BLACK BOX
NETWORK SERVICES

BLACK BOX®
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FEBRUARY 1998

PI750A	PI750AE	PI760A	PI760AE
PI751A	PI751AE	PI761A	PI761AE
PI752A	PI752AE	PI762A	PI762AE
PI754A	PI754AE	PI764A	PI764AE
PI755A	PI755AE	PI765A	PI765AE
PI756A	PI756AE	PI766A	PI766AE

Multiport Spooler VIII (4/8/12-Port Models)
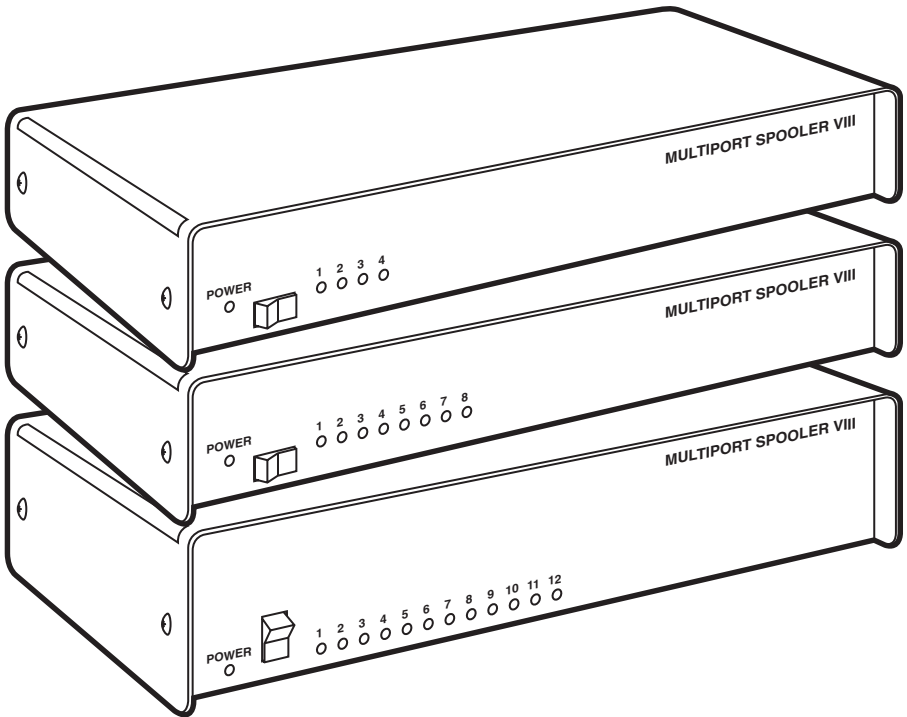
FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

NORMAS OFICIALES MEXICANAS (NOM) ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

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Contents

1. Specifications

1.1 Requirements

**System Hardware
Required —**   Connected computers: IBM PC, PC/XT, AT, or PS/2
with VGA, EGA, CGA, or Hercules video adapters

**System Software
Required —**   Connected computers: DOS version 2.0 or higher;
If running MPSWIN software: Windows
version 3.0, 3.1, or 3.11

**System Memory
Required —**   For default configuration with no peripheral
switching: None;
To run MPSDOS: 6 KB RAM;
To run UCTP: 32 KB RAM (Hercules or CGA
adapter) or 39 KB RAM (EGA or VGA adapter);
To run MPSWIN: Brief loads of 15-KB driver

**System Disk Space
Required —**   Will depend on software selected for installation (use
the numbers below as approximate guidelines only);
For default configuration with no peripheral
switching: None;
For UCTP only (under DOS): 91 KB minimum;
For UCTP only (under Windows): 104 KB minimum;
For DOS software only: 199 KB minumum;
For UCTP and DOS software: 289 KB minumum;
For UCTP and Windows software: 501 KB minimum;
For all software: 722 KB minimum

Cable Required —   See **Appendix A**

1.2 Conformity

Compliance —   FCC Part 15 Class A; IC Class/classe A

1.3 Input/Output Characteristics

Interfaces —   PI750-2, PI760-2 models: IBM PC (Centronics
                          compatible) parallel only;
                      PI754, PI764 models: EIA RS-232 serial only;
                      All other models: IBM PC parallel and EIA RS-232 serial

Protocol —   Serial ports: Asynchronous

Data Format —   Serial ports: 7 or 8 data bits; 1 or 2 stop bits; even,
                          odd, or no parity (user-selectable);
                      Parallel ports: 8 data bits

Flow Control —   Serial ports: Hardware (DTR/CTS) or software
                          (X-ON/X-OFF) (user-selectable); users can also
                          select alternate characters for software flow control

Operation Mode —   Serial ports: Full duplex

Data Rate —   Serial ports: 38,400, 19,200, 9600, 4800, 2400, 600,
                          or 300 bps (user-selectable);
                      Parallel ports:
                          Input only: Up to 36,400 cps;
                          Output only: Up to 18,300 cps;
                          Simultaneous input and output: Up to 11,900 cps

**Maximum
Distance —**   Parallel:
                          From PC to MPS-VIII: Up to 100 ft. (30.5 m) across
                              low-capacitance cable;
                          From MPS-VIII to printer: Up to 25 ft. (7.6 m);
                      Serial:
                          At 38,400 bps: Up to 500 ft. (152.4 m) from PC to
                              MPS-VIII or from MPS-VIII to printer;
                          At 9600 bps: Up to 1000 ft. (304.8 m) from PC to
                              MPS-VIII or from MPS-VIII to printer

1.4 Hardware Characteristics

Internal Memory —   All units: 8 KB battery-backed-up static RAM for
configuration storage;
PI75X models: 1 MB buffer RAM, of which 16 KB
is reserved for use by the system;
PI76X models: 4 MB buffer RAM, of which 16 KB
is reserved for use by the system;
Buffer memory is user-allocatable to parallel or
bidirectional serial ports in 16-KB increments, or
is dynamically allocated by the unit on a first-come,
first-served basis

User Controls —   Software (included);
Front-mounted ON/OFF rocker switch

Indicators —   Front-mounted LEDs:
All models: (1) Power;
PI750, PI754, PI760, PI764 models:
(4) Communication Activity (one for each port);
PI751, PI755, PI761, PI765 models:
(8) Communication Activity (one for each port);
PI752, PI756, PI762, PI766 models:
(12) Communication Activity (one for each port)

Connectors —   (1) Rear-mounted IEC 320 male power inlet;
Rear-mounted DB25:
PI750, PI760 models: (4) female (parallel);
PI751, PI761 models: (8) female (parallel);
PI752, PI762 models: (12) female (parallel);
PI754, PI764 models: (4) male (serial);
PI755, PI765 models: (4) female (parallel), (4) male
(serial);
PI756, PI766 units: (8) female (parallel), (4) male
(serial)

**Temperature
Tolerance —**   Operating: 32 to 100˚ F (0 to 37.8˚C)
Storage: –40 to 212˚F (–40 to 100˚C)

**Humidity
Tolerance —**   Up to 90% noncondensing

Power —   "A"-suffix units (PI750A, PI751A, etc.):
  From wallmount power supply:
    Input: 90 to 132 VAC, 50 to 60 Hz;
  Consumption:
     PI750A, PI754A, PI760A, PI764A models:
      12.7 VA;
     PI751A, PI755A, PI761A, PI765A models:
      17 VA;
     PI752A, PI756A, PI762A, PI766A models:
      19.2 VA;
  "AE"-suffix units (PI750AE, PI751AE, etc.):
  From desktop power supply:
    Input: 203 to 237 VAC, 50 to 60 Hz;
  Consumption:
     4-port models: 11.5 VA;
     8-port models: 16.1 VA;
     12-port models: 22 VA

Size —   PI750, PI754, PI760, PI764 models:
  2"H x 17.5"W x 12"D (5.1 x 44.5 x 30.5 cm);
PI751, PI755, PI761, PI765 models:
  2.8"H x 17.5"W x 12"D (7 x 44.5 x 30.5 cm)
PI752, PI756, PI762, PI766 models:
  3.2"H x 17.5"W x 12"D (8.1 x 44.5 x 30.5 cm)

Weight —   PI750, PI754, PI760, PI764 models: 8 lb. (3.6 kg);
PI751, PI755, PI761, PI765 models: 8.8 lb. (4 kg);
PI752, PI756, PI762, PI766 models: 12 lb. (5.5 kg)

2. Introduction

This manual tells you how to use the 4-, 8-, and 12-port models of the Multiport Spooler VIII (MPS-VIII) peripheral sharer and its included MPSDOS and MPSWIN print-control software.

The Multiport Spooler VIII is a sophisticated peripheral sharer based on multiple microprocessors. It helps you increase the effectiveness of your office hardware by allowing several computers to share a given peripheral (such as a printer, plotter, modem, etc.), or by giving a computer access to several of these peripherals. The MPS-VIII enables you to cross-connect your hardware, and thus maximize its effectiveness. Its large RAM buffer speeds up processing, thus shortening delays often associated with computers submitting a print or plot file.

MPSDOS and MPSWIN software enable you to select a printer or other peripheral without having to exit your application or memorize the MPS-VIII port to which each peripheral is connected. With MPSDOS, you can select any of up to 11 printers from a DOS application, and with MPSWIN, any of up to 9 printers from a Windows™ application.

Whether you are in a DOS or Windows environment, you can use the User's Command Transmission Program (UCTP) to send commands to the MPS-VIII, including commands to select peripherals, without having to exit your application.

3. Hardware Installation

This chapter tells you the initial steps to take to set up your Multiport Spooler VIII. These instructions complement the Easy Installation Guide included in your package.

NOTE

These instructions are intended for the system administrator responsible for installing the Multiport Spooler VIII. Users not involved in the installation can refer to *Chapter 7* for instructions on how to use the MPS-VIII.

3.1 System Requirements

To use the Multiport Spooler VIII, you must have IBM® PC, PC/XT™, AT®, PS/2®, or truly compatible computers, each with VGA, EGA, CGA, or Hercules® display adapters, running DOS (including MS-DOS®, PC-DOS, and Novell® DOS) version 2.0 or higher. *If you are using MPSWIN*, your computers must also be running Microsoft® Windows version 3.0, 3.1, or 3.11.

3.2 The Complete Multiport Spooler VIII Package

As you carefully unpack the Multiport Spooler VIII, make sure you've received all of the following items:

- (1) Multiport Spooler VIII main unit.

- (1) AC power adapter.

- (1) Serial or parallel cable (depending on whether port #1 on your Spooler is a serial or parallel port).

- (1) 3½-inch (720-KB) software diskette labeled "Disk 1 of 2" that contains MPSDOS and the DOS version of the UCTP.

- (1) 3½-inch (1.44 MB) software diskette labeled "Disk 2 of 2" that contains MPSWIN and the Windows version of the UCTP.

- (1) Foldout Easy Installation Guide.

- This manual.

3.3 Copying the Software Diskettes

Before proceeding with the software installation, we recommended that you make a backup copy of the included software diskettes. Install from the backup copies and store the originals.

Under DOS, you can use the DISKCOPY or COPY commands to make the backup diskettes. Under Windows, you can use the Windows File Manager (in the Main program group) to make the copies: From the File Manager's Disk menu, choose "Copy Disk," then follow the instructions on the screen. If necessary, refer to your DOS or Windows manual for instructions.

3.4 Installing the Hardware

Make sure to turn off and unplug the Multiport Spooler VIII, as well as the PCs and peripherals you want to attach to it, before you install the MPS-VIII. Refer to the included Easy Installation Guide for specific information about port connections in the default setup of your unit. The guide shows that every fourth port (4, 8, 12) is an output port. Use appropriate cables (see **Appendix A**) to connect printers, plotters, or other peripherals that receive data to these output ports. By default, the other ports are input ports (or bidirectional, if your MPS-VIII model has serial ports). Use appropriate cables (see **Appendix A**) to connect the computers, which mainly send data, to these input ports. Do *not* plug in or turn on any of the peripherals or PCs you connect until after you have configured the MPS-VIII.

It is important to make sure that you connect *parallel* ports on peripherals and PCs to *parallel* ports on the MPS-VIII, and *serial* ports on peripherals and PCs to *serial* ports on the MPS-VIII. The MPS-VIII's parallel ports are DB25 *female* connectors and its serial ports are DB25 *male* connectors, as shown below. Keep in mind that the MPS-VIII's serial ports are bidirectional, and can be used as either input or output ports without your having to specially configure the MPS-VIII.
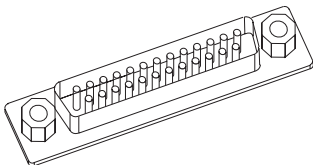
DB25 Male Serial Ports   **DB25 Female Parallel Ports**
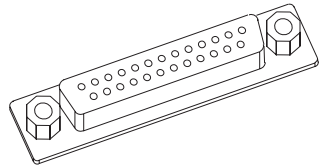
If your peripherals require more output-port connections than you have output ports on your Multiport Spooler VIII, connect these peripherals to free input ports. You can later use the configuration program to change these ports to output ports. The opposite also applies; if your PCs require more input ports than you have on your MPS-VIII, connect these PCs to free output ports and later configure the unit to change the direction of the ports.

3.5 Powering Up the System

Plug the included AC power supply into the appropriate connector on the rear panel of the Multiport Spooler VIII, then plug its input cord into a working outlet.

The power switch is located on the front panel of the Multiport Spooler VIII. Ideally, you should have your MPS-VIII and the attached peripherals plugged into a common power strip or UPS, so that they can be powered up simultaneously. If this is not the case, turn on your system in this order: computers first, followed by the MPS-VIII, then your peripherals (printers, plotters, modems, etc.).

When you turn on the Multiport Spooler VIII, a visual test sequence is initiated on the front panel. If the POWER LED remains on when this test sequence is completed, the MPS-VIII is ready for use.

3.6 What to Do Next

You have now finished your Multiport Spooler VIII's hardware setup. Before you go on to **Section 3.7**, read the passages under the following three headings. Your answers will determine whether or not you need to install any of the software used to control the MPS-VIII.

3.6.1 DO YOU NEED TO CONFIGURE THE **MPS-VIII?**

Depending on your specific needs, you might or might not have to configure the Multiport Spooler VIII. Once you have connected your peripherals as described in the Easy Installation Guide, the MPS-VIII is ready to operate using its default configuration:

- By default, ports 4, 8, and 12 are output ports; the others are input ports (if parallel) or bidirectional (if serial).

- The default communication parameters of the MPS-VIII's serial ports are: 9600 bps, 8 data bits, 1 stop bit, no parity, and hardware handshaking (DTR/CTS).

If these settings suit your needs, no further configuration is needed. If they don't, you need to use the configuration program to adapt the Multiport Spooler VIII to meet your requirements (see **Chapter 4**).

Basically, you need to configure the Multiport Spooler VIII if:

- You have to change an input port to an output port, or vice versa.

- The communication parameters of the MPS-VIII's serial ports do not match those of the attached PCs and peripherals.

NOTE

You can also use the configuration program to change various user-specific functions. Refer to *Section 4.7* for a full list of the parameters set with the program and their default settings.

3.6.2 Do You Need MPSDOS, MPSWIN, or UCTP?

With MPSDOS and MPSWIN software, you can select a printer (or other peripheral) without having to exit your application or memorize the Multiport Spooler VIII port to which each peripheral is connected. With MPSDOS, you may select any of up to 11 printers from within a DOS application; with MPSWIN, any of up to 9 printers from within a Windows application. Whichever environment is used, the software is completely transparent to the end user.

The User's Command Transmission Program (UCTP) is a menu-driven program available for both the DOS and Windows environments. It enables you to send control commands to the MPS-VIII, including peripheral-selection commands, without having to exit your application. You can use these commands to do such things as specify the number of copies to print, activate a form feed, reserve a peripheral for your exclusive use, or put your submitted jobs on pause. You can choose to have the UCTP loaded as a resident program, so that it's instantly accessible by pressing a hotkey combination. (You can also send control commands directly from the DOS prompt, in which case you do not need the UCTP. However, this requires knowledge of the exact command syntax, so the UCTP is recommended for most users. Refer to **Appendix D** for more information about the direct control commands.)

In summary, if your peripherals are of different types (for example, a dot-matrix printer, a laser printer, and a plotter), you need to be able to select the appropriate peripheral (output port). Otherwise, jobs sent to the Multiport Spooler VIII would go to the first available output port—4, 8, or 12—and the peripheral on that port might be unsuitable for the job. Basically, you should install one or more of these software programs if one of the following situations applies to you:

1. You have two or more peripherals and need to be able to switch between them.

2. You want to be able to send control commands to the Multiport Spooler VIII.

If only situation 1 applies to you, you should install MPSDOS (see **Chapter 5**) or MPSWIN (see **Chapter 6**), depending on which operating system you work with. If both situations apply, you should install the UCTP (see **Chapter 5** or **6**); you can also install MPSDOS if you want to be able to select printers transparently.

