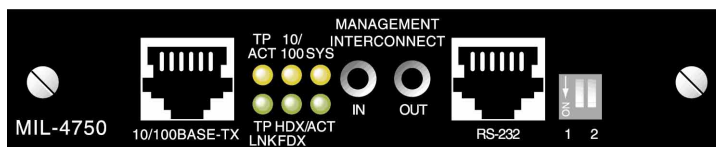




# MIL-4750 and MIL-4755 Master/Slave Modules User's Guide

with  
*FastManage™*-Specific Information



Sunnyvale, California  
Minnetonka, Minnesota

---

## **LEGAL**

### **Trademark Rights**

© 2000 MiLAN, the MiLAN logo, and MiLAN Technology are either trademarks or registered trademarks of Digi International, Inc. in the United States and/or other countries. All other trademarks are the property of their respective holders.

Information in this document is subject to change without notice and does not represent a commitment on the part of MiLAN Technology.

MiLAN Technology provides this document “as is,” without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranty of fitness or merchantability for a particular purpose. MiLAN Technology may make improvements and/or changes in this manual or in the product(s) and/or the program(s) described in this manual at any time.

This document could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes may be incorporated in new editions of the publication.

### **The MiLAN Technology Five-Year Limited Warranty**

MiLAN Technology warrants to the original consumer or purchaser that each of its products, and all components thereof, will be free from defects in material and/or workmanship for a period of five years from the original factory shipment date. Any warranty hereunder is extended to the original consumer or purchaser and is not assignable. MiLAN Technology makes no express or implied warranties including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, except as expressly set forth in this warranty. In no event shall MiLAN Technology be liable for incidental or consequential damages, costs, or expenses arising out of or in connection with the performance of the product delivered hereunder. MiLAN Technology will in no case cover damages arising out of the product being used in a negligent fashion or manner.

### **Regulatory Approvals**

- FCC Class A
- UL 1950
- CSA 22 No. 950
- EN60950
- CE
- EN55022 Class A
- EN55024

### **Canadian EMI Notice**

This Class A digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

### **European Notice**

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the commission of the European Community. Compliance with these directives implies conformity to the following European Norms:

- EN55022 (CISPR 22) - Radio Frequency Interference
- EN61000-X - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety

### **Year 2000 Compliance**

MiLAN Technology warrants that the MIL-4750 and MIL-4755 series are year 2000 compliant. See [www.milan.com](http://www.milan.com) for additional information on other products.

### **To Contact Technical Support**

For prompt response when calling for technical support, have the following information ready: product serial number, date of purchase, vendor or place of purchase.

Contact one of the following:

- In North America: call +1.408.744.2751 or email: [support@milan.com](mailto:support@milan.com)

International: call +49.231.97.47.780 or email: [intl-support@milan.com](mailto:intl-support@milan.com)

# Table of Contents

<b>Preface</b>	P-1
About this Manual .....	P-1
Master/Slave Documentation .....	P-2
Contents of this Document .....	P-3
Package Contents .....	P-4
Notation Conventions .....	P-5
 <b>Chapter 1: Introduction</b>	1-1
Overview of the Master/Slave Modules .....	1-1
MIL-4750 Master Module .....	1-1
MIL-4755 Slave Module .....	1-1
Features .....	1-2
Common Features for Both Modules.....	1-2
Features of the MIL-4750 Master Module.....	1-2
Utilities .....	1-3
The Next Step .....	1-4
 <b>Chapter 2: Installation</b>	
Installation Requirements .....	2-1
Installation .....	2-2
DIP Switch Settings .....	2-3
 <b>Chapter 3: FastManage for the Media Conversion System</b>	3-1
Overview of FastManage .....	3-1
Starting FastManage .....	3-2
Hot Spots and System Information .....	3-3
Configure Pull-down Menu .....	3-4
 <b>Appendix A: Specifications</b>	A-1
Hardware Features for the MIL-4750 .....	A-1
System LEDs for the MIL-4750 .....	A-1
System LEDs for the MIL-4755 .....	A-1
Connectors .....	A-2
Environmental Operating Conditions .....	A-2
Power Supply .....	A-2

<b>Appendix B: Technical Support Services</b>	<b>B-1</b>
World Wide Web Server .....	B-1
Internet FTP Server .....	B-1
Contacting Technical Support.....	B-1
Expediting Technical Support.....	B-1
RMA Procedures.....	B-2

# Preface

## P.1 About this Manual

This guide covers both the MIL-4750 and the MIL-4755 Master/Slave modules. These modules were designed to be installed into MiLAN's Media Conversion System.

