properly. |
|  <br>**2** Set the **IP Address** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. Make sure you enter a valid number for each field. |
|  <br>**3** Set the **Subnet mask** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. Make sure you enter a valid number for each field. |
|  <br>**4** Set the **Gateway** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. | The current field will be highlighted. Make sure you enter a valid number for each field. |
|  <br>**5** From the last field of the Gateway address, press ▶ to set the Gateway mask and highlight Execute ( ). | |

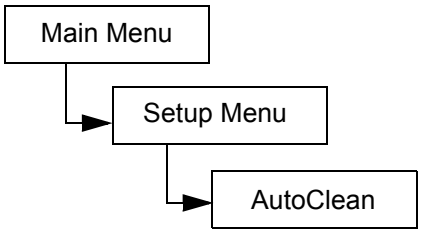
| Selection | Description/Result |
|---|---|
|  <br><br>**6** A confirmation screen displays. Press to accept the RMU settings. | Your RMU is configured and ready for use. |

# Configure AutoClean

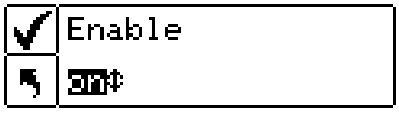
**AutoClean** is managed through the Scalar 24 and operates independent of the host application. AutoClean detects when a drive needs to be cleaned and automatically cleans it without requiring user intervention. To use the AutoClean feature, you must have at least one slot configured as a cleaning slot. For more information on configuring cleaning slots, see Configure Cleaning Slots on page 73. The Scalar 24 will track the usage of the cleaning tape and post an alert message on the LCD once the cleaning tape has expired and requires you to export the tape.

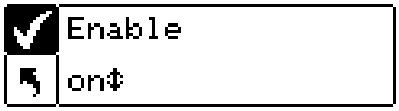
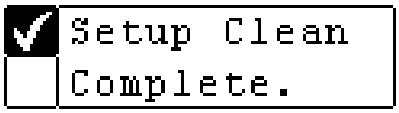
There are two methods for AutoCleaning: with a partitioned library and with an unpartitioned library.

Path:

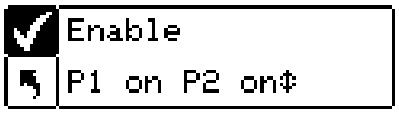



## AutoClean Unpartitioned Library

| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Setup** Menu, highlight and press . | Configures automatic cleaning of drives. |
|  <br><br>**2** Press ▲ and ▼ to Enable/Disable the AutoClean function. | Available options are:<br>• **on:** the library will automatically clean the drives when cleaning is required. Overall slots available for data cartridges will be reduced. Host software cleaning features MUST be turned off.<br>• **off:** disabled |

| Selection | Description/Result |
|---|---|
|  <br><br>**3** Press ▶ to highlight Execute (☑) and then press ◎. | AutoClean is configured. |
|  <br><br>**4** A confirmation screen displays. Press ◎ to dismiss. | |

## AutoClean Partitioned Library

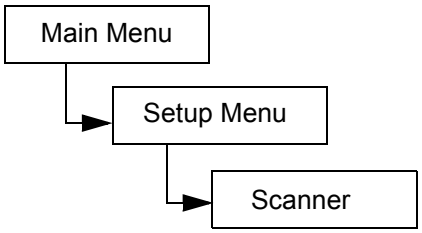
| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Setup** Menu, highlight  and press ◎. | Configures automatic cleaning of drives. |
|  <br><br>**2** Press ▲ and ▼ to select one of the options. | Available options are:<br>• P1 on P2 on: AutoClean is enabled for both partitions<br>• P1 on P2 off: AutoClean is enabled for partition 1 only<br>• P1 off P2 on: AutoClean is enabled for partition 2 only<br>• P1 off P2 off: AutoClean is disabled for both partitions |
|  <br><br>**3** Press ▶ to highlight Execute (☑) and then press ◎. | AutoClean is configured. |

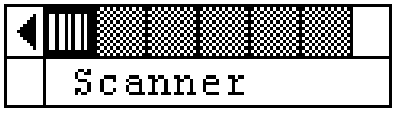
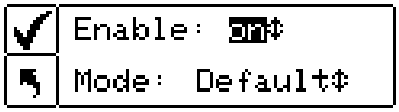
| Selection | Description/Result |
|---|---|
|  <br><br>**4** A confirmation screen displays. Press to dismiss. | |

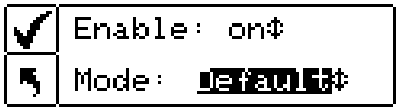
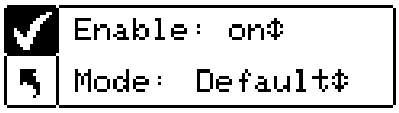
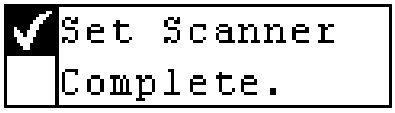
## Configure Barcode Scanner

**Scanner** enables or disables the barcode scanner. The barcode scanner will read and report the information that it scans and will display this information on the operator panel. The library will report the barcode information to the host according to the mode it configured for and will display alert messages on the operator panel if the scanned barcode does not match the barcode length and media identifier requirements of the mode.

Path:



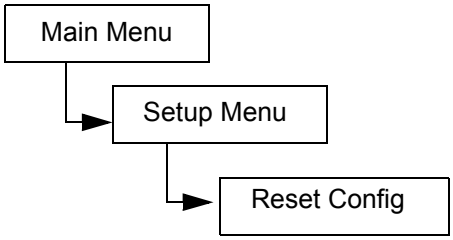

| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Setup** menu, highlight and press . | Configures the barcode scanner. |
|  <br><br>**2** Press ▲ and ▼ to Enable/Disable the barcode scanner. | Available options are:<br>• **on:** all media will be scanned for barcodes. Unlabeled or unreadable labeled media will generate a user message.<br>• **off:** disabled |
| **3** Press ▶ to move to next field. | |

| Selection | Description/Result |
|---|---|
|  <br><br>4 Press ▲ and ▼ to select the scanner mode. | Available options are:<br>• **Default**: The scanner will expect to read and will report to the host six characters. One or two character optional media identifiers will not be reported.<br>• **Media ID**: The scanner will expect to read and will report to the host seven or eight characters (six plus the media identifier).<br>• **Extended:** The scanner will read and report between five and sixteen characters to the host. |
|  <br><br>**5** Press ▶ to highlight Execute (☑) and then press ◉. | Your barcode scanner is configured and ready for use. |
|  <br><br>**6** A confirmation screen displays. Press ◉ to dismiss. | |

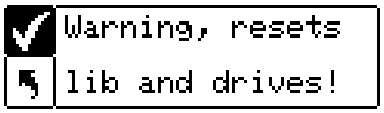
## Reset Configuration

**Reset Configuration** allows you to reset your library to the default settings. For more information of the default values, see Setting up your Scalar 24 on page 24.

Path:




| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Setup** menu, highlight ⟲ and press ◉. | Resets the library configuration. |

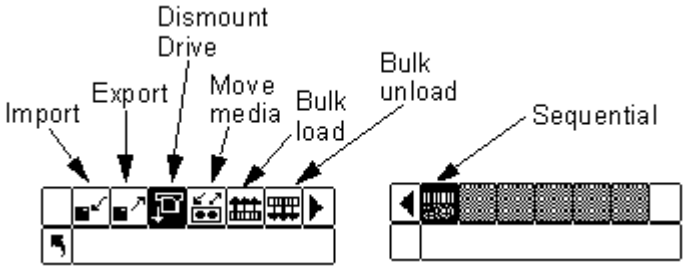
| Selection | Description/Result |
|---|---|
|  <br>**2** A warning screen will prompt you to ensure that you want to reset the library configuration. Press ◎ to continue. | The library will reboot and will be set to the default configuration.<br>The Setup Wizard will also start to allow a new configuration to be established. |

# Command Menu

The **Command** Menu provides access to commands that cause motion within the Scalar 24. From the **Command** menu, you can:

- Import media
- Export media
- Dismount drives
- Move media
- Bulk Load media
- Bulk Unload media
- Set Sequential mode options

**Figure 3** Command Menu



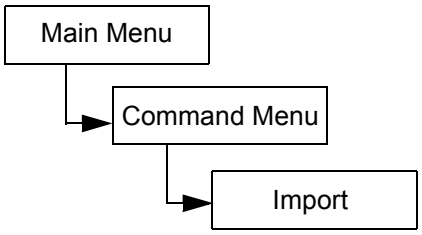

# Import Media

**Import** allows you to move a data or cleaning tape cartridge from the I/E slot to a storage location in your library. This allows you to insert a tape into the library without opening the front door. If your I/E slot is configured as a storage slot, this function cannot be used.

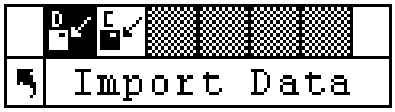
There are two import options: Import Data Cartridge and Import Cleaning Cartridge. To import a cleaning cartridge, you must first configure a cleaning slot location. For more information on configuring cleaning slots, see Configure Cleaning Slots on page 73. There are two methods for importing a data cartridge: with a partitioned library and with an unpartitioned library.

⚠ CAUTION: When a tape is inserted into the I/E slot, the picker may grab the tape to scan it and then place the tape back into the I/E slot or another slot in the library. This process can take up to 11 seconds, and during that time you should not insert another tape into the I/E slot.

