Scalar 24

Installation and Operation Guide

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Introduction

Safety

Description

Getting Started

Installing Optional Hardware

Frequently Asked Questions

Operation

Using the Menus

Troubleshooting and Diagnostics

Specifications

Introduction

This manual contains information and instructions necessary for the operation of the Scalar® 24 library.

Intended Audience

This guide is intended for general use by anyone interested in learning about or using the Scalar 24.

Document Organization

The section topics in this guide include:

- *Introduction* - Provides an overview of the contents of the manual.
- *Safety* - Describes the hazard symbols, messages, safety features, and operational considerations for the safe operation of the Scalar 24.
- *Description* - Provides general information about the Scalar 24 and its components.
- *Getting Started* - Describes the basic set-up procedures for your Scalar 24.
- *Installing Optional Hardware* - Describes the installation procedures for optional Scalar 24 hardware.
- *Frequently Asked Questions* - Provides a list of commonly asked questions and their answers.
- *Operation* - Describes normal operating procedures of the Scalar 24.
- *Using the Menus* - Describes the visual menus and commands executed by the Scalar 24.
- *Troubleshooting and Diagnostics* - Describes message processing and troubleshooting hints.
- *Specifications* - Provides specification information for the Scalar 24.

Associated Documents

The following documents are associated with this guide:

- ***Scalar 24 Quick Start Guide*** (6-00610-01 Rev. A)
- ***SNC 4000 User's Guide*** (62-2308-01 Rev. A)
- ***AMC 3.2 User's Guide*** (6-00064-01 Rev. B)

Explanation of Symbols and Notes

The following symbols and highlighted passages note important information:

Symbol	Damage to ...	Signal Word	Definition	Consequence
	Person	**WARNING:**	Imminent hazardous electrical situation	Death or serious injury
	Material	**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* • File name, e. g., *ERRORS.TXT*
Bold	• Special Term, e. g., **Utilities** • Operating element/key on the Operator Panel • Terms appearing on the Operator Panel
`Courier`	• State of the equipment,e.g., `ONLINE` • Switch position, e. g., `ON, OFF`

Assistance

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 if training is desired, 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

Scalar 24 Website

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.

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.

Intended Use

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.

Safeguards

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.

Precautions

- 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 10-1 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.

Protective Devices

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:	Advanced Digital Information Corporation PO Box 97057 Redmond, WA 98073-9757 USA (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.

Description

Congratulations on your purchase of the Scalar 24 library. 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. With a maximum compressed capacity of 6.72 TB of data storage (for SDLT, including import/export (IE) slot; 4.8 TB for LTO), the Scalar 24 can provide over one month of unattended backup and fits in only 4U (7 inches) of rack space.

Figure 1 Scalar 24

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 can be added for centralizing your data backup control. Finally, the Storage Networking Controller offers functionality such as 2 GB Fibre Channel, firewall, and third party copy capabilities.

The Scalar 24 is the next generation entry-level/mid-range product to meet the standards of ADIC customers. For additional information or questions not included in this manual, please visit us at our product website at **www.adic.com/scalar24**.

Features

The following features are standard with your Scalar 24:

Multi-function Operator Panel. The Operator Panel, located on the right above the IE 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 3-3 for more information. The Operator Panel is described in more detail in **Operator Panel Keypad** on page 7-1.

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 IE 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.

IE Slot. The IE 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 3-4 for more information. The IE 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 IE door and inserting the cartridge into the IE slot. The Operator Panel is then used to load the cartridge into another slot.

Reverse Cartridge Protection. The magazines, IE 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.

Optional Features

The following features are optional. Instructions for installing these features can be found in Installing Optional Hardware on page 5-1.

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 host operation through a web browser.

Storage Networking Controller (SNC). Provides a fibre channel interface to the host.

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.

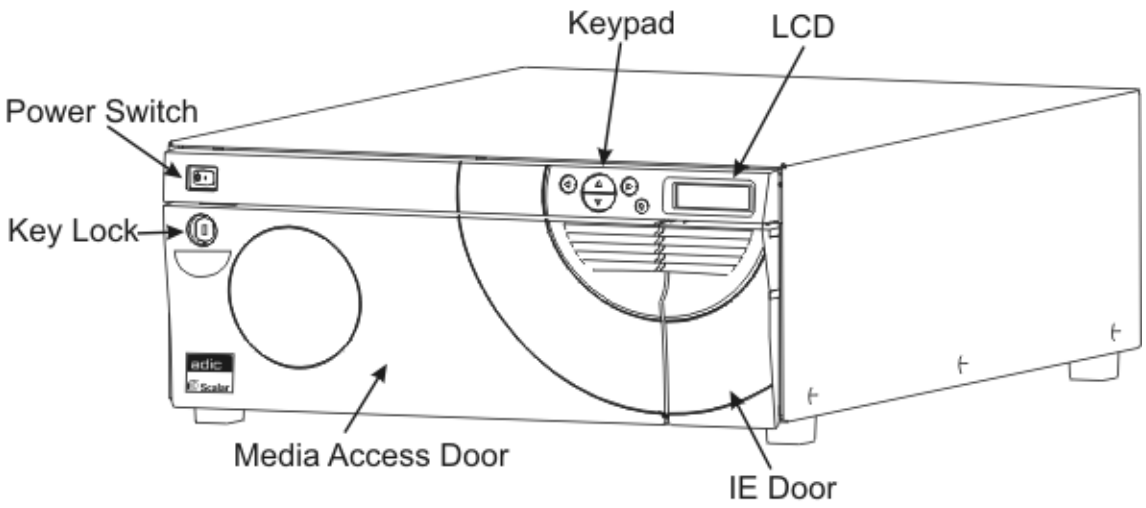


Figure 2 Front View

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.
IE Door	Door for access to the IE slot. The IE 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 IE doors of your Scalar 24:

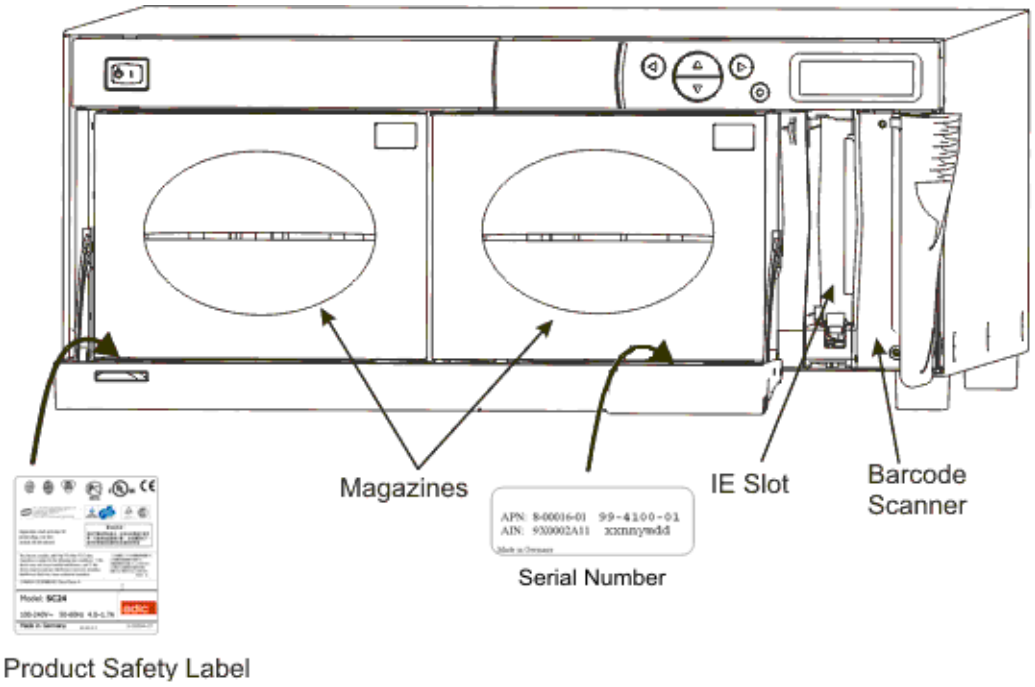


Figure 3 Interior View

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.
IE 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.

NOTE: Behind the magazines are nine fixed data slots.

Rear Panel Components

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

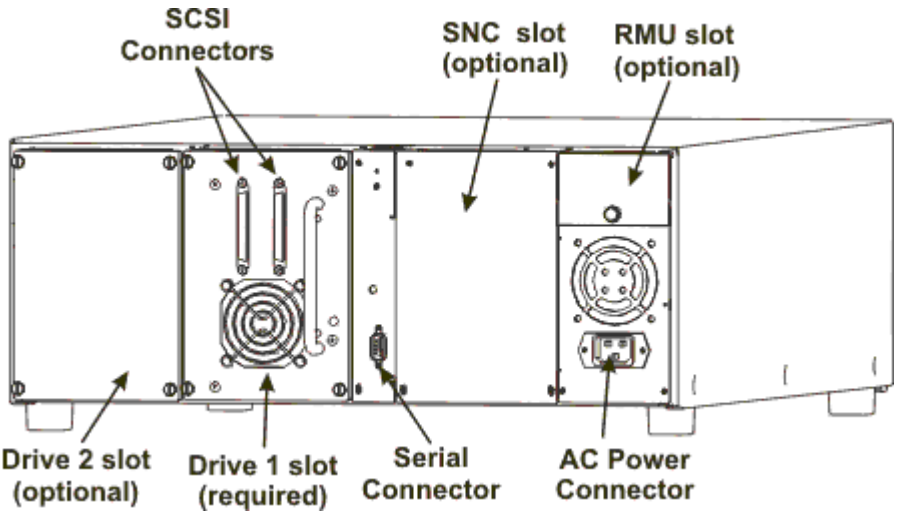


Figure 4 Rear View

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). The interface cable can be attached to either connector.
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 slot	Slot for optional, user-installable RMU that enables remote access to the library via a Web browser.
Storage Networking Controller (SNC) slot	Slot for optional SNC that provides a fibre channel interface.

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 10-1.

Media

The following media types are supported:

Media Type	Capacity	Transfer Rate
LTO (Linear Tape-Open)	200 GB (2:1 compression)	20 MB/second
SDLT (Super Digital Linear Tape)	320 GB (2:1 compression)	32 MB/second
DLT IV (Digital Linear Tape)[a]	80 GB (2:1 compression)	12 MB/second

a. DLT IV media can be used in the SDLT 320 drive as read only.

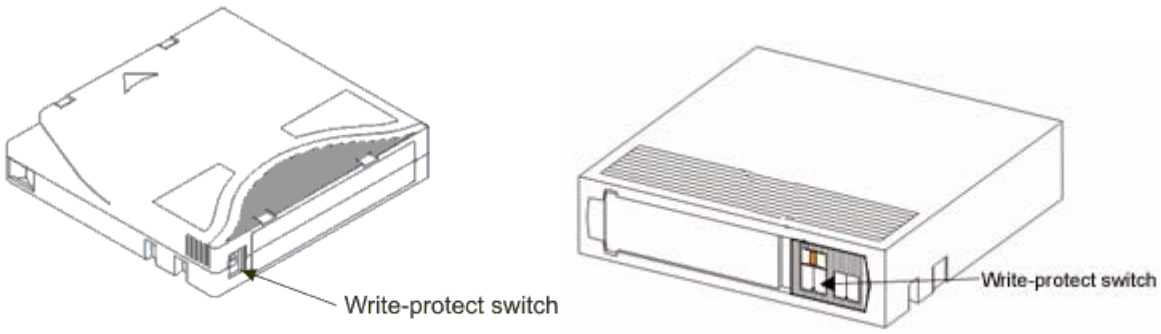


Figure 5 LTO and SDLT Data Cartridges

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.

Host Interface

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

The Scalar 24 can also be connected to a Fibre Channel Host Storage Area Network (SAN) via the optional Storage Networking Controller (SNC). The SNC converts fiber channel protocol to parallel SCSI protocol.

Other Requirements

The following are additional requirements for your Scalar 24.

SCSI Host Adapter

Your Scalar 24 must 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 your needs. If you are not sure about your host adapter requirements, please call ADIC's Technical Assistance Center (ATAC) and ask for assistance. The SCSI interface must be installed before you connect the Scalar 24.

SCSI 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. For information on installing the terminator, see **Connecting to a SCSI Bus** on page 4-2.

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.

Now you are ready to connect the Scalar 24 to your host computer. Follow the instructions provided in **Getting Started** on page 4-1.

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
- 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.

Complete either the written registration card or register the product on the ADIC website at www.adic.com. The serial number is available through the Operator Panel or is alternately available on the inside your Scalar 24, below the right magazine. (You will need to remove the magazine to view the label.)

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 6 ft. SCSI cable with HD/68-pin connectors
- One 1 ft. SCSI cable (dual drive version only)
- Active 68-pin SCSI bus terminator
- One data cartridge
- One cleaning cartridge
- Two keys for the front door
- Installation and Operation Guide CD-ROM
- Quick Start Guide
- Warranty Registration card

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

Installing 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 5-1.

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:

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

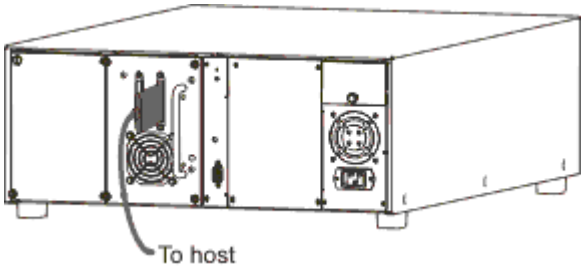


Figure 1 SCSI cable connected to Scalar 24

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

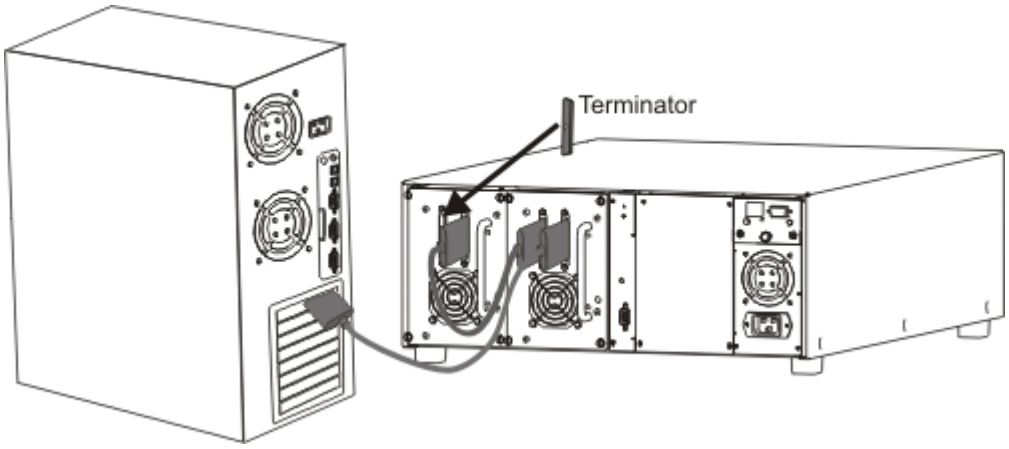


Figure 2 SCSI cable connected to host computer (two drive library)

Step 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.

Step 4 Terminate the last device in the chain.

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

Step 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 8-21.

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

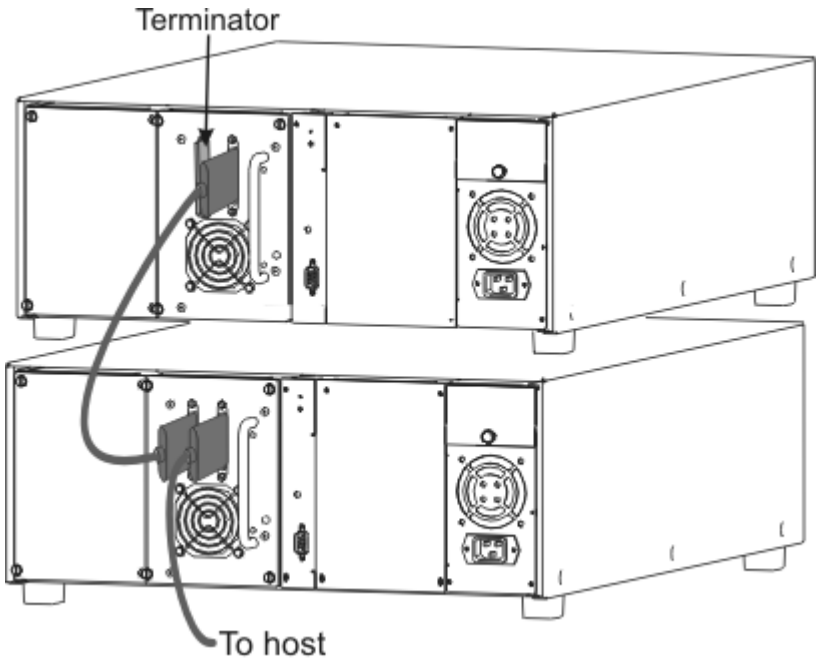


Figure 3 Daisy-chained units

NOTE: It is recommended that you do not daisy-chain more than three Scalar 24s together or data transfer rate may be reduced.

Connecting the Power Cord

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

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

Step 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.

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

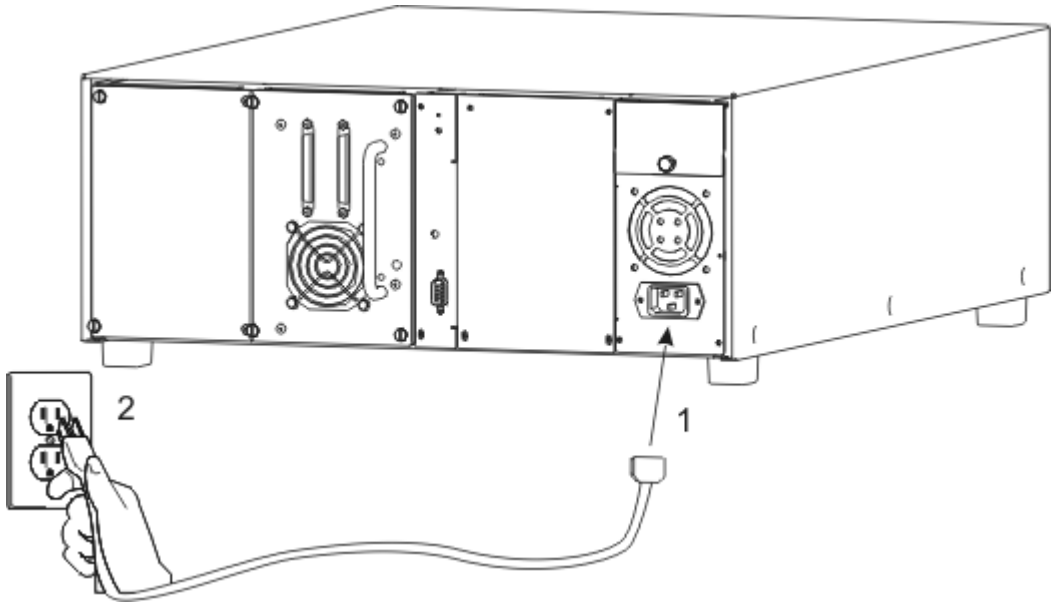


Figure 4 Connecting the power cord

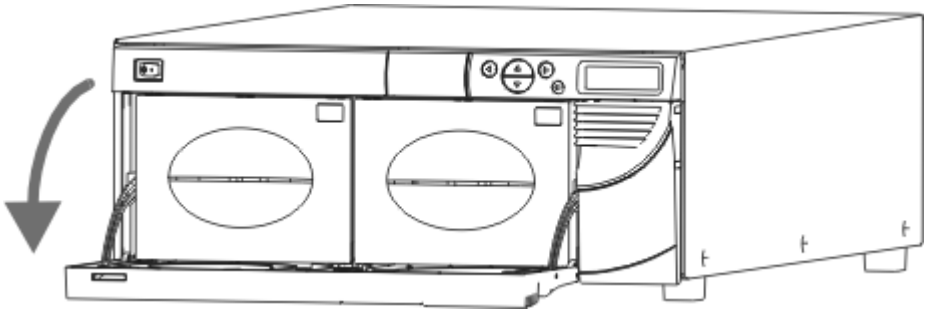
CAUTION: Ensure that the AC line cord from the library is plugged directly into the socket. Extension cords should not be used.

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.

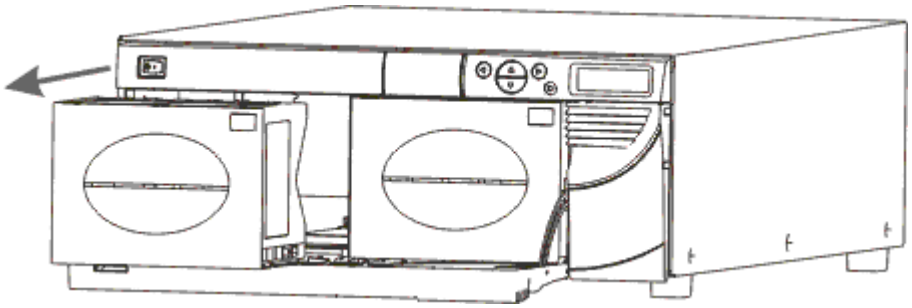
Follow the procedure below to insert data cartridges.

Step 1 Open the media access door.

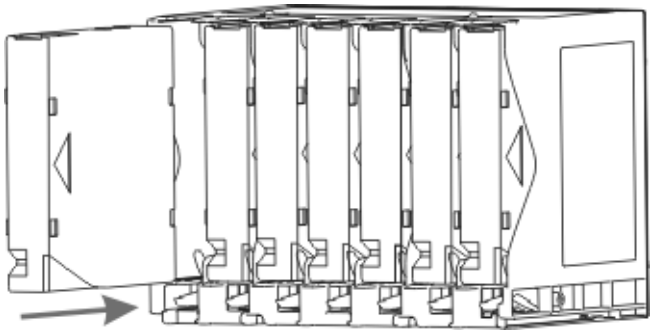


Step 2 Insert your fingers in the magazine handle and slide out the magazines.