NOTES

1) To install the Windows UCTP menu, you need to install MPSWIN.
2) Unless you plan to work extensively in both the DOS and Windows environments, you don't need to do both the DOS and Windows installations; just install the software written for the environment you use most.

3.6.3 DO YOU NEED THE UTILITY SOFTWARE?

Other software utilities besides MPSDOS, MPSWIN, and the UCTP are included with the Multiport Spooler VIII. These enable you to send a break signal to a parallel port, change the speed of the serial port of a serially connected computer to up to 38,400 bps, change the configuration of the MPS-VIII if you have added memory to it, etc. These utilities are listed in **Appendix C**.

It is not essential for you to determine right now whether you need some or all of these utilities. If you prefer, you can simply install them later by using MPSSETUP.

3.7 Using the MPSSETUP Program

You must use the MPSSETUP program if you want to:

- Configure the Multiport Spooler VIII
- Use MPSDOS or the UCTP
- Copy the other software utilities

NOTE

To install MPSWIN (including the UCTP), refer to *Chapter 6*.

To execute MPSSETUP, take the following steps.

1. Insert the Multiport Spooler VIII software diskette (or its backup copy) in your PC's diskette drive.

2. Activate that drive by typing its letter designation followed by a colon (for example, "A:" or "B:") and pressing [ENTER].

3. Run the program by typing in the name "MPSSETUP" and pressing [ENTER].

3. Based on the decisions you have made about the software you need, select from the options displayed on the screen.

   • If you need to configure the MPS-VIII, refer to **Chapter 4**.

   • If you need to install the UCTP and/or MPSDOS, refer to **Chapter 5**.

   • If you need to install the software utilities, you must specify the disk drive and directory to install them to. Refer to **Appendix C** for more information about the software utilities.

4. Configuration

4.1 Do You Need to Configure the MPS-VIII?

Whether or not you need to configure the Multiport Spooler VIII depends entirely on your specific needs. An MPS-VIII comes with a basic factory-set default configuration, under which every fourth port (ports 4, 8, and 12) is an output port. Connect printers, plotters, or other peripherals that primarily *receive* data to these ports. By default, the other ports are input ports (if parallel) or bidirectional ports (if serial). Connect PCs or other devices that primarily *send* data to these ports. Note that a serial bidirectional port can serve either as an input or output port without any reconfiguration of the MPS-VIII.

Once you have connected your peripherals, as described in **Chapter 3**, the unit is fully functional according to the default settings. It only remains to establish whether the default configuration of the Multiport Spooler VIII meets your needs. If it does, you don't have to configure the MPS-VIII. But if it doesn't, you'll need to use the included configuration program (see **Section 4.2**) or the MPS-VIII's control commands (see **Appendix D**) to adapt the Multiport Spooler VIII to meet your requirements.

Basically, you need to configure the Multiport Spooler VIII if:

- You have to change an input port to an output port, or vice versa;

- The communication parameters of the Multiport Spooler VIII serial ports do not match those of the attached peripherals; or

- You want to change various user-specific functions. (This is optional; among the parameters you can set are port names, port-access restriction, headers, etc. This chapter contains a full list of the parameters that can be set and their default settings.)

Here are some of the MPS-VIII's important default parameters:

- By default, ports 4, 8, and 12 are output ports, and all other ports are input (if parallel) or bidirectional (if serial) ports.

- The communications parameters of every serial port are 9600 baud, no parity, 8 data bits, 1 stop bit, and hardware (DTR/CTS) flow control.

4.2 Starting the Configuration Program

NOTE

You can also partially configure the Multiport Spooler VIII by using the control commands that can be sent through the User's Command Transmission Program (UCTP) or from the DOS command line (see *Appendix D*).

To configure the Multiport Spooler VIII, you can use the MPSCONF program included with the MPS-VIII's support software. How you start this program depends on whether you are configuring for the first time or have done so before:

- If you are configuring the MPS-VIII for the first time, run the MPSSETUP program from the MPS-VIII's support software diskette, and choose the **Configure MPS-VIII** menu selection.

- If you have configured the MPS-VIII before, using the MPSSETUP program, MPSCONF has been copied onto your PC. Just enter the command MPSCONF at the DOS prompt.

Regardless of how you initiate the configuration process—by selecting **Configure MPS-VIII** from the MPSSETUP menu or by entering the MPSCONF command at the DOS prompt—there are three stages to the MPS-VIII configuration:

- Loading an existing configuration,
- Making the required modifications, and
- Saving the modified configuration.

4.3 Defining the Connected Port (First-Time Configuration Only)

When you configure the Multiport Spooler VIII for the first time, you must tell MPSCONF which one of the PC's ports you have connected to the Multiport Spooler VIII. This screen will appear:

```
                    MULTIPORT SPOOLER VIII Configuration

   SELECT AND CONFIGURE THE PC PORT CONNECTED TO THE MULTIPORT SPOOLER VIII


      Port        Speed      Parity      Data  bits      Stop  bits
      ====        =====      ======      =========       =========
     (COM1:)       300       (None)       (8 bits)        (1 bit)
      COM2:        600        Even                         2 bits
      COM3:        1200       Odd
      COM4:        2400
      LPT1:        4800
      LPT2:       (9600)
      LPT3:        19200
                   38400



    F1:  Help                    Enter: Select                    ←↑↓→
    Esc: Previous Screen
```

Use your keyboard's arrow keys to select the port name. The options are serial ports COM1, COM2, COM3, or COM4, or parallel ports LPT1, LPT2, or LPT3.

NOTE

If the PC port connected to the Multiport Spooler VIII is a serial port, the port must be configured to the same communication parameters as the MPS-VIII. On a new MPS-VIII, the default parameters are 9600 bps, 8 data bits, no parity, and 1 stop bit. The number of data bits is fixed at 8, which is required for proper communication with the MPS-VIII.

Press Enter to activate your selection. The selections you make are placed in parentheses to indicate that they are current or active. After you have defined which PC port you are using, and have set any necessary serial communication parameters, press Esc. You are returned to the Main Menu.

4.4 The Main Menu

The Multiport Spooler VIII's main menu, shown below, lists the functions involved in configuration.

```
                    MULTIPORT SPOOLER VIII Configuration



               Load configuration
               MULTIPORT SPOOLER VIII Port Configuration
               Restrict port access
               Modify password
               Select the PC port connected to the MULTIPORT SPOOLER
               Activate sound   (Yes / No )
               Print configuration
               Save new configuration
               Quit




   F1: Help                        Enter: Select                        ↑↓
```

Special Keys:

F1   Displays Help information

Enter   Activates the option highlighted in reverse-video.

Up and down   Move to the desired option.
arrow keys

To select an option from the main menu, use the up [↑] and down [↓] arrow keys to move the reverse-video bar over the desired function, or type the first letter of the function name. Then press Enter.

The following sections describe each of the options you can select at the main menu.

4.5 Loading a Configuration

To modify a configuration, whether it is the default configuration or a custom one, you must first load (retrieve) it. When you select **Load configuration** at the main menu, a screen appears and asks you to select the current configuration (the one that is active in the MPS-VIII) or a configuration stored in a file on disk.

- To modify the current Multiport Spooler VIII configuration, which you must do if you are configuring the MPS-VIII for the first time, select **Configuration from Current MPS-VIII**.

- To modify a configuration from a file, select **Configuration from the Disk File**.

4.5.1 THE CONFIGURATION PASSWORD

Whenever you load the current Multiport Spooler VIII configuration, a screen appears and asks you to enter the configuration password. If you are loading the default Multiport Spooler VIII configuration for the first time, there is no password. You need only press Enter. (You can change the configuration password by selecting **Modify password** at the main menu. If you have forgotten the password, refer to the entry for "Lost Configuration Password" in **Section 8.1**.)

4.5.2 THE NAME OF THE CONFIGURATION FILE

If you are loading a configuration file from disk, you are prompted for the configuration file's name. You can use the Backspace key to erase the default name NONAME. You must type in the full pathname of a disk-stored configuration file. Press Enter, and the configuration file is loaded. You are not prompted for a password in this instance.

4.5.3 OTHER CONSIDERATIONS

If a transmission error occurs when you are loading a configuration, an error message is displayed and the configuration is not loaded. Correct the error and restart from the **Load configuration** menu option.

After the configuration is loaded, you return to the main menu with the **MULTIPORT SPOOLER VIII port configuration** option highlighted.

4.6 Multiport Spooler VIII Port Configuration

When you select **MULTIPORT SPOOLER VIII port configuration** from the main menu, the port-menu screen shown below appears. At this screen you can choose individual MPS-VIII ports to configure on separate screens. The port-menu screen provides some information about the ports, such as the port's type and the direction of its communication. To make any changes to a port's configuration, however, you need to select the port and make the changes on the corresponding screen.

```
                    MULTIPORT SPOOLER VIII Configuration


   PORT CONFIGURATION FOR MULTIPORT SPOOLER VIVERSION 4.05        1024K

               NAME      TYPE     SPEED    D     S     P    HANDSHAKE  TIME-OUT
   Port#1 :    P01       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#2 :    P02       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#3 :    P03       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#4 :    P04       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#5 :    P05       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#6 :    P06       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#7 :    P07       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#8 :    P08       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#9 :    P09       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#10:    P10       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#11:    P11       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.
   Port#12:    P12       S-Bdir   9600     8     1     N    DTR/CTS    6 Sec.

      F1:   Help          Enter: Select                            ↑↓
      Esc: Previous Screen

   F1: Help                        Enter: Select                   ↑↓
```

Select the desired port. Press Enter and that port's configuration screen appears. There are four types of port-configuration screen, one for each of the following:

- Serial bidirectional ports,
- Serial output ports,
- Parallel input ports, and
- Parallel output ports.

Examples of each type are shown on the following pages. The fields in the port-configuration screens are described in **Section 4.7**.

4.6.1 CONFIGURATION SCREEN FOR SERIAL BIDIRECTIONAL PORTS

```
                    MULTIPORT SPOOLER VIII Configuration
                    ━━━━━━━━━

     PORT CONFIGURATION FOR MULTIPORT SPOOLER VIVERSION 4.05        1024K
    ┌──────────────────────────────────────────────────────────┐
    │              S  E  R  I  A  L    P  O  R  T # 1            │-OUT
 Por│                                                           │Sec.
 Por│ ▐Name▌      :P01       Allocated Memory    :0 Blocks      │Sec.
 Por│ Type        :S-Bdir    Character  [X-on]   :[11]H         │Sec.
 Por│ Speed       :9600      Character  [X-off]  :[13]H         │Sec.
 Por│ Data Bit    :8         Form Feed           :Inactive      │Sec.
 Por│ Stop Bit    :1         Broadcast           :Inactive      │Sec.
 Por│ Parity      :N         Selected Output     :*             │Sec.
 Por│ Handshake   :DTR/CTS   Return Message      :Active        │Sec.
 Por│ Time-Out    :6 Sec.    Header Option       :Inactive      │Sec.
 Por│ Log         :Permit    Restriction         :             │Sec.
 Por│ Pause       :Inactive                                     │Sec.
 Por│                                                           │Sec.
    │  F1:  Help            Enter: Select            ←↑↓→        │
    │  Esc: Previous Screen                                     │
    └──────────────────────────────────────────────────────────┘
      F1: Help               Enter: Select                   ↑↓
```

4.6.2 CONFIGURATION SCREEN FOR SERIAL OUTPUT PORTS

```
                    MULTIPORT SPOOLER VIII Configuration
                    ━━━━━━━━━

     PORT CONFIGURATION FOR MULTIPORT SPOOLER VIVERSION 4.05        1024K
    ┌──────────────────────────────────────────────────────────┐
    │              S  E  R  I  A  L    P  O  R  T # 2            │-OUT
 Por│                                                           │Sec.
 Por│ Name        :P02       Allocated Memory    :0 Blocks      │Sec.
 Por│ Type        :S-Out     Character  [X-on]   :[11]H         │Sec.
 Por│ ▐Speed▌     :9600      Character  [X-off]  :[13]H         │Sec.
 Por│ Data Bit    :8         Form Feed           :-----         │Sec.
 Por│ Stop Bit    :1         Broadcast           :-----         │Sec.
 Por│ Parity      :N         Selected Output     :-----         │Sec.
 Por│ Handshake   :DTR/CTS   Return Message      :-----         │Sec.
 Por│ Time-Out    :6 Sec.    Header Option       :-----         │Sec.
 Por│ Log         :-----     Restriction         :-----         │Sec.
 Por│ Pause       :-----                                        │Sec.
 Por│                                                           │Sec.
    │  F1:  Help            Enter: Select            ←↑↓→        │
    │  Esc: Previous Screen                                     │
    └──────────────────────────────────────────────────────────┘
      F1: Help               Enter: Select                   ↑↓
```

4.6.3 CONFIGURATION SCREEN FOR PARALLEL INPUT PORTS

```
                    MULTIPORT SPOOLER VIII Configuration
                    ─────────────────────

    PORT CONFIGURATION FOR MULTIPORT SPOOLER VIVERSION 4.05         1024K
    ┌─────────────────────────────────────────────────────────────────┐
    │            P A R A L L E L E     P O R T  #  9           -OUT│
 Por│                                                          Sec.│
 Por│ Name         :P09          Allocated Memory  :0 Blocks   Sec.│
 Por│ Type         :P-In         Character  [X-on]  :-----     Sec.│
 Por│ Speed        :-----        Character  [X-off] :-----     Sec.│
 Por│ Data Bit     :-----        Form Feed         :Inactive   Sec.│
 Por│ Stop Bit     :-----        Broadcast         :Inactive   Sec.│
 Por│ Parity       :-----        Selected Output   :PRINTER?   Sec.│
 Por│ Handshake    :-----        Return Message    :Active     Sec.│
 Por│ Time-Out     :6 Sec.       Header Option     :Inactive   Sec.│
 Por│ Log          :Permit       Restriction       :          Sec.│
 Por│ Pause        :Inactive                                   Sec.│
 Por│                                                          Sec.│
    │  F1:  Help               Enter: Select            ←↑↓→       │
    │  Esc: Previous Screen                                        │
    └─────────────────────────────────────────────────────────────────┘

    F1: Help                  Enter: Select                       ↑↓
```

4.6.4 CONFIGURATION SCREEN FOR PARALLEL OUTPUT PORTS

```
                    MULTIPORT SPOOLER VIII Configuration
                    ─────────────────────

    PORT CONFIGURATION FOR MULTIPORT SPOOLER VIVERSION 4.05         1024K
    ┌─────────────────────────────────────────────────────────────────┐
    │            P A R A L L E L E     P O R T  #  12          -OUT│
 Por│                                                          Sec.│
 Por│ Name         :PRINTERC     Allocated Memory     :-----   Sec.│
 Por│ Type         :P-Out        Character  [X-on]    :-----   Sec.│
 Por│ Speed        :-----        Character  [X-off]   :-----   Sec.│
 Por│ Data Bit     :-----        Form Feed            :-----   Sec.│
 Por│ Stop Bit     :-----        Broadcast            :-----   Sec.│
 Por│ Parity       :-----        Selected Output      :-----   Sec.│
 Por│ Handshake    :-----        Return Message       :-----   Sec.│
 Por│ Time-Out     :1 Sec.       Header Option        :-----   Sec.│
 Por│ Log          :-----        Restriction          :-----   Sec.│
 Por│ Pause        :-----                                      Sec.│
 Por│                                                          Sec.│
    │  F1:  Help               Enter: Select            ←↑↓→       │
    │  Esc: Previous Screen                                        │
    └─────────────────────────────────────────────────────────────────┘

    F1: Help                  Enter: Select                       ↑↓
```

4.7 Choosing and Changing Port Parameters

Using the port-configuration screens on the previous pages, you can configure any of the Multiport Spooler VIII's ports, including the default output ports (numbers 4, 8, and 12), to meet your needs. After selecting a particular port, just select the parameter and change the value to the one you prefer.

Not every parameter applies to every port. For example, serial communication parameters (data bits, parity, etc.) apply only to serial ports. When a parameter does not apply to a port, dashes (- - - - -) appear in its field.