Path:

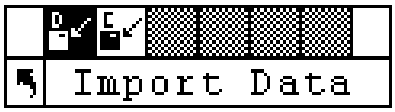
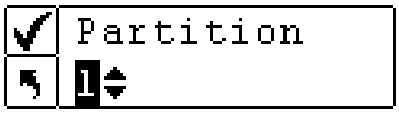
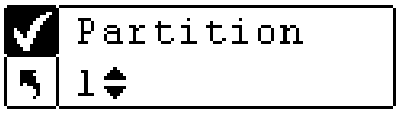



## Import Data Cartridge for Unpartitioned Library

| Selection | Description/Result |
|---|---|
| **1** Open the I/E door and insert a data cartridge into the I/E Slot. | |
|  **2** From the **Command** menu, highlight and press . | Imports media from I/E slot. |
|  **3** Highlight and press . | Imports a data cartridge. |
|  **4** A confirmation screen displays. Press to dismiss. | The data cartridge is imported to the first available slot starting with Slot 1. |

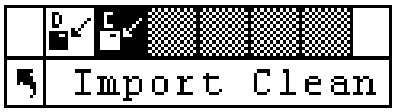
## Import Data Cartridge for Partitioned Library

| Selection | Description/Result |
|---|---|
| **1** Open the I/E door and insert a data cartridge into the I/E Slot. | |
|  **2** From the **Command** menu, highlight and press . | Imports media from I/E slot. |

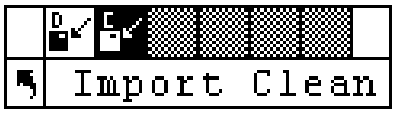
| Selection | Description/Result |
|---|---|
|  <br>**3** Highlight and press . | Imports a data cartridge. |
|  <br>**4** Press ▲ and ▼ to select the partition you wish to import the cartridge into. | |
|  <br>**5** Press ▶ to highlight Execute ( ) and then press . | The data cartridge is imported to the first available slot in the specified partition. |
|  <br>**6** A confirmation screen displays. Press to dismiss. | |

## Import LTO Cleaning Cartridge

| Selection | Description/Result |
|---|---|
| **1** Open the I/E door and insert a cleaning cartridge into the I/E Slot. | LTO tapes are read by the drive after being loaded into the drive. The number of times a cartridge is used is tracked in the **Status > Inventory** menu. |
|  <br>**2** From the **Command** menu, highlight and press . | Imports media from I/E slot. |

| Selection | Description/Result |
|---|---|
|  <br>3 Highlight and press . | Imports a cleaning cartridge. To use this feature, you must have a cleaning slot configured. See Configure Cleaning Slots on page 73 for more information. |
|  <br>4 A confirmation screen displays. Press to dismiss. | The cleaning use count is tracked automatically on the cartridge. The maximum use count is 50. |

## Import SDLT Cleaning Cartridge

| Selection | Description/Result |
|---|---|
| 1 Open the I/E door and insert a cleaning cartridge into the I/E Slot. | |
|  <br>2 From the **Command** menu, highlight and press . | Imports media from I/E slot. |
|  <br>3 Highlight and press . | Imports a cleaning cartridge. To use this feature, you must have a cleaning slot configured. See Configure Cleaning Slots on page 73 for more information. |
|  <br>4 Press ▲ and ▼ to select the Drive type. | |
| 5 Press ▶ to move to next field. | |
|  <br>6 Press ▲ and ▼ to select the how many times the cleaning tape has been used. | You will need to specific how many times this cartridge has been used, if any. |

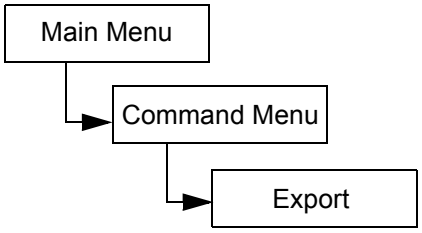
| Selection | Description/Result |
|---|---|
| **7** Press ▶ to move to next field. | |
|  <br>**8** Press ▲ and ▼ to set the maximum number of times the cleaning tape can be used. | For SDLT media, the maximum number of uses is 20. You can specify a different number, if you wish to restrict the number of times this cleaning cartridge will be used. |
|  <br>**9** Press ▶ to highlight Execute (✓) and then press ◎. | The cleaning cartridge is imported to the first available cleaning slot. |
|  <br>**10** A confirmation screen displays. Press ◎ to dismiss. | |

# Export Media

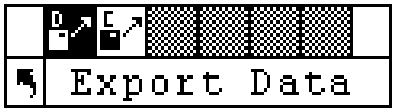
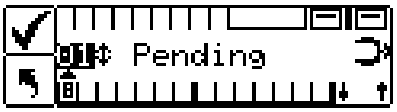
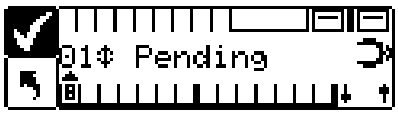
**Export** allows you to move a data or cleaning tape cartridge from the source slot you choose to the I/E slot. This allows you to remove a tape from the library without opening the front door. If the I/E slot is configured as a storage slot, you will not be able to export data cartridges. For more information on configuring the I/E slot, see Configure I/E Slot on page 79.

You can use the Move Media command to export data cartridges when the I/E slot is configured as a data slot. For more information, see Move Media on page 100.

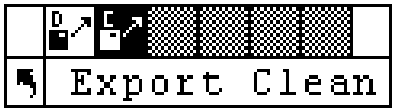
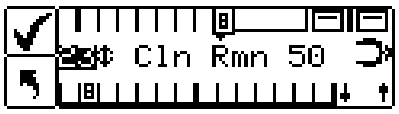
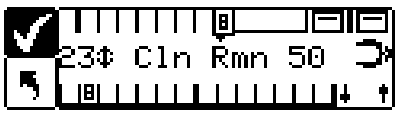
Path:



## Export Data Cartridge

| Selection | Description/Result |
|---|---|
| **1** Open the I/E door and check the I/E slot to make sure that it is empty. If a tape is present, remove it. | |
|  <br>**2** From the **Command** menu, highlight and press . | Exports media to I/E slot. |
|  <br>**3** Highlight and press . | Exports a data cartridge. |
|  <br>**4** Press ▲ and ▼ to select the slot you would like to export the media from. | **SRC**=source<br>In this example, the tape cartridge in slot 01 is to be exported to the I/E slot. |
|  <br>**5** Press ▶ to highlight Execute ( ) and then press . | The specified data cartridge is exported to the I/E slot. |
|  <br>**6** A confirmation screen displays. Press to dismiss. | |
| **7** You can continue to export data cartridges, or you can exit to the **Command** menu. Press ▶ twice to highlight and then press to return to the **Command** menu. | |

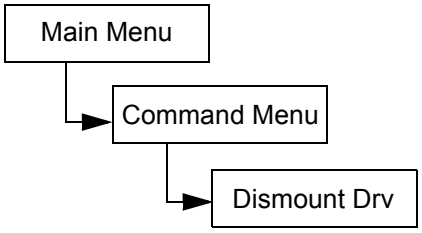
## Export Cleaning Cartridge

| Selection | Description/Result |
|---|---|
| **1** Open the I/E door and check the I/E slot to make sure that it is empty. If a tape is present, remove it. | |
|  <br>**2** From the **Command** menu, highlight and press . | Exports media to I/E slot. |
|  <br>**3** Highlight and press . | Exports a cleaning cartridge. |
|  <br>**4** Press ▲ and ▼ to select the slot you would like to export the media from. | **SRC**=source<br>**Cln Rmn**=number of cleanings remaining on cartridge<br>Cleaning cartridges can be stored in slots 20–23 for LTO or slots 17–20 for SDLT.<br>In this example, the tape cartridge in slot 23 is to be exported to the I/E slot. |
|  <br>**5** Press ▶ to highlight Execute ( ) and then press . | The specified cleaning cartridge is exported to the I/E slot. |
|  <br>**6** A confirmation screen displays. Press to dismiss. | |
| **7** You can continue to export cleaning cartridges, or you can exit to the **Command** menu. Press ▶ twice to highlight and then press to return to the **Command** menu. | |

# Dismount Drive

**Dismount Drive** unloads all drives and returns cartridges to their source slots.

Path:

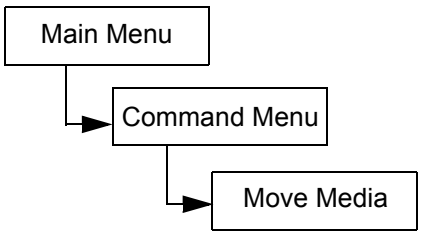


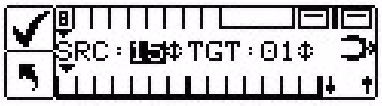

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight  and press . | Moves media within your library. |
| **2** The cartridges are unloaded from the drives and returned to their source slots. | |
|  <br>**3** A confirmation screen displays. Press to dismiss. | |

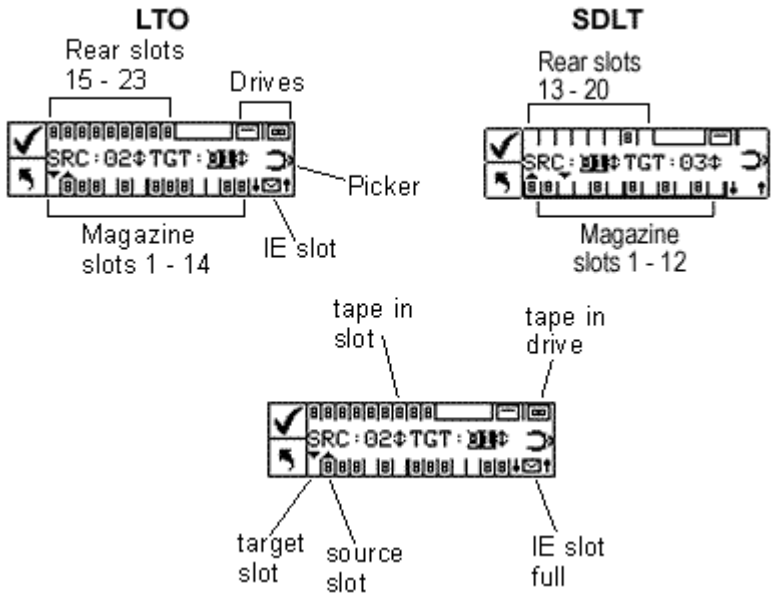
# Move Media

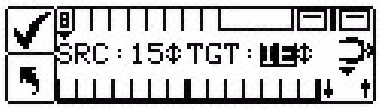
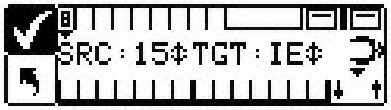
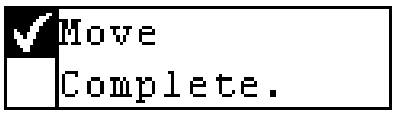
**Move media** allows you to move a tape cartridge from an existing position to a new position. You also use this function to manually insert a tape into a drive or remove a tape from a drive.