The terms "Master/Slave module" and "module" are used throughout this document to describe these devices. This manual assumes that you are familiar with the tasks of a system administrator.

## P.2 Master/Slave Documentation

There are two separate manuals shipped with the Master/Slave modules:

- *MIL-4750/MIL-4755 Master/ Slave Modules User's Guide, with FastManage-specific Information.* This document has the following information:
  - Instructions on how to physically install a module
  - Information on the FastManage suite of software and how it affects a specific MIL-4750 and other modules
  - Specifications for both modules

This document is unique to the Master/Slave modules.

- *LAN products CD-ROM* (Included with MIL-4750 only).

Use the *Fast Manage User's Guide* section of the CD-ROM to set up the FastManage software for the MIL-4750 Master Module.

This document is generic for all MiLAN products that implement FastManage.

## P.3 Contents of this Document

- **Chapter 1:** Has an overview of the Master/Slave modules
- **Chapter 2:** Provides instructions for installing the modules
- **Chapter 3:** This section has information on FastManage for the MIL-4750 Master module
- **Appendix A:** Specifications information for both modules
- **Appendix B:** Technical support information

## P.4 Package Contents

- MIL-4750 Master or MIL-4755 Slave module
- RS-422 cable
- *LAN Products CD-ROM* (MIL-4750 Master module only)
- *MIL-4750/MIL-4755 Master/Slave Modules User's Guide, with FastManage-specific Information.*
- Warranty card

## P.5 Notation Conventions

This document has certain notation conventions that make it easier to follow instructions and examples.

**Table P-1: Notation Conventions**

Conventions	Description
[return]	Brackets indicate a key to be pressed ([tab]).
Courier bold	Courier boldface font indicates a system message, options, or instructions to be implemented.
"+" sign	The "+" sign is used to indicate holding down one key while pressing another (e.g., "press [shift]+[C]").
Italics	Italics designate variables and titles of other documents.
"Quick Reference"	Quotes refer to important information or a specific name.
CAPS	Caps indicates abbreviations, specific directory, or product markings

# Chapter 1: Introduction

Chapter 1 gives a description of the MIL-4750 and MIL-4755 Master/Slave modules.

## 1.1 Overview of the Master/Slave Modules

### 1.1.1 MIL-4750 Master Module

The MIL-4750 Master module is designed to provide two-way communication between a host workstation and MiLAN's media conversion modules. Communication between these devices is performed via the network link and SNMP management. The module uses auto-negotiation to perform in either 10/100 Mbps.

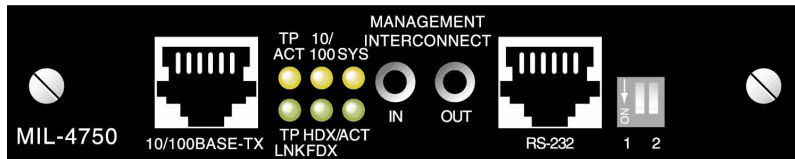


Figure 1-1. MIL-4750 Master Front Panel

### 1.1.2 MIL-4755 Slave Module

The MIL-4755 Slave module is designed to send commands to and receive status from MiLAN's media conversion modules.



Figure 1-2. MIL-4755 Slave Front Panel

## 1.2 Features

One MIL-4750 Master module can support (in a daisy-chain configuration via the serial RS-422 interface) up to four MIL-4755 Slave modules. Definition of daisy-chain: "out" port of 4750 to "in" port of 4755. Last 4755 "out" port to "in" port of 4750.

### 1.2.1 Common Features for Both Modules

- Hot-swappable
- Diagnostic LED(s)

### 1.2.2 Features of the MIL-4750 Master Module

- 10/100BASE-TX, RJ-45 connector for in-band management
- RS-232 serial port for out-of-band management
- SNMP management over TCP/IP, IPX or NetBEUI
- RARP, BOOTP, DHCP and telnet support
- Two-position DIP switch for hand-set configuration

## 1.3 Utilities

To make the MIL-4750 Master module easier to manage, MiLAN supplies the FastManage suite of software. FastManage is a Windows-based menu software application.

Firmware upgrades of the flash EPROMs can be done via network connections.

## 1.4 The Next Step

Use this guide to install the modules. Then refer to the *FastManage User's Guide* section of the LAN Products CD-ROM to configure it to work with the FastManage software. Chapter 3 does not have any specific instructions on the FastManage suite of software (refer to the *FastManage User's Guide*).



# Chapter 2: Installation

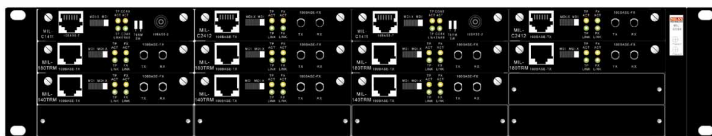
Chapter 2 gives installation information for the modules.