To position the highlight bar on the parameter you wish to modify, use the up (↑), down (↓), left (←), and right (→) arrow keys, or type the first letter of the parameter. If several parameters start with the same letter, press the letter key until the highlight bar reaches the desired parameter. To select that parameter, press Enter. The cursor positions itself in the value column to the right of the parameter's name. If the value is erased and the field is in reverse video, type the new value and press Enter. If the value flashes, use the up and down arrow keys to toggle between the available choices. In either case, press Enter to confirm your entry.

The various port configuration parameters and a summary of each one's purpose is listed on the following page. A detailed explanation of each parameter follows.

4.7.1 SUMMARY OF PORT-CONFIGURATION PARAMETERS

Name	Enter port name
Type	Set port direction
Speed	Set data rate
Data Bit	Set number of data bits
Stop Bit	Set number of stop bits
Parity	Set type of parity
Handshake	Set type of flow control
Time-Out	Set length of timeouts
Log	Permit/deny reserving peripherals
Pause	Set pause between each job
Allocated Memory	Assign memory to a given port
Character [X-on]	Define "Continue" flow-control character
Character [X-off]	Define "Stop" flow-control character
Form Feed	Activate/deactivate automatic form feed
Broadcast	Activate/deactivate sending jobs to all selected output ports
Selected Output	Designate output port for input port
Return Message	Activate/deactivate message/command acknowledgement
Header Option	Define and activate/deactivate header
Restriction	Permit/deny access by input port to output port

4.7.2 PORT-CONFIGURATION PARAMETERS IN DETAIL

Name

Purpose	Assigns a unique name to each port.
Applies To	All port types.
Possible Values	Each name can be up to 8 characters in length. The first character cannot be a number. You can use any ASCII keyboard character in the name except comma (","), asterisk ("*"), slash ("/"), question mark ("?"), carriage return ("Enter"), escape ("ESC"), and "at sign" ("@", the command-start character).
Usage Notes	By default, ports 4, 8, and 12 are assigned the names PRINTERA, PRINTERB, and PRINTERC; the other ports are named P01 through P11. You can change any of these. You might want to assign names based on whether a user or peripheral is connected (for instance, USER1 or PLOTTER2). It is advisable to group similar peripherals with similar names to allow easy selection with wild-card characters, if required. For example, you can select the first available of MODEM_A or MODEM_B with MODEM_?. No name can be used more than once.

Type

Purpose	Determines the direction of data through each port.
Applies To	All port types.
Possible Values	Parallel Input Ports : P-In Parallel Output Ports: P-Out Serial Bidirectional Ports: S-BDir Serial Output Ports: S-Out By default, ports 4, 8, and 12, whether serial or parallel, are defined as *output* ports; all other parallel ports are defined as *input* ports; and all other serial ports are defined as *bidirectional* ports.

Usage Notes

Use this parameter to set ports to be *input* ports (MPS-VIII ports that receive information) or *output* ports (MPS-VIII ports that transmit information—for example, a printer job—to a peripheral or to another PC). Serial *bidirectional* ports can serve both these purposes.

Your Multiport Spooler VIII has 4, 8, or 12 ports, but depending on the model you chose, your unit may have only parallel ports, only serial ports, or some combination of the two types. Depending on how you organize your PCs and peripherals and on which MPS-VIII model you have, you can designate some parallel ports as input and others as output, and designate some serial ports as exclusively output and others as bidirectional. From the opposite point of view, input ports can be parallel input ports or serial bidirectional ports, and output ports can be parallel output ports, serial output ports, or serial bidirectional ports.

Examples: You would normally set a parallel port cabled to a PC to be an *input* port. You would normally set a parallel port cabled to a printer to be an *output* port. And, if you were planning for file transfers between PCs, you would set a serial port cabled to a PC to be a *bidirectional* port.

NOTE

The *Form Feed* and *Header Option* parameters are automatically disabled when a port is configured as an output port. However, the settings of these disabled options stay in the MPS-VIII's memory. This enables users to restore these options' original configurations by changing the port back to an input port.

Speed

Purpose   Determines the data rate (also called "baud rate" or "transmission speed") of the chosen port.

Applies To   Serial ports only.

Possible Values   300, 600, 1200, 2400, 4800, 9600, 19200, or 38400 bps. Use the up and down arrow keys to toggle from value to value. The default data rate is 9600 bps.

Usage Notes   Set the data rate of the Multiport Spooler VIII port to match the data rate of the device to which it is connected.

NOTE

Most DOS PC serial ports default to a data rate of 2400 bps unless they are set differently with the DOS MODE command or the included SMODE command (refer to *Appendix D*).

Data Bit

Purpose   Determines the number of data bits on the chosen port.

Applies To   Serial ports only.

Possible Values   7 or 8 (8 is the default).

Usage Notes   Set the data bits of the Multiport Spooler VIII port to match the data bits of the device to which it is connected.
                        If you select 7 data bits, decimal characters 128 to 255 (for example, the "extended ASCII" accented and graphic characters) can't be transmitted, and you can no longer configure the MPS-VIII from this port. However, 7-bit data with even or odd parity is similar to 8-bit data with no parity. This can be useful if you have a graphics package that sends 7-bit data with even parity. You can set the Multiport Spooler VIII to 8-bit data and no parity, allowing other applications to use the full 8-bit character set.

Stop Bit

Purpose	Determines the number of stop bits on the chosen port.
Applies To	Serial ports only.
Possible Values	1 or 2 (1 is the default).
Usage Notes	Set the number of stop bits of the Multiport Spooler VIII port to match the number of stop bits of the device to which it is connected.

Parity

Purpose	Determines the parity type.
Applies To	Serial ports only.
Possible Values	None, Even, or Odd (None is the default).
Usage Notes	Set the parity of the Multiport Spooler VIII port to match the parity of the device to which it is connected.

Handshaking

Purpose	Determines handshaking (flow control) protocol.
Applies To	Serial ports only.
Possible Values	DTR/CTS (hardware) or X-ON/X-OFF (software). The default is DTR/CTS.
Usage Notes	If you have selected software flow control, you can choose whichever control codes you want to take the place of the the X-ON and X-OFF characters. (This is helpful for people who are using ENQ/ACK or other less popular types of software flow control.) Refer to the entries for the **Character [X-on]** and **Character [X-off]** parameters later in this section.

Time-Out

Purpose	The timeout is the amount of non-transmitting time that may elapse during the transmission of a job before the Multiport Spooler VIII considers the job to be finished. The MPS-VIII will wait the length of the timeout for a transmission to resume without treating it as a new transmission. After the timeout expires, the MPS-VIII considers the next transmission to be a new job.
Applies To	All port types.
Possible Values	The default timeout for parallel input ports and serial bidirectional ports is 6 seconds. For parallel and serial output ports, the default is 1 second. The timeout range for any port is from 1 to 999 seconds.
Usage Notes	*General* The LEDs of the input and output ports are ON during transmission and turn OFF when transmission ends and the timeout expires. On input ports, the expiration of the timeout marks the end of a job received from an external source. A timeout is relevant to output ports only when two or more Multiport Spooler VIII units are daisychained or cascaded (connected together; see **Section 7.4**). *Input-Port Timeouts* Some software packages, such as AutoCAD®, perform a variety of calculations while printing or plotting. While these calculations are in process there may be temporary pauses in data transmission. If the input-port timeout expires during such a pause, the Multiport Spooler VIII assumes that the job has finished, although there has actually only been a transmission delay.

Either of the following can happen when a timeout expires during such a delay:

a) When transmission resumes, the Multiport Spooler VIII assumes it has a new job, rather than a resumption of the old job. Therefore, any form feed, header, or character string assigned to the input port is unnecessarily executed. Or,

b) If a new job is sent to the same output port from a different source before transmission resumes, the Multiport Spooler VIII switches to the new job before completing the old one, because it thinks the old one is finished.

Because of these possibilities, you need to set the timeout for an input port *long* enough to ensure that transmitted jobs will not be ended prematurely, but *short* enough to allow other users fair access to the same peripheral. For software packages that transmit without interruption (for example, word-processing software), set a 6-second timeout for the input ports. In cases when you expect transmission interruptions caused by disk accessing or vector processing (for example, plotting from AutoCAD), you need to set a longer timeout (about 30 seconds).

A direct command is recognized if it occurs within the first 256 characters of a new job. If more than 256 characters of the same job are sent to the Multiport Spooler VIII, the timeout on the entry port must expire before another command can be recognized. In this case, the timeout is used to indicate when the MPS-VIII should interpret command character strings as actual commands and execute them.

To automatically reset an input-port timeout to zero before a subsequent command is sent, use the UCTP program to enable the Break feature (see **Section 7.3.3**).

Output-Port Timeouts

The timeout is not critical or necessary when a Multiport Spooler VIII output port transmits to peripherals such as a printer, plotter, or modem. To deactivate the timeout, set it to one second.

The timeout on an output port is critical, however, when two or more MPS-VIIIs are daisychained or cascaded (connected to each other; see **Section 7.4**). If the timeout on the sending MPS-VIII's output port is shorter than the timeout on the receiving MPS-VIII's input port, the receiving unit might interpret a new transmission as being part of a preceding one. Thus, two separate tasks would be interpreted as one.

NOTE

In general, input (PC) port timeouts should be set longer than output (peripheral) port timeouts. Setting input-port timeouts too short may cause errors in job processing.

Log

Purpose	Determines whether PC users can reserve peripherals for their exclusive use.
Applies To	Parallel input ports and serial bidirectional ports used as input ports.
Possible Values	"Permit" or "Deny." The default is "Permit."
Usage Notes	Users whose input port is granted the Log capability can use the /**L**, /**Y**, or /**Z** direct control commands to reserve a chosen output or bidirectional port for their exclusive use. Users whose input port is denied the Log capability can send these commands, but they are ignored.

NOTE

Serial connections for modem communication or file transfers should have the Log option permitted.

Pause

Purpose	Sets a pause for all jobs transmitted to the Multiport Spooler VIII through the selected port. The MPS-VIII will receive user jobs intact, but will not send them to the selected port until the user releases the paused jobs.
Applies To	Parallel input ports and serial bidirectional ports used as input ports.
Possible Values	"Active" or "Inactive." The default is "Inactive."
Usage Notes	Setting a pause allows the user transmitting to the Multiport Spooler VIII to refill a paper tray or change plotter pens before the MPS-VIII processes that job to an output port (and the attached peripheral).

If the MPS-VIII's buffer is full when a new job is received, the first paused job in the queue is automatically released to the peripheral. The pause stays active.

When a pause is active, you must use the Release Pause command to release a paused job. Refer to **Section 7.3.2** or the entry for the **/A** command in **Appendix D** for details. |

Allocated Memory

Purpose	Sets aside a block of memory exclusively for the user linked to the selected Multiport Spooler VIII port. The allocated memory is never available to other users.
Applies To	Parallel input ports and serial bidirectional ports used as input ports.
Possible Values	Depend on how much memory your Multiport Spooler VIII has (refer to the table below). The default is 0 (zero).

Usage Notes   The Multiport Spooler VIII normally allocates
                           memory automatically, as required for each job.
                           Manually allocating memory enables you to reserve
                           memory exclusively for a given user. The amount you
                           specify is always available to that user, regardless of
                           the activities of other users.

                           Memory is allocated in single 16-KB blocks. The
                           number of 16-KB blocks available in your Multiport
                           Spooler VIII depends on the amount of memory
                           installed in it. The following table shows how much
                           memory and how many blocks are available with
                           various memory configurations. (Four 16-KB blocks
                           are always reserved for internal processing.)

Memory Capacity	No. of Available 16-KB Blocks
256 KB	12
512 KB	28
1 MB	60
4 MB	252

Character [X-on], Character [X-off]

Purpose   Determines the software flow-control characters.

Applies To   Serial ports only.

Possible Values   Any hexadecimal (hex) code between 0 and FF. The
                           defaults are 11 for X-ON and 13 for X-OFF.

Usage Notes   If you want to, you can select alternate software flow-
                           control codes (if you use ENQ/ACK flow control, for
                           example).

Form Feed

Purpose   Determines whether a form feed is automatically sent
                           at the beginning and/or end of each job.

Applies To   Parallel input ports and serial bidirectional ports
                           used as input ports.

Possible Values   "Active" or "Inactive." The default is "Inactive."

Usage Notes	This option is particularly helpful if you use the Print Screen function. Set the timeout to 1 second and activate the form feed. A form feed is then generated after each print screen.
	An end-of-job form feed is executed after the timeout expires.
	You can also use form feed to insert a blank page between user printouts on a continuous-feed printer.

Broadcast

Purpose	Determines whether a user can, with a single command, send a job to all or several selected output ports at once.
Applies To	Parallel input ports and serial bidirectional ports used as input ports.
Possible Values	"Active" or "Inactive." The default is "Inactive."
Usage Notes	If you activate **Broadcast**, you must specify the ports used for broadcast in the **Selected Output** field (see the description of that field below).
	An example application might be a user who needs to be able to print a document at several different stations at the same time (to convey information to people at those stations).

Selected Output

Purpose	Specifies the output port for a Multiport Spooler VIII input port.
Applies To	Input ports.
Possible Values	The name of any output (or bidirectional) port. You can also group peripherals together by type and use a wild-card character ("*" or "?") to indicate that any of the peripherals can be used. The default is PRINTER?, which means the job goes to the first available output port (PRINTERA, PRINTERB, or PRINTERC at port 4, 8, or 12 respectively).

NOTE

Just as in DOS, the "?" wild-card character represents a single character, whereas the "*" character can represent a string of one or more characters.

Usage Notes

Suppose Mary's PC is connected to port #2. You can specify port #12, which is connected to printer C, as the selected output for port #2. Mary's print jobs will then go to printer C until she chooses another printer (for example, with the UCTP, MPSDOS, or MPSWIN).

If you enter just the wild-card character as the selected output, all jobs from the input port go to the first available output port, whether parallel, serial, or serial bidirectional, unless the user specifies otherwise. But it might be a better idea to limit the output to a certain peripheral or peripheral type that suits the input port's user.

To specify the desired output port, enter its name or number and press Enter. You cannot specify input ports or ports that have beeen restricted with the **Restriction** parameter (see the description of this field on page 37) as selected output ports.

If all available selected output ports are busy, the job remains in the buffer until one becomes available.

Return Message

Purpose	Instructs the Multiport Spooler VIII to acknowledge the commands or configurations that it receives from the user.
Applies To	Parallel input ports and serial bidirectional ports used as input ports.
Values	"Active" or "Inactive." The default is "Active."

Here are some of the messages that the MPS-VIII might return if **Return Message** is active:

(OK)	Command accepted
(UNKNOWN COMMAND)	Invalid command
(CONNECTED TO ◆)	Confirmation of bidirectional link with port ◆
(RESERVATION CONFIRMED FOR ◆)	Confirmation of a permanent unidirectional link with port ◆
(PORT NOT VALID)	The wrong port was addressed
(SYNTAX ERROR)	Syntax error in the command parameters
(UNAUTHORIZED COMMAND)	Command unauthorized for the specific link
(INVALID PASSWORD OR PASSWORD NEEDED)	Command rejected due to a missing or invalid password
(PORT NOT VALID OR BUSY)	Attempt to link to a busy or invalid port
(NEW CONFIGURATION ACTIVE)	The loaded configuration is now active (current)
(TRANSMISSION ERROR)	Communication error
(CONFLICTING MEMORY SIZE)	The amount of memory specified in the configuration does not match the amount of memory actually installed in the unit
(WRONG MPS-VIII MODEL)	The wrong MPS-VIII model is specified in the configuration.

Header Option

Purpose	Specifies header text, activates the header (with or without a form feed) and deactivates the header. Headers are ideal for identifying users' print jobs, or sending printer- or modem-initialization strings.
Applies To	Parallel input ports and serial bidirectional ports.
Possible Values	Refer to the Usage Notes below.
Usage Notes	When you select this option, a window containing a menu is displayed. Choose from its three alternatives (listed below), then confirm your selection by entering X. The value in the port-configuration screen changes accordingly.

Header Define: Opens another window, where you type your header text. Header text can be a single line of up to 60 characters. All ASCII characters are allowed.

Header Activation: Activates the header. If you have not defined a header, the default header is used. This is PORT#♦, where ♦ is the number associated with the input port being configured (1 to 12). An active header is printed at the beginning of print jobs (with or without an automatic form feed) until you deactivate it.

Header Deactivation: Deactivates the header.

NOTE

You can use headers to specify things other than text. For example, you can use a header in place of the token (see *Section 7.3.3*) when a command is to be applied to the second of two daisychained Multiport Spooler VIII units (see *Section 7.4*). For example, if the header is *@@/P4@*, the first MPS-VIII that receives a job forwards this header through its output port to the second MPS-VIII, which then interprets the header as the */P4* command.