Path:



| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Moves media within your library. |
|  <br>**2** Press ▲ and ▼ to select the source slot. | **SRC**=Source Slot<br>**TGT**= Target Slot<br>The move media screen provides a visual representation of the storage slots in your library.<br>• Magazine slots:<br>  • shown on the bottom of the screen<br>  • numbered sequentially from left to right 01 to 14 for LTO and 01 to 12 for SDLT<br>• **Rear slots:**<br>  • shown on the top of the screen<br>  • numbered sequentially from left to right 15 to 23 for LTO and 13 to 20 for SDLT<br>• **I/E slot:**<br>  • shown on the bottom right of the screen<br>  • ↓ ↑ arrows indicate configured as I/E slot (represented by *I/E* in SRC/TGT fields)<br>  • ▮ ▮ vertical bars indicate configured as data slot (represented by 00 in SRC/TGT fields)<br>• **Drives**:<br>  • shown on top right of the screen<br>  • indicated by *D1* or *D2* in the SRC/TGT field |

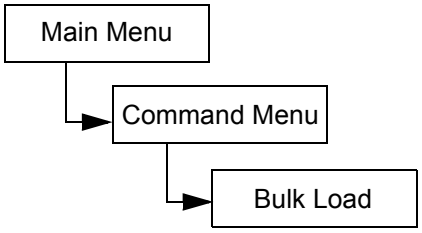



| Selection | Description/Result |
|---|---|
| **3** Press ▶ to move the cursor to the target field. | |
|  **4** Press ▲ and ▼ to select the target slot. | In this example, the cartridge in the source slot 15 is moved to the target slot I/E. |
|  **5** Press ▶ to highlight Execute (☑) and then press ◉. | The media is moved from the specified source to the specified target location. |
|  **6** A confirmation screen displays. Press ◉ to dismiss. | |
| **7** You can continue to move media, or you can exit to the **Command** menu. Press ▶ twice to return to the **Command** menu. | |

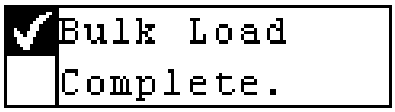
# Bulk Load

**Bulk Load** allows you to move multiple tapes from the magazines to the rear slots with one command. For more information on partitioning, see Configure Partitions on page 77.

Path:

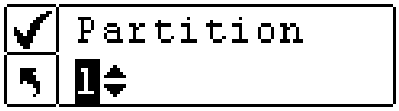
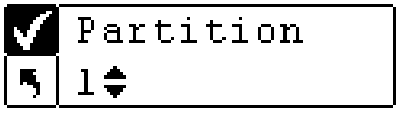
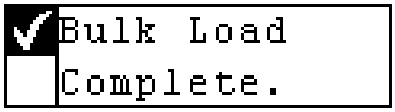



## Unpartitioned Library Bulk Load

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Moves cartridges from magazines to rear slots. |
| **2** The bulk load operation begins. The operation can be cancelled at any time by pressing . | The library will begin loading the rear slots by selecting the left most available cartridge in the front left magazine and placing it in the left most available rear slot. The bulk load will continue until either there are no more tapes in the front magazines or there are no more available slots in the rear. |
|  <br>**3** When the bulk load is complete, a completion screen is displayed. Press to dismiss the screen. | |

## Partitioned Library Bulk Load

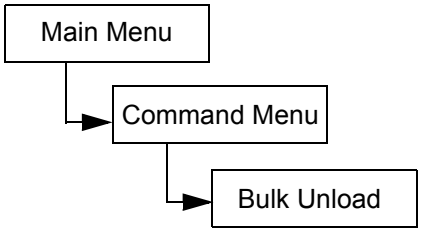
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Moves cartridges from magazines to partitioned rear slots. |

| Selection | Description/Result |
|---|---|
|  <br>**2** Press ▲ and ▼ to select the partition you want to move cartridges to. | Available options are:<br>• **Partition 1:** will move cartridges from the left magazine to the available rear Partition 1 slots.<br>• **Partition 2:** will move cartridges from the right magazine to the available rear Partition 2 slots. |
|  <br>**3** Press ▶ to highlight Execute (☑) and then press ◎ . | |
| **4** The bulk load operation begins. The operation can be cancelled at any time by pressing ◎. | Bulk Load for Partition 1 - The library will begin loading the rear slots by selecting the left most available cartridge in the front left magazine (Magazine 1) and placing it in the left most available rear slot for Partition 1. The bulk load will continue until either there are no more tapes in the front magazine or there are no more available slots in the rear.<br>Note, rear slots identified as Partition 1 can only be bulk loaded from Magazine 1, and rear slots identified as Partition 2 can only be bulk loaded from Magazine 2 while partitioning is enabled. |
|  <br>**5** When the bulk load is complete, a completion screen is displayed. Press ◎ to dismiss the screen. | |

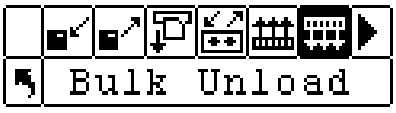
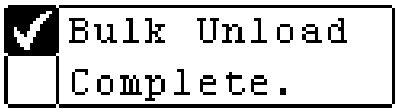
# Bulk Unload

**Bulk Unload** allows you to move all of the tapes from the rear slots to the front magazines with one command. For more information on partitioning, see Configure Partitions on page 77.

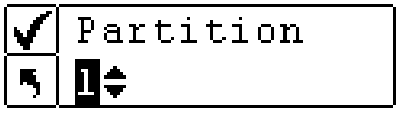
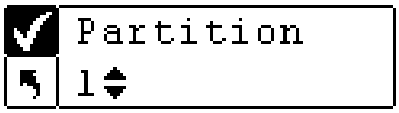
Path:



## Unpartitioned Library Bulk Unload

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Moves cartridges from rear slots to magazines. |
|  <br>**2** When the bulk load is complete, a completion screen is displayed. Press to dismiss the screen. | The library will begin unloading the rear slots by selecting the left most available cartridge and placing it in the left most slot of the left magazine. The bulk unload will continue until either there are no more tapes in the rear slots or there are no more available slots in the magazines. |

## Partitioned Library Bulk Unload

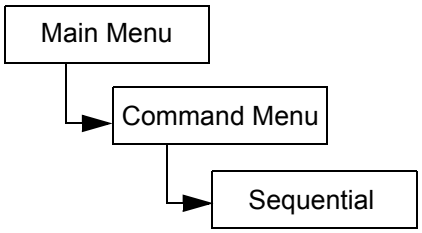
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Moves cartridges from rear slots to magazines. |
|  <br>**2** Press ▲ and ▼ to select the partition you want to move cartridges from. | Available options are:<br>• **Partition 1:** will move cartridges from the rear Partition 1 slots to the left magazine slots.<br>• **Partition 2:** will move cartridges from the rear Partition 2 slots to the right magazine slots. |
|  <br>**3** Press ▶ to highlight Execute (✓) and then press . | |

| Selection | Description/Result |
|---|---|
| **4** The bulk load operation begins. The operation can be cancelled at any time by pressing . | Bulk unload for Partition 1 - The library will begin loading the left magazine by selecting the left most available cartridge in the rear slots of Partition 1 and placing it in the left most slot in the left magazine. The bulk unload will continue until either there are no more tapes in the rear slots or there are no more available slots in the magazine.<br>Note, rear slots identified as Partition 1 can only be bulk unloaded into Magazine 1, and rear slots identified as Partition 2 can only be bulk unloaded into Magazine 2 while partitioning is enabled. |
|  <br>**5** When the bulk load is complete, a completion screen is displayed. Press to dismiss the screen. | |

# Sequential

**Sequential** allows you to start, stop, and resume the sequential backup sequence. You can also set sequential loop mode. If your library is partitioned, you can control each partition independently.

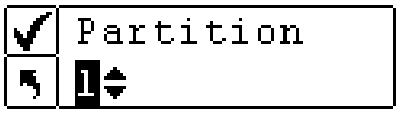
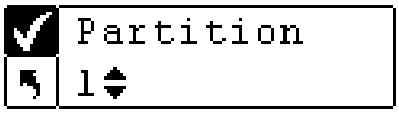
Path:




## Start Loop

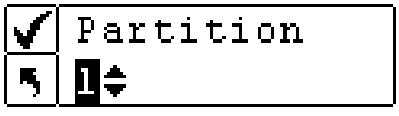
**Start Loop** mode allows you to operate in a continuous backup mode. When all tape cartridges have been filled with data, the Scalar 24 will begin again with the first cartridge, overwriting tape cartridges upon reuse.

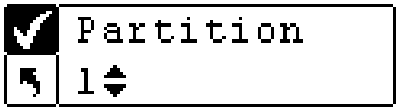
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Sets options for sequential backup. |

| Selection | Description/Result |
|---|---|
|  <br>**2** Highlight and press . | Starts looped sequential backup. |
|  <br>**3** Press ▲ and ▼ to select the partition you want to set to sequential loop mode. | |
|  <br>**4** Press ▶ to highlight Execute ( ) and then press . | Sequential loop backup begins. |

## Start Single

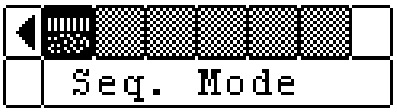
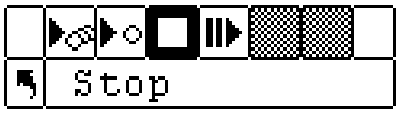
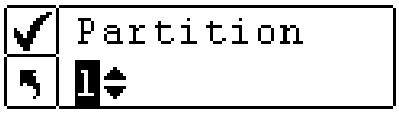
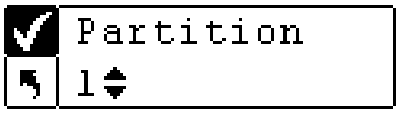
**Start Single** mode allows you to begin backup with the first cartridge in a specified partition. When all tape cartridges have been filled, the backup operation will stop.

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Sets options for sequential backup. |
|  <br>**2** Highlight and press . | Starts single sequential backup. |
|  <br>**3** Press ▲ and ▼ to select the partition you want to set to sequential single mode. | |

| Selection | Description/Result |
|---|---|
|  <br>4 Press ▶ to highlight Execute (✓) and then press ◎. | A single sequential backup begins. |

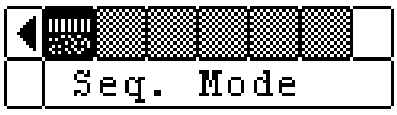
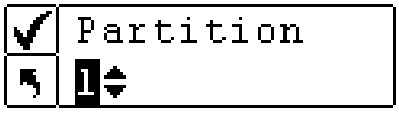
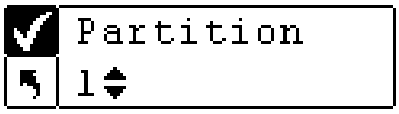
## Stop Sequential Backup

**Stop** allows you to manually stop the backup process when in sequential mode.

| Selection | Description/Result |
|---|---|
|  <br>1 From the **Command** menu, highlight ▦ and press ◎. | Sets options for sequential backup. |
|  <br>2 Highlight ■ and press ◎. | Stops sequential backup. |
|  <br>3 Press ▲ and ▼ to select the partition you want to stop the sequential backup on. | |
|  <br>4 Press ▶ to highlight Execute (✓) and then press ◎. | The backup process is stopped. |

## Resume Sequential Backup

**Resume** allows you to continue a backup process when in sequential mode. The load operation will continue with the next tape in the sequence rather than starting over.