NOTE: You may need to pull firmly to remove the magazines.



Step 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 7-4.



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

NOTE: You will need to push firmly to fully insert the magazines.

Step 5 Close the media access door.

Refer to **Bulk Load** on page 8-46 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 8-43 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:
IE 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.
Library SCSI ID	6	
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 9 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 8-4 or Setup Menu on page 8-3.

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 Windows 2000 native backup, ensure that the proper drivers for the library and drives are installed. Under 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.

ADIC Scalar 24 Library Driver Installation

Step 1 Connect the library to the host and restart the machine.

Step 2 Insert the *Scalar 24 Installation and Operation Guide* CD-ROM into the CD drive.

Step 3 Start the Windows® 2000 Device Manager.

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

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

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

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

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

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

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

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

Required files will be installed for the driver now.

Step 12 Click **Finish**.

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

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

ADIC Scalar 24 LTO Tape Driver Installation

Windows 2000 Driver File Installation

Step 1 Start the **Windows 2000 Device Manager**.

Step 2 Find the **IBM ULTRIUM-TD1 SCSI Sequential Device** in the device manager.

Step 3 Right-click on the **IBM LTO** tape drive.

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

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

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

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

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

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

Required files will be installed for the driver now.

Step 10 Click **Finish**.

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

Step 12 In **Device Manager**, make sure that the *IBM ULTRIUM-TD1 SCSI Sequential Device* is listed under **Tape Devices**.

Windows NT 4.0 Driver File Installation

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

Step 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.

Step 3 Click the **Drivers** tab.

Step 4 Click the **Add** button.

Step 5 Click the **Have Disk** button.

Step 6 Type **x:\drivers\LTO**

Step 7 Click the **IBM Ultrium Tape Drives (OEM)** entry and click the **OK** button.

Step 8 When the **New SCSI Tape Device Found** dialog box appears, click its **OK** button.

Required files will be installed for the driver now.

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

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

Step 11 Restart the host server or workstation.

Step 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.

ADIC Scalar 24 SDLT Tape Driver Installation

Windows 2000 Driver File Installation

Step 1 Start the **Windows 2000 Device Manager**.

Step 2 Find the **Quantum SDLT drive** in the device manager.

Step 3 Right-click on the **Quantum SDLT** tape drive.

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

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

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

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

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

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

Required files will be installed for the driver now.

Step 10 Click **Finish**.

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

Step 12 In **Device Manager**, make sure that the *ADIC Scalar 110T SDLT 320* is listed under **Tape Devices**.

Windows NT 4.0 Driver File Installation

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

Step 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.

Step 3 Click the **Drivers** tab.

Step 4 Click the **Add** button.

Step 5 Click the **Have Disk** button.

Step 6 Type **x:\drivers\SDLT**

Step 7 Click the **Quantum DLT/SDLT Driver for NT4 - Ver 2.0** entry and click the **OK** button.

Step 8 When the **New SCSI Tape Device Found** dialog box appears, click its **OK** button.

Required files will be installed for the driver now.

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

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

Step 11 Restart the host server or workstation.

Step 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.

NOTE: Refer to **www.adic.com** for the latest device drivers and to obtain ISV device driver upgrades.

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

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.

Step 1 Remove the drive module from the packaging.

Step 2 Power down the Scalar 24 and disconnect the AC line cord from the AC source outlet.

Step 3 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.

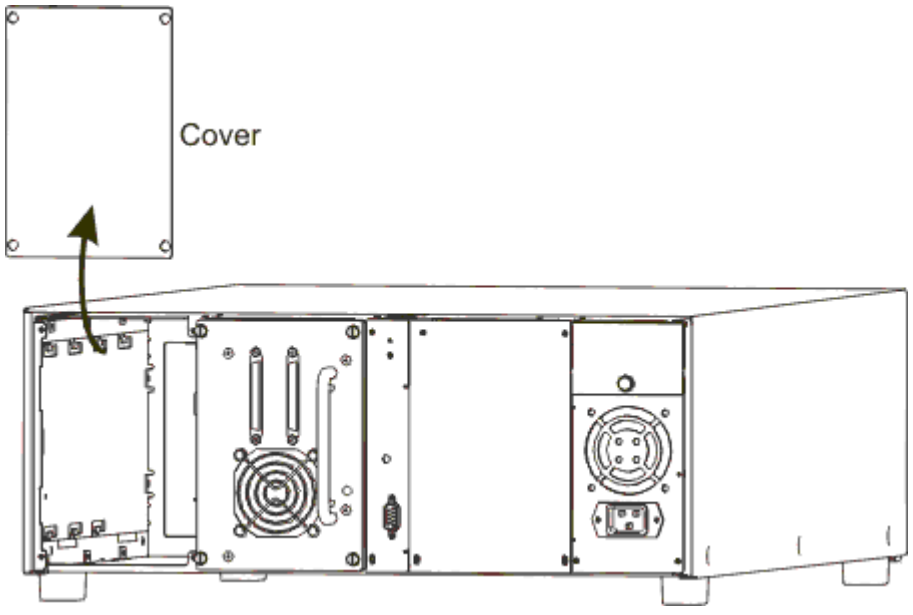


Figure 1 Drive module cover plate removal

Step 4 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.

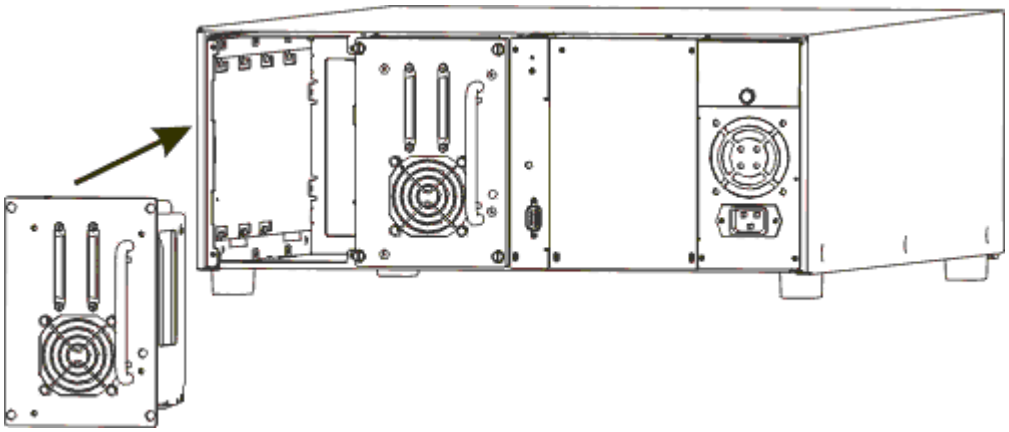


Figure 2 Drive module installation

Step 5 Tighten the four thumbscrews. Make sure the rear plate is flush with the chassis and all screws are fully tightened.

Step 6 Connect the SCSI bus cable to the drive sled SCSI connector.

Step 7 Connect the second SCSI cable or SCSI terminator if the device is last on the SCSI bus.

Step 8 Plug the power cord into a grounded electrical socket.

Step 9 Power up the library. When the library is online, power up the host.

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 8-21.

Installing the Remote Management Unit

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

Step 1 Remove the RMU from the packaging.

Step 2 Power down your Scalar 24 and disconnect the AC line cord from the AC source outlet.

Step 3 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.

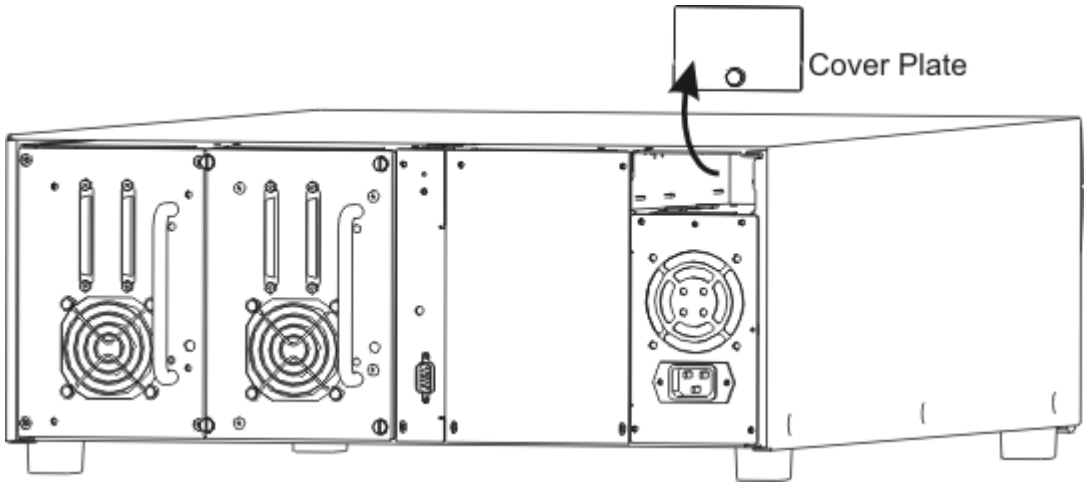


Figure 3 RMU cover plate removal

Step 4 Slide the RMU into position and tighten the thumbscrew.

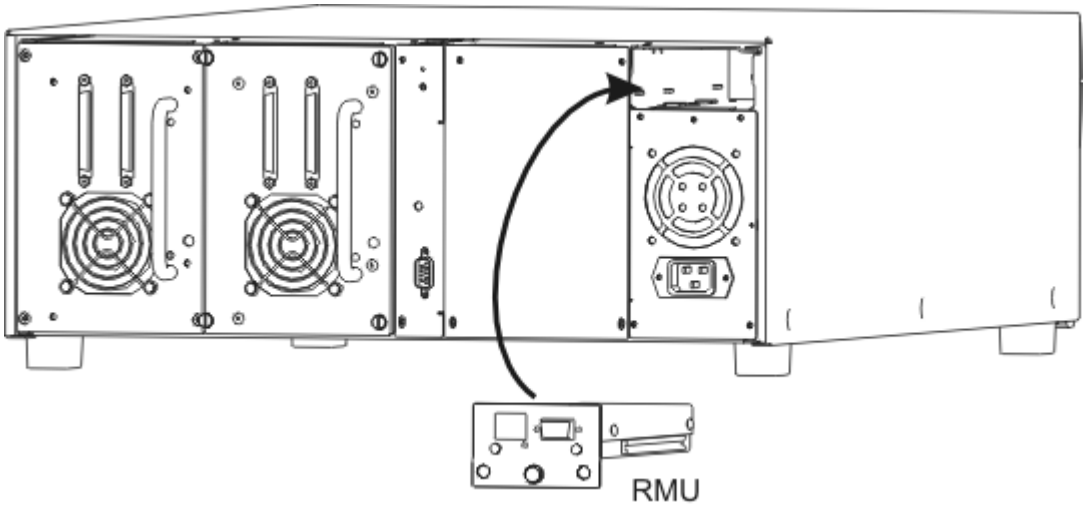


Figure 4 RMU module installation

Step 5 Plug the power cord into a grounded electrical socket.

Step 6 Power on the Scalar 24.

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 8-4 or **Configure RMU** on page 8-28.

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 104° F (40 ° 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

Step 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.

Step 2 Remove the rackmount assembly from packaging.

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

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

Step 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.

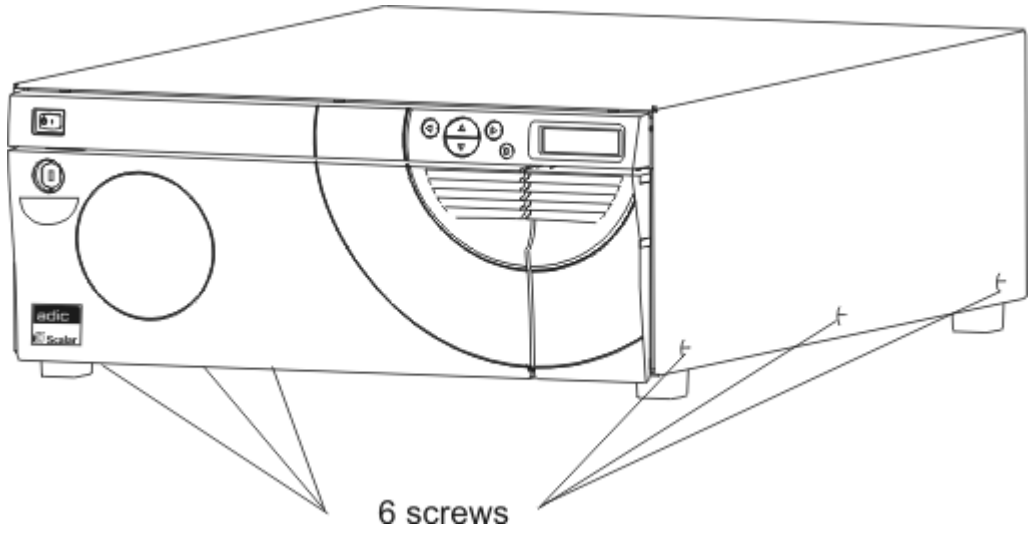


Figure 5 Cosmetic cover removal

Step 6 Using a #1 Philips screwdriver, remove the cosmetic feet by removing the two screws on each foot.

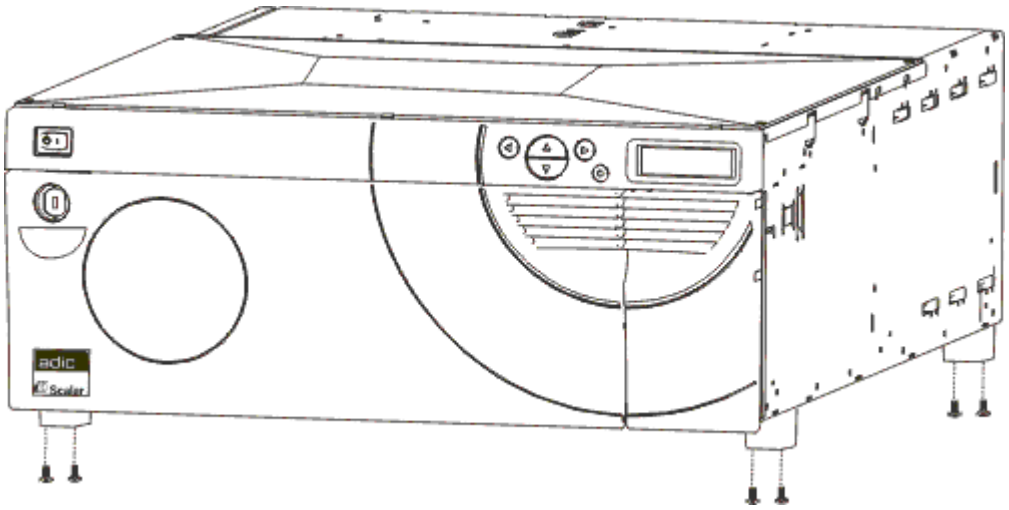


Figure 6 Foot removal

Step 7 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.

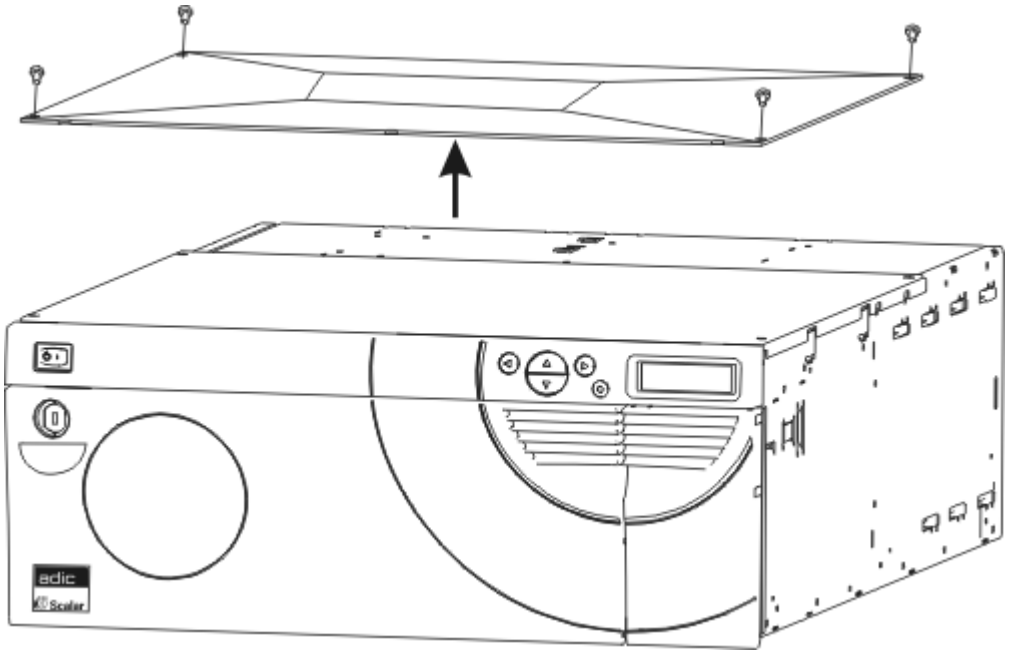


Figure 7 Interior front support plate removal

Step 8 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.

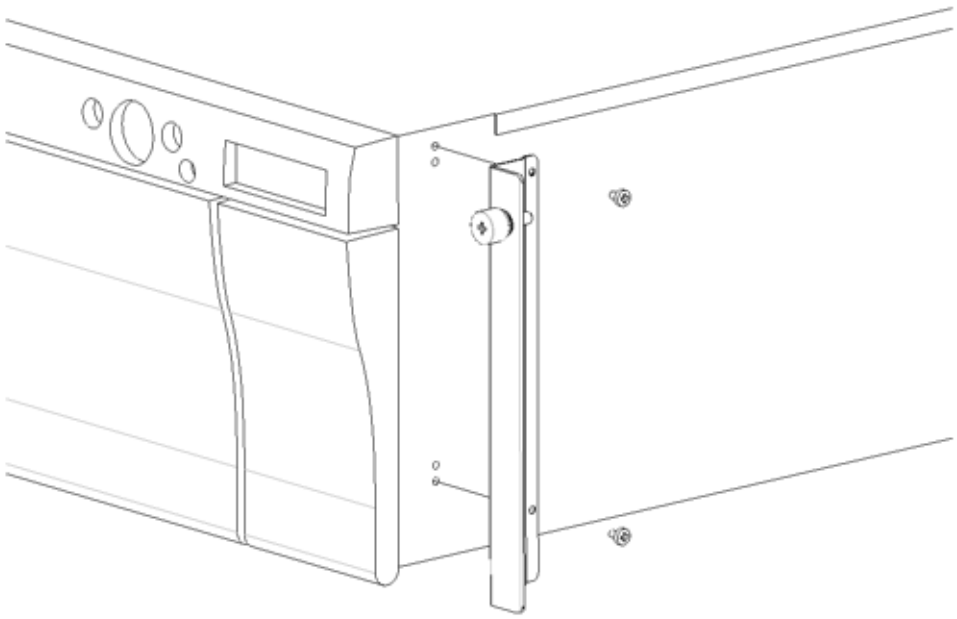


Figure 8 Attaching securing brackets

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

Step 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.

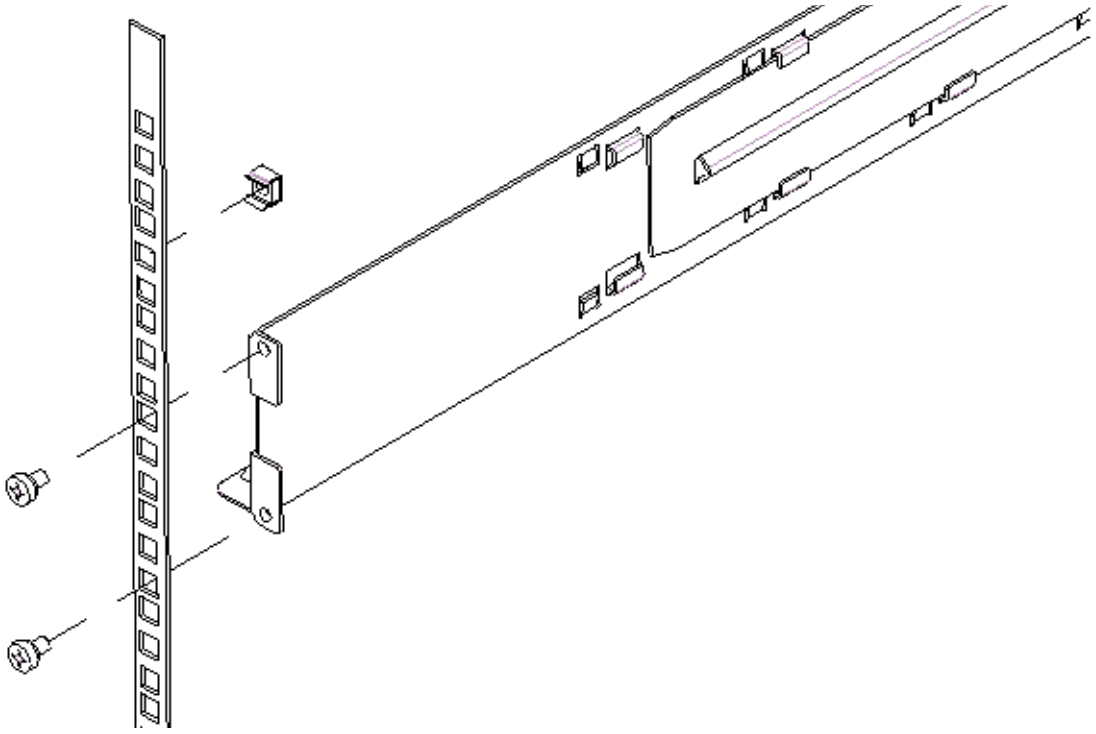


Figure 9 Attaching rails to front of rack

Step 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.