Restriction

Purpose   Enables you to permit or deny access from an input port to an output port. You can use this option to determine who can use which peripherals.

Applies To   Parallel input ports and serial bidirectional ports used as input ports.

Possible Values   X (access) or a blank (no access). The default is X.

When you select this option, this window appears:

```
                    MULTIPORT SPOOLER VIII Configuration


   PORT CONFIGURATION FOR MULTIPORT SPOOLER VIVERSION 4.05          1024K

                      S  E  R  I  A  L      P  O  R  T  # 1         -OUT
 Por                                                               Sec.
 Por  N       R  E  S  T  R  I  C  T    P  O  R  T    A C C E S S   Sec.
 Por  T                                                            Sec.
 Por  S   Port#   1   2   3   4   5   6   7   8   9   1   1   1     Sec.
 Por  D                                               0   1   2    Sec.
 Por  S   - - - - - - - - - - - - - - - - - - - - - - - - - - -    Sec.
 Por  P   Port#1     X   X   X   X   X   X   X               X     Sec.
 Por  H           Port #1  has  access granted to Port #2          Sec.
 Por  T                                                            Sec.
 Por  L    F1:  Help           Enter: Select            ↑↓         Sec.
 Por  P    Esc: Previous Screen                                    Sec.
 Por                                                               Sec.
      F1:  Help                     Enter: Select          ←↑↓→
      Esc: Previous Screen


  F1: Help                          Enter: Select                 ↑↓
```

Usage Notes   The upper row of port numbers lists all ports in the
                            unit; the lower row of X's and blanks indicates the
                            user's port. An X indicates the user can select the
                            port. Use the arrow keys to move to the port that
                            you want to change and press Enter to toggle its
                            restriction status.

                            Thus, the **Selected Output** parameter establishes
                            the output ports to which a user's job *will* be directed,
                            whereas the **Restriction** parameter establishes the
                            output ports to which a user's job *can* be directed.
                            For example, User A inputs to P02, which has P12
                            as its Selected Output. P12 is attached to a printer,
                            which is thus User A's printer. However, P02 is
                            granted unrestricted access to P08, an output port
                            attached to a plotter. When desired, therefore, User
                            A can send a job to P08, the plotter.

4.8 Other Main Menu Selections

Once you have established port parameters, you are returned to the main menu. If you choose, you can use the menu's other functions to change various settings.

4.8.1 RESTRICT PORT ACCESS

The Multiport Spooler VIII administrator can use this function to permit or deny the various input ports (users) access to parallel and serial output ports and serial bidirectional ports serving as output ports.

This function is essentially identical to the **Restriction** parameter on the port-configuration screen (see the entry for this parameter on page 37). The only difference is that the main-menu function gives a more global picture of output-access privileges.

When you select this function, this window appears:

```
                    MULTIPORT SPOOLER VIII Configuration

            R E S T R I C T    P O R T     A C C E S S

      Port#   1   2   3   4   5   6   7   8   9   1   1   1
                                                  0   1   2
     _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
     Port#1       X   X   X   X   X   X   X                   X
     Port#2   X       X   X   X   X   X   X                   X
     Port#3   X   X       X   X   X   X   X                   X
     Port#4                                                   X        ER
     Port#5   X   X   X   X       X   X   X                   X
     Port#6   X   X   X   X   X       X   X                   X
     Port#7   X   X   X   X   X   X       X                   X
     Port#8
     Port#9   X   X   X   X   X   X   X   X                   X
     Port#10  X   X   X   X   X   X   X   X                   X
     Port#11  X   X   X   X   X   X   X   X                   X
     Port#12
               Port #1  has  access granted to Port #2

     F1:  Help      Enter: Select                      ←↑↓→
 F1: Hel Esc: Previous Screen                                           ↑↓
```

Select the desired output port and press Enter to toggle its restriction status. An X indicates that the port in the same row (listed in the column on the left-hand side of the screen) has free access to the port in the same column (listed in the rown at the top of the screen). For example, in the screen shown above, Port 1 has access to Ports 2 through 8 and 12; Port 2 has access to Ports 1, 3 through 8, and 12; and so forth.

4.8.2 MODIFY PASSWORD

Use this function to set or change the Multiport Spooler VIII's configuration password. By default there is no password. Using a password helps to prevent unauthorized users from changing the MPS-VIII's configuration.

A password can contain up to 16 characters, including any ASCII character except "Enter," "Esc," "/," and the command-start character "@". You are required to enter the password a second time for verification purposes.

NOTE

If you have forgotten your password, refer to *Section 8.1*.

4.8.3 SELECT THE PC PORT CONNECTED TO THE MULTIPORT SPOOLER VIII

Use this function to tell MPSCONF which of the PC's I/O ports you are using to communicate with the Multiport Spooler VIII. If you are connected through a serial port (COM1, COM2, etc.), you can change the data rate, parity, and number of stop bits. (This function has no facility for changing the data bits, because 8 data bits are required to send binary configuration information to the MPS-VIII, and we recommend the 8-data-bit setting for other serial communication.)

The window that appears when you select this function is the same window that appears when you first configure the Multiport Spooler VIII and select the PC port connected to it (see **Section 4.3**).

4.8.4 ACTIVATE SOUND (YES/NO)

Use the **Activate sound** selection to activate or deactivate the audible signals generated when a window is opened or closed. The default setting is **Y** ("Yes," activated). To change the status, use the arrow keys to position the highlight bar over the menu selection and press Enter.

4.8.5 PRINT CONFIGURATION

If you want to print the Multiport Spooler VIII's configuration, select the **Print configuration** function at the main menu. You can print the saved configuration, the revised configuration (if you've changed it but haven't saved it yet), or a summary of the revised configuration.

4.8.6 SAVE NEW CONFIGURATION

Select **Save new configuration** to save a revised configuration either to the Multiport Spooler VIII's static RAM or to a PC file:

• To replace the current saved configuration with the revised configuration, select the **Change the Multiport Spooler VIII configuration** option at the window that appears. You will be prompted to enter the password of the configuration being replaced. A **New Configuration Active** message will be displayed when the configuration is successfully stored.

NOTES

When you save a configuration to the Multiport Spooler VIII's static RAM, the current configuration is revised immediately and the unit is reinitialized. Any jobs that the MPS-VIII was processing are lost. Therefore, do not change the current configuration during any transmissions to or from the MPS-VIII.

The *Save new configuration* option uses one block of the MPS-VIII's memory to transfer configurations to the MPS-VIII. If all of a unit's memory blocks are in use or reserved, you will not be able to save a configuration to that unit.

• To generate a file containing the configuration, choose the **Save revised configuration to disk** option at the window that appears. No password is required. MPSCONF prompts you for a name; it supplies the default name NONAME, which you can change if you wish. MPSCONF automatically appends the extension .BW.

NOTE

Modifications made to a loaded configuration are not retained unless you save it either in the Multiport Spooler VIII or as a file on disk.

If your attempt to save a configuration to the MPS-VIII is unsuccessful, one of the following messages may point to the problem:

Wrong MPS-VIII Model
The type of Multiport Spooler VIII listed in your configuration does not match the MPS-VIII you are trying to save the configuration to. This is normally caused by trying to modify one of several configurations for different units saved on the same disk and choosing the wrong one. Load an appropriate configuration for the desired model, or load the configuration currently saved in the unit, and modify and save that.

Conflicting Memory Size
There is a conflict between the memory listed in the configuration and the Multiport Spooler VIII's actual memory capacity. This is normally caused by trying to save a configuration to the MPS-VIII after more memory has been physically installed in the unit. First, save the revised configuration to a disk file; if this is not possible, you will have to abandon your revisions and redo them later. Use the UPDATE utility (see **Appendix C**) to update the configuration saved in the MPS-VIII so that it reflects the added memory. Then reload the new configuration from disk (or reload the old configuration from the MPS-VIII and redo your changes) and try saving the new configuration to the MPS-VIII again.

Transmission Error
An error occurred when the PC tried to transmit the revised configuration to the Multiport Spooler VIII. Verify that the proper cables are securely attached to the PC and to the MPS-VIII. If the MPS-VIII is cabled to one of the PC's serial ports (COM1, COM2, etc.), make sure that the serial port's communication parameters (data rate, parity, etc.) match those of the MPS-VIII's input port. Note that the PC's serial port must be set for eight data bits in order to send an MPS-VIII configuration to a PC file.

If any of these errors occurs, the configuration saved in the Multiport Spooler VIII remains unchanged, and the unit is not reinitialized.

4.8.7 QUIT

Use **Quit** to exit the MPSCONF program. If you loaded a configuration, you are asked whether you wish to save the configuration to disk or send it to the Multiport Spooler VIII for saving in its static RAM.
    Alternatively, you can abandon the configuration and return to DOS.

5. DOS Software Installation: UCTP and MPSDOS

5.1 The UCTP Menu and MPSDOS

This chapter explains how to install the Users' Command Transmission Program (UCTP) and the MPSDOS print-utility software for users working in a DOS environment.

NOTE

This chapter describes software installation for users who plan to work in a DOS environment. If you plan to work in a Windows environment, refer to *Chapter 6*. Refer to *Chapter 7* for instructions for operating the MPS-VIII with MPSDOS and the UCTP.

With the UCTP running, you can access a pop-up menu from within your applications to send control commands to the Multiport Spooler VIII, including commands for selecting peripherals. You can use these commands to do such things as specify the number of copies to print, activate a form feed, reserve a peripheral for your exclusive use, or put your submitted jobs on pause. You can also customize the UCTP menu to fit your needs (refer to **Appendix E**).

MPSDOS software greatly enhances the ease with which you can select a printer (or another peripheral). You can select from up to 11 printers without having to exit your application or memorize which MPS-VIII port each printer is connected to.

If you are connecting different kinds of peripherals to the Multiport Spooler VIII (for example, a dot-matrix printer, a laser printer, and a plotter), your users need to be able to select the appropriate peripheral. Otherwise, jobs sent to the MPS-VIII would go to the first available output port—4, 8, or 12—and the peripheral attached to that port might be unsuitable for the job. Therefore, you should install the software if:

1. You have two or more peripherals and need to be able to switch between them, or

2. You want to be able to send control commands to the MPS-VIII.

If only number 1 applies to you, you should install MPSDOS. If both apply to you, you should install the UCTP; if you want *transparent* printer selection, you can also install MPSDOS.

5.2 The Installation Procedure

To install the UCTP and/or MPSDOS, take the following steps (refer to
Section 5.3 for full details):

1. Insert the Multiport Spooler VIII's diskette labeled "Disk 1 of 2" in one
   of your PC's diskette drives.

2. Switch to that drive by typing its letter designation followed by a colon
   ("A:", for example).

3. Type MPSSETUP and press Enter. The installation program begins to
   run.

   Here are some of the keys you can use to control the installation process
   within MPSSETUP:

Tab	To go to the next option
Shift-Tab	To go back to the previous option
Alt-♦	To select the option with an underlined letter (♦)
Enter	To accept an entry and go to the next option
Up-Arrow	To move up in the option list
Down-Arrow	To move down in the option list
Esc	To return to the previous screen
F1	Help
F3	Exit the Installation Program

   A field's highlighted value becomes the active one. When you have
   finished selecting, tab to the Continue field and press Enter.
     The screens that appear during installation depend on whether you
   choose to install the UCTP or MPSDOS or both. They are described in
   detail in **Section 5.3**.

NOTE

**Only those screens that require you to enter data are shown in
illustrations in this chapter. For brevity's sake, we didn't include pictures
of screens that only require you to respond with a Yes or a No or enter
other simple information. The manual does include all the relevant
information about these screens.**

4. Select UCTP and/or MPSDOS from the menu that appears, then press
   Enter.

5. Select the drive that contains the MPS-VIII diskette, as well as the drive
   and directory where you want the software to be installed.

6. Tell MPSSETUP which of the PC's ports is connected to the MPS-VIII. If the connected PC port is a serial port, set the port's parameters.

7. Tell MPSSETUP which MPS-VIII model is connected to the PC.

8. If you are installing the UCTP, proceed to Step 9. If you aren't, go to Step 12.

9. Choose the UCTP menu level.

10. Decide whether or not the UCTP will function as a resident (TSR) or nonresident program.

11. Choose the video interface, set the break, set the token, and select hotkeys.

12. If you are installing MPSDOS, proceed to Step 13. If you aren't, go to Step 17.

13. Set the redirection for each port, and (if you want to) define strings for the ports.

14. Set the timeout.

15. Choose whether or not returned messages will be verified.

16. If you want to, select a port and print its configuration.

17. Confirm the installation.

18. Return to DOS or reboot the PC.

This completes the installation process. From this point on, you should able to select output (printer) ports from inside your applications.

5.3 Installation Screens

5.3.1 INITIAL SCREEN (UCTP AND MPSDOS)

Source
Enter the letter designation of the drive containing the MPS-VIII diskette.

Destination
This is the drive and directory where the software will be installed. The default C:\MPSVIII is displayed. Press Enter if this is acceptable. If you want to, enter a different drive or directory. Remember to include the drive letter before the directory name. You must install onto a hard disk.

5.3.2 PC PORT PARAMETERS SCREEN (UCTP AND MPSDOS)

At this screen (shown below), set the parameters of the PC port connected to the Multiport Spooler VIII. The parameters must match those of the corresponding MPS-VIII port.
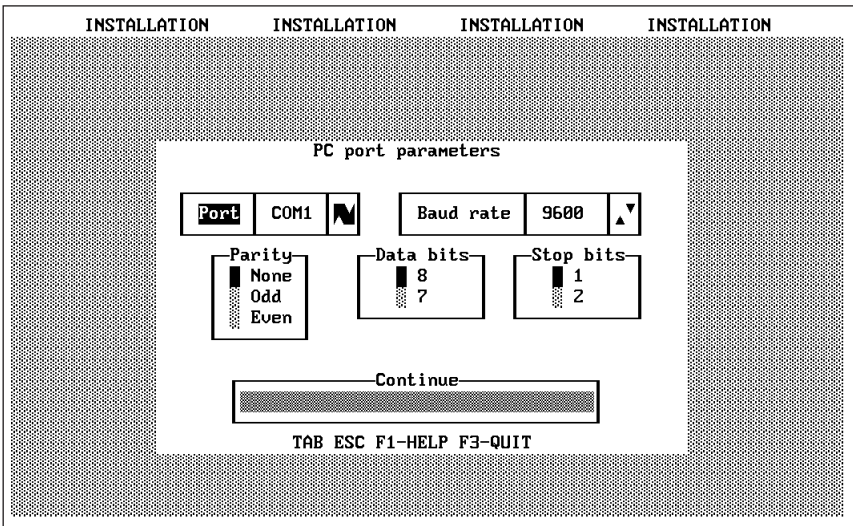
Port
Scroll through the values to select the port on your PC that is connected to the MPS-VIII. You can chose from several parallel (LPT*) and serial (COM*) ports. If you choose a parallel port, you are done with this screen. If you choose a serial port, you need to verify serial-communication parameters:

Baud Rate
The default data rate ("baud rate") is 9600 bps. You can choose from 300, 600, 1200, 2400, 4800, 9600, 19200, or 38400 bps.

Parity
The default parity is None. You could select Even or Odd instead.

Data Bits
The default number of data bits is 8. You could choose 7 instead.

Stop Bits
The default number of stop bits is 1. You could choose 2 instead.

5.3.3 THE UNIT-TYPE SCREEN (UCTP ONLY)

Tell MPSSETUP which of the Multiport Spooler VIII models the PC is connected to.

5.3.4 THE UCTP MENU-LEVEL SCREEN (UCTP ONLY)

Use this screen to choose the type of UCTP you want to install: Default or Advanced. The two types are similar in many ways, but Advanced offers more commands. Basically, you should select the Default menu if you are using the default Multiport Spooler VIII configuration, and the Advanced menu if you have specially configured the unit (in particular, changed some output ports to input ports, or vice versa).

Default: The printer selection of the Default UCTP menu matches that of the default configuration of your Multiport Spooler VIII. The default output ports are those numbered 4, 8, and 12. The Default UCTP menu has four commands that each allow you to directly select one of these printers (for example, "Use First Printer"). With the other commands on the menu, you can:

- Modify the timeout,

- Cancel your jobs,

- Activate or deactivate form feed,

- Define and activate or deactivate headers, and

- Send a string.