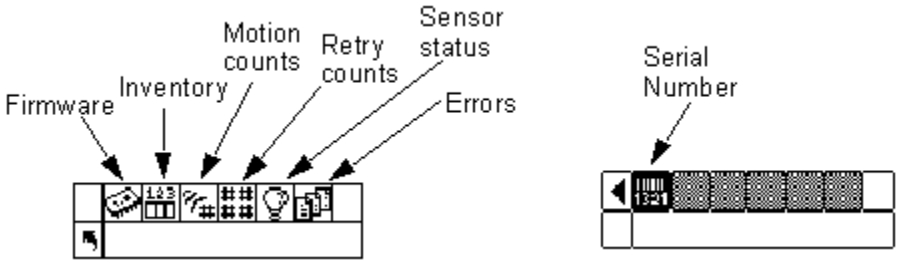
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Command** menu, highlight and press . | Sets options for sequential backup. |
|  <br>**2** Highlight and press . | Continues sequential backup. |
|  <br>**3** Press ▲ and ▼ to select the partition you want to resume the sequential backup on. | |
|  <br>**4** Press ▶ to highlight Execute ( ) and then press . | The backup process is resumed. |

# Status Menu

The **Status** Menu allows you to display operating statistics and system information. From the **Status** Menu you can display:

- Firmware Revision Numbers
- Inventory Information
- Motion Counts
- Retry Counts
- Sensor Status
- Error Logs
- Serial Number

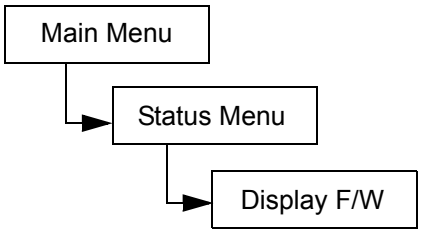
**Figure 4** Status Menu

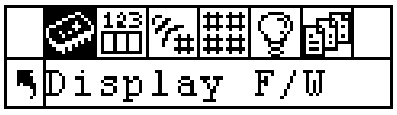



# Display Firmware Version

**Display Firmware** displays the current level of firmware you are running. This information is important for troubleshooting problems.You can also compare the version numbers with the latest available versions on the ADIC Web site (**www.adic.com**) to determine if a newer version is available.

Path:



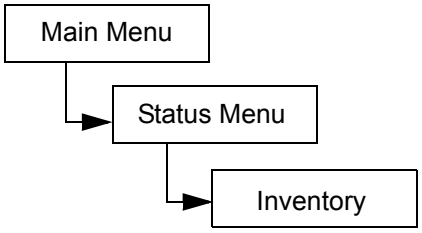

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Status** menu, highlight  and press  . | *Display F/W* displays the current level of library firmware. |
|  <br>**2** Press ▲ and ▼ to view all of the firmware revision numbers. | The current version of library firmware is displayed. You can view firmware revision numbers for:<br>• **Application:** controls the library operations<br>• **Picker:** operates the cartridge picker mechanism in your library<br>• **RMU:** RMU firmware<br>• **Drive1:** Drive firmware<br>• **Drive2:** Drive firmware<br>• **Boot:** boots the library controller firmware<br>• **Picker Boot:** boot code for picker |

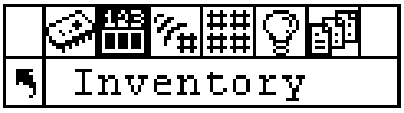
| Selection | Description/Result |
|---|---|
|  <br><br>**3** To exit, press ▶ to highlight and then press . | You are returned to the **Status** menu. |

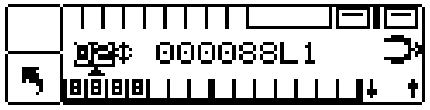
# Display Inventory Information

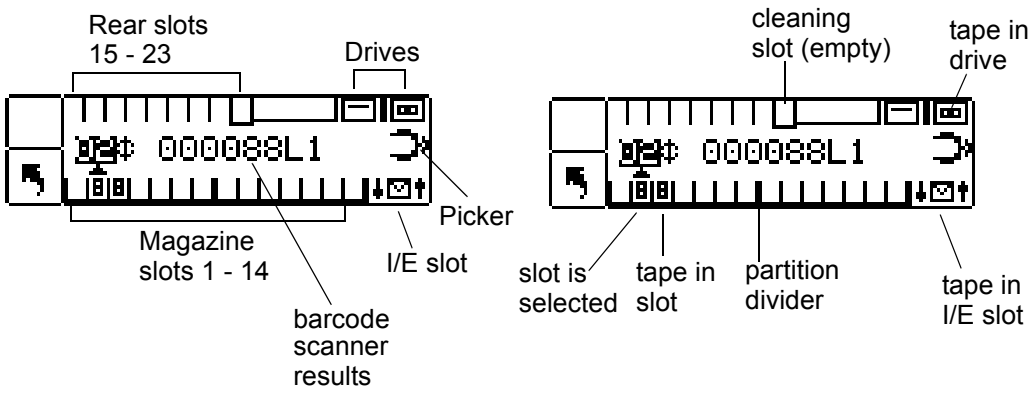
**Inventory** provides a display of the tape cartridges present in the rear slots and magazines. A physical inventory is also conducted each time you power on your Scalar 24.

Path:




| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Status** menu, highlight and press . | Displays the current library cartridge content. |

| Selection | Description/Result |
|---|---|
|  <br>**2** Press ▲ and ▼ to scroll through the various slots. An arrow in front of the slot indicates it slot is selected. | The inventory screen provides a visual representation of the storage slots in your library.<br>• **Magazine slots**:<br>  • shown on the bottom of the screen<br>  • numbered sequentially from left to right 01 to 14 for LTO or 01 to 12 for SDLT<br>  • the magazines slots will not be shown if the magazines are not installed<br>• **Rear slots:**<br>  • shown on the top of the screen<br>  • numbered sequentially from left to right 15 to 23 for LTO or 13 to 20 for SDLT<br>  • double bar will be shown in rear slots to show partition<br>  • a horizontal bar will close off slots reserved for cleaning<br>• **I/E slot:**<br>  • shown on the bottom right of the screen<br>  • ↓ ↑ arrows indicate configured as I/E slot (represented by *I/E* in slot field)<br>  • ▮ ▮ vertical bars indicate configured as data slot (represented by *00* in slot field)<br>• Barcode Scanner results:<br>  • shown on middle of screen and changes as various slots are selected<br>  • blank: scanner not installed<br>  • *Scan Off*: scanner installed but turned off<br>  • *No Label*: no barcode label present or unable to read label<br>  • number: displays entire barcode label regardless of what the scanner is set at<br>  • number of cleaning slots remaining will be shown instead of a barcode for full cleaning slots<br>• **Drives**:<br>  • shown on top right of the screen |



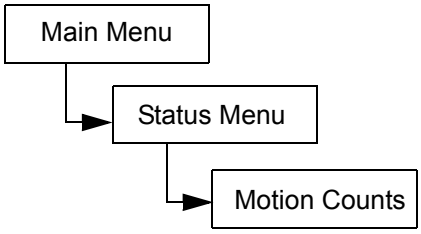

LTO library is shown above.

| Selection | Description/Result |
|---|---|
|  <br>**3** To exit, press ▶ to highlight and then press . | You are returned to the **Status** menu. |

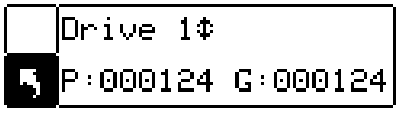
# Display Motion Counts

**Motion Counts** displays how many times a slot or drive has had a cartridge placed in it or removed from it.

Path:



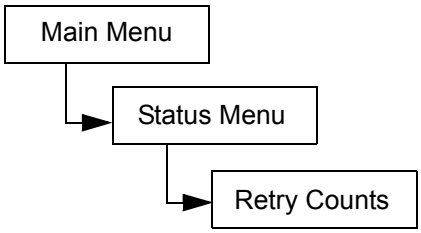

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Status** menu, highlight and press . | Displays slot usage information. |

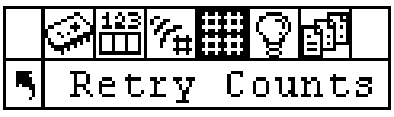
| Selection | Description/Result |
|---|---|
|  <br>**2** Press ▲ and ▼ to view the motion counts for each slot, drive, and I/E slot. | You can view motion counts for:<br>• **System Moves:** displays the total number of library moves. A move is described as a "get" from one location and a "put" to another location.<br>• **Drive 1:** displays the number of gets and puts to and from Drive 1.<br>• **Drive 2:** displays the number of gets and puts to and from Drive 2.<br>• **I/E and Slots 1 - 23 for LTO or 1 - 20 for SDLT:** displays the total number of moves for a particular slot.<br>The format of the entries is:<br>• **P:** = Number of puts to a location.<br>• **G:** = Number of gets from a location. |
|  <br>**3** To exit, press ▶ to highlight and then press . | You are returned to the **Status** menu. |

# Display Retry Counts

**Retry Counts** displays the number of retry operations the picker has attempted to put a cartridge to a specific location or get a cartridge from a particular location.

