MIL-3000FTX Series of FastPort™

Print Servers
Hardware User's Guide
with
FastManage™-Specific Information

Sunnyvale, California
Minnetonka, Minnesota

Legal

Trademark Rights

Digi International™, FastPort™, Print Server Software™, and the Digi logo are trademarks of **Digi International, Inc**. All other brand and product names are the trademarks of their respective holders.

© Digi International, 1998. All Rights Reserved.

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

Digi International 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. Digi International 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.

Restricted Rights

For non-U.S. Government use

These programs are supplied under a license. They may be used, disclosed, and / or copied only as permitted under such license agreement. Any copy must contain the above copyright notice and this restricted rights notice. Use, copying, and / or disclosure of the programs is strictly prohibited unless otherwise provided in the license agreement.

For U.S. Government use

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in sub-paragraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause of DFARS 52.227-7013.

The Digi Five-Year Limited Warranty

Digi International 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.

Digi International 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 Digi International be liable for incidental or consequential damages, costs, or expenses arising out of or in connection with the performance of the product delivered hereunder. Digi International 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 B
  – EN50082-1

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
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4) - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety

To Contact Digi

For prompt response when calling for service information, have the following information ready:

- Product serial number
- Date of purchase
- Vendor or place of purchase

You can reach Digi LAN technical support at 408 / 744-2751 or *sun-tech@dgii.com*

Table of Contents

Appendix B: Technical Support Services

Index

Preface

P.1 About this Manual

This manual has instructions on how to physically install the MIL-3000FTX series of FastPort print servers. This document also has specific information on the FastManage™ suite of software as it applies to the MIL-3000FTX series.

The terms “MIL-3000FTX,” “FastPort” and “print server” are used to describe the device throughout the document. This document assumes you are familiar with the tasks of a system administrator.

P.2 FastPort Documentation

There are three separate manuals shipped with a FastPort print server:

- *MIL-3XXX FastPort Print Server Hardware User’s Guide, with FastManage-specific Information*. This document has the following information:
  - Instructions on how to physically set up FastPort
  - Information on the FastManage suite of software and how it affects a specific FastPort
  - Specifications for a particular FastPort

  This document is unique to a specific FastPort print server.
- *FastPort User’s Guide*: This document has the following:
  - The latest firmware information
  - Software information for MS Windows™, Novell™, etc.
  - Configuration and diagnostic information

  This document is generic for all FastPorts.

- *FastManage User's Guide*: Use this guide to setup the FastManage software for FastPort.

  This document is also generic for all FastPorts.

P.3 Contents of this Document

Material covered in this manual includes:

- **Chapter 1:** Provides an overview of the MIL-3000FTX series
- **Chapter 2:** Has instructions for installing the FastPort
- **Chapter 3:** This section has information on FastManage for the MIL-3000FTX
- **Appendix A:** Has specifications information
- **Appendix B:** Provides technical support information, including how to contact Digi

P.4 Notation Conventions

This document has certain notation conventions that make it easier to follow instructions and examples. Notation conventions used in this manual are shown in Table P-1.

Table P-1: Notation Conventions

Conventions	Description
[Enter]	Brackets indicate a key to be pressed.
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	Capitalized words are abbreviations, a specific directory, or product markings.

Chapter 1

Introduction

Chapter 1 gives a description on all of the MIL-3000FTX FastPort print servers.

1.1 Overview of the MIL-3000FTX Print Servers

The MIL-3000FTX series of FastPort print servers are 10/100 Mbps, stand-alone print servers. These print servers are designed to be connected directly to multiple printers on Ethernet and/or Fast Ethernet networks. Versions of the print servers include:

- **MIL-3100FTX**: One RJ-45 (UTP), 10/100 Mbps port; one parallel port and one serial port
- **MIL-3200FTX**: One RJ-45 (UTP), 10/100 Mbps port; two parallel port and one serial port
- **MIL-3310FTX**: One RJ-45 (UTP), 10/100 Mbps port; three parallel port and one serial port

When connected to the appropriate network, all print servers recognize the LAN speed of that particular network, using auto-negotiation.