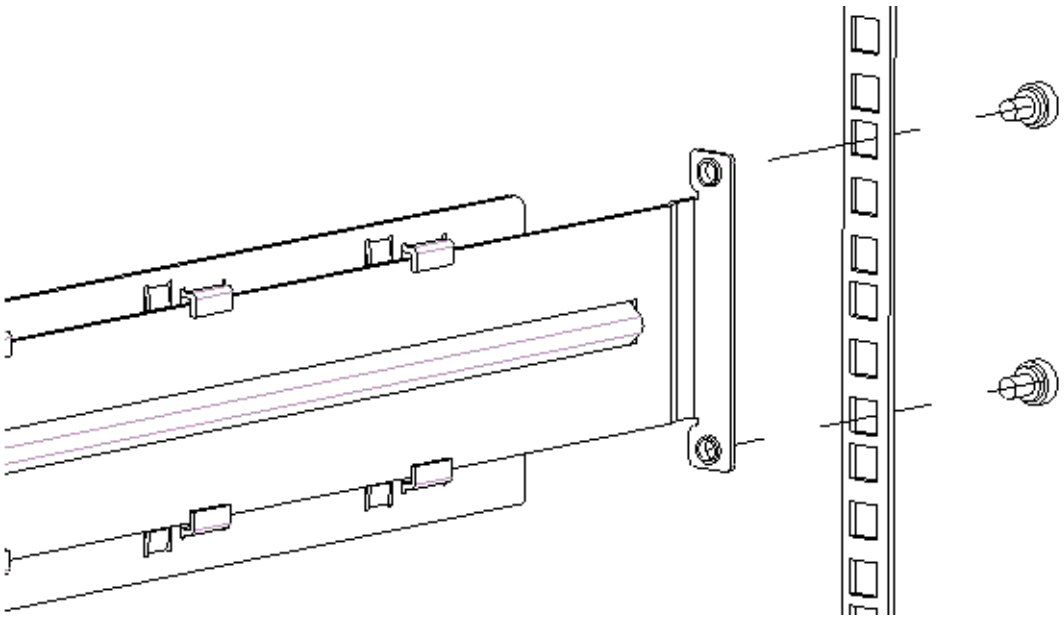


Figure 10 Attaching rails to rear of rack

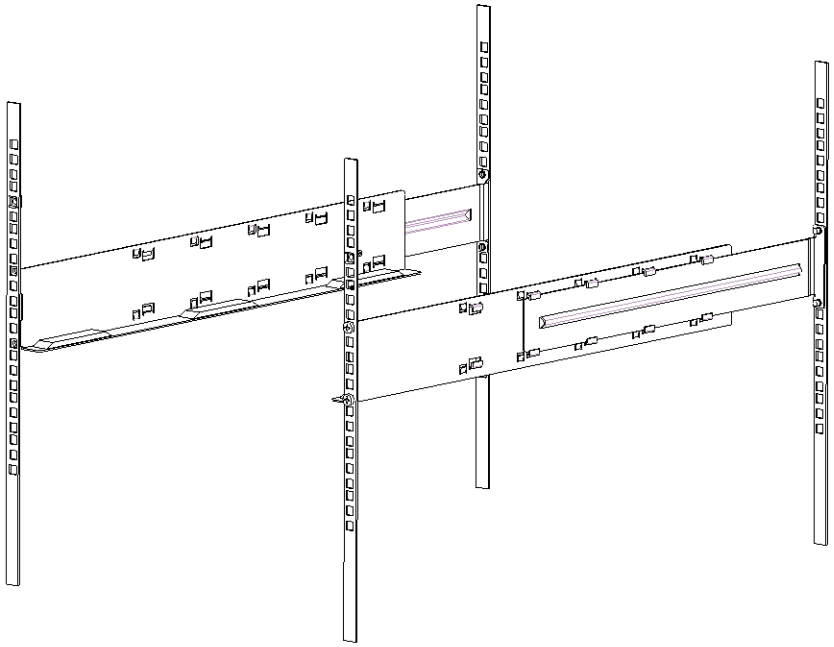


Figure 11 Fully assembled rackmount hardware

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

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

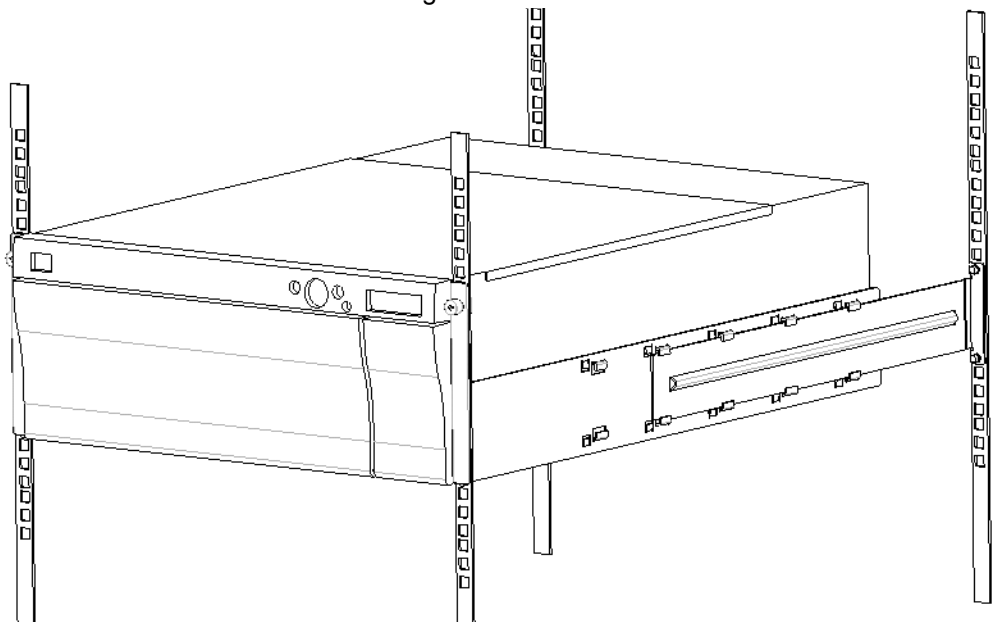


Figure 12 Scalar 24 in rack

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

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

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

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

Step 18 Power on the Scalar 24.

Installing the Storage Networking Controller

The Storage Networking Controller (SNC) provides a fibre channel interface to the host. Follow the procedure below to install the SNC.

Step 1 Remove the SNC from the packaging.

Step 2 Power down your Scalar 24 and disconnect the AC line cord from the AC source outlet.

Step 3 From the rear of the Scalar 24, locate the available SNC 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 SNC is ever removed.

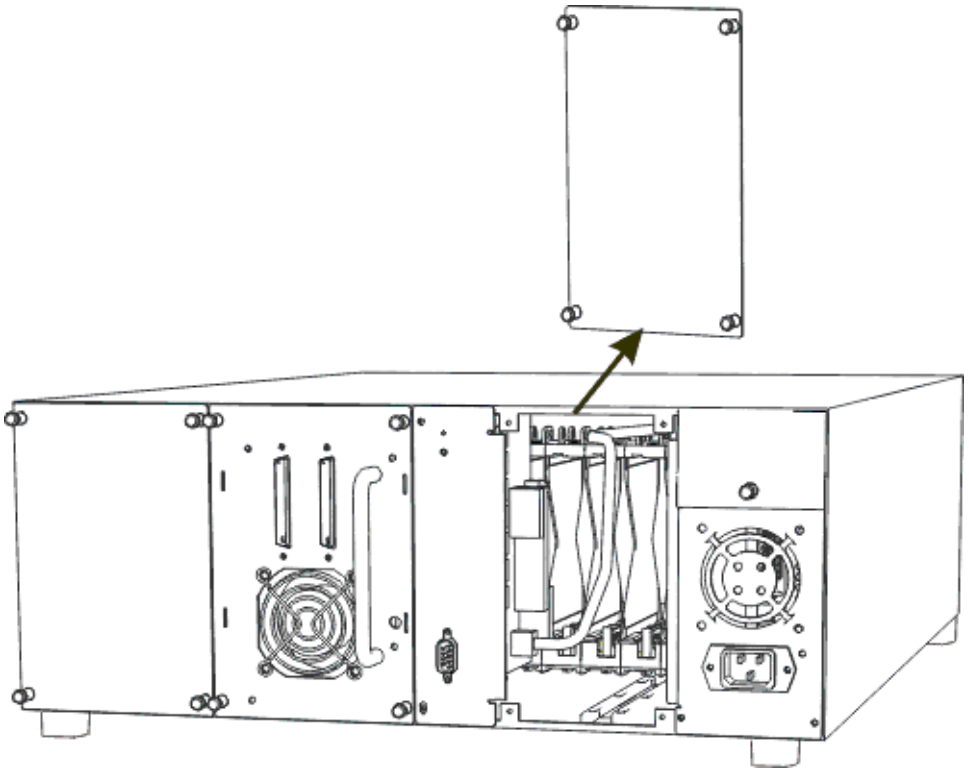


Figure 13 SNC cover plate removal

Step 4 Slide the SNC into position and until it mates with the connector then tighten the thumbscrews.

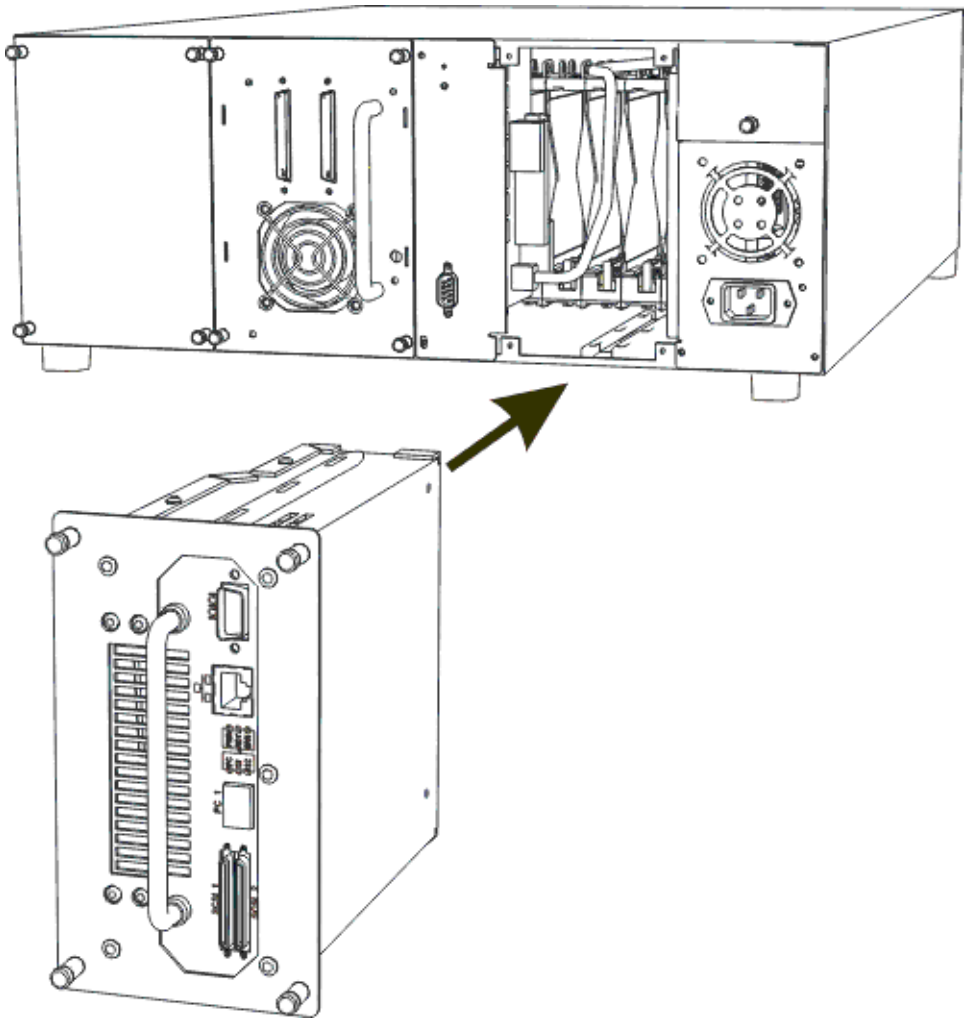


Figure 14 SNC installation

Step 5 Plug the power cord into a grounded electrical socket.

NOTE: For complete instructions on installing and configuring your SNC, please refer to the ***SNC 4000 User's Guide***.

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 8-4. You can also configure your Scalar 24 manually by using the **Setup** menu. Refer to Setup Menu on page 8-3 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 8-21.

What type of SCSI card is required?

The Scalar 24 supports a Low Voltage Differential/Single-Ended (LVD/SE) 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 4-2.

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 4-2.

What type of terminator is required?

Your Scalar 24 comes with a compatible terminator. The Scalar 24 is a LVD/SE SCSI device, so only use an LVD/SE 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 4-2.

Where are the drivers located?

Drivers for your Scalar 24 can be found on the CD-ROM in the *drivers* directory. For the latest drivers, check the Scalar 24 website at **www.adic.com/scalar 24**. If you need assistance installing the drivers, please contact ATAC.

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 9-5.

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 8-74.

For more information on specific error messages, see **Scalar 24 Error Messages** on page 9-2.

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 8-55.

You can find drive and library firmware upgrades on the ADIC website at **www.adic.com**. 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 8-66.
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 **Firmware Dialog Example** on page 7-21.
AMC	If you have an ADIC Management Console (AMC) installed, you can upgrade SNC firmware from the AMC. For more information, refer to your ***AMC User's Guide***.

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 8-65.
- For information about autoclean, see **Configure Autoclean** on page 8-30.
- 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. **OR** The data cartridge may be damaged	Replace the cleaning cartridge. 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.

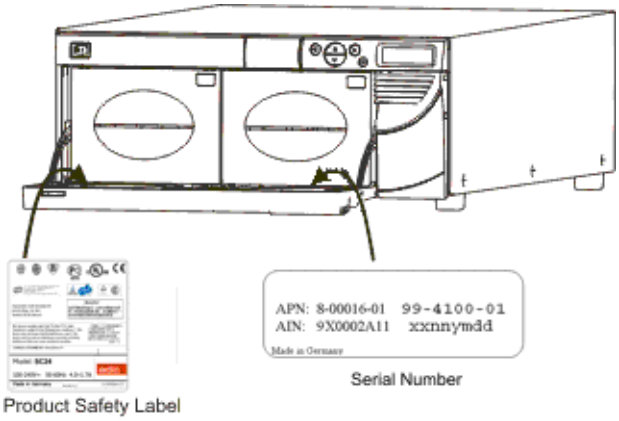
What is the life span of the cleaning tape?

Your Scalar 24 came with a cleaning tape. This tape should be used to clean the drive(s) of your Scalar 24 when the icon appears in the drive status field of the LCD.

When importing a cleaning cartridge, you will be asked to enter the number of times the cartridge can be used. An LTO cleaning cartridge can be used approximately 50 times. An SDLT cleaning cartridge can be used approximately 20 times.Your Scalar 24 will keep track of each time the cleaning tape is used and tell you when it has expired. For more information on cleaning the drive, see **Clean Drive** on page 8-65.

Where is the Serial Number located?

The Serial Number for your Scalar 24 can be found via the Operator Panel, refer to **Display Serial Number** on page 8-63. 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.



Product Safety Label

Serial Number

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 two different libraries. Partition 1 can operate in one of two modes: SCSI Mode or Sequential Mode. Partition 2 operates in Sequential Mode. The Scalar 24 allows you the flexibility to change the partition size, share the IE slot, as well as share cleaning tapes between partitions.

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. Optional one or two character media identifiers can be present but 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 8-32.

What format should I use for my barcodes?

The Scalar 24 currently supports Code 39 type barcode labels. For more information, see Barcode Labels on page 7-5.

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 goes out during a backup and then is restored, the library should recover and re-inventory. If power is still 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, the library should be 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 9-5 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

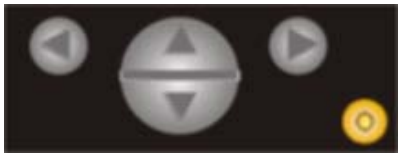
For the latest information and accessories on the Scalar 24, visit the product website at www.adic.com/scalar24. The most recent versions of all documents are also located here.

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.



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.

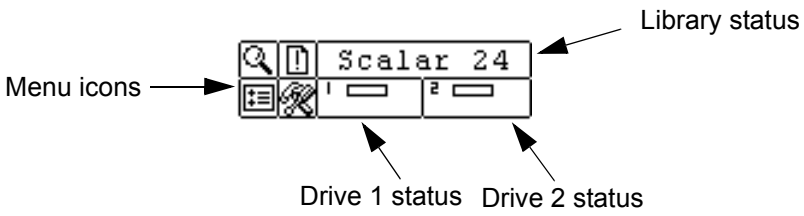


Figure 1 Main Menu icons

Menu Icons

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

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		SCSI ID (library)
	Display Sensor Status		Drive
	Errors		Inquiry
	Serial Number		Configure User Interface
	COMMAND Menu		Timeout
	Import Media		Password
	Import Data Media		Key Click
	Import Cleaning Media		Configure RMU
	Export Media		Configure Autoclean
	Export Data Media		Configure Scanner
	Export Cleaning Media		Reset Configuration
	Dismount Drive		TOOLS Menu
	Move Media		Clean Drive
	Bulk Load Media		Load Firmware
	Bulk Unload Media		Demo Test
	Sequential Mode		Self Test
	Start Loop		Drive Maintenance
	Start Single		Manufacturing Test
	Stop		Position Picker
	Resume		Output Logs
			Replace Drive

Drive Status Icons

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

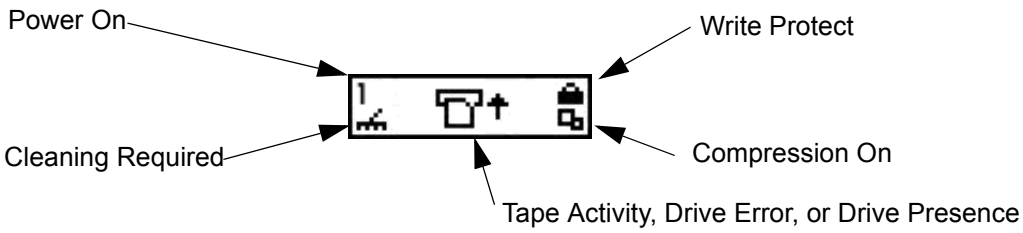


Figure 2 Drive Status Icons

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 7-4.
!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 (LTO, SDLT).
	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, the library will automatically go into the offline mode. 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. To assist in loading tapes to the rear slot from the front magazines, the Bulk Load feature in the **Command** menu can be utilized.
- Load the magazines with tapes and use the Bulk Load feature in the **Command** menu. For more information, see **Bulk Load** on page 8-46. 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 8-48.
- Use the Import/Export features in the **Command** menu to load tapes from the IE slot. For more information, see **Import Media** on page 8-36 and **Export Media** on page 8-39.

CAUTION: It is not recommended that you 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.

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.

Barcode Labels

For cartridges to be scanned, they 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. Optional one or two character media identifiers can be present but 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.

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.

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 percent
- Print contrast: at least 75 percent
- 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 are feasible in principle, but 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

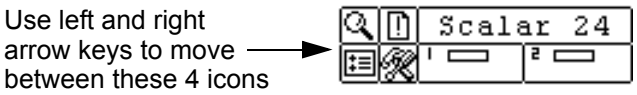
All barcode scanning labels should be applied to the front of the cartridge in the upper right corner of the tape cartridge recess (when oriented vertically). To aid in operator-readability of the labels, apply the labels so that the numbers are at the top of the label.

Menu Navigation

To navigate between menus and within a particular menu item, tabbing and scrolling are used. Tabbing and scrolling are described in more detail below.

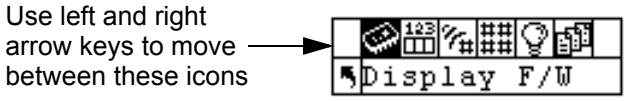
Main Menu Navigation

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 you are interested in, press the Action key () to select it.

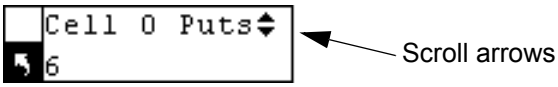


Submenu Navigation

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.

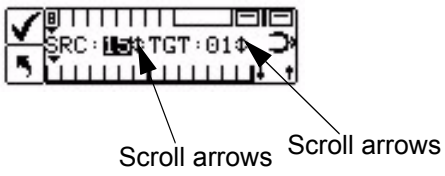


Once you have selected an item in a submenu, there may be several options for that item. This is the second level of submenu navigation called scrolling. When scrolling within a submenu item is available, a set of arrows will be present on the right side the LCD as shown below.

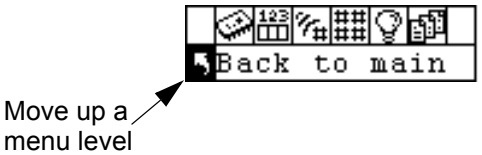


The presence of these arrows indicates that there are more items available to view or change. You use the up and down arrow keys on the keypad (▲ and ▼) to scroll up and down through the list or to change the value.

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).