Path:



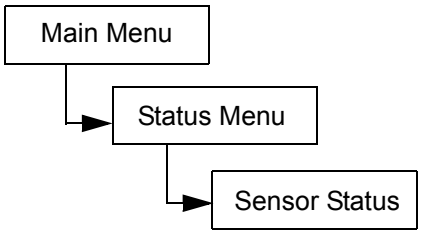

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Status** menu, highlight and press . | Displays the number of retry operations. |

| Selection | Description/Result |
|---|---|
|  <br><br>**2** Press ▲ and ▼ to view all of the retry counts. | You can get retry counts on the number of:<br>• **System:** displays the total number of library retries.<br>• **D1:** displays how many times a get or a put retry has occurred for Drive 1.<br>• **D2:** displays how many times a get or a put retry has occurred for Drive 2.<br>• **Position:** displays how many times the picker has retried positioning.<br>• **Scan:** displays how many times the barcode scanner has scanned the tape cartridges.<br>• **I/E and Slots 1 - 23 for LTO or 1 - 20 for SDLT:** displays how many times a get or a put retry has occurred for a particular slot.<br>The format of the entries is:<br>• **P:** = Number of puts to a location.<br>• **G:** = Number of gets from a location. |
|  <br><br>**3** To exit, press ▶ to highlight ↰ and then press ◎. | You are returned to the **Status** menu. |

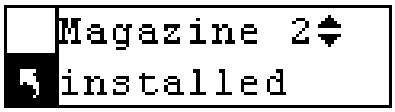
# Display Sensor Status

**Sensor Status** displays the results of the real-time sensors on your Scalar 24.

Path:



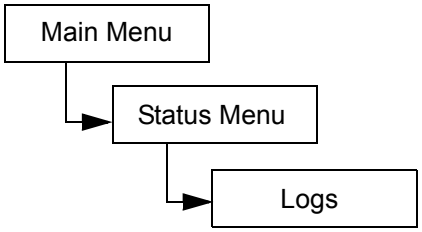

| Selection | Description/Result |
|---|---|
|  <br><br>**1** From the **Status** menu, highlight 💡 and press ◎. | Displays results of real-time sensors. |

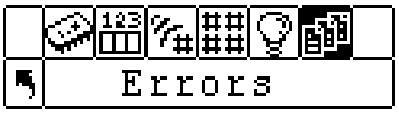
| Selection | Description/Result |
|---|---|
|  <br>2 Press ▲ and ▼ to view all of the sensor statuses. | You can view sensor status for:<br>• **Door (Media Access):** opened or closed<br>• **Picker:** empty or full<br>• **I/E Slot:** empty or full<br>• **Magazine 1:** installed or removed<br>• **Magazine 2:** installed or removed<br>• **Rear Slots:** represented by a nine character string with "1"s and "-"s (–1–1–1–1–) where 1 means slot full, and - means slot empty. |
|  <br>3 To exit, press ▶ to highlight ↰ and then press ◎. | You are returned to the **Status** menu. |

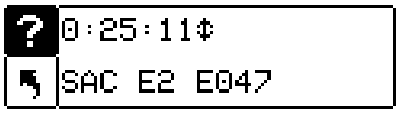
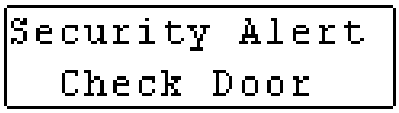
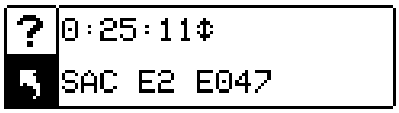
# Display Errors

**Errors** provides a listing of errors that need to be addressed by the operator. The log can store up to 100 errors and is preserved through power cycles. The log is accessible by using the LCD as well as the SCSI interface, the serial port, and the RMU interface. You may be asked to supply log information to ADIC technical support for troubleshooting purposes if other problem resolution strategies do not work.

Path:



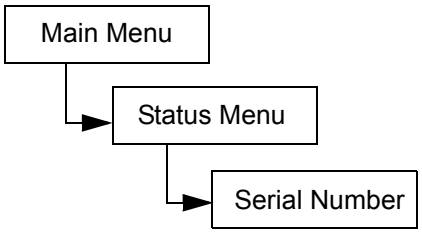

| Selection | Description/Result |
|---|---|
|  <br>1 From the **Status** menu, highlight  and press ◎. | Displays Error log. |

| Selection | Description/Result |
|---|---|
|  <br>2 Press ▲ and ▼ to scroll through the error messages. | The format of the entries is as follows:<br>`0:00:00=hours:minutes:seconds of power on time since the error occurred`<br>SAC E2 E047=Service Action Code of error message<br>For more information on error codes, see Scalar 24 Error Messages on page 132. |
|  <br>3 If you would like to get more information, press ▶ to highlight [?] and then press ◎. | The text version of the Error message is displayed. |
|  <br>4 Press ◎ to dismiss the message and return to the Error log. | |
|  <br>5 To exit the Error log, press ▶ to highlight ↖ and then press ◎. | You are returned to the **Status** menu. |

# Display Serial Number

**Serial Number** displays the serial numbers of the library, drives, and the RMU. You may need this information when contacting Technical Support.

Path:



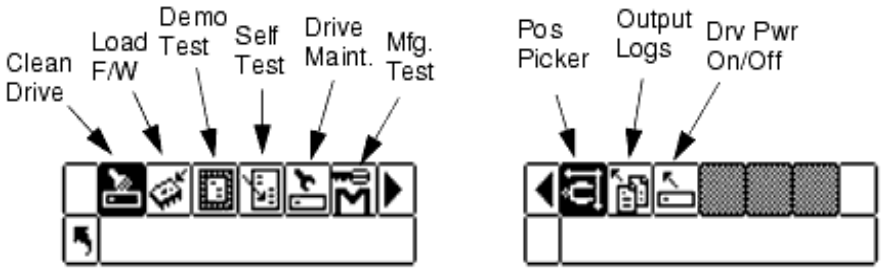
| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Status** menu, highlight and press . | Displays serial numbers. |
|  <br>**2** Press ▲ and ▼ to view all of the serial numbers. | Available options are:<br>• Library<br>• Drive 1<br>• Drive 2<br>• RMU<br>• SNC<br>JMS--Is there going to be a distinction here between the SNC 4000 and the SNC 4501? |
|  <br>**3** To exit, press ▶ to highlight and then press . | You are returned to the **Status** menu. |

# Tools Menu

The **Tools** Menu provides access to Scalar 24 utilities. From the **Tools** Menu you can:

- Manually clean a drive
- Load drive firmware
- Run Demo tests
- Run Self tests
- Run Drive Maintenance tests
- Run Manufacturing tests
- Position the picker
- Output logs
- Power the drive on or off

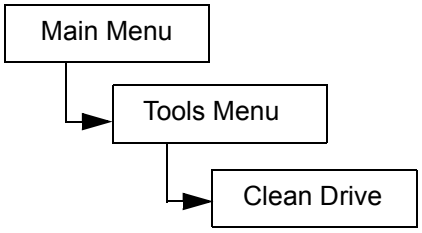
**Figure 5** Tools Menu

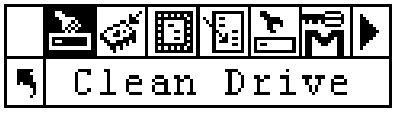
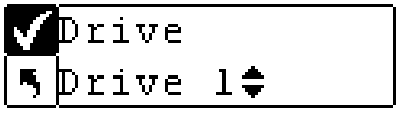



# Clean Drive

**Clean Drive** allows you to manually clean your drive components. To use this feature, you must have at least one slot configured as a cleaning slot, and it must contain a cleaning cartridge. For more information on configuring cleaning slots, see Configure Cleaning Slots on page 73.

Path:

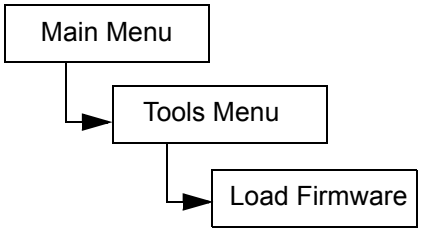


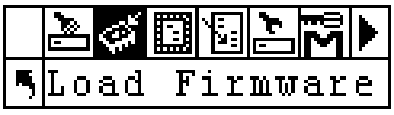
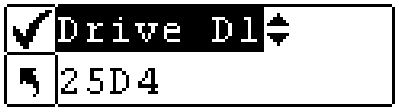
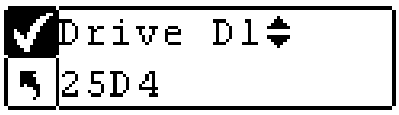

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Tools** menu, highlight and press . | Manually cleans a drive. |
|  <br>**2** Press ▲ and ▼ to select the drive to be cleaned. | If you have two drives installed, you can clean Drive 1 or Drive 2. |
|  <br>**3** Press ▶ to highlight Execute (✓) and then press . | The drive is cleaned and the cleaning tape is returned to the cleaning slot. |
| **4** A completion screen displays. Press to dismiss. | |

# Load Firmware

**Load Firmware** allows you to manually update your firmware using a firmware upgrade tape cartridge.

Path:

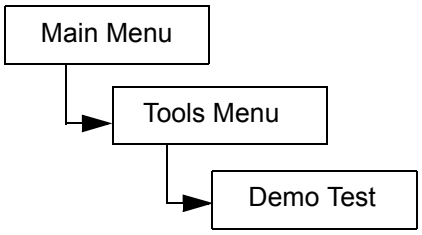


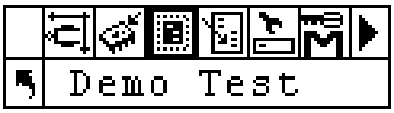
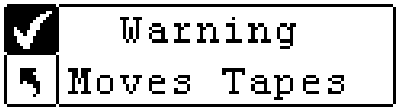
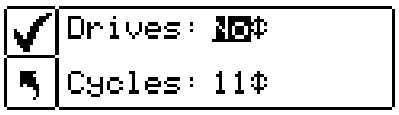
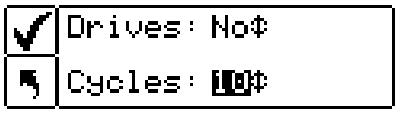
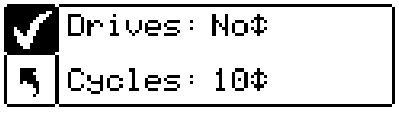

| Selection | Description/Result |
|---|---|
| **1** Open the I/E door and inset the firmware upgrade tape into the I/E slot. | |
|  **2** From the **Tools** menu, highlight and press . | Loads firmware. |
|  **3** Press ▲ and ▼ to select which firmware you want to upgrade. | Available options are:<br>• **Drive 1:** upgrades firmware for Drive 1<br>• **Drive 2:** upgrades firmware for Drive 2<br>• **All Drives:** ugrades both drives with a single command |
|  **4** Press ▶ to highlight Execute (✓) and then press . | The new firmware is loaded and the upgrade tape is retuned to the I/E slot. |
| **5** A confirmation message is displayed. Press to dismiss. | |
| **6** Remove the upgrade tape from the I/E slot. | |