1.2 Features of the Print Servers

1.2.1 Physical Features

Physical features for the MIL-3000FTX FastPort includes:

- 10 / 100BASE-TX, RJ-45 connector
- Centronics compatible parallel ports
- RS-232 serial port
- Diagnostic LEDs
- Four position DIP switch

1.2.2 Configuration Features

Configuration features for the MIL-3000FTX include:

- FastManage SNMP manager for Windows
- On-board diagnostic utilities can also be accessed on-line
- Configuration can also be done manually or with the supplied installation program
- Apple Macintosh users can configure FastPort by downloading configuration files with the supplied Apple Printer™ utility

1.2.3 Shared Printer Features

The unit give users the widest access to shared printers, including:

- Windows 95®, Windows NT, and Windows for Workgroups systems
- PCs networked with Novell® NetWare®
- UNIX® support
- Apple® Macintosh® using EtherTalk®

- OS/2® machines with TCP/IP
- PCs running a TCP/IP protocol stack over Ethernet networks
- Microsoft LAN Manager® and IBM LAN Server® systems

The MIL-3000FTX print servers are configured by using the FastManage suite of software, which is an SNMP management tool. The MIL-3000FTX also supports SNMP MIB-II (RFCs 1213) and parallel/serial MIBs (RFCs 1318 and 1317).

1.3 Utilities

To make the units easier to manage, Digi supplies the FastManage suite of software and the Advanced Configuration Tool™ (ACT). FastManage is a windows-based menu software application and ACT is a DOS-based menu software application.

Configuration of devices can be done by using print utilities on UNIX systems. Firmware upgrades of the flash EPROMs can be done via network connections. Refer to the *FastPort User's Guide* for more information on these utilities.

1.4 The Next Step

Use this guide to physically setup FastPort. Then consult the *FastPort User's Guide* for the latest software/firmware installation information. Then refer to the *FastManage User's Guide* to configure FastManage for FastPort.

Note: Chapter 3 in this document has FastManage information, but only as it applies to this specific FastPort. Chapter 3, though, does not have any specific instructions on the FastManage suite of software.

Chapter 2

FastPort Installation

Chapter 2 gives installation information for the MIL-3000FTX FastPort print server.

2.1 Installation Requirements

Before installing FastPort, make sure you have the following:

- A MIL-3000FTX FastPort print server
- Power supply

  Use a switchable power supply. Set for 120 VAC in the USA
- Appropriate Ethernet cabling (CAT 5)
- Serial or parallel printer(s) with the proper cabling. The MIL-3000FTX is shipped with a 3 ft. parallel port cable
- Four rubber feet to keep the print server from sliding. These are also included in the packaging

Contact Digi LAN technical support (see Appendix B) if you are missing an item(s) from the packaging.

2.2 Installing FastPort

To install a MIL-3000FTX FastPort print server:

1. Attach the Rubber feet to the bottom of the print server. Place one on each corner of the device.

2. Record the Ethernet address (located on the bottom of the unit) for future reference.

3. Attach the Ethernet cabling: The MIL-3000FTX supports 10/100BASE-TX cabling and has an RJ-45 connector. Use CAT 5 (UTP).

4. Select an operating mode with the front panel switches. Use Table 2-1.

Table 2-1: Operating Mode

D3	D4	Mode	Description
Up	Up	Normal	Does not allow a telnet session. Users can print to the unit. The **SYS** (system) and **NET** (network) LEDs blinks.
Down	Up	Telnet diagnostic monitor	Allows a telnet session to monitor FastPort or change its parameters. Users can print to the unit. The **SYS** and **NET** LEDs blink.
Down	Down	Serial diagnostic monitor	A terminal can be attached to the serial port to run a serial monitor. Print jobs are not accepted. The **NET** LED blinks.
Up	Down	Test page	A test page prints on a power cycle. Print jobs are not accepted.