Advanced: Instead of the "Use X Printer" command, the Advanced UCTP menu has the "Select an Output Port" command. You can use this command to choose any port on the unit by number; your jobs will go to that port (and the attached peripheral) until you change your output selection. The Advanced menu includes all the other commands of the Default menu, and also has commands that enable you to:

- Reserve a peripheral,
- Establish a temporary or permanent bidirectional link (only possible if the PC and peripheral in question are connected to the MPS-VIII through serial ports),
- Cancel links (peripheral reservations and bidirectional links),
- Activate a pause for your jobs,
- Release one or all of your jobs from pause,
- Specify the number of copies to print,
- Send a Break, and
- Broadcast a job to several output ports.

5.3.5 THE UCTP RESIDENCE SCREEN (UCTP ONLY)

At this screen, you can choose to install the UCTP as either a resident or non-resident program. If you install it as a *resident* (TSR, Terminate and Stay Resident) program, you need only press a hotkey combination to access it. If you install it as a *non-resident* program, you must enter the NRESUCTP command at the DOS prompt to run and access UCTP, or enter the RESUCTP command to make it resident.

   If you choose to make the UCTP resident, the PATH statement and the command line necessary to load the UCTP as a TSR when the PC is powered up are added to your computer's AUTOEXEC.BAT file. The command line specifies the correct command (UCTPCGA, UCTPEGA, UCTPVGA, or UCTPHER) as well as several parameters governing UCTP operation.
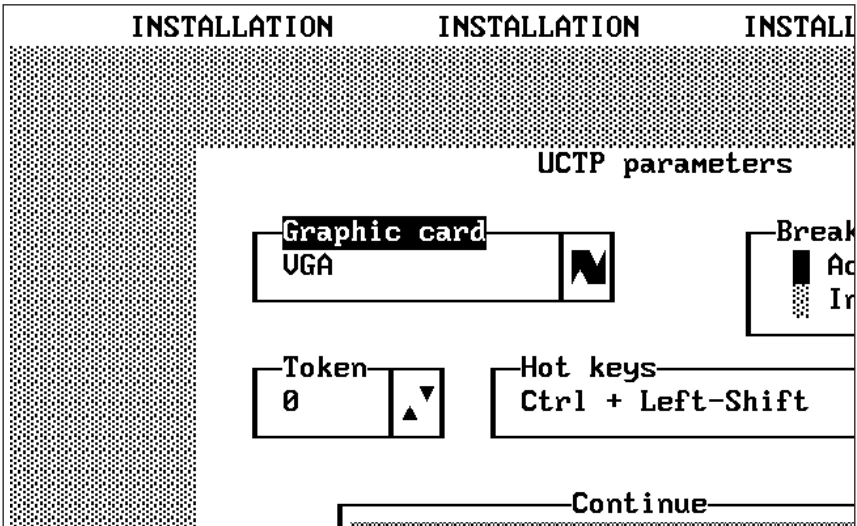
   If you do not make the UCTP resident, only the PATH statement is added. To run the UCTP as an application when installation is complete, you must enter the NRESUCTP command at the DOS prompt. If you decide you want to load and run the nonresident UCTP as a TSR after all, enter the RESUCTP command at the DOS prompt.

NOTE

When loaded as a TSR, the program uses about 26 KB of conventional memory for a CGA or Hercules card and about 34 KB for a VGA or EGA card. In most cases this should not be a problem; however, installing the program as nonresident will free up the maximum amount of memory for other programs.

5.3.6. UCTP PARAMETER SCREEN (UCTP ONLY)

This screen (shown below) requires you to enter or verify some UCTP-related information.

```
   INSTALLATION        INSTALLATION        INSTALL

                                 UCTP parameters

         ┌Graphic card─┐                       ┌Break
         │VGA          │   ┌─┐                  │ ▌Ac
         │             │   │◣│                  │ ▒ Ir
                                                │

         ┌Token┐           ┌Hot keys──────────┐
         │0    │  ┌─┬─┐     │Ctrl + Left-Shift │
         │     │  │▲│▼│     │                  │

                                  ┌Continue──────────┐
```

Graphic card
The graphics (video-interface) standard used by your computer's graphics card is automatically displayed in this field, but you can select a different graphics standard if necessary. The supported standards are CGA, EGA, VGA, and Hercules.

Break signal
Use this field to turn the automatic Break feature (which forces any active timeout to expire) on or off. While Break is on, you can send several consecutive commands without waiting for each timeout to expire. Select the Active option to activate this feature.

Token

If you have more than one Multiport Spooler VIII unit interconnected in a daisychain or cascade, the token specifies which unit you are sending commands *to* (as opposed to *through*). If you are using only one unit, set the token number to "0." If several units are connected together, set the value to the number of units through which your command must go before reaching the unit you want the command to reach. For example if you have three units in a chain, and want to send the command to the third, set the value to "2" (because the command goes through the first and second unit). Refer to **Section 7.3.3**.

Hot keys

Hotkeys are your way of instantly accessing the UCTP menu when you have it resident. This field lists the possible hotkey combinations that you can select from. The default is Left Shift + Right Shift, but if you want to run another software package that must use Left Shift + Right Shift for its own purposes, you can select another of the ten different combinations available:

> Left-Shift + Right-Shift
>
> Ctrl + Right-Shift
>
> Ctrl + Left-Shift
>
> Alt + Right-Shift
>
> Alt + Left-Shift
>
> Alt + Ctrl
>
> Ctrl + Left-Shift + Right-Shift
>
> Alt + Left-Shift + Right-Shift
>
> Alt + Ctrl + Right-Shift
>
> Alt + Ctrl + Left-Shift

5.3.7 PORT-REDIRECTION SCREEN (MPSDOS ONLY)

Normally, a PC has a maximum of four physical output ports installed: any four of COM1 through COM4 and LPT1 through LPT3. The MPSDOS program creates a number of "phantom ports" (often called "logical ports" or "virtual ports") numbered COM1 to COM9 and LPT1 to LPT3. At the MPSDOS port-redirection screen (shown below), you can assign ("redirect") these phantom ports to any physical output port on the PC or on the Multiport Spooler VIII (except the PC port to which the MPS-VIII is connected). Users can direct jobs through these phantom ports to specific peripherals attached to the PC or the MPS-VIII.

```
INSTALLATION       INSTALLATION       INSTALL

                              Port redirection

  ┌───────┬────────────┐      ┌───────┬────
  │ Port  │ Redirection │      │ Port  │ Re
  ├───────┼────────────┤      ├───────┼────
  │ COM1  │         ▼  │      │ COM7  │ NO
  │ COM2  │ COM2    N  │      │ COM8  │ NO
  │ COM3  │ COM3    ▲▼ │      │ COM9  │ NO
  │ COM4  │ COM4    ▲▼ │      │ LPT1  │ LF
  │ COM5  │ NONE    ▲▼ │      │ LPT2  │ LF
  │ COM6  │ NONE    ▲  │      │ LPT3  │ LF
  └───────┴────────────┘      └───────┴────
```

To print something after you have redirected the ports, simply select a printer directly from within your DOS application. The MPSDOS driver ensures that the job is sent to the right printer. For example, suppose the physical PC port linked to the Multiport Spooler VIII is LPT1 and you have redirected the phantom COM2 port to port 6 on the MPS-VIII. When you print to COM2 from a DOS application, the MPSDOS driver sends the print job through LPT1 to the MPS-VIII, along with a string that tells the MPS-VIII to send the job to port 6.

In the "Redirection" column on this screen, the default for the phantom ports COM5 to COM9 is "NONE" (no redirection). Because the PC can't have physical output ports with those names, COM5 through COM9 have no assigned output port if you do not choose to use them. Also, when a phantom port is redirected to any Multiport Spooler VIII port ("PORT1" through "PORT12"), each job earmarked for that phantom port is transmitted to the Multiport Spooler VIII with a string that causes the MPS-VIII to send the job to the chosen MPS-VIII output port.

If you select the "STRING" redirection option, another screen will appear at which you can define a character string for any phantom port. See **Section 5.3.8**.

The table below shows a sample port-redirection setup. LPT1 is the computer port linked to the Multiport Spooler VIII. Since phantom ports can't be redirected to the physical port connected to the MPS-VIII, LPT1 doesn't appear in the table. In this example, dedicated peripheral devices are directly connected to the PC's COM1, LPT2, and LPT3 ports.

MPSDOS phantom port	Redirection setting	PC Port that data is output from	Type of string transmitted with output data
COM1	COM1	COM1	None
COM2	PORT4	LPT1	Route data to MPS-VIII port 4
COM3	PORT8	LPT1	Route data to MPS-VIII port 8
COM4	STRING	LPT1	User-defined
COM5	STRING	LPT1	User-defined
COM6	PORT12	LPT1	Route data to MPS-VIII port 12
COM7	STRING	LPT1	User-defined
COM8	NONE	None	None
COM9	NONE	None	None
LPT2	LPT2	LPT2	None
LPT3	LPT3	LPT3	None

Here's another example. Suppose you have a Multiport Spooler VIII with three printers attached: a black-and-white laser printer on port 4, a dot-matrix printer on port 7, and a color laser printer on port 8. If you can assign three MPSDOS phantom ports to these MPS-VIII ports, you can send jobs to the attached printers from inside your word-processing application:

- PC phantom port COM4 can represent MPS-VIII port 4 (the B&W laser).

- PC phantom port COM7 can represent MPS-VIII port 7 (the dot-matrix).

- PC phantom port COM8 can represent MPS-VIII port 8 (the color laser).

5.3.8 STRING-DEFINITION SCREEN (MPSDOS ONLY)

You can define strings at this screen (shown below). It appears only if you select "String" at the Port Redirection screen.

Port field
In this field, select the port for which you want to define a string.

Before field

In this field, enter any string that you want sent *before* the print job.

After field

In this field, enter any string that you want sent *after* the print job.

5.3.8.A Entering Strings

Strings may be up to 128 characters long. To include characters that cannot be entered directly, insert their hexadecimal code (in parentheses) in the string. For example, to include the Escape character, type **(1B)**. This would count as four characters toward the length of the string.

   You can also insert a Break signal or a delay in the string. Use the following syntax for these options:

   (BR)   Sends a break signal to the Multiport Spooler VIII.

   (DL)   Generates a 500-millisecond delay when printing. To increase the delay, insert more **(DL)**s. Thus, **(DL)(DL)** represents a 1-second delay (0.5 seconds + 0.5 seconds).

5.3.8.B Sending Strings to the Multiport Spooler VIII

Sending strings to the Multiport Spooler VIII is usually the best way to reconfigure or customize it on the fly. This usually involves embedding direct (control) commands in the strings; refer to **Appendix D**.

   For example, if you send a print job that requires computer calculations, break times may occur during the transmission. If they do, the Multiport Spooler VIII's timeout may be too short, resulting in mixed print requests.

   To avoid this, you can change the MPS-VIII's timeout value by defining a "Before" string to increase the delay and an "After" string to restore the initial delay value, using the **/T** direct command. If the timeout is initialized at 6 seconds and the timeout delay for a particular job needs to be set to 25 seconds, useful Before and After strings would be:

   Before String: **@@/T25@**

   After String: **(BR)@@/T6@**

5.3.8.C Sending Strings to Peripherals

Suppose that your application does not allow you to directly set the printer to a specific mode. By using the String option, you can send a specific escape sequence to the printer to set it to the mode you need. You can also restore the normal mode by using an escape sequence after the print job.

If you need to configure a laser printer for manual paper-feed mode, you must send the printer (as a Before string) the escape sequence required to set it to that mode. Then, to avoid any conflict with other users, set the printer back to automatic-feed mode by defining a matching After string. The Before and After strings would look like this:

Before String	**(1B)&l2H**	Manual feed
After String	**(1B)&l1H**	Automatic feed

(1B) represents the ESC (escape) character.

5.3.9 TIMEOUT SCREEN (MPSDOS ONLY)

At the timeout screen, you can set an end-of-job timeout for the Multiport Spooler VIII. The default timeout is 6 seconds, but the timeout can be set from 1 to 999 seconds. (Entering a value of zero sets the timeout to ¼ second [250 milliseconds].) If the timeout is set to 6 seconds, MPSDOS assumes that a job has been completed if no data is transmitted for a period of 6 seconds. Any transmission received after the timeout expires is interpreted as a new job.

Some software programs (for example, AutoCAD) perform a variety of calculations while printing or plotting. Temporary pauses during transmission may occur during these calculations. If the MPSDOS timeout expires during such a pause, MPSDOS assumes that the job has been completed, and it will consider further data to be a new job. In general, you should set the timeout *long* enough to ensure that a job will not be ended prematurely, but *short* enough not to delay future jobs. For software that transmits without interruption (for example, word-processing packages), use a timeout of 6 seconds (or longer, if your file has graphics). If you expect transmission delays, use a timeout of 20 to 30 seconds.

5.3.10 MESSAGE-RETURN VERIFICATION SCREEN (MPSDOS ONLY)

At this point a screen appears asking you whether you want the messages returned from the Multiport Spooler VIII to be checked. If you opt for this, then any time any errors are detected or a message is not received, your PC will beep two or seven times. To determine the nature of the problem, use the CHKERR program (refer to **Section 8.5**).

NOTE

To use this feature, you must also activate the MPS-VIII's Return Message configuration parameter (see *Section 4.7.2*).

5.3.11 CONFIGURATION-PRINTING SCREENS (MPSDOS ONLY)

At this point a screen appears asking you whether you want to print a hard copy of the MPSDOS configuration, including the port redirection, character strings, etc. This can be useful for reference sake.

If you choose to print the configuration, a "Print Port Parameters" screen appears. At this screen, you can select the printer port that will be used to print the MPSDOS configuration. This is the same screen as the PC Port Parameters screen (refer to **Section 5.3.2**). If you select a serial port, set the communication parameters as necessary. Make sure that the selected port is connected to a printer.

5.3.12 CONFIRM INSTALLATION SCREEN (UCTP AND MPSDOS)

This screen displays all the choices you've made during installation and prompts you to confirm or abandon installation. To complete installation with the shown parameters, tab to the Continue field and press Enter. Alternatively, you can go to the previous screen or quit installation.

If you're installing UCTP, the RESUCTP.BAT or NRESUCTP.BAT file, which contains the information specified during installation, is now created. RESUCTP.BAT loads the UCTP as a resident program; NRESUCTP.BAT loads the UCTP as a non-resident program.

After installation is confirmed, you are asked whether you want to return to DOS or restart the computer. To activate the installed software, you must restart the computer.

5.3.13 CONFIGURING PORTS IN DOS APPLICATIONS (MPSDOS ONLY)

To complete the MPSDOS installation, you need to select the proper output (printer) ports for your application software. To do so, take these steps:

1. Run your application software.
2. Select the option in the software that allows you to change the output port.
3. Select from the list of available ports (COM1 through COM9 and LPT1 through LPT3), keeping in mind the port redirection you performed earlier (see **Section 5.3.6**).
4. Repeat steps 1 through 3 for all your application programs.

Your DOS applications will now print with the new parameters.

5.4 Changing MPSDOS Settings

With MPSDOS's configuration program, you can change parameters set during installation. To load the configuration program, type CONFDOS at the DOS prompt, then press Enter.

With the CONFDOS program, you have the following options:

PC Port Parameters	Modify the port parameters of the PC port linked to the Multiport Spooler VIII. The PC Port Parameters screen appears (see **Section 5.3.2**).
Assign Port	Redirect any of the 11 phantom ports. The Port Redirection screen appears (see **Section 5.3.6**).
Define String	Define a "before" and "after" string for any port. The String Definition screen appears (see **Section 5.3.7**).
UCTP	Specify whether or not the UCTP program should be loaded automatically. The UCTP Residence screen appears (see **Section 5.3.5**).
Command Validation	Specify whether or not returned messages are verified. The Message-Return Verification screen appears (see **Section 5.3.9**).

Print Configuration   Print the MPSDOS configuration. The
                            configuration-printing screens appear
                            (see **Section 5.3.11**).

Modify Timeout   Modify the MPSDOS timeout. The Timeout
                            screen appears (see **Section 5.3.8**).

Save   Save the revised configuration.

Exit   Quit the configuration program.

If you select Exit to quit the configuration program, and did not modify the
configuration, you immediately return to DOS. However, if you did modify
the configuration, you are prompted to save it (if you have not done so
already). After saving, you are prompted to reboot your computer to make
the new parameters active. If you exit the configuration program without
accepting the modifications you made, or if you choose not to reboot your
computer, you will return to DOS.

6. Windows Software Installation: UCTP and MPSWIN

6.1 The UCTP Menu and MPSWIN

This chapter explains how to install the Users' Command Transmission Program (UCTP) and the MPSWIN print-utility software for users working in a Windows environment.