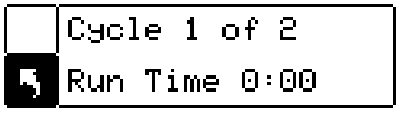
# Demo Test

**Demo Test** randomly moves tapes within the library to demonstrate robotic motion.

Path:



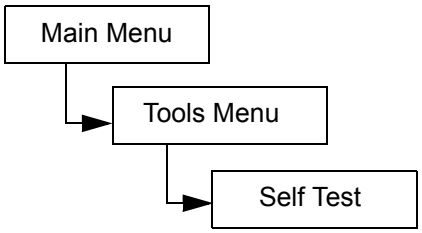

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Tools** menu, highlight  and press  . | Runs Demo test. |
|  <br>**2** You will be prompted with a warning, press  to continue the test. | **CAUTION: This test will move your tapes and may change your inventory information by not returning tapes to the same locations.** |
|  <br>**3** Press ▲ and ▼ to select/deselect the Drives. | Available options are:<br>• **yes:** allows loads and unloads to the drives<br>• **no:** does not load or unload tapes to the drives |
| **4** Press ▶ to move to the next option. | |
|  <br>**5** Press ▲ and ▼ to select the number of Cycles to include in the demo test. | You can select between 1 and 100 cycles. |
|  <br>**6** Press ▶ to highlight Execute (☑) and then press  . | The demo test begins. |

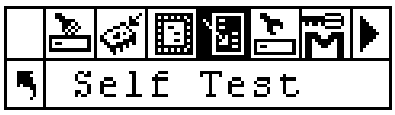
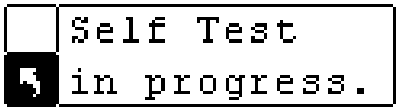
| Selection | Description/Result |
|---|---|
|  <br>**7** A status screen will display the progress of the test. You can press  at any time to cancel the test. | |
| **8** When the test is complete, a completion message is displayed. Press  to dismiss. | |

# Self Test

**Self Test** tests sensor input and robotic motion to make sure the system is operational.

Path:




| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Tools** menu, highlight  and press  . | Runs self test. |
|  <br>**2** A status screen will display the progress of the test. You can press  at any time to cancel the test. | The self test begins. |

| Selection | Description/Result |
|---|---|
| **3** When the test is complete, a completion message is displayed. Press to dismiss. | If the **Self Test** fails, there is probably something obstructing motion of the picker. Open the door and pull out the magazines to verify that all the tapes are pushed into their slots. Look for anything that appears to be blocking the path of the picker. Retry the test. If it still fails, contact technical support. |

# Drive Maintenance Test

**Drive Maintenance** allows you to perform several different drive diagnostic tests.

Note The drive maintenance tests are only supported for libraries with LTO drives.

To better understand these tests, you need to understand the format of the tape. The tape is divided into four data sections. Each data section contains 96 tracks (96*4=384 tracks, the number of tracks on a generation one cartridge). On each edge of the tape (two servo bands), and between the databands (three servo bands), there are pre-formatted servo bands (five in total). A wrap is defined as a trip from logical BOT to logical EOT (a round trip would be two wraps).

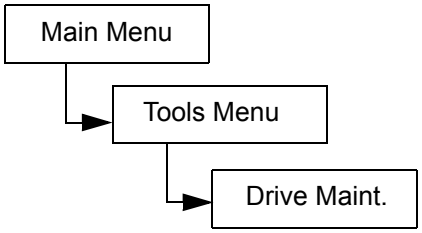
Each test is described in more detail below.

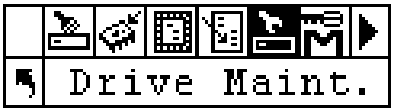
Note Run time records the test time in minutes and seconds (m:ss).

| | |
|---|---|
| Power on self test (POST) | Runs self diagnostics. This test takes approximately one minute. |
| Fast Read/Write | The drive reads and writes two wraps worth of data (a trip down and back) in each of the four data sections. Ten data patterns are used in this test. No more than 1.5% of the tape is used. This test takes approximately 25 minutes. |
| Normal Read/ Write | The drive reads and writes 96 wraps worth of data (all the tracks) in each of the four data sections. No more than 1.5% of the tape is used. Ten data patterns are used in this test. This test takes approximately 22 minutes. |
| Media Read/Write | Since media damage usually comes from the edges of tape to the center of tape, the media test performs a read/write test by writing two wraps on each of the two outside data bands, closest to the edge of tape, on both edges of the tape, for the entire length of tape. This test takes approximately 20 minutes. |
| Head Read/Write | In this test the drive performs a resistance check on the recording head, then it does a read/ write test where it writes two wraps in each of the two center data bands of tape to verify the head is performing well. This test takes approximately 20 minutes. |
| Wrap | This test is used to ensure that the drive is communicating correctly with the host and the library. |

| | |
|---|---|
| Create FUP | The drive loads firmware onto a data cartridge to create a firmware upgrade (FUP) tape. |
| Clear FUP | The drive erases the firmware from the firmware upgrade (FUP) cartridge so it can be used as a data cartridge. |

Path:



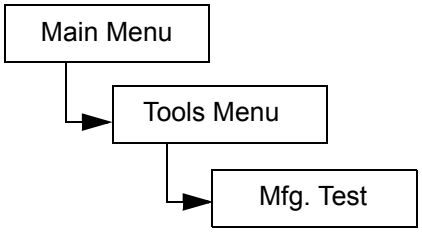

| Selection | Description/Result |
|---|---|
|  1 From the **Tools** menu, highlight  and press  . | Runs Drive Maintenance test.<br>  NOTE: During drive maintenance tests, tapes are automatically moved between I/E and tape slots. Be sure to remove media from the I/E until you are prompted to insert scratch media.<br>  WARNING: For all Read/Write tests, the content of the tape will be destroyed when running the test. |
|  2 Press ▲ and ▼ to select the drive you wish to run the test on. | |
| 3 Press ▶ to move to the next option. | |
|  4 Press ▲ and ▼ to select the test you wish to run. | Available options are:<br>• POST<br>• Fast R/W<br>• Normal R/W<br>• Media R/W<br>• Head R/W<br>• Wrap<br>• Create FUP<br>• Clear FUP<br>• Drive Logs |

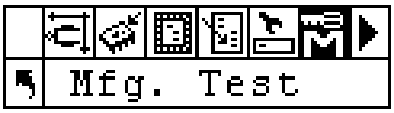
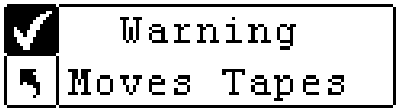
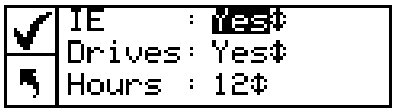
| Selection | Description/Result |
|---|---|
| **5** Press ▶ to highlight Execute (✔) and then press ◉.You can press ◉ at any time to cancel the test. The test begins. | |

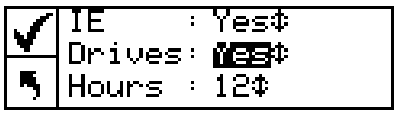
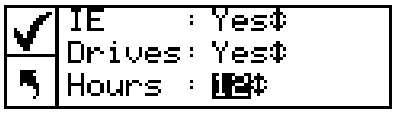
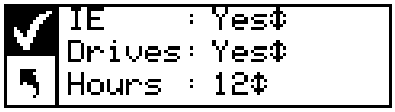
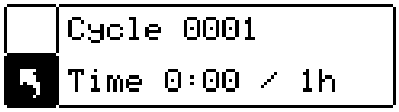
# Manufacturing Test

**Manufacturing Test** operates the robotics by moving tape cartridges from slot to slot. This test is used to verify that the library is functioning correctly.

Path:



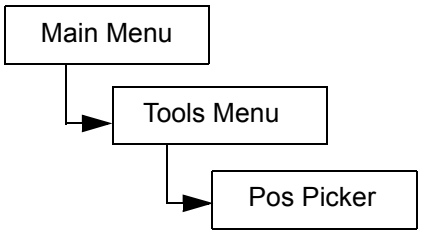

| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Tools** menu, highlight ⚙ and press ◉ . | Runs Manufacturing test. |
|  <br>**2** You will be prompted with a warning, press ◉ to continue the test. | ⚠ CAUTION: This test will move your tapes and may change your inventory information by not replacing tapes in the same locations. |
|  <br>**3** Press ▲ and ▼ to select/deselect the I/E slot. | Available options are:<br>• **yes:** includes the I/E slot in the tape swap cycle<br>• **no:** does not load or unload a tape to the I/E slot |
| **4** Press ▶ to move to the next option. | |

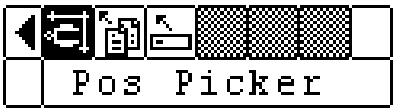
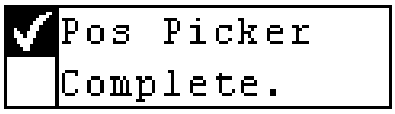
| Selection | Description/Result |
|---|---|
|  <br><br>**5** Press ▲ and ▼ to select/deselect the Drives slot. | Available options are:<br>• **yes:** allows loads and unloads to the drives<br>• **no:** does not load or unload tapes to the drives |
| **6** Press ▶ to move to the next option. | |
|  <br><br>**7** Press ▲ and ▼ to select the number of Hours to run the manufacturing test. | You can choose between 0 and 72 hours. |
|  <br><br>**8** Press ▶ to highlight Execute (☑) and then press ◎. | The Manufacturing test begins. |
|  <br><br>**9** A status screen will display the progress of the test. You can press ◎ at any time to cancel the test. | |
| **10** When the test is complete, a completion message is displayed. Press ◎ to dismiss. | |

# Position Picker

**Position Picker** allows you to move the picker inside the library to a specified location. If you need to remove a tape manually from the picker, you can position the picker to point to a slot in a magazine near the front door. If you need to remove a tape manually from the rear slots or drives, you can move the picker away from the slot you need to access.