Front

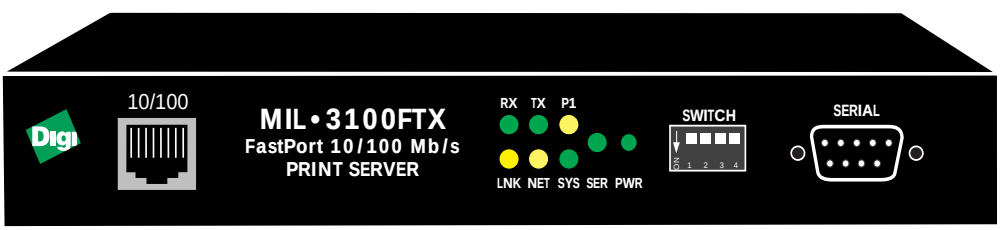


Figure 2-1. MIL-3100FTX Front Panel

Note: The MIL-3200FTX will have one extra LED: "P2." The MIL-3310FTX will have two extra LEDs: "P2" and "P3."

Switch	Position	Mode	Description
D1	Up	Flash Bank	Selects bank 0 (upper) to run the 4 Mb Flash EPROMs for uploading the new firmware image.
D1	Down		Selects bank 1 (lower) to run the 4 Mb Flash EPROMs for uploading. If the upgrade process fails, use this setting and power cycle the unit to return FastPort to its default settings.
D2	Up	Test Page	FastPort prints a test page over ports: parallel 2 and serial 1.
D2	Down		FastPort prints a test page over ports: parallel 1 and serial 1.

Table 2-2: Default Settings

D1	D2	D3	D4
Up	Down	Down	Up

5. Attach the parallel printer(s) cable(s).

   Attach the parallel cable to the female DB25 parallel port on the back of the FastPort. Connect the other end of the cable to a standard, centronics port on the printer.

6. Attach the serial printer cable.

   Attach the serial cable to the male DB9 printer port on the front of the unit. The other end of the cable should be connected to a female DB9 with the standard serial interface pinout.

   A null modem cable or adapter is necessary if the printer's serial port is a DTE device. If the cable works for an IBM PC attached to a printer, then it will work for FastPort.

Note: See Appendix A for the parallel and serial port pinouts.

7. Set the printer to the defaults for the serial port: **9600 baud**, **8 data bits**, **no parity bits**, **1 stop bit**, and **Xon/Xoff** for flow control.

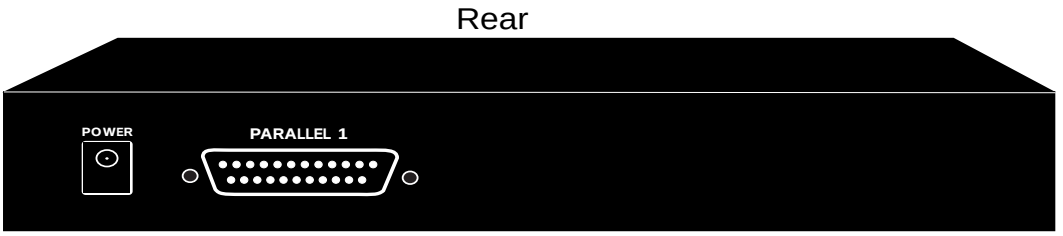


Figure 2-2. Rear Panel of MIL-3100FTX

Note: The MIL-3200FTX will have two parallel ports. The MIL-3310FTX will have three parallel ports.

8. Connect the power supply: Select the proper voltage for the specific country.

   a. Place the unit near the printer.

   b. Plug the power connector into the receptacle marked **Power** on the rear of the unit.