NOTE

This chapter describes software installation for users who plan to work in a Windows environment. If you plan to work in a DOS environment, refer to *Chapter 5*. Refer to *Chapter 7* for instructions for operating the MPS-VIII with MPSWIN and the UCTP.

With the UCTP running, you can access a pop-up menu from within your applications to send control commands to the Multiport Spooler VIII, including commands for selecting peripherals. You can use these commands to do such things as specify the number of copies to print, activate a form feed, reserve a peripheral for your exclusive use, or put your submitted jobs on pause. You can also customize the UCTP menu to fit your needs (refer to **Appendix E**). Please note that to install the UCTP under Windows, you must install MPSWIN, and vice versa.

MPSWIN software greatly enhances the ease with which you can select a printer (or another peripheral). You can select from up to nine printers without having to exit your application or memorize which MPS-VIII port each printer is connected to. MPSWIN and the Windows UCTP must be installed together. We strongly recommend that you install MPSWIN if your network includes more than one printer, or if you plan to add printers.

If you are connecting different kinds of peripherals to the Multiport Spooler VIII (for example, a dot-matrix printer, a laser printer, and a plotter), your users need to be able to select the appropriate peripheral. Otherwise, jobs sent to the MPS-VIII would go to the first available output port—4, 8, or 12—and the peripheral attached to that port might be unsuitable for the job. Therefore, you should install the software if:

1. You have two or more peripherals and need to be able to switch between them, or

2. You want to be able to send control commands to the MPS-VIII.

6.2 The Installation Procedure

There are two basic steps to the Windows installation procedure: running the installation program and configuring the printer ports in Windows. To install the UCTP and MPSWIN, take the following steps (refer to **Section 6.3** for full details):

1. If you are in Windows, end your Windows session and quit to DOS (do *not* open a DOS shell).

2. Insert the Multiport Spooler VIII's diskette labeled "Disk 2 of 2" in one of your PC's diskette drives. Select that drive by typing its letter designation followed by a colon ("A:", for example).

3. Type INSTWIN and press Enter. The installation program loads and runs the configuration program SETUPWIN. (The SETUPWIN screens will display the name "MPS-VIII WIN.")

    Use the same keys with SETUPWIN as you would with Windows to edit, switch between options, etc. (This program also supports the mouse.) Here are some of the other keys you can use to control the installation process within SETUPWIN:

Tab	To go to the next option
Shift-Tab	To go back to the previous option
Alt-♦	To select the option with an underlined letter (♦)
Enter	To accept all entries and go to the next screen
Up-Arrow	To move up in the option list
Down-Arrow	To move down in the option list

    You can also use the icons in the lower right-hand corner of the installation screens to go one screen back or quit the installation program. The screens that appear are described in detail in **Sections 6.3**.

NOTE

Only those screens that require you to enter data are shown in illustrations in this chapter. For brevity's sake, we didn't include pictures of screens that only require you to respond with a Yes or a No or enter other simple information. The manual does include all the relevant information about these screens.

4. At the initial screen that appears, tell SETUPWIN which diskette drive contains the MPSWIN diskette, as well as which type of MPS-VIII model is connected to the PC.

5. Tell SETUPWIN which PC port is connected to the MPS-VIII. If the PC port is a serial port, set parameters for that PC port.

6. Set port redirection and enter any desired character strings.

7. Choose whether the UCTP will load as a resident or nonresident program.

8. Choose the desired UCTP menu level.

9. Choose whether returned messages are verified.

10. Choose whether or not to use the Windows Print Manager.

11. Print the configuration.

12. Confirm installation and return to DOS.

13. Type WIN at the DOS prompt.

14. Open the Windows Program Manager, Main group, Control Panel, and Print Manager.

15. Choose the printer drivers whose ports you want to configure.

16. Choose "Configure" in Windows 3.0 or "Connect" in Windows 3.1.

17. Select a port from among the listed ports.

18. Exit the Control Panel when you are finished configuring the ports.

This completes the installation process. From this point on, you should be able to select output (printer) ports from inside your applications.

6.3 Installation Screens

6.3.1 INITIAL SCREEN

Source
Enter the letter designation of the drive containing the MPSWIN diskette.

ModelMPSWIN;PC Port Parameters Screen
Choose the type of Multiport Spooler VIII that is connected to the PC.

6.3.2 PC PORT PARAMETERS SCREEN (UCTP AND MPSWIN)

At this screen (shown below), identify for SETUPWIN the PC port connected to the Multiport Spooler VIII. The possible choices are COM1 through COM4 and LPT1 through LPT3.
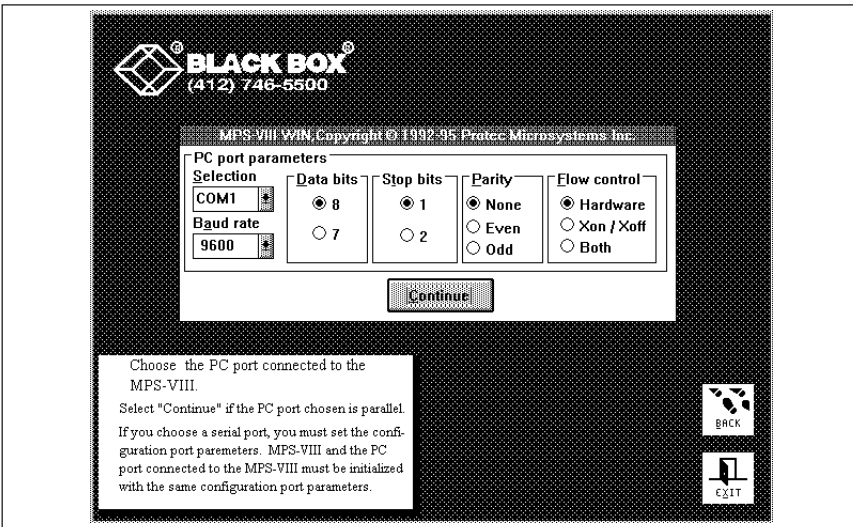
If the connected port is a parallel port, you are finished with this screen—go to **Section 6.3.3**. If the connected port is a serial port, make sure its parameters match those of the MPS-VIII port at the other end of the cable:

Baud Rate
The default data rate ("baud rate") is 9600 bps. You can choose 300, 600, 1200, 2400, 4800, 9600, 19,200, or 38,400 bps.

Data Bits
The default number of data bits is 8. You could choose 7 instead.

Stop Bits
The default number of stop bits is 1. You could choose 2 instead.

Parity
The default parity is None. You could select Even or Odd instead.

Flow Control
The default type of flow control is DTR/CTS (hardware). You could choose
X-ON/X-OFF (software) or Both (DTR/CTS *and* X-ON/X-OFF) instead.

6.3.3 PORT-REDIRECTION SCREEN

Normally, a PC has a maximum of four physical output ports installed: any
four of COM1 through COM4 and LPT1 through LPT3. The MPSWIN
program creates a number of "phantom ports" (often called "logical ports" or
"virtual ports") numbered COM1 to COM9. At the MPSWIN port-redirection
screen (shown below), you can assign ("redirect") these phantom ports to any
physical output port on the Multiport Spooler VIII or any *serial* physical
output port on the PC (except the one to which the MPS-VIII is connected).
Users can direct jobs through these phantom ports to specific peripherals
attached to the PC or the MPS-VIII.
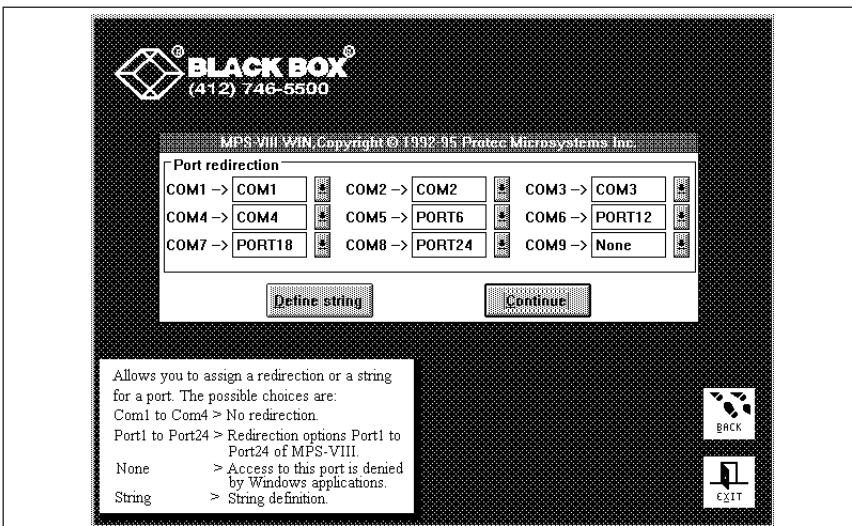
To print something after you have redirected the ports, simply select a printer directly from within your Windows application. The MPSWIN driver ensures that the job is sent to the right printer. For example, suppose the physical PC port linked to the Multiport Spooler VIII is LPT1 and you have redirected the phantom COM2 port to port 4 on the MPS-VIII. When you print to COM2 from a Windows application, the MPSWIN driver sends the print job through LPT1 to the MPS-VIII, along with a string that tells the MPS-VIII to send the job to port 4.

The default redirection for the phantom ports COM5 to COM9 is "None" (no redirection). Because the PC can't have physical output ports with those names, COM5 through COM9 have no assigned output port if you do not choose to use them. Also, when a phantom port is redirected to any Multiport Spooler VIII port ("PORT1" through "PORT12"), each job earmarked for that phantom port is transmitted to the MPS-VIII with a string that causes the MPS-VIII to send the job to the chosen MPS-VIII output port.

The table below shows a sample port-redirection setup. LPT1 is the computer port linked to the Multiport Spooler VIII. In this example, a dedicated peripheral device is directly connected to the PC's COM1 port.

MPSDOS phantom port	Redirection setting	PC Port that data is output from	Type of string transmitted with output data
COM1	COM1	COM1	None
COM2	PORT4	LPT1	Route data to MPS-VIII port 4
COM3	PORT8	LPT1	Route data to MPS-VIII port 8
COM4	String	LPT1	User-defined
COM5	String	LPT1	User-defined
COM6	PORT12	LPT1	Route data to MPS-VIII port 12
COM7	String	LPT1	User-defined
COM8	None	None	None
COM9	None	None	None

You cannot redirect the port connected to the MPS-VIII. For example, if COM2 serves as that connection, it is not an eligible port for redirection.

Here's another example. Suppose you have a Multiport Spooler VIII with three printers attached: a black-and-white laser printer on port 4, a dot-matrix printer on port 7, and a color laser printer on port 8. If you can assign three MPSWIN phantom ports to these MPS-VIII ports, you can send jobs to the attached printers from inside your word-processing application:

- PC phantom port COM4 can represent MPS-VIII port 4 (the B&W laser).

- PC phantom port COM7 can represent MPS-VIII port 7 (the dot-matrix).

- PC phantom port COM8 can represent MPS-VIII port 8 (the color laser).

If you click on the "Define String" button, another screen appears at which you can define a character string that will be sent before and/or after the print jobs sent from the chosen phantom port. (See **Section 6.3.4**.) When you define a string for a phantom port, that port is automatically set to "String" redirection mode. If later you redirect that phantom port differently (to "PORT5," for example), the string you defined earlier will be discarded.

6.3.4 STRING-DEFINITION SCREEN

Define strings at this screen. It automatically appears if you click on "Define String" at the Port-Redirection screen; otherwise it doesn't appear.
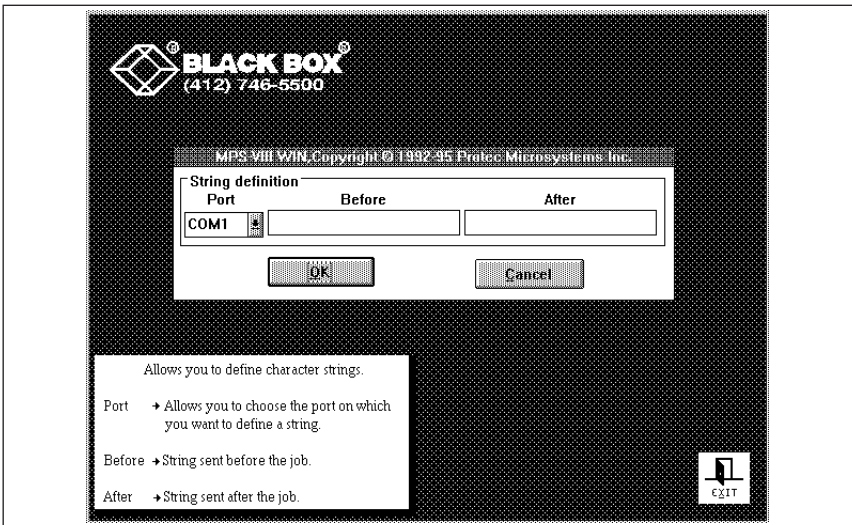
Tasks that you can do with a string include:

- Redirecting print jobs to any Multiport Spooler VIII output port,
- Performing a form feed,
- Initializing a peripheral by sending an escape sequence, and
- Modifying a timeout.

In the "Port" field, select the port for which you want to define a string. In the "Before" field, enter the string you want sent *before* each print job sent to that port. In the "After" field, enter the string you want sent *after* each print job sent to that port.

6.3.4.A Entering Strings

Strings may be up to 128 characters long. To include characters that cannot be entered directly, insert their hexadecimal code (in parentheses) in the string. For example, to include the Escape character, type **(1B)**. This would count as four characters toward the length of the string.

You can also insert a Break signal or a delay in the string. Use the following syntax for these options:

(BR)   Sends a break signal to the Multiport Spooler VIII.

(DL)   Generates a 500-millisecond delay when printing. To increase the delay, insert more **(DL)**s. Thus, **(DL)(DL)** represents a 1-second delay (0.5 seconds + 0.5 seconds).

6.3.4.B Sending Strings to the Multiport Spooler VIII

Sending strings to the Multiport Spooler VIII is usually the best way to reconfigure or customize it on the fly. This usually involves embedding direct (control) commands in the strings; refer to **Appendix D**.

For example, if you send a print job that requires computer calculations, break times may occur during the transmission. If they do, the Multiport Spooler VIII's timeout may be too short, resulting in mixed print requests.

To avoid this, you can change the MPS-VIII's timeout value by defining a "Before" string to increase the delay and an "After" string to restore the initial delay value, using the **/T** direct command. If the timeout is initialized at 6 seconds and the timeout delay for a particular job needs to be set to 25 seconds, useful Before and After strings would be:

Before String: **@@/T25@**

After String: **(BR)@@/T6@**

6.3.4.C Sending Strings to Peripherals

Suppose that your application does not allow you to directly set the printer to a specific mode. By using the String option, you can send a specific escape sequence to the printer to set it to the mode you need. You can also restore the normal mode by using an escape sequence after the print job.

   If you need to configure a laser printer for manual paper-feed mode, you must send the printer (as a Before string) the escape sequence required to set it to that mode. Then, to avoid any conflict with other users, set the printer back to automatic-feed mode by defining a matching After string. The Before and After strings would look like this:

Before String	**(1B)&l2H**	Manual feed
After String	**(1B)&l1H**	Automatic feed

(1B) represents the ESC (escape) character. (The character after the ampersand is a lowercase **L**.)

6.3.5 THE UCTP AUTOLOADING SCREEN

Choose whether you want to have the UCTP automatically loaded when Windows is loaded. If you choose to have it loaded, you only need to click on its icon on the screen or press the Alt-Tab key combination to access it.

6.3.6 THE UCTP MENU-LEVEL SCREEN

Use this screen to choose the type of UCTP you want to install: Default or Advanced. The two types are similar in many ways, but Advanced offers more commands. Basically, you should select the Default menu if you are using the default Multiport Spooler VIII configuration, and the Advanced menu if you have specially configured the unit (in particular, changed some output ports to input ports, or vice versa).

Default: The printer selection of the Default UCTP menu matches that of the default configuration of your Multiport Spooler VIII. The default output ports are those numbered 4, 8, and 12. The Default UCTP menu has four commands that each allow you to directly select one of these printers (for example, "Use First Printer"). With the other commands on the menu, you can:

• Modify the timeout,

• Cancel your jobs,

• Activate or deactivate form feed,

• Define and activate or deactivate headers, and

• Send a string.