Remote Management Unit

The RMU allows remote access via a Web browser to the library. 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 available functions, as described below, are accomplished without the need of a dedicated server (or separate software).

The RMU performs the following functions:

- Allows the user to quickly access the status of the system, including library and drive conditions, firmware levels, and other useful information.
- Provides remote operation of all library Operator Panel (LCD) functions via the Web browser.
- Updates firmware in the RMU, the drives, and the library's controller.
- 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.
- Allows for the library command and RMU support and error logs.
- Allows an administrator to make configuration changes such as network, users, and date/time changes.
- Provides online access to Scalar 24 documentation.

System Administrator Responsibilities

The System Administrator (SA) must set up the RMU for proper operation. The SA responsibilities include establishing a network address for the RMU and establishing the Uniform Resource Locators (URL). The network address consists of an Internet Protocol (IP) address, subnet mask, and gateway IP Address. Refer to **Configure RMU** on page 8-28 for information about setting the network address via the Operator Panel. After the network address has been established, the SA should test the RMU and URL via a Web browser. Once the URL has been verified and accounts have been created, the SA can broadcast the URL address to the potential RMU users. The SA can delete users and change any user password.

Starting the RMU

Begin using the RMU by completing the following procedure:

Step 1 Open your Web browser.

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

For example if your IP address is 182.073.056.052 on the Operator Panel LCD, go to the following address: http://182.73.56.52

The RMU displays.

NOTE: For information on determining or setting your RMU IP address, see **Configure RMU** on page 8-28.

Menu Structure Description

The RMU startup dialog, Figure 3 on page 7-10, is divided into two navigation frame segments and a single information frame segment. The first of three illustrated segment descriptions is the left navigation frame. The left navigation frame has seven hyperlinks as indicated in the following list:

- Logout
- Contents
- Documentation
- SNMP MIB
- Support
- Version
- www.adic.com

Refer to **Left Navigation Frame on page 7-10** for the dialogs and hyperlink descriptions.

The second segment is the top information frame. There are no hyperlinks or subsequent dialogs for this frame. One field value associated with this frame follows:

- URL identifier and equipment type

Refer to Top Information Frame on page 7-14 for the dialog.

The third segment is the center navigation frame. The center navigation frame has six tab-style hyperlinks as indicated in the following list:

- Status
- Configuration
- Firmware
- Diagnostics file
- Operator Panel
- Logs

The Status tab is an open dialog. The remaining five tabs are password protected. These tabs require a valid user or administrator account and a successful login.

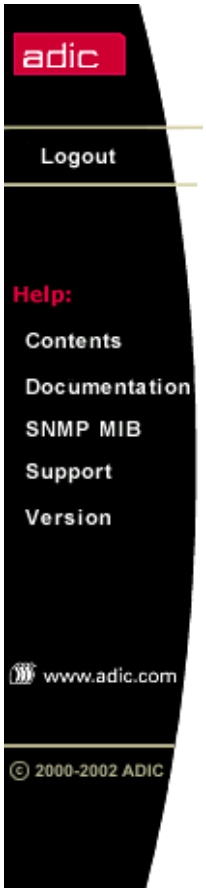
Refer to Center Navigation Frame on page 7-15 for the dialogs and hyperlink descriptions.

Figure 3 Startup Display Example

Left Navigation Frame

Use the Left Navigation Frame to Logout of the RMU and for Help on:

- Contents (See Figure 5 on page 7-12)
- Documentation
- SNMP MIB (See Figure 6 on page 7-12)
- Support (See Figure 7 on page 7-13)
- Version (See Figure 8 on page 7-14)



Hyperlink	Description
Logout	This hyperlink logs out the current user and returns to the Status dialog.
Contents	This hyperlink opens a new page and displays a brief description of the Status, Configuration, Firmware, Diagnostic files, Operator Panel, and Logs tabs.
Documentation	This hyperlink opens a new page for the ADIC website, redirects the user, and displays the library documentation file hyperlink.
SNMP MIB	This hyperlink opens a new page and displays an explanation of the SNMP MIB. This page also contains a link to download the SNMP MIB.
Support	This hyperlink opens a new page and displays the Support web page where additional hyperlinks direct the user to the ATAC support center.
Version	This hyperlink opens a new page and displays the current version information about the RMU application.
www.adic.com	This hyperlink opens a new page and redirects the user to the ADIC website home page.

Figure 4 The Left Navigation Frame

Remote Management Unit (RMU)

Help Content:

- Status

The status page shows the current status of the Remote Management Unit, the attached library, and any drives within that library. From this page the user can easily see if there are any problems with the system.

- Configuration (Password Protected)

The configuration page allows the user to configure the Remote Management Unit. Network configuration (including SNMP), user configuration, and date/time setup are all on this page.

- Firmware (Password Protected)

The firmware page allows the user to update the firmware on the Remote Management Unit, the attached library.

- Diagnostic Files (Password Protected)

The diagnostic files page allows the user to up load (to their local computer) the diagnostic information from the attached library that may be useful to service personnel in diagnosing problems. Both information from the library (command and error logs) and information from the RMU (error log) can be retrieved in text form. The system snapshot is a machine decodable file which can only be used by ADIC service personnel.

- Operator Panel (Password Protected)

The operator panel page is a direct interface to the attached library's operator panel. The user will see what is happening on the attached library and any interaction the user performs (button presses) will reflect both on this web page and the attached library.

- Logs (Password Protected)

The logs page shows the last few entries of the library's log. To see the entire log, please download it using the Diagnostic Files page.

Notes:

1. Usernames and passwords are case sensitive.

Figure 5 Help Content Dialog

Figure 6 SNMP Dialog Example

Figure 7 Technical Support Dialog Example

Hyperlink	Description
ADIC Technical Assistance Center	This hyperlink opens an email dialog to ADIC technical support center for North America (support@adic.com).
support@adic.fr	This hyperlink opens an email dialog to ADIC technical support center for the remainder of the world.

Figure 8 Version Dialog Example

Top Information Frame

The Top Information Frame dialog and description are indicated below.

Figure 9 Top Information Frame

Hyperlink	Description
Name	This location indicates the URL identifier of the RMU site and the attached library type.

Center Navigation Frame

All of the Center Navigation Frame dialogs and descriptions, beginning with Status, are indicated below. All fields are for example only.

Figure 10 Center Navigation Frame

Hyperlink	Description
Status	The Status tab displays the current summary status of the library. This tab is active even when a user is not logged into the RMU. The tab is not password protected. The fields and values that are associated with this tab are indicated below. This screen is refreshed periodically to reflect the current states.
Library Status	This field indicates the current online/offline library status.
Drive Status	This field value indicates the type and quantity of tape drives currently installed in the attached library.
RMU User	This field value indicates the name and location of the current user.
Hostname	This field value indicates the Hostname used for the RMU connection.
IP Address	This field value indicates the Internet Protocol (IP) address for the RMU connection.
MAC Address	This field value indicates the MAC address of the RMU. This is also the serial number of the RMU.
Library Serial #	This field value 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 (*ADIC* in the example above) and the partition (*0* in the example above).
SNMP Alerts	This field value indicates the state of the SNMP Alert notification. This value is either SNMP On/SNMP Off.

Library Firmware	This field value indicates the current level of library firmware.
RMU Firmware	This field value indicates the current level of RMU firmware.

Clicking any tab, other than the Status tab, initiates a Login dialog. Refer to Figure 11 on page 7-16.

NOTE: Only one user can be logged into the RMU at a time. If the Admin is logged in, no other users can log in.

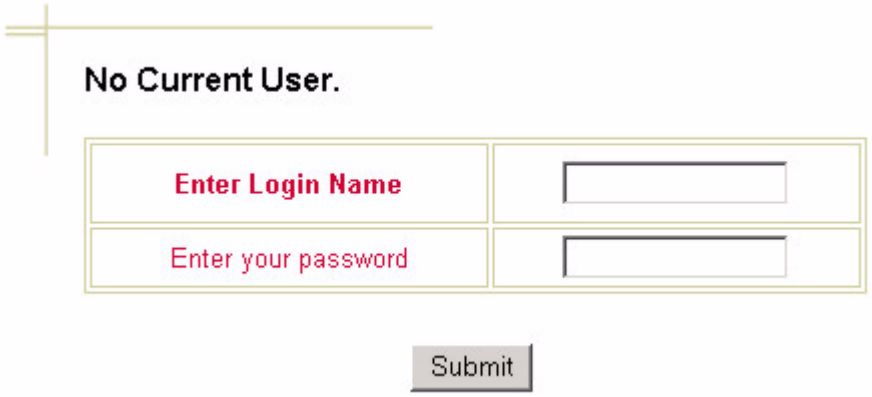


Figure 11 Login Dialog Example

Field	Description
Enter Login Name	The user enters his/her user name. The RMU is shipped with *admin* as the default Login Name. Login names are case sensitive.
Enter your password	The user enters his/her password. The RMU is shipped with *secure* as the default password. Passwords are case sensitive.
Submit	The user submits the name and password for login verification. If either user name or user password are not verified, the login is rejected.

NOTE: After the Admin user has initially logged into the RMU, ADIC recommends that the Admin user change the default password.

The Configuration dialogs and descriptions are indicated below. All values shown are for example only.

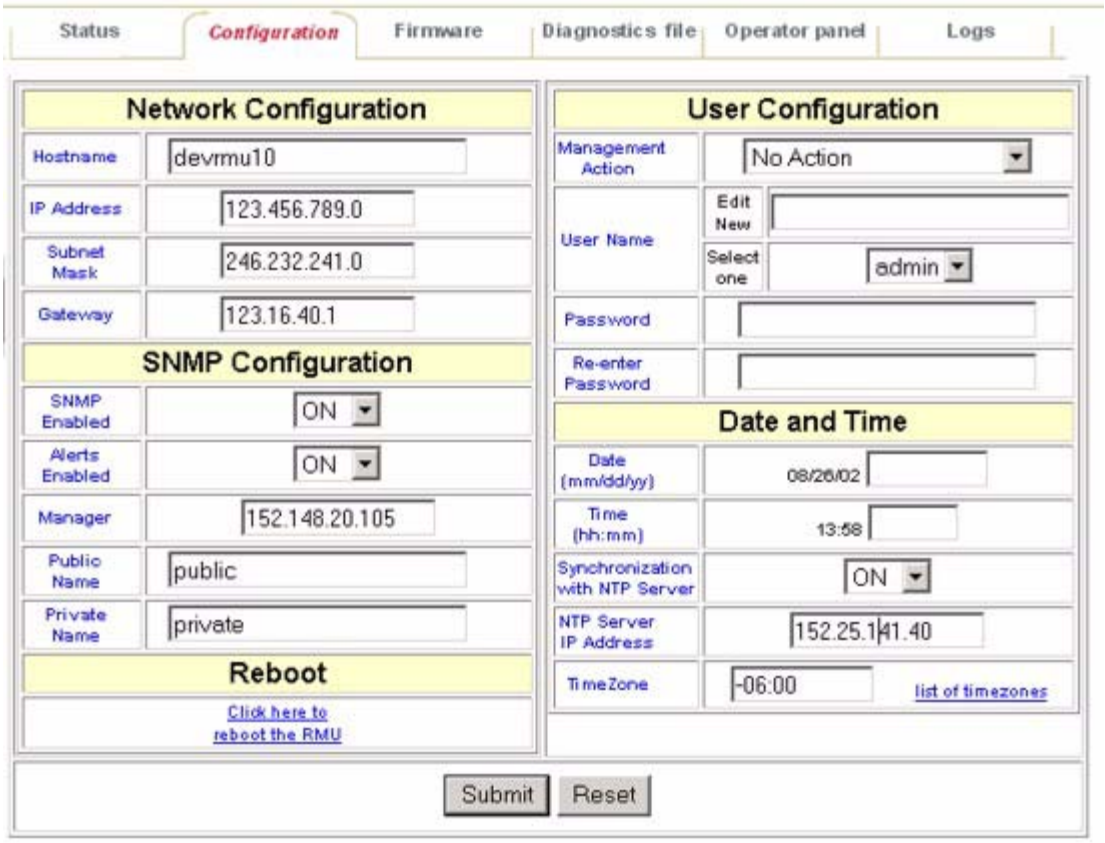


Figure 12 Configuration Dialog Example

Hyperlink	Description
Configuration	The Configuration tab displays the current configuration status of the RMU and user account. The fields and values that are associated with this tab are indicated below.
Hostname	This field value indicates the Hostname used for the RMU configuration.
IP Address	This field value indicates the Internet Protocol (IP) address for the RMU connection.
Subnet Mask	This field value indicates what subnet an IP address belongs to.
Gateway	This field value indicates the Gateway address used for RMU communication.
SNMP Enabled	This pull down menu allows the user to enable or disable SNMP feature.
OFF	This selection disables SNMP feature.

ON	This selection enables SNMP feature.
Alerts Enabled	This pull down menu allows the user to enable or disable SNMP server alerts.
OFF	This selection disables SNMP server alerts.
ON	This selection enables SNMP server alerts.
Manager	This field value indicates the SNMP server address.
Public Name	This field value indicates the name of the read-only SNMP community.
Private Name	This field value indicates the name of the read/write SNMP community.
Management Action	This pull down menu allows the user to select the type of action to be accomplished.
No Action	This selection indicates that no change should be made.
Create User	This selection indicates that a new user is to be created. This can only be done by the SA.
Change User Password	This selection indicates that the user password will be changed.
Delete User	This selection indicates that the current user will be deleted. This can only be done by the SA.
User Name	This section allows the user to perform management actions on the user selected.
Edit New	This section allows the user to enter a new User Name.
Select One	This pull-down menu allows the user to select a user name that has already been created. Only the current user name is listed unless the SA is logged on.
Password	The user enters his password.
Re-enter Password	The user types his password in again for verification.
Date (mm/dd/yy)	This field value allows the user to change the current date.
Time (hh:mm)	This field value allows the user to change the current time.
Synchronization with NTP Server	This pull-down menu allows you to enable or disable connecting the RMU to a network time server to automatically set the time.
OFF	This selection disables synchronization with a NTP server.
ON	This selection enables synchronization with a NTP server.
NTP Server IP Address	This field value indicates the Internet Protocol (IP) address for the NTP server.

TimeZone	This field value indicates the time zone deviation for the NTP server. Click on the link to see the list of time zones (Figure 13). You will need to enter the value from this list that corresponds to your time zone.
Submit	The user submits the configuration data for verification and allows the user to confirm any configuration changes.
Reset	This button will clear all the changed fields.

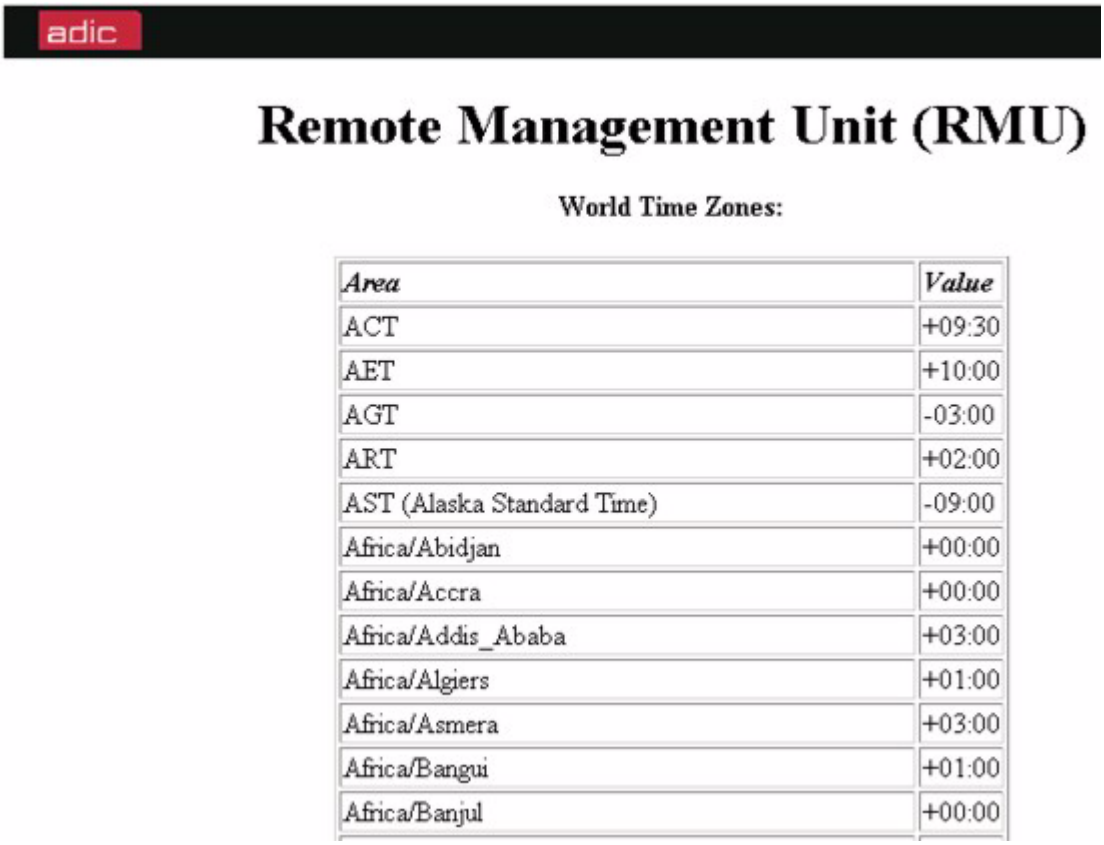


Figure 13 List of Time Zones

If you change the configuration, the Confirm Configuration Changes dialog appears. This dialog displays the old configuration. Refer to Figure 14 on page 7-20. All values shown are for example only.

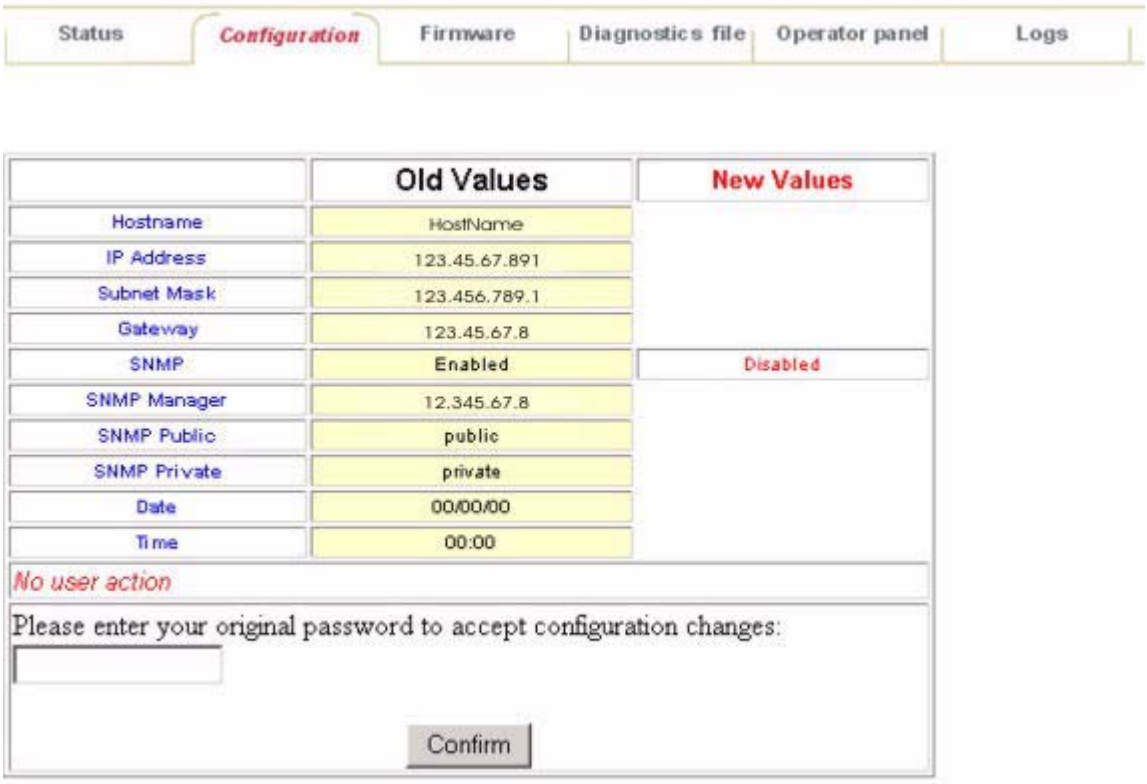


Figure 14 Confirm Configuration Changes Dialog Example

Hyperlink	Description
Password	The user must enter their password.
Confirm	This button confirms the configuration changes.

The Firmware dialog and descriptions are indicated below.

Figure 15 Firmware Dialog Example

Hyperlink	Description
Firmware	The Firmware tab updates the firmware version of the RMU or the library. The fields and values that are associated with this tab are indicated below
Select target for update	This section allows the user to select which firmware is to be upgraded.
Select firmware file	This section allows the user to select or browse to find the firmware upgrade file. Note that it may take a few minutes for the firmware to update. You can see a list of time frames for each type of firmware by clicking on the link below the **Browse** button. Figure 16 shows the estimated durations for firmware downloads.
Update Firmware	When this button is clicked, the upgrade firmware process is started.