9. Verify normal boot-up. The unit performs POST (power-on self-test) at start-up and tries to resolve its IP addresses:

   – If the IP address is set, the **SYS** LED blinks once per second.

   – If the IP address is not set, the **SYS** LED blinks five times per second until the address is set either manually or by using *RARP*, *BOOTP*, or *DHCP*.

FastPort should now be functioning on the network. Consult the *FastPort User's Guide* to continue installation for a specific client computer.

Chapter 3

FastManage for the MIL-3000FTX FastPort

Chapter 3 discusses FastManage-specific software, though, only as it applies to the MIL-3000FTX series of print servers. This chapter does not have detailed instructions. Refer to the *FastManage User's Guide* for installation and configuration information on the FastManage suite of software.

3.1 Overview of FastManage

The FastManage suite of software configures and manages most SNMP-types of devices, including print servers, fax servers, and stackable hubs. When the software is started, an icon appears that represents each SNMP device discovered (found) on the network. This section discusses the specific icons for the MIL-3000FTX series.

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 (Figure 3-1). The system discovers all of the SNMP manageable devices on the subnet.

Figure 3-1. FastManage for FastPort

b. Icons will now appear on *Map 1* as "thumbnails," each represent an SNMP device.

c. Double-click on a thumbnail to display a full-screen image of a particular SNMP device (Figure 3-2).

- FastPort PrintServer Mgr. Icon:

a. Also start the software by double-clicking on the **`FastPort PrintServer Mgr.`** icon (Figure 3-1).

b. Enter the IP Address of the device.

c. A full-screen image appears (Figure 3-2).

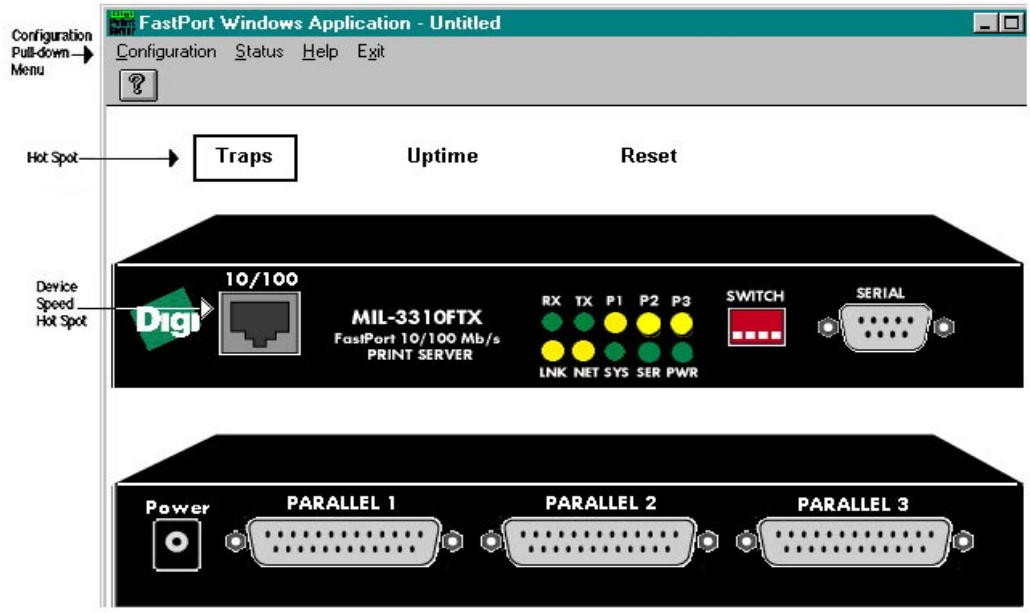


Figure 3-2. MIL-3310FTX Graphical Icon

3.3 Configuration Pull-down Menu

There are many different options available from the pull-down menus, including TCP/IP, Novell, and SMB configurations. Refer to the *FastManage User's Guide* for more information on these options.