Advanced: Instead of the "Use X Printer" command, the Advanced UCTP menu has the "Select an Output Port" command. You can use this command to choose any port on the unit by number; your jobs will go to that port (and the attached peripheral) until you change your output selection. The Advanced menu includes all the other commands of the Default menu, and also has commands that enable you to:

- Reserve a peripheral,
- Establish a temporary or permanent bidirectional link (only possible if the PC and peripheral in question are connected to the MPS-VIII through serial ports),
- Cancel links (peripheral reservations and bidirectional links),
- Activate a pause for your jobs,
- Release one or all of your jobs from pause,
- Specify the number of copies to print,
- Send a Break, and
- Broadcast a job to several output ports

6.3.7 MESSAGE-RETURN VERIFICATION SCREEN

At this point a screen appears asking you whether you want the messages returned from the Multiport Spooler VIII to be checked. If you opt for this, then any time any errors are detected or a message is not received, you will be notified and prompted for a print confirmation.

NOTE

To use this feature, you must also activate the MPS-VIII's Return Message configuration parameter (see *Section 4.7.2*).

6.3.8 PRINT MANAGER SCREEN

At this screen, you can choose whether or not to use Print Manager (the Windows software spooler). When Print Manager is active, print jobs are saved to disk and then printed to the desired output port in the background while you are working on something else. We recommend that you disable Print Manager here, because the Multiport Spooler VIII is a fast enough spooler that using Print Manager would actually slow the system down.

6.3.9 CONFIGURATION-PRINTING SCREENS

At this point a screen appears asking you whether you want to print a hard copy of the MPSWIN configuration, including the port redirection, character strings, etc. This can be useful for reference.

   If you want to print the configuration, select "Yes." A "Print Port Parameters" screen appears. At this screen, you can select the printer port that will be used to print the MPSWIN configuration. This is the same screen as the PC Port Parameters screen (refer to **Section 6.3.2**). If you select a serial port, set the communication parameters as necessary. Make sure that the selected port is connected to a printer.

6.3.10 FILE-COPYING SCREEN

Select "Proceed with the installation" to copy the MPSWIN files onto your hard disk (specifically, to a Windows subdirectory named MPSVIII.)

6.3.11 INSTALL COMPLETE SCREEN

The last screen indicates that the installation has been completed. You must return to DOS and reload Windows to activate the programmed parameters. Select "Return to DOS" to quit the installation program.

6.3.12 CONFIGURING PORTS IN WINDOWS APPLICATIONS

To complete the MPSWIN installation, you need to select the proper output (printer) ports for the printer driver within Windows. To do so, take these steps:

1. If you're not currently in Windows, start or return to Windows.

2. Make sure the Windows Program Manager, the Main program group, and the Control Panel are all open.

3. Click on Printer in the Control Panel window.

4. Choose the printer driver whose output port you want to set.

5. Click on Configure if you have Windows 3.0 or on Connect if you have Windows 3.1.

6. Select the new port from among the available ones listed. Do not select the computer port linked to the Multiport Spooler VIII, because no string has been defined for that port.

7. Close the Control Panel to end the installation.

Your Windows applications will now print with the new parameters.

6.4 Changing MPSWIN Settings

With MPSWIN's configuration program, you can change parameters set during installation. To load the configuration program, take these steps:

1. Open the MPSWIN Applications program group.

2. Select the Config program.

3. Select **Parameter**.

You have the following options:

PC Port Parameters	Modify the port parameters of the PC port linked to the Multiport Spooler VIII. The PC Port Parameters screen appears (see **Section 6.3.2**).
Assign Port	Redirect any of the nine phantom ports. The Port Redirection screen appears (see **Section 6.3.3**).
Define String	Define a "before" and "after" string for any port. The String Definition screen appears (see **Section 6.3.4**).
WINUCTP Auto	Specify whether or not the UCTP program should be loaded automatically. The UCTP Autoloading screen appears (see **Section 6.3.5**).

Command Validation	Specify whether or not returned messages are verified. The Message-Return Verification screen appears (see **Section 6.3.7**).
Print Configuration	Print the MPSWIN configuration. The configuration-printing screens appear (see **Section 6.3.9**).
Save	Save the revised configuration.
Exit	Quit the configuration program.

If you select Exit to quit the configuration program, and did not modify the configuration, you immediately return to Windows. However, if you did modify the configuration, you are prompted to save it (if you have not done so already). After saving, you are prompted to close and then reload Windows to make the new parameters active. If you exit the configuration program without accepting the modifications you made, you will return to Windows.

NOTE

Whether you choose to return to Windows or to DOS, MPSWIN is activated the next time you load Windows.

7. Operation

This chapter describes how to use the Multiport Spooler VIII, whether by itself, with its included software, or in a daisychain or cascade. The software with which you can control the MPS-VIII includes the User's Command Transmission Program (UCTP) and the print-utility software (MPSWIN or MPSDOS) with which you can select printers or other peripherals.

NOTE

If the UCTP is not installed, and you want to know how to send direct control commands directly from the DOS prompt or embed them in a task, refer to *Appendix D*.

7.1 MPS-VIII Hardware Operation

7.1.1 THE MPS-VIII'S LEDs

While the Multiport Spooler VIII is in use, the LED indicator lights on its front panel flash. When these flash differently from the ways described in this section, the Multiport Spooler VIII might be signaling an error. Refer to **Section 8.4** for a listing of error messages.

Input Ports
The port LEDs of parallel input ports or serial bidirectional ports used for input flash *slowly* when the corresponding port receives a command and *quickly* when the corresponding port receives a task (a print job). If you reserve a peripheral, the LEDs of both the computer's port and the peripheral's port flash until you cancel the reservation.

Output Ports
The port LEDs of parallel output ports or serial bidirectional ports used for output stay on from the time a transmission begins until one of three things happens: The port's buffer becomes empty, the current transmission ends, or the port's timeout expires.

NOTE

Timeouts for output ports are only required if two or more Multiport Spooler VIIIs are daisychained or cascaded together (see *Section 7.4*).

A reserved port's LED flashes until you cancel the reservation. If a job directed to a port is on pause, the port's LED flashes very slowly (once every few seconds).

Buffer Full

If the Multiport Spooler VIII's buffer becomes full, all the port LEDs flash until space becomes available. Note that while the buffer is full, the transfer of data is substantially slower than normal.

7.1.2 DEFAULT OPERATION

If you did not configure the Multiport Spooler VIII, did not install MPSWIN, MPSDOS, or the UCTP, and do not use control commands to control the MPS-VIII, the unit operates according to its default parameters. Jobs sent to the unit go to the first available output port (4, 8, or 12). Unless you have only one peripheral (or all your peripherals are of the same kind), this might cause problems. If it does, we recommended that you install either MPSDOS or MPSWIN (depending on whether you work in DOS or Windows respectively), and/or the UCTP, so that you and your users can select peripherals. Refer to **Chapter 5** for DOS installation instructions; refer to **Chapter 6** for Windows installation instructions.

NOTE

If you are in a DOS application and are sending a job to the MPS-VIII through a serial port on your PC, make sure that the PC port's communication parameters are the same as those of the receiving MPS-VIII input port (which by default are 9600 bps, no parity, 8 data bits, and 1 stop bit).

If you are in DOS itself, use the DOS MODE command or the included SMODE command utility to set the PC port's communication parameters.

7.2 Using MPSDOS and MPSWIN with the MPS-VIII

This section shows how to use the MPSDOS and MPSWIN application programs to print a document. It assumes that you have already installed MPSDOS or MPSWIN. For instructions on installing these programs, or on using them to configure ports, refer to the appropriate chapter (**Chapter 5** for DOS, **Chapter 6** for Windows).

7.2.1 OPERATION WITH **MPSDOS**

After installing MPSDOS, you can work with your DOS applications as usual. However, MPSDOS handles external I/O (printing, file transfer, etc.) for DOS. It does so in the background, so you can continue working undisturbed except for certain sounds you might hear:

- *One* beep indicates that the timeout has expired.

- *Two* beeps indicate that the port is busy or not ready.

- *Seven* beeps indicate that the MPS-VIII did not receive any command validation.

The software package includes the CHKERR program. If you have difficulty printing, this program might indicate the nature of the problem. (See **Section 8.5** for more information on this program).

7.2.2 OPERATION WITH **MPSWIN**

After you have installed MPSWIN, you can work with your Windows applications as usual. However, MPSWIN handles external I/O (printing, file transfer, etc.) for Windows. It does so in the background, so you can continue working undisturbed.

When you launch Windows you will see a new program group (shown on the next page) called "MPSWIN Applications." It contains:

- **UCTP**
The User's Command Transmission Program (UCTP) enables you to send direct commands to the Multiport Spooler VIII. It is discussed later in this chapter.

- **Config**
Config enables you to change MPSWIN parameters for Windows. It is explained in **Chapter 6**.
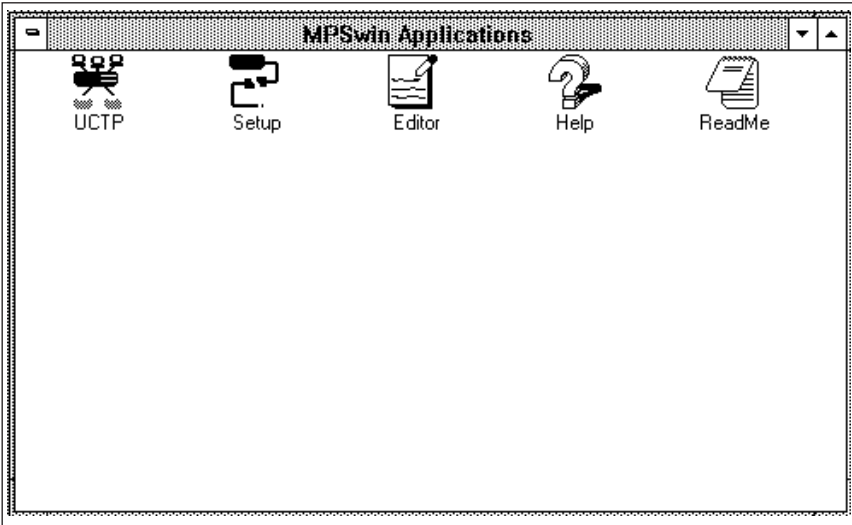
- **Editor**
  Editor enables you to edit the command file UCTP.PRO used by the
  UCTP program. It is explained in **Appendix E**.Editor icon

- **Help**
  Help is a help file that might assist you in using MPSWIN applications.

- **ReadMe**
  ReadMe is a text file that provides information about modifications
  made to the software that might not appear in this manual.

7.2.3 PRINTING A DOCUMENT

To print a document, simply use the print command of your Windows or DOS
application program as usual. If you have redirected ports to obtain a wider
selection of peripherals, you can select any of the peripherals listed. The
redirection command, or any heading you may have defined, is sent to the
Multiport Spooler VIII before the print request. The command and the print
job are sent to the MPS-VIII through the computer port linked to the MPS-
VIII, and then redirected to the selected port.
Suppose that LPT1 is the PC port linked to the Multiport Spooler VIII and
that you have used MPSDOS or MPSWIN to redirect port COM3 to MPS-VIII
port #12. When you print to COM3, the print request is sent out through
LPT1, preceded by the command redirecting it to Multiport Spooler VIII
port #12.

DOS Considerations
If your application doesn't support the port you want to print to (as will probably be the case with COM5 through COM9), print to a file using the port designation as the name of the file (for example, "COM5").

Windows Considerations
DOS applications running under Windows will not use MPSWIN parameters for printing. (In other words, port assignments or redirections in DOS applications are not modified by MPSWIN.) However, if MPSDOS is also installed, DOS applications running under Windows will use MPSDOS parameters for printing.

7.3 Using the UCTP with the MPS-VIII

7.3.1 ACCESSING THE UCTP

7.3.1.A In the DOS Environment
If during the installation you chose to have the UCTP load automatically when the PC is powered up (that is, to install it as a resident [TSR] program), you can access it by pressing its hotkey combination on the PC keyboard. However, if during installation you decided that the UCTP shouldn't load when the PC is powered, you can access it by typing NRESUCTP at the DOS prompt, or, if you want to load it as resident for a session, by typing RESUCTP at the DOS prompt.

NOTE

If you did not select a hotkey combination for the UCTP, the default combination is [Ctrl] + [Left-Shift].
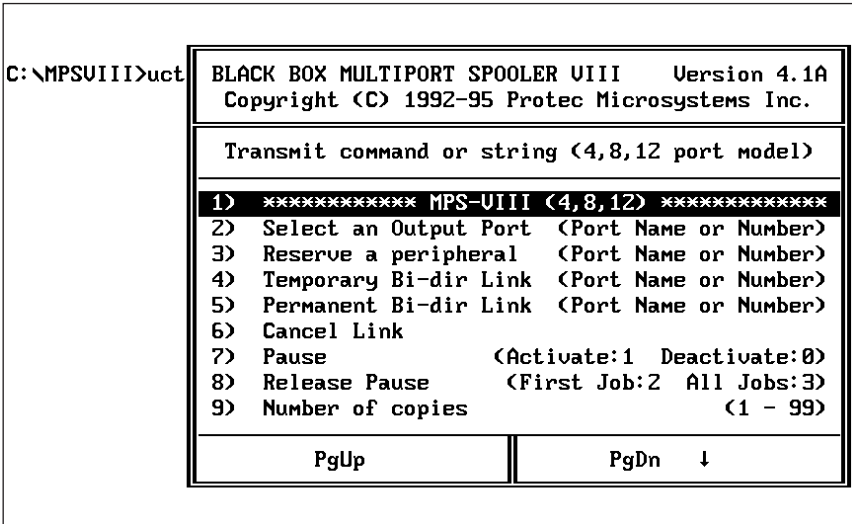
7.3.1.B In the Windows Environment
If during installation you chose to have the UCTP load when you run Windows, you can access it by selecting its icon at the bottom of the screen in the Program Manager window. Or you can access the UCTP by simultaneously pressing the [Alt] and [Tab] keys. However, if during installation you decided not to have the UCTP load when you run Windows, you can access the program by selecting its icon in the "MPSWIN Applications" window.

7.3.1.C How the UCTP Looks

Here is an example Advanced UCTP menu, called from (accesssed under) DOS:

```
C:\MPSVIII>uct┌──────────────────────────────────────────────────┐
             │ BLACK BOX MULTIPORT SPOOLER VIII    Version 4.1A │
             │    Copyright (C) 1992-95 Protec Microsystems Inc.│
             ├──────────────────────────────────────────────────┤
             │   Transmit command or string (4,8,12 port model) │
             ├──────────────────────────────────────────────────┤
             │ 1)  ************ MPS-VIII (4,8,12) ************   │
             │ 2)   Select an Output Port  (Port Name or Number)│
             │ 3)   Reserve a peripheral   (Port Name or Number)│
             │ 4)   Temporary Bi-dir Link  (Port Name or Number)│
             │ 5)   Permanent Bi-dir Link  (Port Name or Number)│
             │ 6)   Cancel Link                                 │
             │ 7)   Pause            (Activate:1  Deactivate:0)  │
             │ 8)   Release Pause    (First Job:2  All Jobs:3)  │
             │ 9)   Number of copies                  (1 - 99)  │
             ├─────────────────────┬────────────────────────────┤
             │        PgUp         ║        PgDn    ↓           │
             └─────────────────────┴────────────────────────────┘
```

The UCTP differs in appearance depending on whether you call it from DOS or from Windows. However, both versions contain the same commands, and also a subwindow which you can use to change settings. In DOS, the default UCTP is displayed on two pages. Use the PgUp and PgDn keys to view the various pages of commands. In Windows, the default UCTP is on one page. To view and select fields, scroll down.

Regardless of which version of the menu you have, the functionality of the UCTP is the same: You select a command and press Enter. In some cases you also have to enter an argument (a value), for which you are prompted. This is explained in more detail in next section's entries for each command.

7.3.2 THE UCTP COMMANDS

For some of these commands the Parameter window is displayed after you press Enter. In this window you enter the specifics of your request. For more information about some of these commands, refer to **Chapter 4**, which explains these commands in the context of default settings for each port. **Appendix D** lists these commands in exact DOS direct-command format and provides additional information about them.

Commands marked with a single asterisk ("*") appear only in the Advanced menu. Those marked with a double asterisk ("**") appear only in the Default menu.

Select an Output Port*
Use this command to select an output port. Enter the number (or name, if you have defined one with the configuration program) of the port you want as your new output port in the Parameter window. Subsequent jobs will be sent to this peripheral until you change the connection again. Note that other users can also use this port/peripheral; if you want exclusive access to a peripheral, you must use either the **Reserve a Peripheral** or **Permanent Bidirectional Link** command. Refer to the entries in this section for these commands, or to the entry for the **/P** command in **Appendix D**.