## 2.1 Installation Requirements

Before installing a module, you will need the following (most items sold separately):

- An MIL-9200X Media Conversion System
- Ethernet cabling (CAT 5 for in-band management)
- RS-232 Serial cabling (for out-of-band management)
- Female DB9 connector to RJ45.

## 2.2 Installation



Do the following to install a MIL-4750 Master or MIL-4755 Slave into the rear of the MIL-9200X Media Conversion System:

1. For the MIL-4750, make any configuration changes to the module (i.e., jumper settings).
2. Remove the faceplate from the rear of the chassis.

3. Slide the module into the slot through the guide rails.
4. Insert the module into the card-edge connector (port bay). Make sure it is seated firmly.
5. Secure the module with the two thumbscrews located on the faceplate of the unit.
6. Make all your network connections.

**Note:** Do not plug a phone cable (RJ-11) into the RS-232 and/or RJ-45 connectors.

## 2.3 DIP Switch Settings

On the front panel of the MIL-4750 module is a two-position DIP switch. Use Table 2-1 to configure this DIP switch.

**Table 2-1: DIP Switch Settings**

D1	D2	Mode/Description
Up	Up	Network mode. Telnet not allowed
Up	Down	Telnet and network mode (Default setting)
Down	Up	Diagnostic mode (only serial port active) or ascii test page
Down	Down	Diagnostic mode (only serial port active) or ascii test page

**Note:** If D1 is "down" and a serial printer is attached, the printer will print a manufacturing test page. This test page printed represents exactly what a user would see if a terminal was attached to the serial port. Also, when D1 is "down," the module is in serial configuration mode. Network traffic is not enabled.

# Chapter 3: FastManage for the Media Conversion System

Chapter 3 discusses FastManage-specific software as it applies to the media conversion system, including the MIL-4750 Master module. This chapter does not have detailed FastManage instructions (refer to the *FastManage User's Guide* section of the LAN Products CD-ROM).

## 3.1 Overview of FastManage

FastManage configures and manages most SNMP-types of devices over the subnet; including print servers and stackable hubs. Icons appears on a "Map" that represents each SNMP device found on the network. This section describes the icons for the media conversion system, including:

- MIL-9200X media conversion system (stacks)
- MIL-4750 Master module
- \* MIL-XXXXX module

**Note:** \* The Media Conversion System (MCS) Devices all have identical FastManage features and functions.

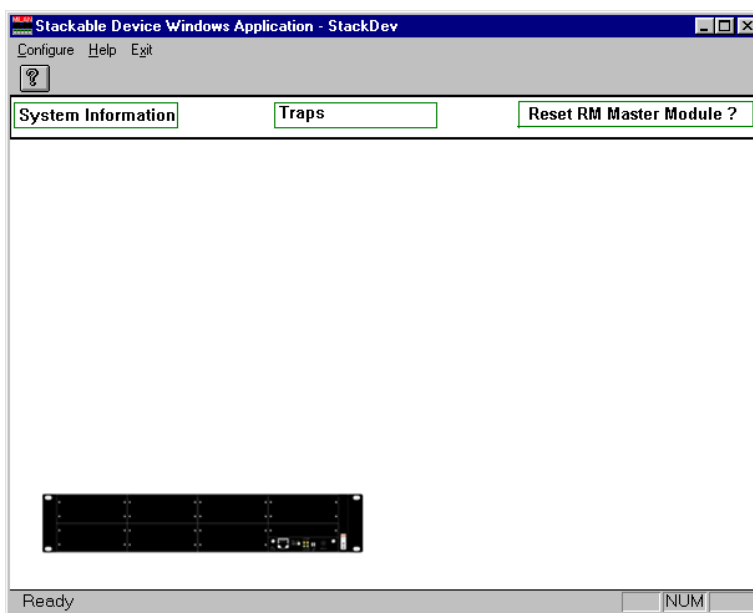
## 3.2 Starting FastManage

There are two ways to start the FastManage suite of software:

- Discovery Application icon:
  - a. Start by double-clicking on the **Discovery Application** icon. The software discovers all SNMP managed devices on the subnet.
  - b. Icons will now appear on *Map 1* as "thumbnails," each represent an SNMP device.
  - c. Double-click on the media conversion device's icon to

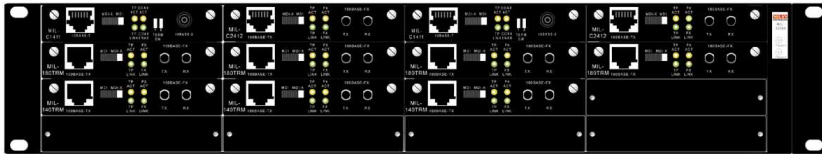
display its “stack” of device(s) (Figure 3-1).