3.3.1 Auxiliary Port Sub-Menu

The "Auxiliary Port" sub-menu (Figure 3-3) differs from each FastPort because of the number of parallel ports, for example:

- The MIL-3100FTX has information for one Serial port and one Parallel port
- The MIL-3200FTX has information for one Serial port and two Parallel ports
- The MIL-3310FTX has information for one Serial port and three Parallel ports

To view the “Auxiliary Port” sub-menu from the “Configuration” pull-down menus, go to:

TCP/IP Config.--> FPFILTER Configuration-->Auxiliary ports

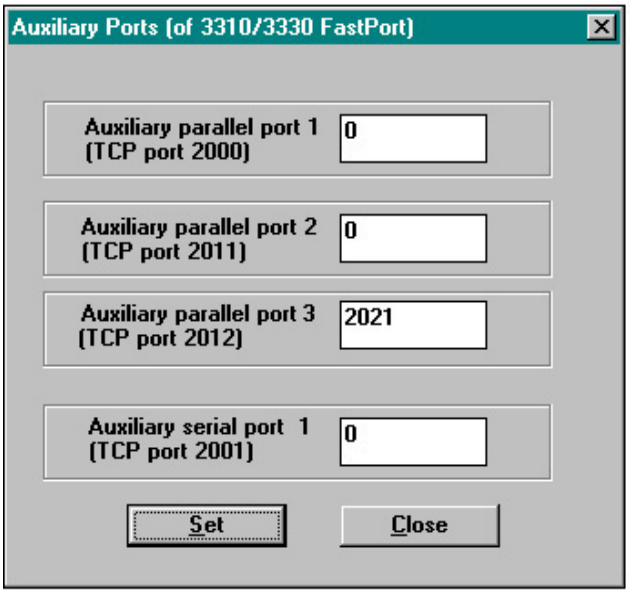


Figure 3-3. Auxiliary Port Sub-Menu: MIL-3310FTX

This parameter specifies an auxiliary port for parallel or serial port printing.

3.3.2 Parallel Printer Setup Sub-Menu

Again, the “Parallel Printer Setup” (Figure 3-4) sub-menus differ from each FastPort, because of the number of parallel ports. To view these sub-menus from the “Configuration” pull-down menu, go to:

Ethertalk Config.-->Parallel Printer Setup/Serial Printer Setup (Figure 3-4)

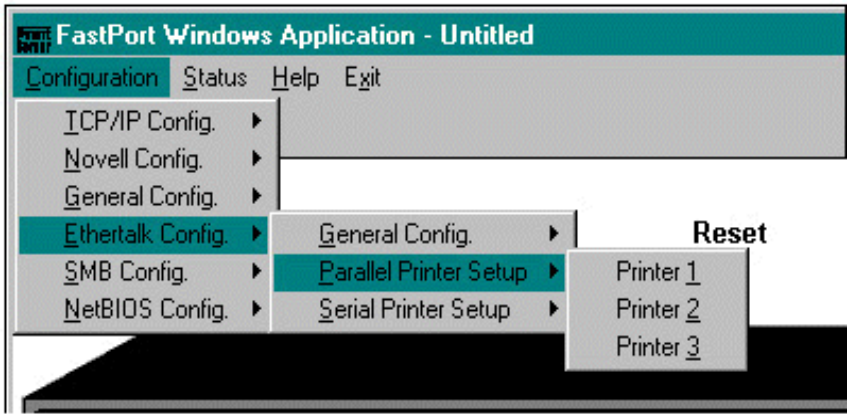


Figure 3-4. Parallel Printer Setup Menu

This parameter sets-up the port for parallel port printing.

3.4 Hot Spots

Hot spots on the graphical representation of a MIL-3000FTX graphic (Figure 3-2) are used to gain status of the device. Use the mouse to highlight the selection (a block around the area appears), and click on it to obtain the information. Hot spots function the same way on all FastPorts.