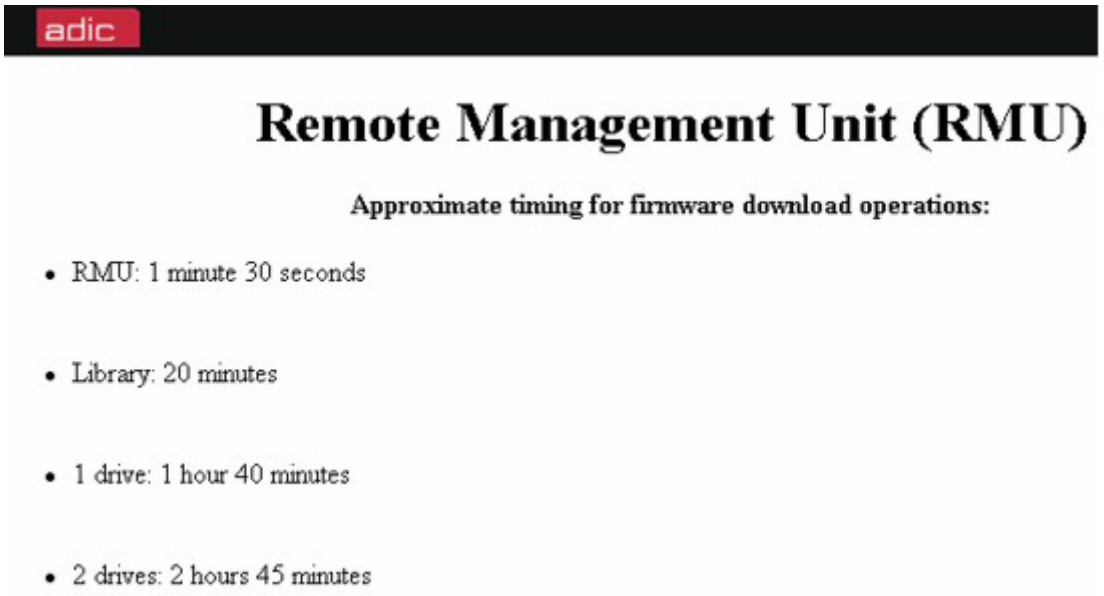


Figure 16 Firmware Download Times

The Diagnostic file dialog and descriptions are indicated below.

Figure 17 Diagnostics File Dialog Example

Hyperlink	Description
Diagnostic file	The Diagnostic file tab displays the library command error log, library error log, or RMU error log. The fields associated with this tab are indicated below:
Select the file to retrieve	This selection allows the user to choose which log to retrieve.
Retrieve selected files	After selecting the log, click on this button to retrieve the log file.

The Operator Panel dialog and descriptions are indicated below.

Figure 18 Operator Panel Dialog Example

Hyperlink	Description
Operator Panel	The Operator Panel tab displays the library operator and duplicates operator panel functionality. Access to this menu does not lock out the library's front panel. The current state of the library menu is echoed and continuously refreshed on the display.
Keypad	The functionality of the keypad is dependent on the screen currently being used.

NOTE: The RMU is a direct interface to the attached library. The user will see what is happening on the attached library and any interaction the user performs (button presses) will reflect both on this web page and the attached library.

The Logs dialog and descriptions are indicated below.

Figure 19 Logs Dialog Example

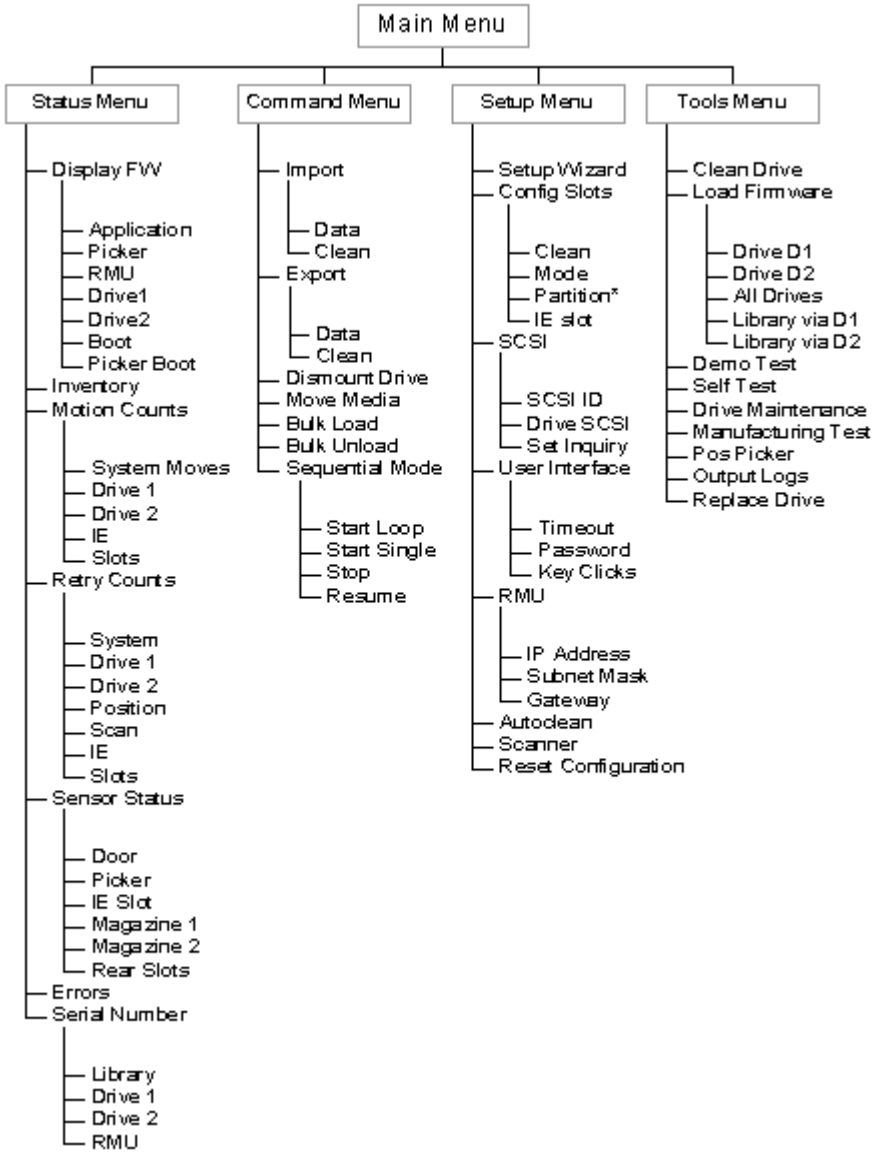
Hyperlink	Description
Logs	The Logs tab displays the library logs.

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 7-1 for an illustration and definition of the keypad. An illustration of the menu tree mapping is provided below.



**Partition* will only appear in the Configure Slots menu if you have specified either Rnd-Seq or Seq-Seq mode. for more information, see Configure Modes on page 8-16.

Main Menu

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

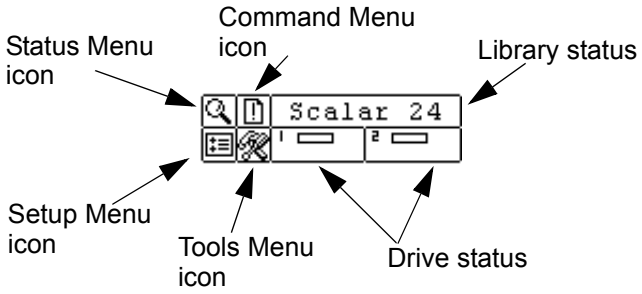
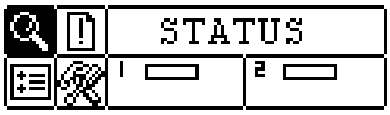
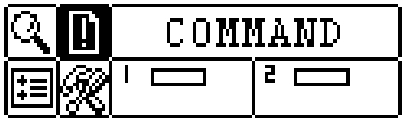
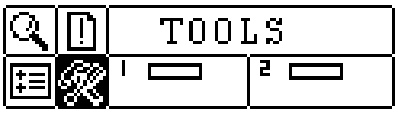


Figure 1 Main Menu

Menu	Description
	The Status Menu on page 8-54 provides selections to: • Display Firmware Version on page 8-55 • Display Inventory Information on page 8-56 • Display Motion Counts on page 8-58 • Display Retry Counts on page 8-59 • Display Sensor Status on page 8-61 • Display Errors on page 8-62 • Display Serial Number on page 8-63
	The Command Menu on page 8-35 provides selections to: • Import Media on page 8-36 • Export Media on page 8-39 • Dismount Drive on page 8-42 • Move Media on page 8-43 • Bulk Load on page 8-46 • Bulk Unload on page 8-48 • Sequential on page 8-50

Menu	Description
	The Setup Menu on page 8-3 provides selections to: • Setup Wizard on page 8-4 • Configure Slots on page 8-14 • Set SCSI IDs on page 8-21 • User Interface on page 8-25 • Configure RMU on page 8-28 • Configure Autoclean on page 8-30 • Configure Barcode Scanner on page 8-32 • Reset Configuration on page 8-34
	The Tools Menu on page 8-64 provides selections to: • Clean Drive on page 8-65 • Load Firmware on page 8-66 • Demo Test on page 8-67 • Self Test on page 8-68 • Drive Maintenance Test on page 8-69 • Manufacturing Test on page 8-71 • Position Picker on page 8-73 • Output Logs on page 8-74 • Replace a Drive on page 8-75

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 IDs
- Configure the User Interface
- Configure the RMU
- Configure Autocleaning
- Configure the Barcode Scanner
- Reset Configuration

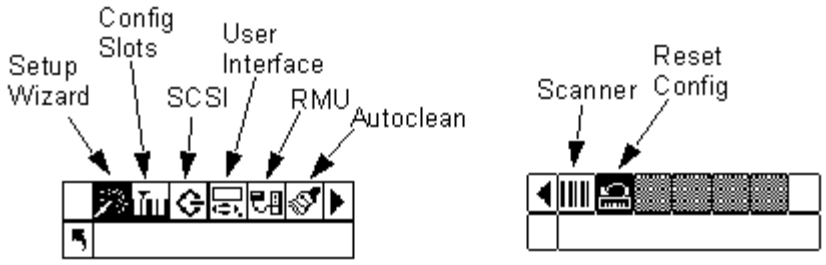
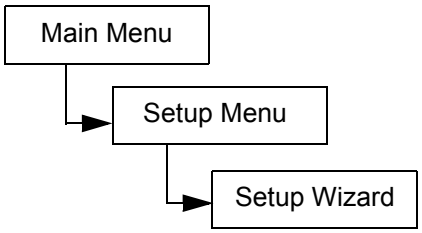


Figure 2 Setup Menu

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.

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.

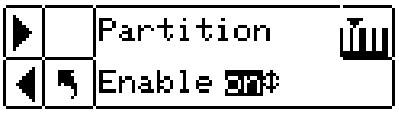
Selection	Description/Result
 **Step 1** At the Setup Wizard prompt, press ▶ to select ↰ (return arrow). Press ◉.	Cancels the Setup Wizard.

Selection	Description/Result
 **Step 2** You will be prompted to cancel the Setup Wizard. Press ▼ to select `Do Not Show`.	
Step 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

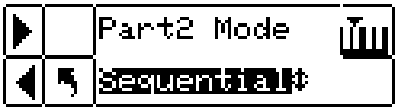
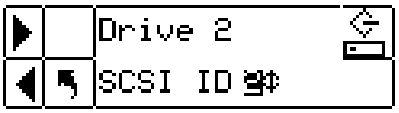
At any time, you can select ↰ (return arrow) to exit the Setup Wizard and cancel changes.

Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight 🪄 and press ◎.	Runs the Setup wizard.
 **Step 2** Press ◎ to begin using the Wizard.	
 **Step 3** Press ▲ and ▼ to select the configuration of the IE slot.	Available options are: • **Import/Export:** host will see one import/export slot and 23 data slots for LTO or 20 data slots for SDLT. • **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. Recommended: Import/Export

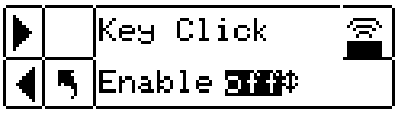
Selection	Description/Result
 **Step 4** Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 5** Press ▲ and ▼ to enable/disable partitioning.	Available options are: • **on:** library is split into two partitions. The host will be affected (reduced slot/drive count) based on which partition it is attached to. • **off:** host sees entire library Recommended: off If you want to use partitioning, it is recommended that you configure it using the **Config Slots** submenu. For more information, see Configure Slots on page 8-14. If you enable partitioning through the Setup Wizard, you will need to set the items shown in Step 12 through Step 16.
 **Step 6** Press ▲ and ▼ to enable/disable Autoclean. If you do not enable Autoclean, skip to Step 12.	Available options are: • **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. • **off:** Autoclean is disabled Recommended: off If you want to use autocleaning, it is recommended that you configure it using the **Config Slots** submenu. For more information, see Configure Slots on page 8-14. If you enable autocleaning through the Setup Wizard, you will need to set the items shown in through Step 11.
Step 7 Press ▶ and then ◎ to accept the changes and move to the next option.	

Selection	Description/Result
 **Step 8** Press ▲ and ▼ to select the mode for Autoclean.	Available options are: • **Both:** Cleans both partitions • **Part 1:** Only cleans Partition 1 • **Part 2:** Only cleans Partition 2
Step 9 Press ▶ and then to accept the changes and move to the next option.	
 **Step 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. 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 8-14.
Step 11 Press ▶ and then to accept the changes and move to the next option. If you did not enable partitioning, skip to Step 18.	

Selection	Description/Result
 **Step 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. **LTO** You can designate a minimum of 8 slots for each Partition (7 magazine slots and 1 rear slot). You can designate a maximum of 16 slots for Partition 1 (7 magazine slots, 8 rear slots, and the IE 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 **Configure Cleaning Slots** on page 8-14 for more information. **SDLT** 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 IE 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 8-14 for more information.
Step 13 Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 14** Press ▲ and ▼ to select the mode for Partition 1.	Available options are: • **Random**: Allows your backup software to access any tape cartridge randomly. This is the mode that most host software will use. • **Sequential:** Requires the backup software to 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.
Step 15 Press ▶ and then ◎ to accept the changes and move to the next option.	

Selection	Description/Result
 **Step 16** Press ▲ and ▼ to select the mode for Partition 2.	Available options are: • **Sequential:** Requires the backup software to write the data to each of the tape cartridges sequentially, starting with the first one.
Step 17 Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 18** Press ▲ and ▼ to set the SCSI ID of the Library.	You must choose a number between 0 and 7. Recommended: 6
Step 19 Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 20** Press ▲ and ▼ to set the SCSI ID for Drive 1.	You must choose a number between 0 and 15. Recommended: 1
Step 21 Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 22** Press ▲ and ▼ to set the SCCSI ID for Drive 2, if applicable.	You must choose a number between 0 and 15. Recommended: 2
Step 23 Press ▶ and then ◎ to accept the changes and move to the next option.	

Selection	Description/Result
 **Step 24** Press ▲ and ▼ to set the Inquiry mode.	Sets the inquiry string returned to the host in a SCSI inquiry command. Available options are: • Scalar 24 • Scalar 100 • Scalar 1000 • Scalar 10K Recommended: Scalar 24
Step 25 Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 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. The timeout window is represented in minutes. You must specify a value between 1 and 9. The default setting is 9 minutes. If you have a password set, after the timeout window has expired, the password will need to be re-entered to access the secure menu features.
Step 27 Press ▶ and then ◎ to accept the changes and move to the next option.	
 **Step 28** Press ▲ and ▼ to enable/disable a Password.	Available options are: • **on:** the password is required to enter any menu except **Status** • **off:** password is disabled NOTE: If the password is enabled via the SCSI host, you cannot modify or disable the password using the LCD display.
Step 29 Press ▶ and then ◎ to accept the changes and move to the next option.	

Selection	Description/Result
 **Step 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.
Step 31 Press ▶ and then ◉ to accept the changes and move to the next option.	
 **Step 32** Press ▲ and ▼ to enable/disable Key Clicks.	Available options are: • **on:** an audible tone will be heard when buttons are pressed on the keypad • **off:** key clicks disabled Recommended: off
Step 33 Press ▶ and then ◉ to accept the changes and move to the next option.	
 **Step 34** Press ▲ and ▼ to enable/disable the barcode scanner. If you disable the scanner, skip to Step 38.	Available options are: • **on:** all media will be scanned for barcodes. Unlabeled or unreadable labeled media will generate a user message • **off:** barcode scanner is disabled Recommended: on
Step 35 Press ▶ and then ◉ to accept the changes and move to the next option.	

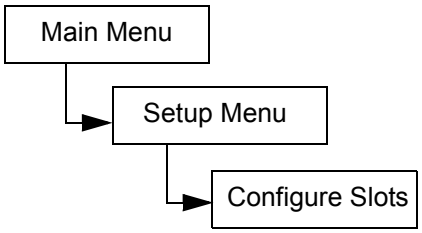
Selection	Description/Result
 **Step 36** Press ▲ and ▼ to select the barcode scanner mode.	Available options are: • **Default:** The scanner will expect to read and will report to the host six characters. Optional one or two character media identifiers can be present but will not be reported. • **Media 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 five and sixteen characters. Recommended: Extended
Step 37 Press ▶ and then ◉ to accept the changes and move to the next option.	
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.  **Step 38** Set the **IP Address** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields. If an RMU is not installed, skip to Step 42.	The current field will be highlighted. Make sure you enter a valid number for each field.
 **Step 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.

Selection	Description/Result
 **Step 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.
 **Step 41** From the last field of the Gateway address, press ▶ to set the Gateway mask and highlight Execute (☑).	
 **Step 42** You have now completed the Setup Wizard. Press ◎ to accept all values and exit the wizard.	
 **Step 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.

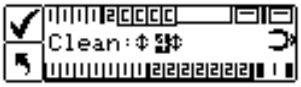
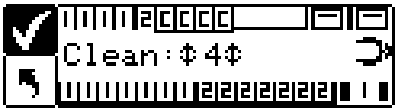
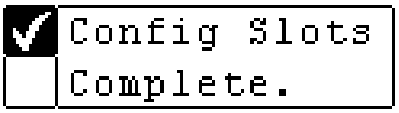
Path:



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 8-30.

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

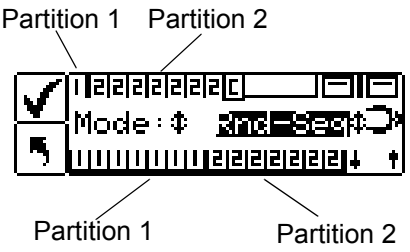
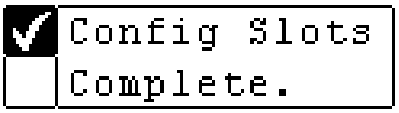
Selection	Description/Result
 **Step 4** Press ▲ and ▼ to select the number of slots you would like to allocate as cleaning slots.	You can allocate up to four slots to be used for cleaning. Slots 20 - 23 can be used as cleaning slots for LTO or slots 17 - 20 for SDLT. When a slot is configured for cleaning, a **C** appears in that slot. configured as a cleaning slot  NOTE: If partitioning is configured, the number of rear slots may be limited to allow at least one slot in Partition 2.
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	
 **Step 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 or Sequential mode.

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. 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. 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. 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 8-50.

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

Selection	Description/Result
 **Step 4** Press ▲ and ▼ to select the backup mode.	There are four mode settings: • **Rnd:** sets the library to Random mode • **Seq:** sets the library to Sequential mode • **Rnd-Seq:** sets Partition 1 to Random mode and Partition 2 to Sequential mode. By selecting this mode, you are creating a partitioned library. • **Seq-Seq:** sets both partitions to Sequential mode with each partition having its own starting point. By selecting this mode, you are creating a partitioned library. If you choose **Rnd-Seq** or **Seq-Seq**, 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 8-18. 
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	The library is configured to the specified modes.
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	

Configure Partitions

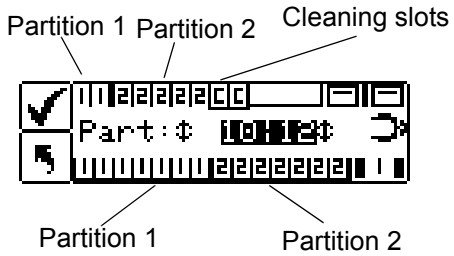
Partitioning is used to allow your single Scalar 24 library to be logically partitioned so it will appear to a host as if it were two independent physical libraries. Each logical library (partition) can be independently controlled as though it were two different libraries. The partitioning types available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

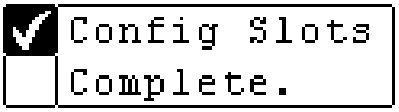
Partition 1 can operate in one of two modes: random or sequential. Partition 2 can operate in sequential mode.

The partition size is configurable. Each partition is assigned one of the front magazines but may have a configurable number of rear slots 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: Partitioning will only appear in the Configure Slots menu if you have specified either Rnd-Seq or Seq-Seq mode. Otherwise, your Scalar 24 will operate as a single library.

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

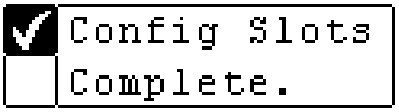
Selection	Description/Result
 **Step 4** Press ▲ and ▼ to select number of slots you would like to designate for Partition 1 and Partition 2.	The slots in the magazine on the left are always Partition 1 and the slots in the magazine on the right are always Partition 2. **LTO** You can designate a minimum of 8 slots for each Partition (7 magazine slots and 1 rear slot). You can designate a maximum of 16 slots for Partition 1 (7 magazine slots, 8 rear slots, and the IE 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 8-14 for more information. **SDLT** 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 IE 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 8-14 for more information. 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. 

Selection	Description/Result
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	The library is configured for the specified partitions.
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	

Configure IE Slot

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

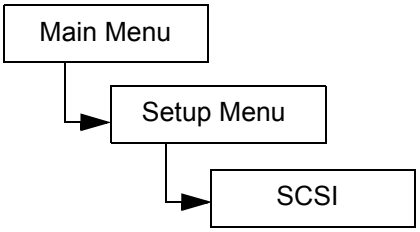
Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight  and press ◎.	Configures IE slot.
 **Step 2** Press ▲ and ▼ to select **IE slot**.	
Step 3 Press ▶ to move to the next field.	
 **Step 4** Press ▲ and ▼ to select configuration option.	Available options are: • **ST:** appears 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. • **IE:** host will see one import/export slot and 23 data slots for LTO or 20 for SDLT.