- **Media Conversion System Mgr. Icon:**
  - a. Also start the software by double-clicking on the **Media Conversion System Mgr.** icon.
  - b. Enter the IP Address of a specific device that you want to manage.
  - c. A “stack” of SNMP managed device(s) appear. One to sixteen devices may be displayed (Figure 3-1).



**Figure 3-1. Stack Device Graphical Icon**

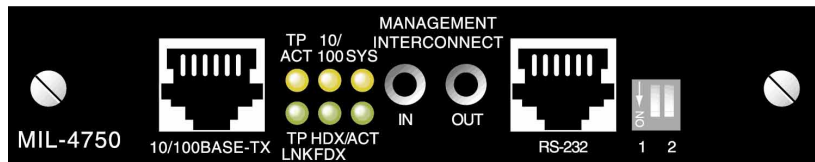
- d. To launch a device in the stack, double-click on that particular unit. Figure 3-2 may appear (depending on the device that was selected):



**Figure 3-2. First Device of a Stack**

- e. Double-click on a module to launch it. Figure 3-3 may appear (depending on the module selected).

**Note:** MiLAN offers many different modules to configure, including the MIL-4750 (shown in Figure 3-3). All modules, except the MIL-4755 slave module, have hot spots where the user can gain information.



**Figure 3-3. MIL-4750 Master Module**

### 3.3 Hot Spots and System Information

Hot spots on the graphic are used to gain information on the device. Use the mouse to highlight the selection (a block around the area appears), and click on it to obtain information.

The following describes the hot spots for the MIL-4750 and the

MIL-9200X redundant rack mount chassis. For more information and detailed descriptions of these hot spots, refer to the *FastManage User's Guide* section of the LAN Products CD-ROM.

- **Traps** (Figure 3-1): This selection alerts the user to any problem associated with the device (e.g., a power failure).
- **System Information** (Figure 3-1): This selection describes the device chosen, including its *Location* and *Up Time*.
- **Reset RM Master Module** (Figure 3-1): When this is clicked on, a warning message appears asking whether or not the user wants to reset the rack mount's Master module. Select **Yes** to continue, **No** to stop.
- **Reset this Module** (Figure 3-1): Functions the same as the "Reset RM Master Module" (above) hot spot.
- **Device speed/Duplex**: This is the RJ-45 portion of the graphic (Figure 3-1). When it is clicked on, the software displays the device's operating speed (either 10 or 100 Mbps), and if the device is in half- or full-duplex mode.

### 3.4 Configure Pull-down Menu

There are many different options available from the pull-down menus, including IP, IPX, and NetBIOS configurations. Refer to the *FastManage User's Guide* section of the LAN Products CD-ROM for more information on these options.

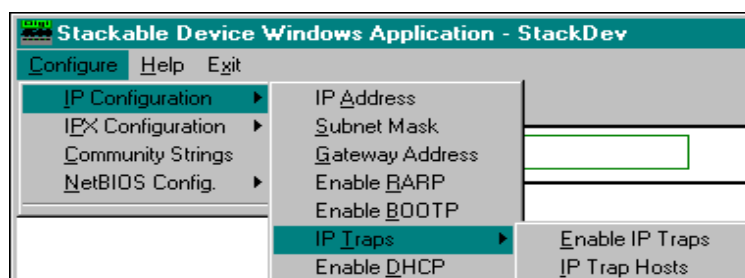


Figure 3-4. Configuration Pull-down Menu

# Appendix A: Specifications

## A.1 Hardware Features for the MIL-4750

- CPU: An 80186 processor, with a 25 MHz clock
- Memory: 256 RAM
- Flash: Flash devices are 29F040 @ 90 ns. Each device is 4 Mbps and arranged in  $2 \times 256k \times 8$  format
- MAC chipsets: Ethernet controller is 10/100 Mbps, with its own memory management
- 10/100BASE-TX, RJ-45 (unshielded twisted pair) connector

## A.2 System LEDs for the MIL-4750

LED	Function	Color
TP/ACT	Twisted-pair is active and receiving data	Yellow
10/100	Indicates if the device is operating at: –10 Mbps: LED is off –100 Mbps: LED is illuminated	Yellow
SYS	Flash ROM is okay with an IP address set in NVRAM. 5X if no IP address is set.	Yellow
TP/LNK	Link is active	Green
HDX/FDX	Indicates if the device is operating in: –Half-duplex: LED is off –Full-duplex: LED is illuminated	Green
ACT	Activity between management cards on RS-422	Green

## A.3 System LEDs for the MIL-4755

LED	Function	Color
SYS	Flash ROM is okay. Blinks once per second if it boots correctly.	Yellow

## A.4 Connectors

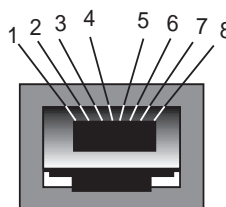
### A.4.1 RS-232, RJ-45 Connector

Use a standard null-modem for communication when connecting “straight-through” to a DB9 connector.