The following describes the hot spots for the MIL-3000FTX. Refer to the *FastManage User's Guide* for more information on the hot spots.

- **Traps:** This selection alerts the user to any problem associated with the device.
- **Uptime:** This selection informs the user of how long the device has been running.
- **Reset:** When this hot spot is clicked on, a warning message appears asking whether or not the user want to reset FastPort. Select **Yes** to continue, **No** to stop.

- **Digi/MiLAN logo:** Depending on the versions of MIL-3000FTX, either a “MiLAN” or a “Digi” appears on the top, right-hand side of the graphic. When this Logo is clicked on, FastPort specifications appear. Change the **Name**, **Location**, and **Contact** and press **Set** (Figure 3-5).

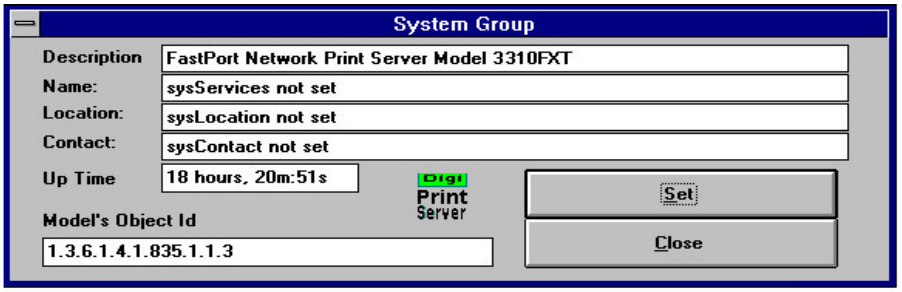


Figure 3-5. Digi/MiLAN Logo Message

- **Parallel port:** Depending on which button is clicked, this parameter displays the status of the parallel port.
- **Serial port:** Depending on which button is clicked, this parameter displays the status of the serial port.
- **Device speed:** This option is the RJ-45 portion of the graphic (on the top, left-hand side of the unit. Figure 3-2). When this hot spot is clicked on, this parameter displays FastPort’s operating speed: Either 10 Mbps or 100 Mbps.

Appendix A

Specifications

A.1 Resetting FastPort Back to the Factory Defaults

1. Place the front panel switches: D3 and D4 **down**.
2. Unplug then plug back in the power supply.
3. Wait at least 4 seconds.
4. Toggle switch D4 up and down quickly at least 10 times.

   If the reset is successful, **SER** (serial) LED will blink once.
5. Reset switch D4 back to default (up).
6. Set switch D4 down for printing only (no telnet).
7. Power cycle the unit.

A.2 Hardware Features

- The MIL-3000FTX motherboard, with Ethernet controller, serial, and parallel port interfaces
- CPU: An 80186 processor, with a 16 MHz clock
- Memory: 256K RAM

- Flash: Flash devices are 29F040. 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.3 Serial Printer and Terminal Cables