Path:

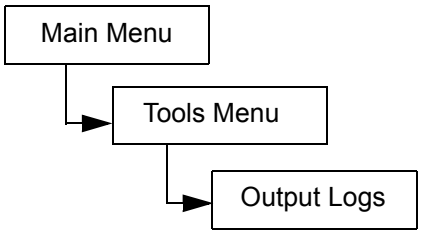



| Selection | Description/Result |
|---|---|
|  **1** From the **Tools** menu, highlight and press . | |
|  **2** Press ▲ and ▼ to select the target slot to move the picker to. | **TGT** = Target slot to position the picker in front of. |
|  **3** Press ◀ to highlight Execute (✓) and then press . | The picker moves to the specified position. |
|  **4** When the picker is positioned, a completion message is displayed. Press to dismiss. | |

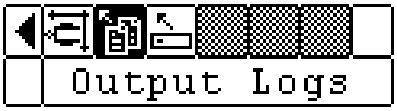
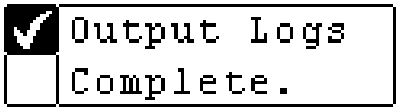
# Output Logs

**Output Logs** exports the log files to the serial port. If you are having problems with your library, you may be asked to output the logs and send them to Technical Support to analyze.

Path:



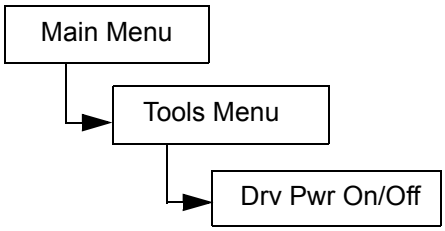

Output logs are downloaded over the Web interface to a log file that can be saved to disk and e-mailed to ATAC technical support. For more information see Using the Remote Management Unit on page 53.

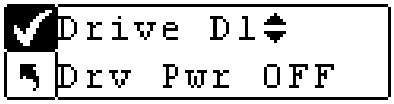
| Selection | Description/Result |
|---|---|
|  <br>1 From the **Tools** menu, highlight and press . | Outputs logs. |
|  <br>2 When the output is complete, a completion message is displayed. Press to dismiss. | |

## Drive Power On/Off

**Drive Power On/Off** either prepares a drive to be removed or reactivates a drive once it is installed. If you are removing a drive, the drive will be taken offline and will not be available for use.

Path:



| Selection | Description/Result |
|---|---|
|  <br>**1** From the **Tools** menu, highlight and press . | Prepares a drive to be removed/replaced. |
|  <br>**2** Press ▲ and ▼ to select the drive you wish to remove. | |
|  <br>**3** Press to highlight Execute (✓) and then press . | The drive is ready to be removed/replaced. |

# 10

# Troubleshooting and Diagnostics

This chapter contains some general suggestions to aid you in solving problems.

## Installation Problems

Usually, problems encountered during the installation of your Scalar 24 are caused by improper SCSI bus configuration application software configuration errors or by an OS that has not been correctly configured. If the application software that you are attempting to use is not communicating with your library after installation, check the following:

| | |
|---|---|
| SCSI IDs: | Make sure that the IDs you selected for the Scalar 24 robotics and tape drive are not the same as the ID used by any other SCSI device on that bus, including the host SCSI adapter card. |
| SCSI Cabling: | Verify that all SCSI cables are securely connected at both ends and that the jack screws are secured. Also, check the length and integrity of your SCSI cabling. The total length of a SCSI bus must not exceed 12 meters (39.4 feet). Replace suspect cables with known good cables.<br>NOTE: The length of the internal SCSI cabling inside your Scalar 24 is one foot for each drive. This length must be included in any calculations of bus length. |
| Termination: | Check that all SCSI buses are properly terminated. |
| Compatibility: | Ensure that your Scalar 24 and its tape drive(s) are compatible with the SCSI adapter card and application software you plan to use. |
| **SCSI Adapter Card Installation:** | Verify that you have installed your SCSI adapter card correctly. Refer to the documentation that came with your card for installation and troubleshooting instructions. Pay particular attention to any steps describing the settings of various jumpers and/or switches on the card. Check that the card is seated fully in the I/O connector. |

NOTE: For a list of compatible SCSI adapters and application software, check with your application software vendor.

| | |
|---|---|
| **Application Software Installation:** | Refer to the documentation included with your software for instructions on how to verify installation. |

# Scalar 24 Error Messages

If an error occurs during the operation of your Scalar 24, an error message will be displayed on the operator's display. The following table lists the error messages you may encounter and recommended actions.

| SAC Code | Error Message | Description | Recommended Action |
|---|---|---|---|
| 00h | Unknown Error<br>Call Service | An unexpected error has occurred. | Capture the support and error logs and provide them to service. |
| 01h | OS Error<br>Reboot System | Operating System Error | Reboot the system. If the problem persists, capture the support and error logs and contact ATAC. |
| 02h<br><br>03h<br><br>04h | Z80 Error<br>Call Service<br>OCP Error<br>Call Service<br>XA Error<br>Call Service | A robot controller, OCP controller board, or XA main controller board hardware problem exists which requires replacement. | Contact ATAC. |
| 05h | SW Error<br>Call Service | Application Software (firmware) Error | Reboot the system. Capture the support and error logs and contact ATAC. |
| 10h | SN Missing<br>Call Service | The system serial number is missing in NVRAM. The system cannot go online if a serial number is not entered. This problem may occur if the main board has been exchanged or NVRAM has been corrupted either due to a code problem or due to a bad NVRAM chip. | Contact ATAC. Be prepared to provide the serial number, attached on a label inside the library under the right magazine and any OEM vendor and product information, so that entry of the serial number can be verified. |
| 15h | Scanner Error<br>Call Service | The barcode scanner is not functioning properly. | Reboot the system. If the problem persists, contact ATAC. |

| SAC Code | Error Message | Description | Recommended Action |
|---|---|---|---|
| 16h | Barcode Error Check Tape | The scanned barcode is incorrect for your current configuration. This is most likely the result of a missing or unreadable barcode or a barcode length that does not match the mode you have configured (such as Default, Media ID, or Extended). | Check barcode scanner configuration. See Configure Barcode Scanner on page 91 for more information. |
| 38h and 39h | RMU Problem Check RMU | The RMU has reported an error to the library. | Make sure the RMU is configured correctly, is operational, and is accessible on the network. |
| 3Ah | SNC Problem Check SNC | An error has been sent to the library from the SNC. | Check the SNC. If the problem persists, contact ATAC. |
| A2h | SNC Com Error Check SNC | There is a communication problem between the library and the SNC. | Check the SNC. Reboot the system. If the problem persists, contact ATAC. |
| A0h | RMU Com Error Check RMU | The library firmware was able to communicate with the RMU, but did not detect any communication for more than 10 minutes. The RMU may have been removed or somehow has become non-operational. | Reboot the system. If the problem persists, contact ATAC. |
| 40h | CFG Mismatch Call Service | The firmware detects that the code configuration does not match the hardware configuration. This may happen when the wrong firmware is loaded (for example, an LTO code image is loaded to an SDLT system). | Reboot the system.If the error persists, contact ATAC and provide them with the system model and firmware version. |
| 7Eh | Media Error Eject Tape | The media in the drive is worn out or has a buckle error. | Replace the cartridge. |
| 70h, 81h, and 82h | Picker Error Reset System | The picker was unable to perform a requested command. | Ensure that the picker path is clear and that cartridges are properly inserted into storage and I/E slots, as well as drive locations.<br>Reboot the system. If the problem persists, contact ATAC. |

| SAC Code | Error Message | Description | Recommended Action |
|---|---|---|---|
| 90h | Drive Error<br>Check Drive | Communication to a drive is not working, the drive is not initializing, or the drive is reporting a problem. | Reboot the system. If the problem persists, remove the drive and re-install it. If the problem still persists, contact ATAC, you may need to exchange the drive. |
| 92h | DRV Invalid<br>Call Service | Invalid drive firmware | Reload drive firmware or call ATAC. |
| 94h | Drive Media Error | Indicates drive media error | Remove the suspect tape |
| EAh | Sled Missing<br>Check Sled | A drive sled has been removed or is not connected properly. | Re-insert the sled or check the connections. |
| D0h | PS Failure<br>Call Service | A library power supply failed or is not operating within specified ranges. | Reboot the system. If the problem persists, contact ATAC. |
| F0h | Fan Failure<br>Call Service | A library or drive fan failed. | Prevent the system from becoming too hot and either turn off the library or remove the drive with the bad fan. Contact ATAC. |
| 80h and E0h | Obstruction<br>Check Picker | The picker has reported a move failure, which may be caused by an obstruction of the picker, such as: partially extended tapes into the picker path; an ejected tape from a drive; or a tape within the picker partially extending out of the picker. | Try to clear the obstruction. Contact ATAC. |
| E7h<br><br>E8h | Pick Failed<br>Clear Picker<br><br>Place Failed<br>Clear Picker | The picker could not get or put a tape. Typically this means a tape is still partially in the picker. | Remove the tape from the picker. For more information, see Manual Removal of a Tape From the Picker on page 47. |
| E9h | Tape Recovered to Cell X | Informational message that indicates that a tape had been detected in the picker assembly and was placed in a slot location (X) to free the picker and make it operational. | Make sure that the tape belongs in the location it was placed. You may have to use the Move Media function to move the tape to the proper location. |

| SAC Code | Error Message | Description | Recommended Action |
|---|---|---|---|
| E2h | Security Alert Check Door | The system has detected operator interference, such as an open door and magazine removal, or a host has issued a PREVENT MEDIA REMOVAL and a tape has been inserted or removed from the I/E slot. | Check and ensure that magazines are installed, the door is closed, and that the I/E slot is empty. |
| E3h, E4h, E5h, and E6h | SCSI Error Check SCSI | A SCSI connection problem has been detected. | Make sure the cables are connected correctly, the bus type, LVD is connected correctly, and the proper terminator is applied. |
| F5h | Clean Needed Check Drive X | A drive has been cleaned, but still requires cleaning. The cleaning tape may not function properly, may be expired, or the drive may be defective. | Retry the clean operation. |
| F6h | Tape Expired Eject Slot X | A cleaning tape is expired. | Export the cleaning tape and insert a new one. |
| F7h | No Clean Tape Insert Tape | A cleaning operation was attempted, but a cleaning tape is not configured, expired, or not available. | Insert a cleaning tape into the I/E slot or configure a cleaning slot and import a cleaning tape into that slot. |
| F8h | Tape Missing in Slot X | A previously configured cleaning tape is no longer found. It may have been removed manually, loaded in a drive, or placed in a data slot. | Place the tape back into the slot. |

# Vital Product Data Recovery

The Vital Product Data feature allows library settings to be automatically stored on the RMU. The feature prevents customized settings, such as slot configurations, from being lost when the main board is replaced. This feature works with LTO drive types only.