Selection	Description/Result
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	The IE slot is configured.
 **Step 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.

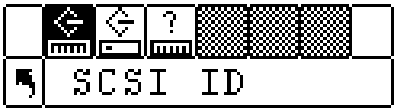
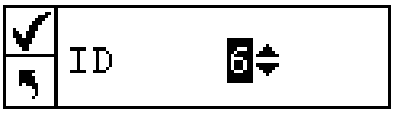
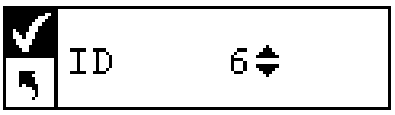
Path:



Set Library SCSI ID

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

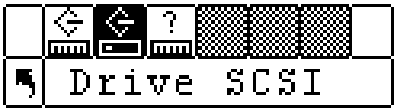
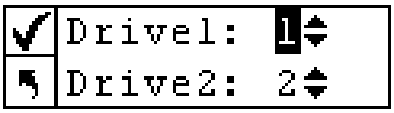
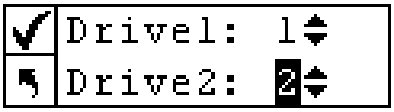
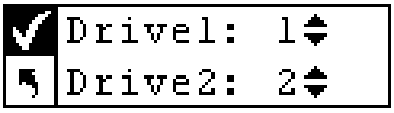
Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight ⇦ and press ◎.	Sets SCSI IDs.

Selection	Description/Result
 **Step 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 8-16 for more information.
 **Step 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 6.
 **Step 4** Press ▶ to highlight Execute (☑) and then press  .	The library SCSI ID is set.
 **Step 5** A confirmation screen displays. Press  to dismiss.	

Set Drive SCSI IDs

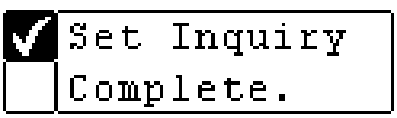
The SCSI IDs of the drives identify which IDs the drives use to communicate with the host.

Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight  and press .	Sets SCSI IDs.

Selection	Description/Result
 **Step 2** Highlight and press .	Sets the drive SCSI IDs.
 **Step 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.
Step 4 If you have two drives installed, press ▶ highlight Drive 2.	
 **Step 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.
 **Step 6** Press ▶ to highlight Execute (✓) and then press .	The drive SCSI IDs are set.
 **Step 7** A confirmation screen displays. Press to dismiss.	

Set Inquiry

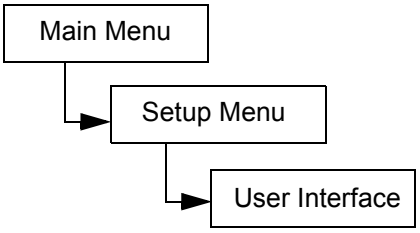
Set Inquiry allows the host to see your library as another existing ADIC Scalar product. This can be useful if the host software does not currently include drivers to communicate with the Scalar 24.

Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight and press .	Sets SCSI IDs.
 **Step 2** Highlight and press .	Sets Inquiry string.
 **Step 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. Available options are: • Scalar 24 • Scalar 100 • Scalar 1000 • Scalar 10K
 **Step 4** Press ▶ to highlight Execute (☑) and then press .	The inquiry string is set.
 **Step 5** A confirmation screen displays. Press to dismiss.	

User Interface

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

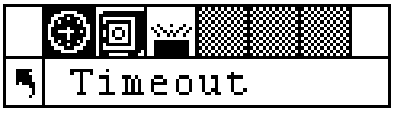
Path:

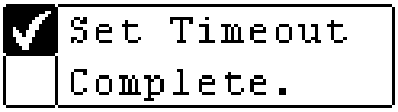


Set Timeout

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 you with 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.

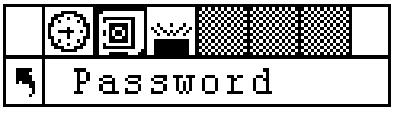
Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight and press .	Sets timeout window.
 **Step 2** Highlight and press .	
 **Step 3** Press ▲ and ▼ to select the value of the timeout window.	The timeout window is represented in minutes. You must specify a value between 1 and 9. The default setting is 9 minutes. If you have a password set, after the timeout window has expired, the password will need to be re-entered to access the library.

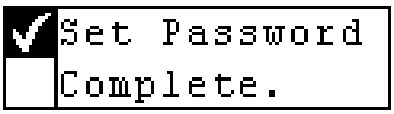
Selection	Description/Result
 **Step 4** Press ▶ to highlight Execute (☑) and then press ◎.	
 **Step 5** A confirmation screen displays. Press ◎ to dismiss.	The timeout value is set.

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 a password is set, it will be required 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 automatically be logged out and you will have to re-enter your password. By default, there is no password set on your Scalar 24.

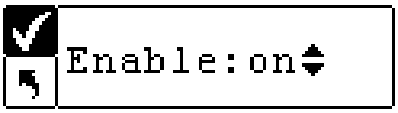
NOTE: If the password is enabled via the SCSI host, you cannot modify or disable the password using the LCD display on the Scalar 24.

Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight and press ◎.	
 **Step 1** Highlight and press ◎.	Sets password.

Selection	Description/Result
 **Step 2** Press ▲ and ▼ to Enable/Disable the password function.	Available options are: • **on:** password will be required to access secure menu features • **off:** disabled NOTE: If the password is enabled via the SCSI host, you cannot modify or disable the password using the LCD display.
Step 3 Select ▶ to move to the Password field.	
 **Step 4** 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.
 **Step 5** From the last field of the password, press ▶ to highlight Execute (☑) and then press ◎.	The password is set.
 **Step 6** 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

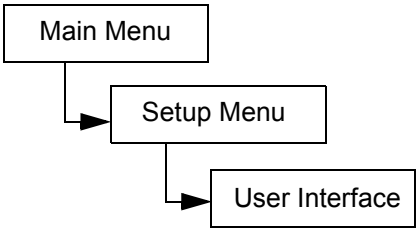
Key Click allows you to enable or disable an audible tone when the keys on the keypad are pressed.

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

Path:



Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight and press .	Configures the RMU. An error will appear if an RMU is not installed or is not functioning properly.
 **Step 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.
 **Step 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.

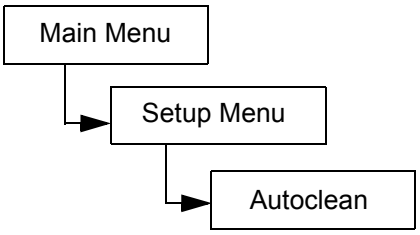
Selection	Description/Result
 **Step 4** Set the **Gateway** by pressing ▲ and ▼ to change the value of the current field and ◀ and ▶ to move between fields.	The current field will be highlighted. Make sure you enter a valid number for each field.
 **Step 5** From the last field of the Gateway address, press ▶ to set the Gateway mask and highlight Execute (☑).	
 **Step 6** A confirmation screen displays. Press ◎ to accept the RMU settings.	Your RMU is configured and ready for use.

Configure Autoclean

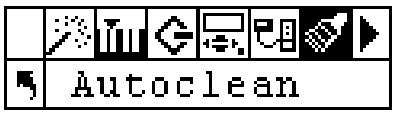
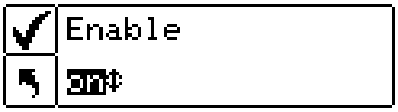
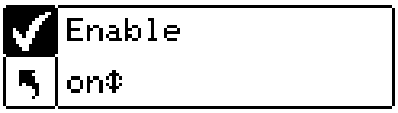
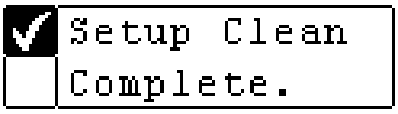
Autoclean is managed through the Scalar 24 and operates independent of the host application. Autoclean detects when a drive needs to be cleaned and automatically cleans it without requiring user intervention. To use the autoclean feature, you must have at least one slot configured as a cleaning slot. For more information on configuring cleaning slots, see **Configure Cleaning Slots** on page 8-14. 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.

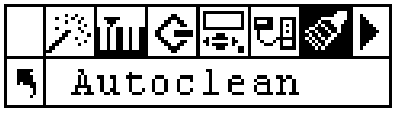
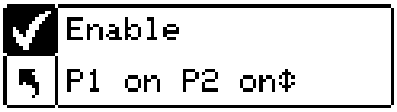
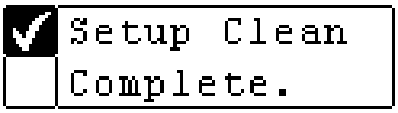
Path:



Autoclean Unpartitioned Library

Selection	Description/Result
 **Step 1** From the **Setup** Menu, highlight and press .	Configures automatic cleaning of drives.
 **Step 2** Press ▲ and ▼ to Enable/Disable the autoclean function.	Available options are: • **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. • **off:** disabled
 **Step 3** Press ▶ to highlight Execute (☑) and then press .	Autoclean is configured.
 **Step 4** A confirmation screen displays. Press to dismiss.	

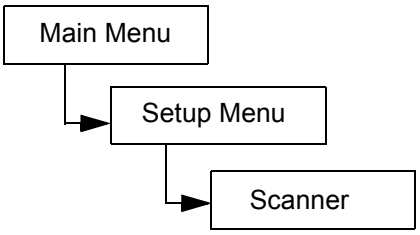
Autoclean Partitioned Library

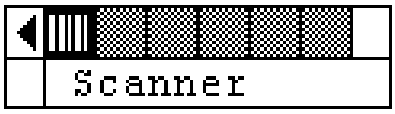
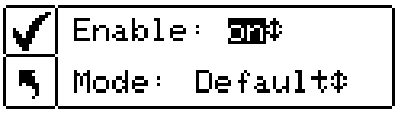
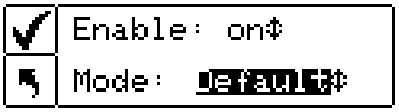
Selection	Description/Result
 **Step 1** From the **Setup** Menu, highlight and press .	Configures automatic cleaning of drives.
 **Step 2** Press ▲ and ▼ to select one of the options.	Available options are: • P1 on P2 on: autoclean is enabled for both partitions • P1 on P2 off: autoclean is enabled for partition 1 only • P1 off P2 on: autoclean is enabled for partition 2 only • P1 off P2 off: autoclean is disabled for both partitions
 **Step 3** Press ▶ to highlight Execute (☑) and then press .	Autoclean is configured.
 **Step 4** A confirmation screen displays. Press to dismiss.	

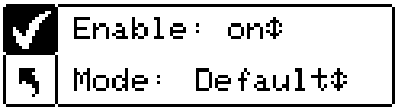
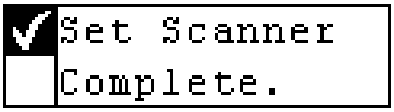
Configure Barcode Scanner

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:



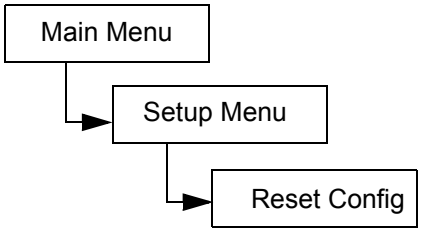
Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight  and press  .	Configures the barcode scanner.
 **Step 2** Press ▲ and ▼ to Enable/Disable the barcode scanner.	Available options are: • **on:** all media will be scanned for barcodes. Unlabeled or unreadable labeled media will generate a user message. • **off:** disabled
Step 3 Press ▶ to move to next field.	
 **Step 4** Press ▲ and ▼ to select the scanner mode.	Available options are: • **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. • **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 five and sixteen characters.

Selection	Description/Result
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	Your barcode scanner is configured and ready for use.
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	

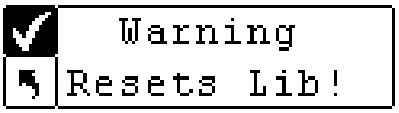
Reset Configuration

Reset Config 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 4-7.

Path:



Selection	Description/Result
 **Step 1** From the **Setup** menu, highlight and press ◎.	Resets the library configuration.

Selection	Description/Result
 **Step 2** A confirmation screen displays. Press to continue.	
 **Step 3** 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. 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

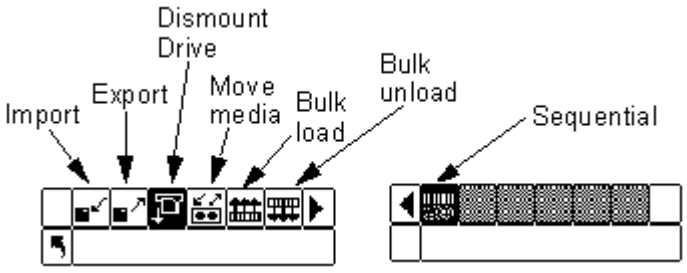


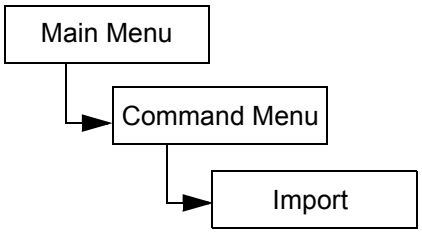
Figure 3 Command Menu

Import Media

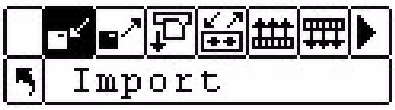
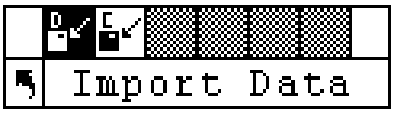
Import allows you to move a data or cleaning tape cartridge from the IE slot to other location in your library. This allows you to insert a tape into the library without opening the front door. If your IE slot is configured as a storage slot, you will need to remove any present data cartridge before running this command.

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 8-14. There are two methods for importing a data cartridge: with a partitioned library and with an unpartitioned library.

Path:

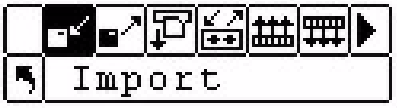
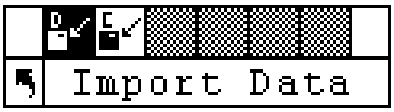
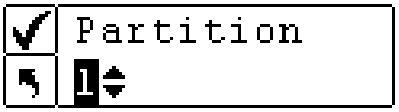
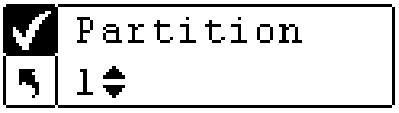


Import Data Cartridge for Unpartitioned Library

Selection	Description/Result
Step 1 Open the IE door and insert a data cartridge into the IE Slot.	
 **Step 2** From the **Command** menu, highlight and press .	Imports media from IE slot.
 **Step 3** Highlight and press .	Imports a data cartridge.

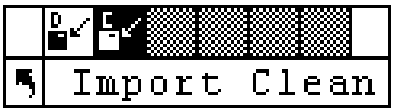
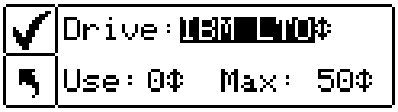
Selection	Description/Result
 **Step 4** A confirmation screen displays. Press ◎ to dismiss.	The data cartridge is imported to the first available slot starting with Slot 1.

Import Data Cartridge for Partitioned Library

Selection	Description/Result
Step 1 Open the IE door and insert a data cartridge into the IE Slot.	
 **Step 2** From the **Command** menu, highlight  and press ◎.	Imports media from IE slot.
 **Step 3** Highlight  and press ◎.	Imports a data cartridge.
 **Step 4** Press ▲ and ▼ to select the partition you wish to import the cartridge into.	
 **Step 5** Press ▶ to highlight Execute () and then press ◎.	The data cartridge is imported to the first available slot in the specified partition.

Selection	Description/Result
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	

Import Cleaning Cartridge

Selection	Description/Result
Step 1 Open the IE door and insert a cleaning cartridge into the IE Slot.	
 **Step 2** From the **Command** menu, highlight ↙ and press ◎.	Imports media from IE slot.
 **Step 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 8-14 for more information.
 **Step 4** Press ▲ and ▼ to select the Drive type.	
Step 5 Press ▶ to move to next field.	

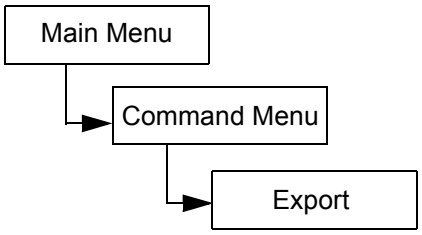
Selection	Description/Result
 **Step 6** Press ▲ and ▼ to select the how many times the cleaning tape has been used.	You will need to specific how many times this cartridge has been used, if any.
Step 7 Press ▶ to move to next field.	
 **Step 8** Press ▲ and ▼ to set the maximum number of times the cleaning tape can be used.	For LTO media, the maximum number of uses is 50. 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.
 **Step 9** Press ▶ to highlight Execute (☑) and then press .	The cleaning cartridge is imported to the first available cleaning slot.
 **Step 10** A confirmation screen displays. Press to dismiss.	

Export Media

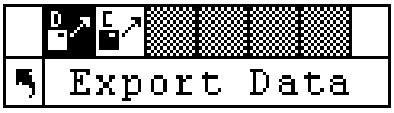
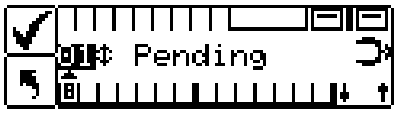
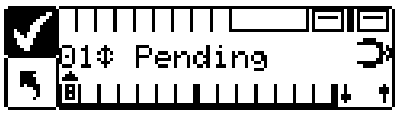
Export allows you to move a data or cleaning tape cartridge from the source slot you choose to the IE slot. This allows you to remove a tape from the library without opening the front door. If the IE slot is configured as a storage slot, you will not be able to export data cartridges. For more information on configuring the IE slot, see **Configure IE Slot** on page 8-20.

You can use the Move Media command to export data cartridges when the IE slot is configured as a data slot. For more information, see **Move Media** on page 8-43.

Path:

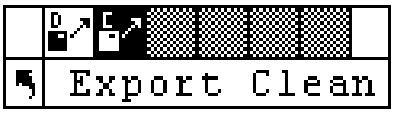
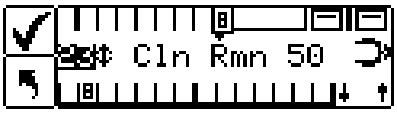


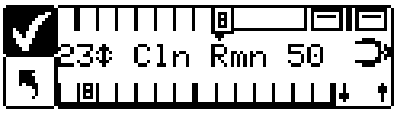
Export Data Cartridge

Selection	Description/Result
Step 1 Open the IE door and check the IE slot to make sure that it is empty. If a tape is present, remove it.	
 **Step 2** From the **Command** menu, highlight  and press  .	Exports media to IE slot.
 **Step 3** Highlight  and press  .	Exports a data cartridge.
 **Step 4** Press ▲ and ▼ to select the slot you would like to export the media from.	**SRC** = source In this example, the tape cartridge in slot 01 is to be exported to the IE slot.
 **Step 5** Press ▶ to highlight Execute () and then press  .	The specified data cartridge is exported to the IE slot.

Selection	Description/Result
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	
Step 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

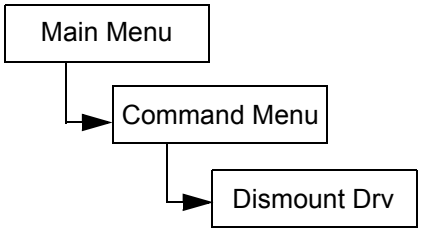
Selection	Description/Result
Step 1 Open the IE door and check the IE slot to make sure that it is empty. If a tape is present, remove it.	
 **Step 2** From the **Command** menu, highlight ↗ and press ◎.	Exports media to IE slot.
 **Step 3** Highlight ↗ and press ◎.	Exports a cleaning cartridge.
 **Step 4** Press ▲ and ▼ to select the slot you would like to export the media from.	**SRC** = source **Cln Rmn** = number of cleanings remaining on cartridge Cleaning cartridges can be stored in slots 20 - 23 for LTO or slots 17 - 20 for SDLT. In this example, the tape cartridge in slot 23 is to be exported to the IE slot.

Selection	Description/Result
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	The specified cleaning cartridge is exported to the IE slot.
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	
Step 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:

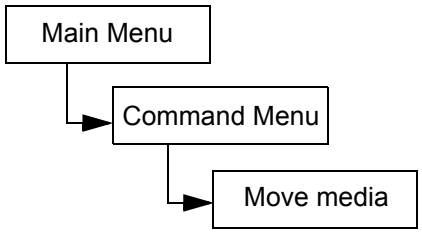


Selection	Description/Result
 **Step 1** From the **Command** menu, highlight  and press  .	Moves media within your library.
Step 2 The cartridges are unloaded from the drives and returned to their source slots.	
 **Step 3** A confirmation screen displays. Press  to dismiss.	