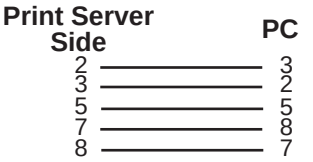


Figure A-1.Common Dumb Terminal Connection

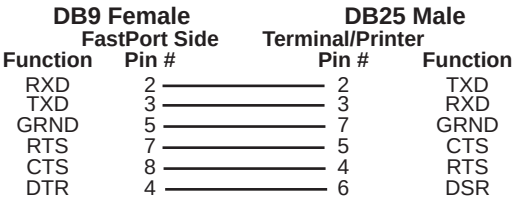


Figure A-2.Cable for Terminal and Serial Printers

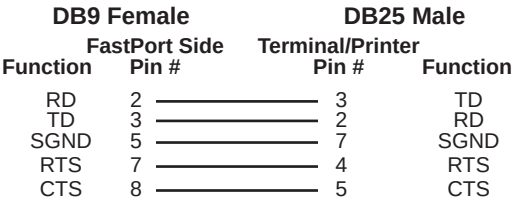


Figure A-3.DCE Device, Dumb Terminal or Serial Port: DB9 Male

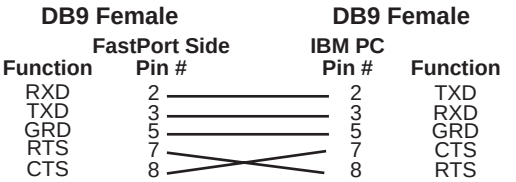


Figure A-4.Wyse 60 Dumb Terminal

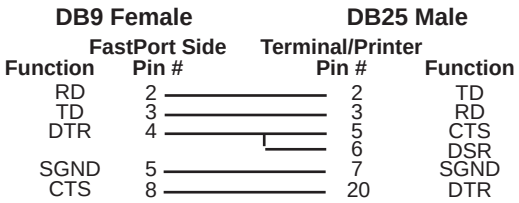


Figure A-5.DTE Printer/Plotter and PC Null: DB25 Male

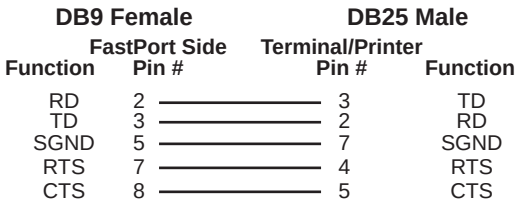


Figure A-6.DCE Printer/Plotter: DB25 Female

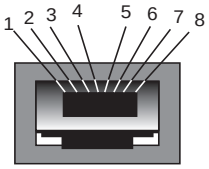
A.4 System LEDs

LED	Functioned	Color
RX	Transmitting on the network	Green
TX	Receiving from the network	Green
SYS	System is active	Green
SER	Serial port activity	Green
PWR	System power is On	Green
LNK	Link is active	Yellow
NET	Network activity	Yellow
P1	Parallel data activity on parallel port 1	Yellow
P2 (MIL-3200FTX & MIL-3310FTX only)	Parallel data activity on parallel port 2	Yellow
P3 (MIL-3310FTX only)	Parallel data activity on parallel port 3	Yellow

A.5 Connectors

A.5.1 RJ-45 Pin outs

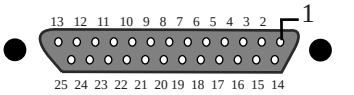
- Pin 1: Transmit data +
- Pin 2: Transmit data -
- Pin 3: Receive data +
- Pin 6: Receive data -



SPECIFICATIONS

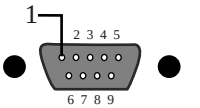
SPECIFICATIONS

A.5.2 Parallel Port Connector.



PIN Number	Signal	PIN Number	Signal
1	PASTB	14	AUTO FEED
2	PAD0	15	FAULT
3	PAD1	16	INIT
4	PAD2	17	SLCTIN
5	PAD3	18	GND
6	PAD4	19	GND
7	PAD5	20	GND
8	PAD6	21	GND
9	PAD7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	ONLINE		

A.5.3 Serial Port Connector



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

A.6 Environmental Operating Conditions

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

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.dgii.com

B.2 Internet FTP Server

Digi has set up an anonymous FTP server for those with access to the internet. The address is **ftp.milan.com** or **206.40.59.2**. Log-in as anonymous, and enter an email address when asked for a password. Drivers and installation tips are located in the **/pub/fastport/software** and **/pub/fastport/faq** directories.

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 Digi's technical support:

- By Phone: 408 / 744-2751
- By Fax: 408 / 744-2771
- By email: sun-tech@dgii.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 print server 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 Returning Procedures

To return a unit to Digi:

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

M

N

O

P

R

S

T

U

W

X

1299 Orleans Drive
Sunnyvale, CA 94089

Part Number: 90000070 Rev. C

Printed in the USA