PIN Number	Signal	PIN Number	Signal
1	NC	6	NC
2	RXD	7	RTS/DTR
3	TXD	8	CTS
4	DTR/RTS	9 (for DB9)	NC
5	GND		

### A.4.2 RJ-45 Pinouts

- Pin 1: Transmit data +
- Pin 2: Transmit data -
- Pin 3: Receive data +
- Pin 6: Receive data -



**Note:** For a workstation/PC port, use a swap cable. Pins are connected: 1 to 3, 2 to 6, 3 to 1, and 6 to 2.

## A.5 Environmental Operating Conditions

Parameters	Minimum	Maximum
Operating Temperature	+5° C	40° C
Humidity: Non-condensing	10%	95%
Altitude test	NA	12,000 ft. (at 40° C)
Temperature test (Operating)	5° C	50° C
Temperature test (Packaged)	-25° C	70° C

## A.6 Power Supply

Both modules are powered via the backplane of the media conversion system. The power consists of +5VDC +/-10% @10A.



## Appendix B: Technical Support Services

### B.1 World Wide Web Server

Product information, manuals, new product announcements, programs, applications stories and more can be obtained through the world wide web. Our address is:

<http://www.milan.com>

### B.2 Internet FTP Server

MiLAN has set up an anonymous FTP server for those with access to the internet. The address is <ftp.milan.com>. Drivers and installation tips are located in the `/pub/rackmount` directory.

**Note:** To ensure binary transfer of files, switch to binary mode by entering `bin` or `binary` before downloading.

### B.3 Contacting Technical Support

To contact MiLAN Technology Technical Support:

- By Phone: 1.408.744.2751
- By Fax: 1.408.744.2771
- By email: [support@milan.com](mailto:support@milan.com)

### B.4 Expediting Technical Support Service

For faster service when calling our technical support department:

- Be in a position where the computer and the Media Conversion System are accessible
- Know the type and versions of software you are using
- Know your hardware specification, including memory and

disk space

- Note any and all error messages
- Be specific about the problem(s)

## B.5 RMA Procedures

To return a unit to MiLAN for repair:

1. Call technical support at 408/744-2751
2. Technical support engineers will work with users to find the problem. If technical support determines that the unit is defective, a return materials authorization (RMA) will be issued by our RMA administrator who will also provide shipping instructions.

**Note:** It is required that any return has an RMA number, or it will be rejected and returned to the sender.

# Index

## Numerics

10 Mbps A-1  
10/100BASE-TX 1-2, A-1  
100 Mbps A-1  
25 MHz clock A-1  
256 RAM A-1  
29F040 A-1  
80186 processor A-1

## A

About this manual P-1

## C

CAT 5 2-1  
Configuration options 3-4

## D

Daisy-chain configuration 1-2  
Device speed A-1  
DIP switch settings 2-2

## E

Environmental operating conditions A-2  
Ethernet A-1

## F

FastManage 3-1  
FastManage User's Guide 3-1, 3-4  
Features 1-2  
Flash device A-1  
ftp.milan.com B-1

## H

Hardware features A-1  
Hot spots 3-3  
[http:// www.milan.com](http://www.milan.com) B-1

## I

Installation 2-1, 2-2  
Internet access B-1  
Internet FTP server B-1  
IP configuration 3-4  
IPX configuration 3-4

## L

LEDs A-2

## M

MAC chipsets A-1  
Master/Slave documentation P-2

Media conversion system mgr. 3-1

MIL-4750 P-1, 1-1, 2-2

MIL-4755 P-1, 1-1

## **N**

NetBIOS configuration 3-4

## **P**

Power supply A-6

## **R**

Return materials authorization (RMA) B-2

RJ-45 1-2

RS-232 serial 1-2, 2-1

## **S**

SNMP 3-1

Hardware features A-1

[www.milan.com](http://www.milan.com) B-1

System LEDs A-1

## **T**

Technical support B-1

Traps 3-3





1299 Orleans Drive  
Sunnyvale, CA 94089