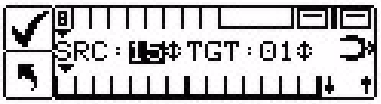
Move Media

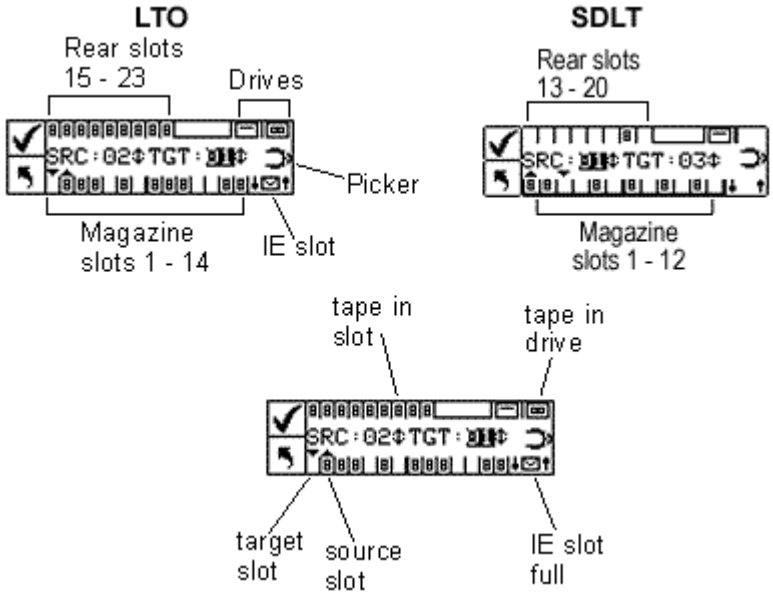
Move media allows you to move a tape cartridge from an existing position to a new position. You also use this function to manually insert a tape into a drive or remove a tape from a drive.

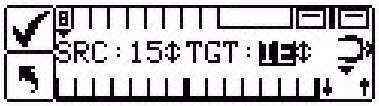
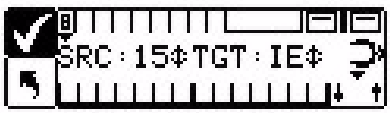
Path:



Selection	Description/Result
 **Step 1** From the **Command** menu, highlight  and press  .	Moves media within your library.


Step 2 Press ▲ and ▼ to select the source slot.
	SRC = Source Slot
	TGT = Target Slot
	
	The move media screen provides a visual representation of the storage slots in your library.
	• **Magazine slots:**
	  • shown on the bottom of the screen
	  • numbered sequentially from left to right 01 to 14 for LTO and 01 to 12 for SDLT
	• **Rear slots:**
	  • shown on the top of the screen
	  • numbered sequentially from left to right 15 to 23 for LTO and 13 to 20 for SDLT
	• **IE slot:**
	  • shown on the bottom right of the screen
	  • ▮ ▮ arrows indicate configured as IE slot (represented by *IE* in SRC/TGT fields)
	  • ▮ ▮ vertical bars indicate configured as data slot (represented by 00 in SRC/TGT fields)
	• **Drives**:
	  • shown on top right of the screen
	  • indicated by *D1* or *D2* in the SRC/TGT field



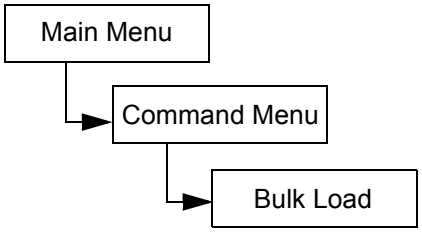
Selection	Description/Result
Step 3 Press ▶ to move the cursor to the target field.	
 **Step 4** Press ▲ and ▼ to select the target slot.	In this example, the cartridge in the source slot 15 is moved to the target slot IE.
 **Step 5** Press ▶ to highlight Execute (☑) and then press ◎.	The media is moved from the specified source to the specified target location.
 **Step 6** A confirmation screen displays. Press ◎ to dismiss.	

Step 7	You can continue to move media, or you can exit to the **Command** menu. Press ▶ twice to return to the **Command** menu.	

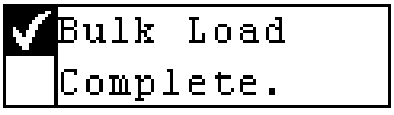
Bulk Load

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 8-18.

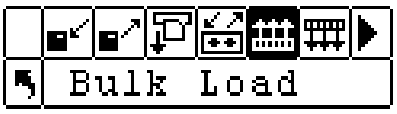
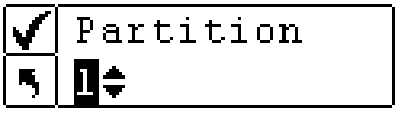
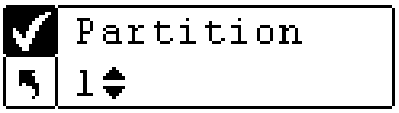
Path:

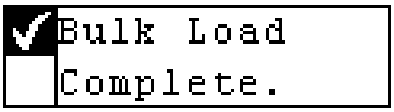


Unpartitioned Library Bulk Load

Selection	Description/Result
 **Step 1** From the **Command** menu, highlight  and press  .	Moves cartridges from magazines to rear slots.
Step 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.
 **Step 3** When the bulk load is complete, a completion screen is displayed. Press  to dismiss the screen.	

Partitioned Library Bulk Load

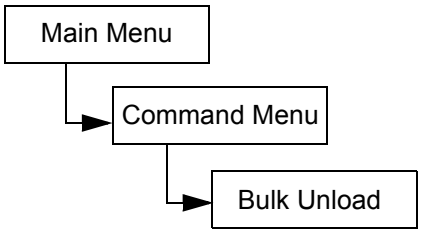
Selection	Description/Result
 **Step 1** From the **Command** menu, highlight and press .	Moves cartridges from magazines to partitioned rear slots.
 **Step 2** Press ▲ and ▼ to select the partition you want to move cartridges to.	Available options are: • **Partition 1:** will move cartridges from the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

Selection	Description/Result
 **Step 5** When the bulk load is complete, a completion screen is displayed. Press to dismiss the screen.	

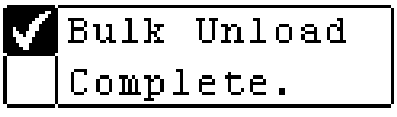
Bulk Unload

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 8-18.

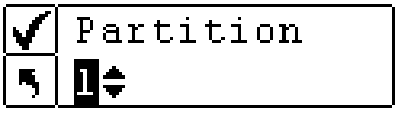
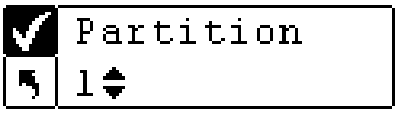
Path:

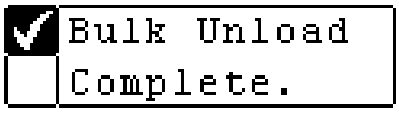


Unpartitioned Library Bulk Unload

Selection	Description/Result
 **Step 1** From the **Command** menu, highlight and press .	Moves cartridges from rear slots to magazines.
 **Step 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

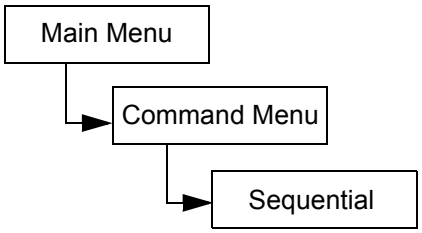
Selection	Description/Result
 **Step 1** From the **Command** menu, highlight and press .	Moves cartridges from rear slots to magazines.
 **Step 2** Press ▲ and ▼ to select the partition you want to move cartridges from.	Available options are: • **Partition 1:** will move cartridges from the rear Partition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

Selection	Description/Result
 **Step 5** When the bulk load is complete, a completion screen is displayed. Press to dismiss the screen.	

Sequential

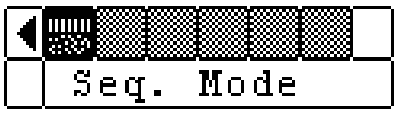
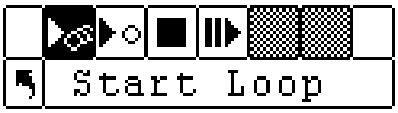
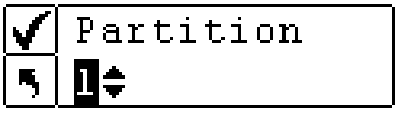
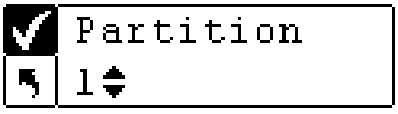
Sequential allows you to start, stop, and resume the sequential backup sequence. You can also set sequential loop mode. If your library is partitioned, you can control each partition independently.

Path:



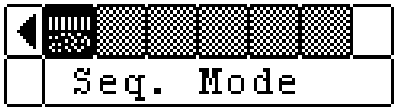
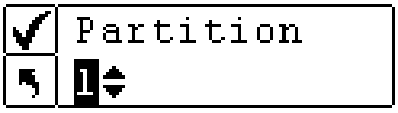
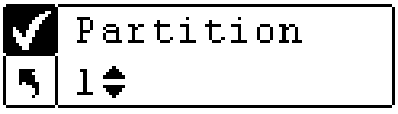
Start Loop

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
 **Step 1** From the **Command** menu, highlight and press .	Sets options for sequential backup.
 **Step 2** Highlight and press .	Starts looped sequential backup.
 **Step 3** Press ▲ and ▼ to select the partition you want to set to sequential loop mode.	
 **Step 4** Press ▶ to highlight Execute (☑) and then press .	Sequential loop backup begins.

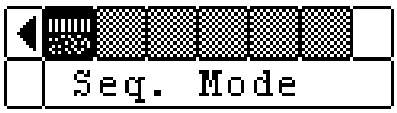
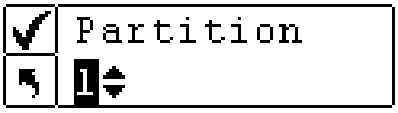
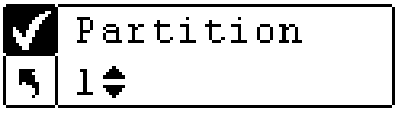
Start Single

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
 **Step 1** From the **Command** menu, highlight and press .	Sets options for sequential backup.
 **Step 2** Highlight and press .	Starts single sequential backup.
 **Step 3** Press ▲ and ▼ to select the partition you want to set to sequential single mode.	
 **Step 4** Press ▶ to highlight Execute ( ) and then press .	A single sequential backup begins.

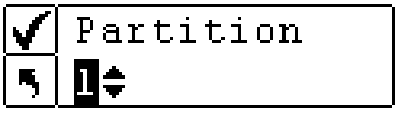
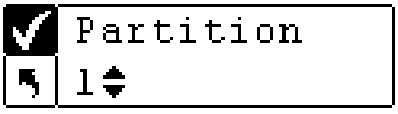
Stop Sequential Backup

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

Selection	Description/Result
 **Step 1** From the **Command** menu, highlight and press .	Sets options for sequential backup.
 **Step 2** Highlight and press .	Stops sequential backup.
 **Step 3** Press ▲ and ▼ to select the partition you want to stop the sequential backup on.	
 **Step 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
 **Step 1** From the **Command** menu, highlight and press .	Sets options for sequential backup.
 **Step 2** Highlight and press .	Continues sequential backup.
 **Step 3** Press ▲ and ▼ to select the partition you want to resume the sequential backup on.	
 **Step 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

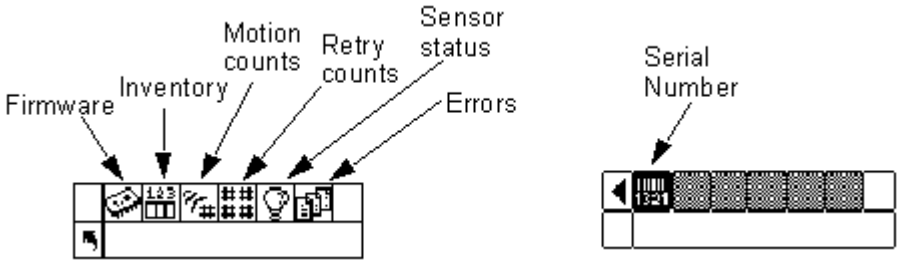
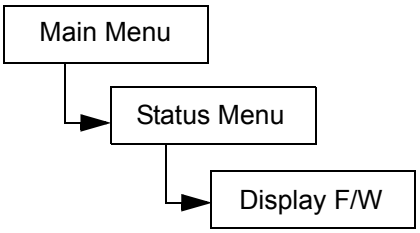


Figure 4 Status Menu

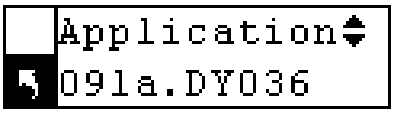
Display Firmware Version

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 website (www.adic.com) to determine if a newer version is available.

Path:



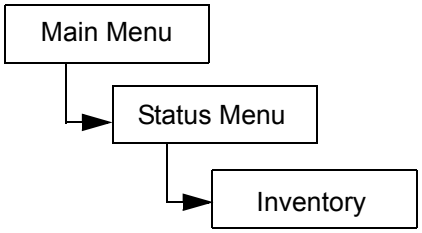
Selection	Description/Result
 **Step 1** From the **Status** menu, highlight  and press .	*Display F/W* displays the current level of library firmware.

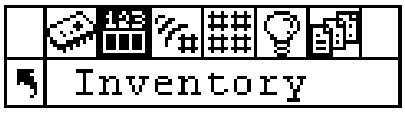
Selection	Description/Result
 **Step 2** Press ▲ and ▼ to view all of the firmware revision numbers.	The current version of library firmware is displayed. You can view firmware revision numbers for: • **Application:** controls the library operations • **Picker:** operates the cartridge picker mechanism in your library • **RMU:** RMU firmware • **Drive1:** Drive firmware • **Drive2:** Drive firmware • **Boot:** boots the library controller firmware • **Picker Boot:** boot code for picker
 **Step 3** To exit, press ▶ to highlight ↖ and then press ◉.	You are returned to the **Status** menu.

Display Inventory Information

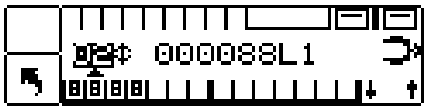
Inventory provides a display of the tape cartridges present in the rear slots and magazines. A physical inventory is also conducted each time you power on your Scalar 24.

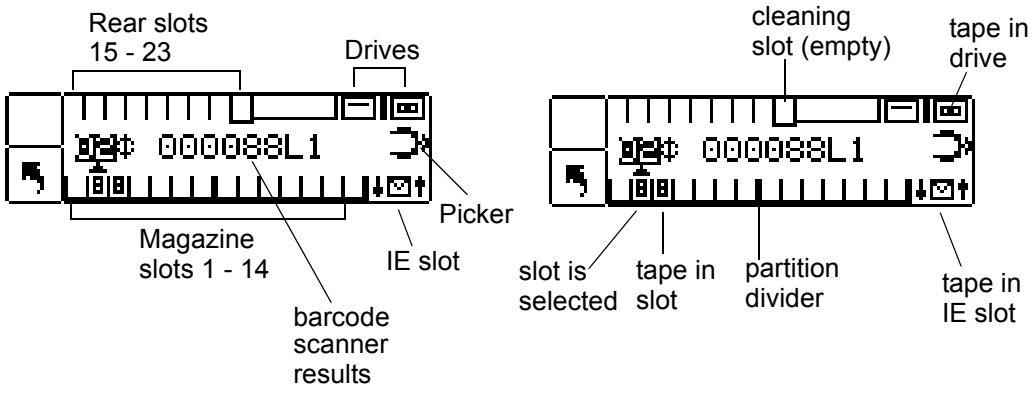
Path:

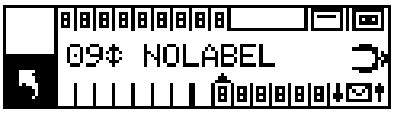


Selection	Description/Result
 **Step 1** From the **Status** menu, highlight  and press ◉.	Displays the current library cartridge content.

Selection	Description/Result


Step 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.
	• **Magazine slots:**
	  • shown on the bottom of the screen
	  • numbered sequentially from left to right 01 to 14 for LTO or 01 to 12 for SDLT
	  • the magazines slots will not be shown if the magazines are not installed
	• **Rear slots:**
	  • shown on the top of the screen
	  • numbered sequentially from left to right 15 to 23 for LTO or 13 to 20 for SDLT
	  • double bar will be shown in rear slots to show partition
	  • a horizontal bar will close off slots reserved for cleaning
	• **IE slot:**
	  • shown on the bottom right of the screen
	  • ↓ ↑ arrows indicate configured as IE slot (represented by *IE* in slot field)
	  • ▮ ▮ vertical bars indicate configured as data slot (represented by 00 in slot field)
	• **Barcode Scanner results:**
	  • shown on middle of screen and changes as various slots are selected
	  • blank: scanner not installed
	  • *Scan Off*: scanner installed but turned off
	  • *No Label*: no barcode label present or unable to read label
	  • number: displays entire barcode label regardless of what the scanner is set at
	  • number of cleaning slots remaining will be shown instead of a barcode for full cleaning slots
	• **Drives**:
	  • shown on top right of the screen

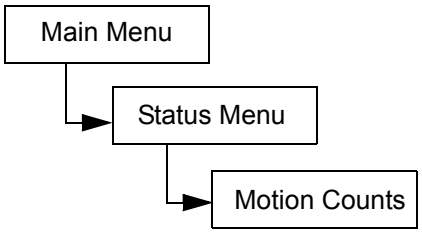


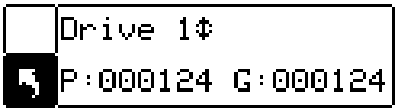
Selection	Description/Result
 **Step 3** To exit, press ▶ to highlight and then press .	You are returned to the **Status** menu.

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:

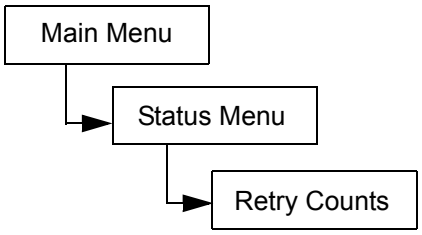


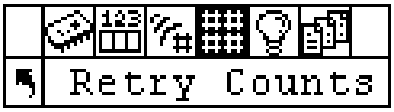
Selection	Description/Result
 **Step 1** From the **Status** menu, highlight  and press  .	Displays slot usage information.
 **Step 2** Press ▲ and ▼ to view the motion counts for each slot, drive, and IE slot.	You can view motion counts for: • **System Moves:** displays the total number of library moves. A move is described as a "get" from one location and a "put" to another location. • **Drive 1:** displays the number of Gets and Puts to and from Drive 1. • **Drive 2:** displays the number of Gets and Puts to and from Drive 2. • **IE and Slots 1 - 23 for LTO or 1 - 20 for SDLT:** displays the total number of moves for a particular slot. The format of the entries is: • **P:** = Number of “puts” to a location. • **G:** = Number of “gets” from a location.
 **Step 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:

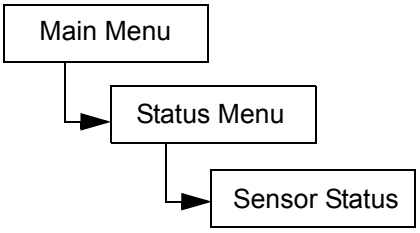


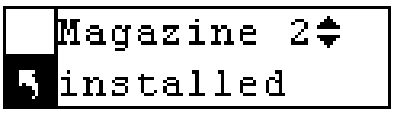
Selection	Description/Result
 **Step 1** From the **Status** menu, highlight and press .	Displays the number of retry operations.
 **Step 2** Press ▲ and ▼ to view all of the retry counts.	You can get retry counts on the number of: • **System:** displays the total number of library retries. • **D1:** displays how many times a get or a put retry has occurred for Drive 1. • **D2:** displays how many times a get or a put retry has occurred for Drive 2. • **Position:** displays how many times the picker has retried positioning. • **Scan:** displays how many times the barcode scanner has scanned the tape cartridges. • **IE 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. The format of the entries is: • **P:** = Number of “puts” to a location. • **G:** = Number of “gets” from a location.
 **Step 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:

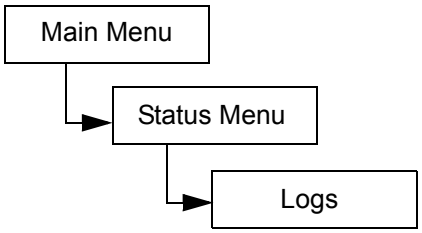


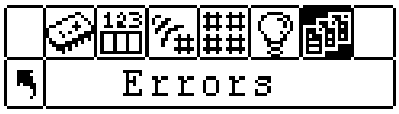
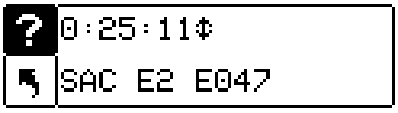
Selection	Description/Result
 **Step 1** From the **Status** menu, highlight and press .	Displays results of real-time sensors.
 **Step 2** Press ▲ and ▼ to view all of the sensor statuses.	You can view sensor status for: • **Door (Media Access):** opened or closed • **Picker:** empty or full • **IE Slot:** empty or full • **Magazine 1:** installed or removed • **Magazine 2:** installed or removed • **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.
 **Step 3** To exit, press ▶ to highlight and then press .	You are returned to the **Status** menu.