# Environmental Considerations

For best performance of your Scalar 24, and to minimize the chance of condensation, please observe the following guidelines:

- Install your Scalar 24 on a level surface. Do not place the Scalar 24 on a carpeted surface.
- If you expose cartridges to temperatures outside the operating limits, (see Specifications), stabilize them by leaving the cartridges in the operating temperature for a minimum of two hours before you use them.

- Avoid temperature problems by ensuring that the Scalar 24 front and rear panels are not obstructed so that the drive has adequate ventilation.
- Position the Scalar 24 where the temperature is relatively stable (that is, away from open windows, fan heaters, and doors).
- Avoid leaving cartridges in severe temperature conditions, for example, in a car standing in bright sunlight.
- Avoid transferring data (reading from and writing to cartridges) when the temperature is changing by more than 10° C (15° F) per hour.

# Contacting Customer Assistance

Before calling ATAC, follow these steps to take full advantage of your call:

- Review all documentation carefully. (Experience has demonstrated that most questions are answered in your documentation.)
- Be prepared to explain whether the software or hardware has worked properly at anytime in the past. Have you changed anything recently?
- Pinpoint the exact location of your problem, if possible. Note the steps that led to the problem. Are you able to duplicate the same problem or is it a one-time occurrence?
- Note any error messages displayed on your PC screen or file server. Write down the exact error message.
- If at all possible, call while at your computer, with ADIC 's Scalar 24 installed and turned on.
- If running on a network, have all relevant information available (i.e. type, version #, network hardware, etc.).
- Be prepared to provide:
    - Your name and your company’s name
    - Model number
    - Serial number of the Scalar 24 (obtained from the operator panel or located inside the unit, under the right magazine)
    - Serial number of drive assembly (located on rear panel, above SCSI connectors)
    - Software version numbers
    - Device driver information
    - Host application name and version
    - Hardware configuration, including firmware versions, date, and number
    - Type of PC, DOS version, clock speed, RAM, network type, network version, and any special boards installed
    - A brief description of the problem
    - Where you purchased your ADIC Scalar 24

Having this information available when you call for customer assistance will enable ADIC Technical Assistance Center personnel to resolve your problem in the most efficient manner possible.


Note

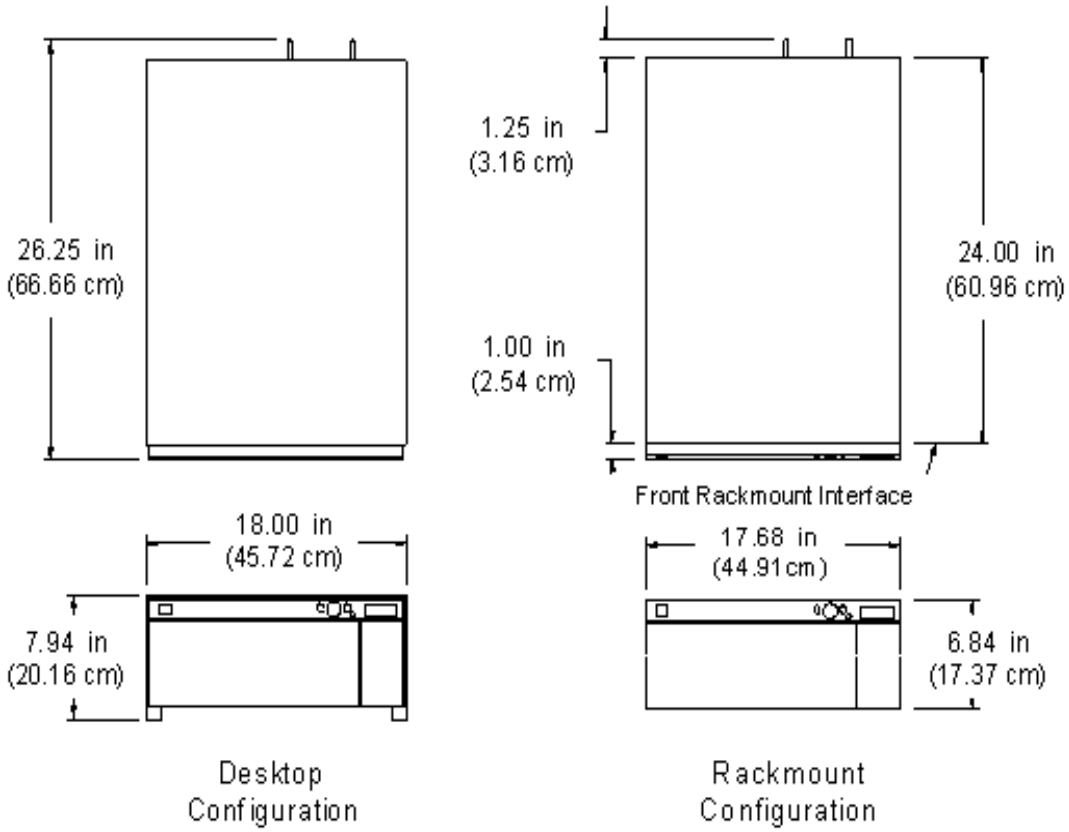
In the US and Canada, call ATAC at 1-800-827-3822. In Europe, call ATAC at +800.9999.3822.

# 11

# Specifications

The following tables provide specification information about the Scalar 24.

## Dimensions



# Weight

| | |
|---|---|
| Library with 1 drive | 46 lbs (20.9 kg) |
| Library with 2 drives | 54 lbs (24.5 kg) |

| | |
|---|---|
| Rackmount Library with 1 drive | 43 lbs (19.5 kg) |
| Rackmount Library with 2 drives | 50 lbs (22.7 kg) |

# Storage Slot Count

| | LTO | SDLT |
|---|---|---|
| Rear Tape Slots | 9 | 8 |
| Magazine Slots | 7 | 6 |
| Magazines per Library | 2 | 2 |
| Import/Export Slot (configured as a data slot) | 1 | 1 |
| Total Tape Slots | 24 | 21 |

# Library Storage Capacity

| | Tape Capacity | | Library Capacity | |
|---|---|---|---|---|
| | Uncompressed | Compressed | Uncompressed | Compressed |
| LTO-2 | 200 GB | 400 GB | 4.8 TB | 9.6 TB |
| LTO-1 | 100 GB | 200 GB | 2.4 TB | 4.8 TB |
| SDLT320 | 160 GB | 320 GB | 3.36 TB | 6.72 TB |

# Library Data Transfer Rates

| | Drive Transfer Rate | Uncompressed | | Compressed | |
|---|---|---|---|---|---|
| | | 1 Drive | 2 Drives | 1 Drive | 2 Drives |
| IBM LTO-2 | 35 MB/s | 126 GB/hr | 252 GB/hr | 252 GB/hr | 504 GB/hr |

| | | | | | |
|---|---|---|---|---|---|
| IBM LTO-1 3580 Ultrium | 15 MB/s | 54 GB/hr | 108 GB/hr | 108 GB/hr | 216 GB/hr |
| Quantum SDLT320 | 16 MB/s | 57.6 GB/hr | 115.2 GB/hr | 115.2 GB/hr | 230.4 GB/hr |

# Operating Time

| | |
|---|---|
| Average Cartridge Move Time | 13.6 seconds |

# Safety and EMC Standards

| | |
|---|---|
| Safety | CSA Standard CAN/CSA-C22.2 no. 950-95<br>UL Standard 1950, Third Addition<br>EN60950 |
| Emissions | FCC #47, Part 15, Subpart B, Class A;<br>ICES-003 (Canada);VCCI Class A (Japan);<br>BSMI CNS 13438 (Taiwan);<br>EN55022:1994; EN61000-3-2:2001;<br>EN61000-3-3:1998 (Europe);<br>AS/NZS 3548:1995 (Australia/NZ) |
| Immunity | EN 55024:1998 ITE – Immunity Characteristics, Limits & Methods of Measurement;<br>European Union CE Immunity Standards |

# Power

| | |
|---|---|
| Input Power | 100 – 240 VAC, 50-60 Hz |

| **Power Consumption Typical*** | **W** | **BTU/hr** |
|---|---|---|
| Library with RMU (no drives or SNC) | 36 | 122.8 |
| LTO-1 drive sled (each) | 84 | 286.6 |
| LTO-2 drive sled (each) | 66 | 225.2 |
| SDLT320 drive sled (each) | 73 | 249.1 |
| SNC4000 | 49 | 167.2 |
| SNC4501 | 17.4 | 59.4 |

*Power consumption is obtained using RMS values for voltage and current. Drive sled power consumption is taken while writing to a drive.

# Thermal Environment

| | Operating | Non-operating | Shipping & Storage |
|---|---|---|---|
| Dry Bulb Temperature | 10ºC to 38ºC (50ºF to 100ºF) @2000 M<br><br>10ºC to 33ºC (50ºF to 91ºF) @3000 M | 10ºC to 45ºC (50ºF to 113ºF) | -40ºC to 65ºC (-40ºF to 149ºF) |
| Temperature Variation | 3ºC (5.5ºF) per Minute Max | 3ºC (5.5ºF) per Minute Max | 3ºC (5.5ºF) per Minute Max |
| Wet Bulb Temperature | 29ºC (84ºF) Max | 32ºC (90ºF) Max | 37ºC (99ºF) Max |
| Relative Humidity | 10 to 90% | 10 to 90% | 10 to 95% |

# Acoustic

| Designation | Class 3C Table Top Unit |
|---|---|
| Upper Limit of Operating Sound Power[a] | 62 dB (6.2 Bels) |
| Upper Limit of Idle Sound Power[b] | 60 dB (6.0 Bels) |
| Maximum Operator Position Sound Pressure | 61 dB |

a. Operating is defined as exercising both robotic and tape drive components.
b. Idle mode is defined as the unit being powered on with no robotic or tape drive action.

# Library Interface

| | |
|---|---|
| SCSI | The library communicates through external HD 68 pin SCSI connectors on the Drive Module.<br>LVD/S |
| Fibre Channel | A Fibre Channel interface is provided in an optional Storage Networking Controller. It supports 50 Micron Multi-Mode Short-wave and 65 Micron Multi Mode Fibre. |
| Gigabit Ethernet | A Gigabit Ethernet interface is provided in an optional Storage Networking Controller. It supports 3-pair Cat 5e wiring. |

# Reliability

| | |
|---|---|
| MTBF<br><br>(Mean Time Between Failures) | 100,000 hours |
| MTTR<br><br>(Mean Time To Repair) | Less than 30 minutes |
| MSBF<br><br>(Mean Swap Between Failures)<br><br>(A swap is defined as a pick and a place followed by a pick and a place) | 500,000 swaps |

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