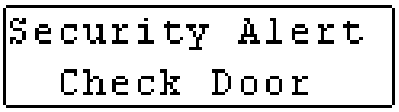
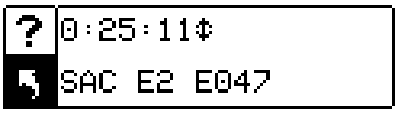
Display Errors

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 via 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:



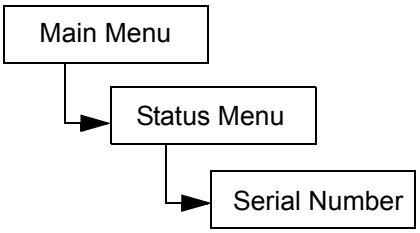
Selection	Description/Result
 **Step 1** From the **Status** menu, highlight and press .	Displays Error log.
 **Step 2** Press ▲ and ▼ to scroll through the error messages.	The format of the entries is as follows: 0:00:00 = hours:minutes:seconds of power on time since the error occurred SAC E2 E047 = Service Action Code of error message For more information on error codes, see Scalar 24 Error Messages on page 9-2.
 **Step 3** If you would like to get more information, press ▶ to highlight and then press .	The text version of the Error message is displayed.

Selection	Description/Result
 **Step 4** Press ◎ to dismiss the message and return to the Error log.	
 **Step 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
 **Step 1** From the **Status** menu, highlight 1321 and press ◎ .	Displays serial numbers.

Selection	Description/Result
 **Step 2** Press ▲ and ▼ to view all of the serial numbers.	Available options are: • Library • Drive 1 • Drive 2 • RMU
 **Step 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 firmware
- Run Demo tests
- Run Self tests
- Run Drive Maintenance tests
- Run Manufacturing tests
- Position the picker
- Output logs
- Replace drive

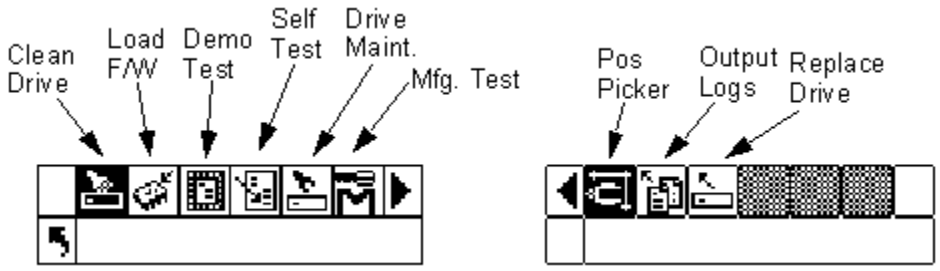
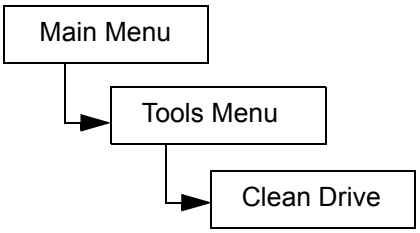


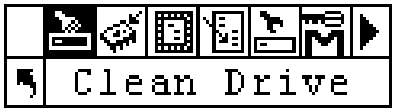
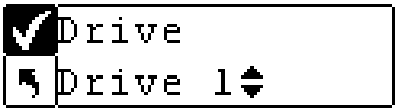
Figure 5 Tools Menu

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 8-14.

Path:

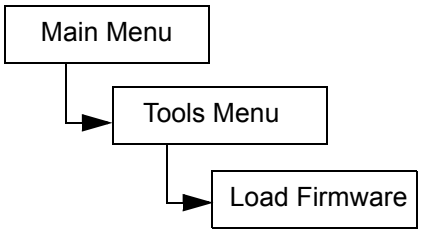


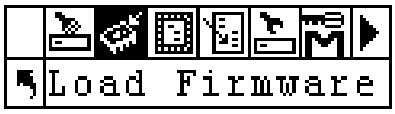
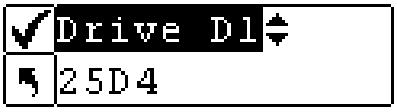
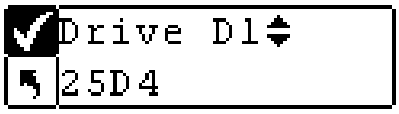
Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight  and press .	Manually cleans a drive.
 **Step 2** Press ▲ and ▼ to select the drive to be cleaned.	If you have two drives installed, you can clean Drive 1 or Drive 2.
 **Step 3** Press ▶ to highlight Execute (☑) and then press .	The drive is cleaned and the cleaning tape is returned to the cleaning slot.
Step 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:



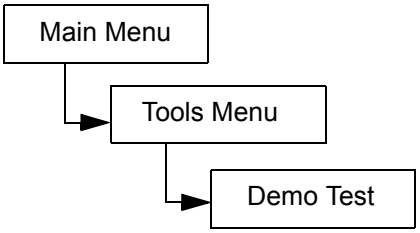
Selection	Description/Result
Step 1 Open the IE door and inset the firmware upgrade tape into the IE slot.	
 **Step 2** From the **Tools** menu, highlight  and press .	Loads Firmware.
 **Step 3** Press ▲ and ▼ to select which firmware you want to upgrade.	Available options are: • **Drive 1:** upgrades firmware for Drive 1 • **Drive 2:** upgrades firmware for Drive 2 • **Lib via D1:** upgrades the library firmware using Drive 1 • **Lib via D2:** upgrades the library firmware using Drive 2 • **All Drives:** ugrades both drives with a single command
 **Step 4** Press ▶ to highlight Execute (☑) and then press  .	The new firmware is loaded and the upgrade tape is retuned to the IE slot.

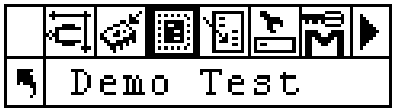
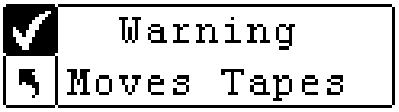
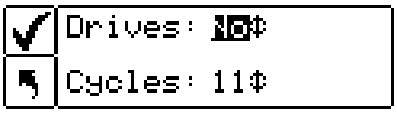
Selection	Description/Result
Step 5 A confirmation message is displayed. Press to dismiss.	
Step 6 Remove the upgrade tape from the IE slot.	

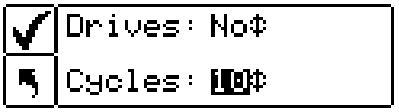
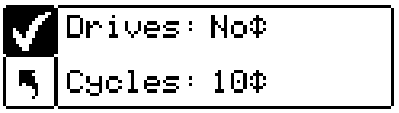
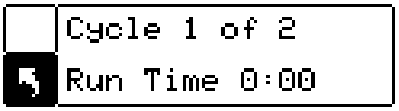
Demo Test

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

Path:



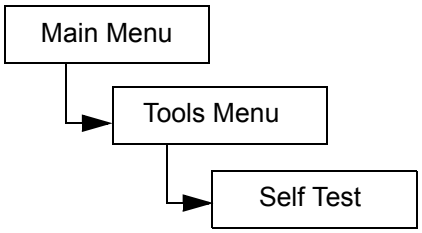
Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight and press .	Runs Demo test.
 **Step 2** You will be prompted with a warning, press to continue the test.	**CAUTION: This test will move your tapes and may change your inventory information by not returning tapes to the same locations.**
 **Step 3** Press ▲ and ▼ to select/deselect the Drives.	Available options are: • **yes:** allows loads and unloads to the drives • **no:** does not load or unload tapes to the drives

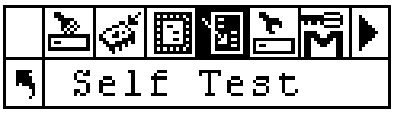
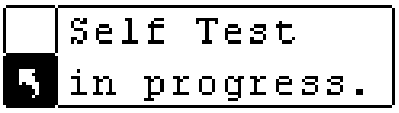
Selection	Description/Result
Step 4 Press ▶ to move to the next option.	
 **Step 5** Press ▲ and ▼ to select the number of Cycles to include in the demo test.	You can select between 1 and 100 cycles.
 **Step 6** Press ▶ to highlight Execute (☑) and then press ◎.	The demo test begins.
 **Step 7** A status screen will display the progress of the test. You can press ◎ at any time to cancel the test.	
Step 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
 **Step 1** From the **Tools** menu, highlight  and press  .	Runs self test.
 **Step 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.
Step 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.

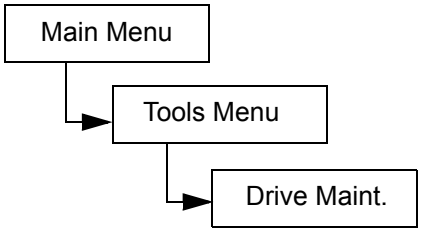
To better understand these tests, you need to understand the format of the tape. The tape is divided into 4 data sections. Each data section contains 96 tracks (96*4=384 tracks, the number of tracks on a generation 1 cartridge). On each edge of the tape (2 servo bands), and between the databands (3 servo bands), there are pre-formatted servo bands (5 in total). A wrap is defined as a trip from logical BOT to logical EOT (a round trip would be 2 wraps).

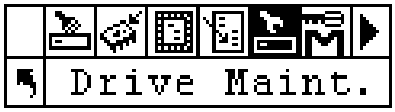
Each test is described in more detail below.

Power on self test (POST)	Runs self diagnostics. This test takes approximately 1 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 3 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 3 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 10 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 10 minutes.

Path:



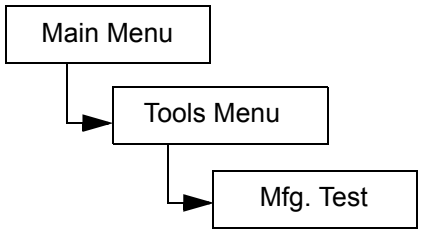
Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight and press .	Runs Drive Maintenance test.
 **Step 2** A warning message displays. Press to continue with the test.	**WARNING: For all Read/Write tests, the content of the tape will be destroyed when running the test.**

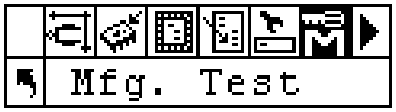
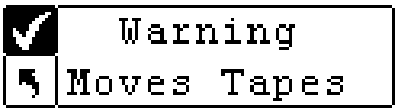
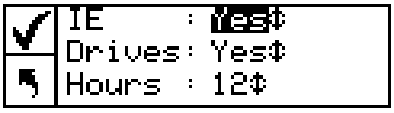
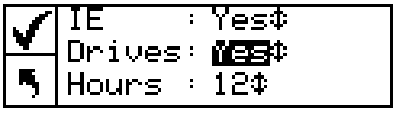
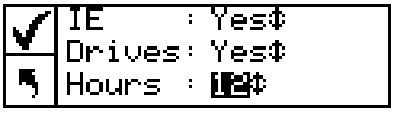
Selection	Description/Result
 **Step 3** Press ▲ and ▼ to select the drive you wish to run the test on.	
Step 4 Press ▶ to move to the next option.	
 **Step 5** Press ▲ and ▼ to select the test you wish to run.	Available options are: • POST • Fast R/W • Normal R/W • Media R/W • Head R/W
Step 6 Press ▶ to highlight Execute (☑) and then press ◎.You can press ◎ at any time to cancel the test. The test begins.	

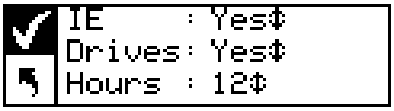
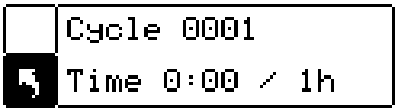
Manufacturing Test

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:



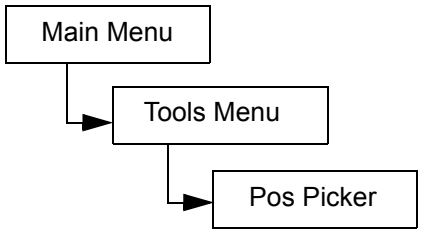
Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight and press .	Runs Manufacturing test.
 **Step 2** You will be prompted with a warning, press to continue the test.	CAUTION: This test will move your tapes and may change your inventory information by not placing tapes in the same locations.
 **Step 3** Press ▲ and ▼ to select/deselect the IE slot.	Available options are: • **yes:** includes the IE slot in the tape swap cycle • **no:** does not load or unload a tape to the IE slot
Step 4 Press ▶ to move to the next option.	
 **Step 5** Press ▲ and ▼ to select/deselect the Drives slot.	Available options are: • **yes:** allows loads and unloads to the drives • **no:** does not load or unload tapes to the drives
Step 6 Press ▶ to move to the next option.	
 **Step 7** Press ▲ and ▼ to select the number of Hours to run the manufacturing test.	You can choose between 0 and 72 hours.

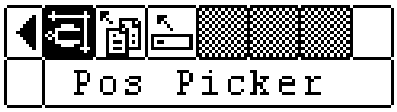
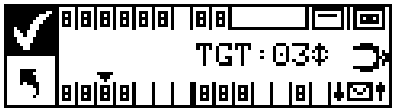
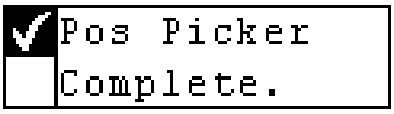
Selection	Description/Result
 **Step 8** Press ▶ to highlight Execute (☑) and then press ◎.	The Manufacturing test begins.
 **Step 9** A status screen will display the progress of the test. You can press ◎ at any time to cancel the test.	
Step 10 When the test is complete, a completion message is displayed. 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:

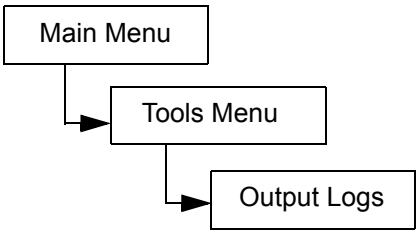


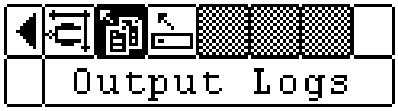
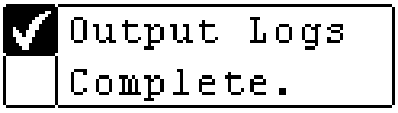
Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight and press .	
 **Step 2** Press ▲ and ▼ to select the target slot to move the picker to.	**TGT** = Target slot to position the picker in front of.
 **Step 3** Press ◀ to highlight Execute (✓) and then press .	The picker moves to the specified position.
 **Step 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:

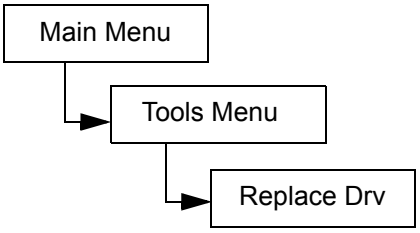


Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight and press .	Outputs logs.
 **Step 2** When the output is complete, a completion message is displayed. Press to dismiss.	

Replace a Drive

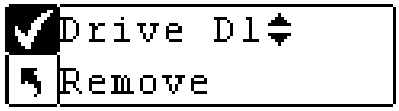
Replace Drive either prepares a drive to be removed or reactivates a drive once it is installed.

Path:



Removing a Drive

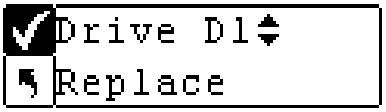
If you are removing a drive, the drive will be taken offline and will not be available for use.

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

Replacing a Drive

Replacing a drive will reinitialize the drive sled.

Selection	Description/Result
 **Step 1** From the **Tools** menu, highlight and press .	Prepares a drive to be removed/replaced.

Selection	Description/Result
 **Step 2** Press ▲ and ▼ to select the drive you wish to remove/replace.	
 **Step 3** Press to highlight Execute (☑) and then press .	The new drive can be used.

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. 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 recommend actions.

SAC Code	Error Message	Description	Recommended Action
00h	Unknown Error Call Service	An unexpected error has occurred.	Capture the support and error logs and provide them to service.
01h	OS Error Reboot System	Operating System Error	Reboot the system. If the problem persists, capture the support and error logs and contact ATAC.
02h 03h 04h	Z80 Error Call Service OCP Error Call Service XA Error Call Service	A robot controller, OCP controller board, or XA main controller board hardware problem exists which requires replacement.	Contact ATAC.
05h	SW Error Call Service	Application Software (firmware) Error	Reboot the system. Capture the support and error logs and contact ATAC.
10h and 14h	SN Missing 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 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 8-32 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 tot he 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.
70h, 81h, and 82h	Picker Error Reset System	The picker was unable to perform a requested command.	Assure that the picker path is clear and that cartridges are properly inserted into storage and IE slots, as well as drive locations. Reboot the system.If the problem persists, contact ATAC.

SAC Code	Error Message	Description	Recommended Action
90h	Drive Error 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 Call Service	Invalid Drive Firmware	Reload drive firmware or call ATAC.
EAh	Sled Missing Check Sled	A drive sled has been removed or is not connected properly.	Re-insert the sled or check the connections.
D0h	PS Failure 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 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 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 E8h	Pick Failed Clear Picker Place Failed 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 9-6.
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 IE slot.	Check and ensure that magazines are installed, the door is closed, and that the IE 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/SE 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 IE 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 recovered to a data slot.	Place the tape back to the slot.

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.

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

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

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

Manual Removal of a Tape From a Drive

To manually remove a tape from a drive, use the following steps:

Step 1 Position the picker to the left, which is away from the drive, using the Operator Panel. Refer to the procedure above.

Step 2 Open the front door and remove the two magazines.

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

Step 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, use the following steps:

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

Step 2 Power off the library.

Step 3 Open the front door and remove the two magazines.

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

Step 5 Gently pull the tape out toward you.

Manual Removal of a Tape From the Picker

To manually remove a tape from the picker, use the following steps:

Step 1 Position the picker to be accessible to you. Refer to the procedure above.

Step 2 Power off the library.

Step 3 Open the front door and remove the two magazines.

Step 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.

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 (i.e., 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 – which will help you 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

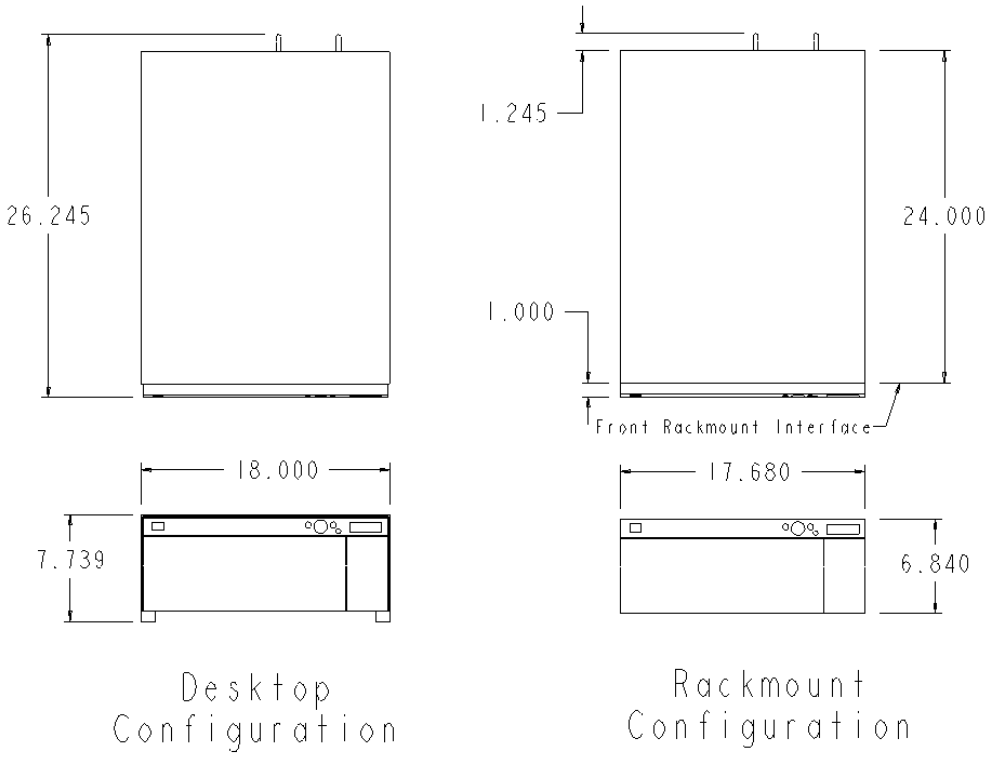
Having this information available when you call for customer assistance will enable ADIC's Technical Assistance Center personnel to resolve your problem in the most efficient manner possible.

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

Specifications

The following tables provide specification information about the Scalar 24.

Dimensions



NOTE: Above measurements in inches.

Weight

Library with 1 drive	55 lbs (25 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	42 lbs (19 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 Ultrium	100 GB	200 GB	2.4 TB	4.8 TB
SDLT 320	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 3580 Ultrium	15 MB/s	54 GB/hr	108 GB/hr	108 GB/hr	216 GB/hr
Quantum SDLT 320	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 UL Standard 1950, Third Addition EN60950
Emissions	FCC #47, Part 15, Subpart B, Class A; ICES-003 (Canada);VCCI Class A (Japan); BSMI CNS 13438 (Taiwan); EN55022:1994; EN61000-3-2:2001; EN61000-3-3:1998 (Europe); AS/NZS 3548:1995 (Australia/NZ)
Immunity	EN 55024:1998 ITE – Immunity Characteristics, Limits & Methods of Measurement; European Union CE Immunity Standards

Power

Input Power	100 – 240 VAC, 50-60 Hz

Power Consumption (includes barcode scanner, RMU, SCSI Terminators)	**RMS Power (W)**		**Peak Power (W)**	
	LTO	**SDLT**	**LTO**	**SDLT**
One Drive	104	104	162	157
Two Drives	179	179	290	280
Two Drives with SNC	253	253	376	366

Thermal Environment

	Operating	Non-operating	Shipping & Storage
Dry Bulb Temperature	10ºC to 38ºC (50ºF to 100ºF) @2000 M 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. LVD/S
Fibre Channel	A fibre channel interface is provided in the optional Storage Networking Controller. It will support 50 Micron Multi-Mode Short-wave and 65 Micron Multi Mode Fibre.

Reliability

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