Use First Printer**, **Use Second Printer****, and **Use Third Printer*****
Use these commands to select a printer/peripheral. First Printer refers to the printer connected to output port #4; Second Printer refers to output port #8; and Third Printer refers to output port #12. Refer to the entry for the **/P** command in **Appendix D**.

Reserve a Peripheral*
Use this command to reserve a peripheral (output port), so that only you (your input port) will have access to it. Enter the name or number of the output port to which the peripheral is attached in the Parameter window. The peripheral will be reserved until you cancel the reservation. You can have only one peripheral reserved at a time. (This command is sometimes also referred to as **Establish Unidirectional Link**.) Refer to the entry for the **/L** command in **Appendix D**. Cancel a peripheral reservation with the **Cancel Link** command.

Appears only in the Advanced menu.
**Appears only in the Default menu.*

Temporary Bi-directional Link*

Use this command to establish a temporary bidirectional link between your serial bidirectional port and another serial port. Refer to the entry for the **/Y** command in **Appendix D**. The link is terminated when the timeout expires or when you use the **Cancel Link** command.

Permanent Bi-directional Link*

Use this command to establish a permanent bidirectional link between your serial bidirectional port and another serial port. Refer to the entry for the **/Z** command in **Appendix D**. The link is terminated when you cancel it with the **Cancel Link** command.

Cancel Link*

Use this command to cancel peripheral reservations and bidirectional links (see the entries for the previous commands) by sending a Break to the MPS-VIII. This command does essentially the same thing as the **Send a Break** command. Refer to the entry for that command, as well as to the entry for the Break signal in **Section 7.3.3**.

Pause*

Use this command to suspend the transmission of your jobs from the Multiport Spooler VIII to peripherals. Enter a 1 to activate a pause, or 0 to deactivate a pause. Note that deactivating a pause is not enough to release jobs from pause; you must also use a **Release Pause** command. Refer to the entry for the **/A** command in **Appendix D**.

Release Pause*

Use this command to release your jobs from pause. Enter 2 to release the *first* job sent from your input port from pause, or enter 3 to release *all* jobs sent from your input port from pause. Refer to the entry for the **/A** command in **Appendix D**.

Number of Copies**

Use this command to set the number of copies to be printed. You can enter up to 99 copies. This applies only to the next job you are sending; after that, the number of copies is automatically reset to 1. Refer to the entry for the **/C** command in **Appendix D**.

*Appears only in the Advanced menu.
**Appears only in the Default menu.

Form Feed
Use this command to control whether a form feed is sent after the timeout
expires for each of your jobs. Note that some application software already
includes this function, in which case you need not add another form feed
with this command. Refer to the entry for the /**F** command in **Appendix D**.

Header Activation
Use this command to activate or deactivate a header. An active header will be
printed at the beginning of each job until you deactivate it. If you activate a
header but do not define it, the UCTP will use the default header for your
input port. Note that if you use a header, you may also want to activate the
form feed, because otherwise the header prints at the top of the first page
of the job itself. Refer to the entry for the /**H** command in **Appendix D**.

Header Definition
Use this command to define the header. A window appears in which you can
enter a header of up to 60 characters. Refer to the entry for the /**S** command
in **Appendix D**.

Cancel Jobs
Use this command to cancel all jobs sent from your input port. Refer to the
entry for the /**K** command in **Appendix D**.

Modify Timeout
Use this command to set the length of the timeout (from 1 to 999 seconds).
Entering a value of zero sets the timeout to ¼ second (250 milliseconds). If
you are submitting a job that will involve transmission interruptions on
account of calculations that need to be performed (from CAD/CAM software,
for example), set the timeout to anywhere from 20 to 40 seconds. For non-
graphics printing, such as word-processing files, we recommend a 6-second
timeout. Refer to the entry for the /**TO** command in **Appendix D**.

Send a String
Use this command to send a string to a peripheral.

Send a Break*
Use this command to cause an immediate timeout (that is, to skip the remainder of the timeout) by sending a Break to the Multiport Spooler VIII, so that you can immediately send another job. This command does essentially the same thing as the **Cancel Links** command. Refer to the entry for that command, and also to the entry for the Break signal in **Section 7.3.3**.

Broadcast*
Use this command to send a job to more than one output port simultaneously. You must specify which ports should receive the job (you can use wild-card characters to do so). Refer to the entry for the **/B** command in **Appendix D**.

7.3.3 SETTINGS WINDOW

In the UCTP's Settings window, you can enable or disable the Break signal or change the token. If you are running UCTP under DOS, you can also modify the communication parameters of the serial PC port connected to the Multiport Spooler VIII.

   If you are running UCTP under DOS, open this window by pressing the Ctrl and PgDn keys simultaneously. (To close the window, press Ctrl and PgUp.) If you are running UCTP under Windows, select Settings from the menu.

PC Output Port
Under DOS, you can use this parameter to select the port on your computer that the Multiport Spooler VIII is connected to. The options are LPT1, LPT2, LPT3, COM1, COM2, COM3, and COM4. For the serial ports, the communications parameters may be included. When you enter a port, the program verifies that the selected port actually exists. If it doesn't, your port-selection command is ignored.

NOTE
Under Windows you can only view (not change) the PC port.

*Appears only in the Advanced menu.

Token
If you have two or more Multiport Spooler VIII units interconnected, you
need to set the token to a non-zero value to access the second and subsequent
MPS-VIII units your peripherals are connected to. For example, if three units
are interconnected in a daisychain, set the token to 2 to access the third
MPS-VIII: Subsequent commands will be passed through the first and second
MPS-VIIIs and processed by the third, until you change the token again. (If
you have four units in a chain and need to access the fourth, set the token to
3, etc.). The token can range in value from 0 to 9, meaning that you can have
a chain or cascade ten units deep (but we definitely don't recommend this).
See **Section 7.4**.

Break
If the Break feature is active when you send a command, the Multiport
Spooler VIII immediately times out. This enables you to send another job
without having to wait for the timeout on your input port to expire. A typical
installation requires that the Break always be enabled. If it is turned off, you
have to wait the duration of each timeout (after any job consisting of more
than 256 characters) before sending subsequent commands.
   Under DOS, position the cursor on the "Break Signal" item in the menu
and press Enter to toggle between the Enable and Disable values. Under
Windows, select either the On or Off setting.

7.3.4 ENDING YOUR SESSION AND CUSTOMIZING THE UCTP (WINDOWS ONLY)

Under Windows, if you will frequently be using the UCTP with particular
settings, you can save the UCTP back to disk with those settings. If you save
this altered UCTP so that it overwrites the existing version, the new settings
will become the new default settings that you'll start with whenever you load
the UCTP. If you save the altered UCTP as a new file, the new settings are
automatically loaded whenever you load that version of UCTP, but you can
always load the original version and use the factory defaults instead.
   When you are finished using the UCTP, select Exit from the Windows
UCTP menu to end the session. You will be prompted for whether or not you
want to save the file. If you answer yes, the altered UCTP will be saved to disk,
using the filename it was loaded with, and become permanent. If you answer
no, the altered UCTP is discarded and its original version remains.

To avoid overwriting the original version of the UCTP when you save the altered version, make a copy of the original version and give it a different filename. (UCTP files can have any filename, but must have the ".PRO" extension.) After you save the altered UCTP, you can rename the altered version and give the original version its old name back.

Users who have copied or created different UCTPs can load the version they choose by selecting Load from the Windows UCTP Menu. You will be prompted to choose a .PRO file from the list of available versions.

7.3.5 SUMMARY OF UCTP USE

- Under DOS, run the program by pressing its hotkey combination (if it is loaded as a TSR) or by running it at the DOS prompt (in nonresident mode). Under Windows, select the UCTP icon in the MPSWIN window.

- Make sure that the token is set to 0 if you are sending a command to the closest Multiport Spooler VIII.

- Make sure that the selected PC output port is actually connected to the MPS-VIII.

- Select the command to be transmitted, and enter the parameters as required.

NOTE

For information about non-UCTP control-command transmission methods, refer to *Appendix D*. Refer to *Appendix E* for information about how to change the parameters of the DOS version of UCTP.

7.4 Operating Daisychained or Cascaded MPS-VIIIs

If you have installed more than one Multiport Spooler VIII and connected them together in a daisychain or cascade, there are several special concerns you must keep in mind.

Firstly, you must make sure that the timeouts are set appropriately for your output ports. For single-unit installations, output-port timeouts can be set to one second, because jobs don't have to be output until they've been received in full. By contrast, in multiple-unit installations the data is passed through the intermediate MPS-VIIIs immediately; any delay in a job caused by computer processing must be allowed for, not only by the input port of the destination MPS-VIII, but by the input and output ports of all units in between as well. If you have not already done so during configuration, use the UCTP's **Modify Time-Out** menu command (see **Section 7.3.2**) or **/T** direct command (see the entry for that command in **Appendix D**) to set the timeouts of the output ports connected to other MPS-VIIIs to longer than the timeouts of the corresponding input ports on the connected MPS-VIIIs.

Secondly, to make sure that your commands (including timeout-setting commands) go to the right MPS-VIII and that your jobs go to the right peripherals, you must manipulate the token very carefully (see **Section 7.3.3**). For example, perhaps you have three MPS-VIIIs connected in a daisychain (one unit sending output to a second, which in turn sends output to a third), and you want to send a print job to a printer connected to Port 4 of the third unit. If the token were already set to 2 and the proper output ports on the first and second MPS-VIIIs were selected, commands and data would pass through the first and second units and be processed by the third; you would simply select Port 4 and send your job, and it would go to the right place. However, let's suppose the token is set to 0; commands will go to the first MPS-VIII and no farther. The first thing to do is select the output port on the first MPS-VIII that is connected to the second unit. Having done that, set the token to 1 (so that the first unit will pass the command through) and select the output port on the second MPS-VIII that is connected to the third unit. Now set the token to 2, so that subsequent commands will be passed through to the third unit, and select Port 4. At last you can send your print job to the desired printer.

(When you send direct commands, you can skip the token-setting steps, because you can include the token, set to your desired number, in the command itself. See **Section D.2.3** in **Appendix D**.)

Things get even trickier when you cascade Multiport Spooler VIIIs (one unit sending output to several units, each of which in turn might send output to several other units, and so on). Perhaps you have two "secondary" units connected to ports 4 and 8 of your "primary" unit, and you have two "tertiary" units connected to ports 4 and 8 of each of your secondary units. If the token is set to 2, one of your tertiary units is probably ready to receive commands and jobs, but is it the one you need? You'll have to send test commands or data to find out, and if you need a different unit, you'll have to set the token to 0 and start the "select port, set token" process from the top.

The token can be set to any value from 0 to 9, which theoretically allows you to build very large setups involving hundreds of Multiport Spooler VIIIs. Needless to say, however, working with even a few units can be tedious and confusing; working with more than a few is impractical at best. If you must expand, we recommend that, where possible, you upgrade to a larger MPS-VIII (24-port units are available). If this is not possible, we recommend that you expand by daisychaining rather than cascading units. If you have a very large number of total stations (users and peripherals), we recommend that you call Black Box to discuss whether a true network would be more practical for you.

8. Troubleshooting

This chapter describes difficulties that you might have when you install or operate the Multiport Spooler VIII or its software, along with possible causes and solutions. It also describes various display codes and error messages you might see. Lastly, it explains how to contact Black Box and how to package and ship your unit if you can't solve the problem yourself.

8.1 Common Concerns

The MPS-VIII is sending jobs to the wrong port.

Cause 1:   You might have selected to print on the port linked to the Multiport Spooler VIII, but that port serves as the output port for MPSWIN/MPSDOS.

Solution 1:   Select a different port for your print job, or change the port linked to the printer interface. If you are in DOS, do this within your DOS application. If you are in Windows, do this with the Printer option in the Windows Control Panel.

Cause 2:   You might have incorrectly defined a string.

Solution 2:   Use the configuration programs of MPSDOS (CONFDOS) or MPSWIN (**Config** in the MPSWIN Applications window) to change the string.

Cause 3:   The communication parameters of the PC serial port connected to the MPS-VIII might be set wrong.

Solution 3:   Make sure that the computer port's communication parameters match those of the MPS-VIII port.

Cause 4:   You might have accidentally selected the wrong model of MPS-VIII during software installation (an 8-port unit instead of a 4-port, for example).

Solution 4:   Reinstall the software and choose the correct MPS-VIII model at the initial installation screen.

The LED of a bidirectional serial port used as an output port starts flashing for no apparent reason.

Cause: Some serial printers use X-ON/X-OFF software flow control to control the flow of data into their small on-board buffer. If the Multiport Spooler VIII has DTR/CTS hardware flow control enabled, it will think that the X-ON/X-OFF characters sent back to it by the printer are data characters.

Solution: Change the configuration of the Multiport Spooler VIII's bidirectional serial port where the printer is connected to that of a serial output port.

NOTE

DTR/CTS hardware flow control is the only type of flow control supported by DOS and all applications that use DOS to print.

There are problems printing or plotting from AutoCAD.

Background: AutoCAD drivers for serial plotters usually have fixed serial communication parameters: 7 data bits, even parity, and 1 stop bit. (Only the number of data bits and the parity are relevant to this problem.) For example, let's consider the following PC—MPS-VIII—Plotter installation:

      The PC is connected through its serial port to one of the Multiport Spooler VIII's serial ports. The plotter is connected to a different MPS-VIII port. The PC's serial port, the MPS-VIII's two serial ports, and the plotter's serial port are all configured to match the fixed AutoCAD configuration of 7 data bits and even parity. Plot data is sent from the PC through the MPS-VIII to the plotter.

      In this sort of arrangement, the following problems can arise.

Cause 1:   Word-processing software is installed on your PC and its ouput is sent to a printer. The printer is connected to one of the Multiport Spooler VIII's parallel output ports. You plan to use the existing serial connection on your PC to send AutoCAD output to the plotter and word-processor output to the printer. Furthermore, it might be useful to send AutoCAD output to the printer. So you use the UCTP to send port-redirection commands to the MPS-VIII for switching between the plotter and printer. Everything looks good on paper, but it just doesn't work in practice.

The problem with this configuration is that the word-processing software uses the 8th bit for special characters such as accents and line-drawing characters. Also, AutoCAD requires 8-bit characters when it sends plot bitmaps to the printer. The original configuration that set the serial ports on the PC and the Multiport Spooler VIII to 7 bits and even parity must be changed.

Solution 1:   Configure your PC's serial port (with MODE COM1:9600,N,8,1) and the corresponding Multiport Spooler VIII port (with MPSCONF) to 8 bits and no parity. This will allow the word processor to print the accents and other special characters. The plotter, which is permanently set to 7 bits and even parity, will still work as usual. Use the UCTP or a command entered at the DOS prompt to redirect your PC's output to the printer instead of the plotter. Any time you go back to AutoCAD and plot, the plotter driver will reconfigure your PC's serial port to 7 bits and even parity. When the plotting is done, you must again use the DOS MODE command to configure your PC's serial port for 8 bits and no parity, as just described.

Cause 2:   An additional problem arises when you want to use the AutoCAD "output to printer" option. (Note that since AutoCAD normally prints on LPT1, you must use the DOS MODE command to redirect LPT1 to COM1 [or whatever PC serial port you are using].) Suppose you have been plotting from within AutoCAD when you decide you want to use the printer instead. Because the AutoCAD plotter driver has set your PC's serial output port to 7 bits and even parity, you cannot simply use a UCTP control command to redirect the output of the Multiport Spooler VIII to the printer. This PC serial port setting (7 bits and even parity) might alter any commands or data you send from your PC to the MPS-VIII.

Solution 2: From within AutoCAD, set your PC's serial port to 8 bits, no parity. Use the AutoCAD SHELL command to access the DOS command line, and use MODE COM1:96,N,8,1 to set your PC's serial port to 8 bits and no parity. Return to AutoCAD by typing EXIT at the DOS prompt. You may now use the UCTP to issue a redirection command to the Multiport Spooler VIII, connecting your PC to the printer. The printer will now receive 8-bit characters properly.

    If you select the AutoCAD plot feature again, the plotter driver will again change the configuration of your serial port. When you are done plotting and wish to revert to the printer, you must use the AutoCAD SHELL command again, as described above.

NOTE

See *Section D.1.1.B* in *Appendix D* for further details on the use of the MODE command.

The computer does not communicate with the Multiport Spooler VIII when you attempt to configure the unit.

Cause 1: The cable is the wrong type, is not connected properly, or is malfunctioning.

Solution 1: Make sure that both the cable connectors on the Multiport Spooler VIII and the PC are firmly seated. Also, check in **Appendix A** to make sure you are using the right cable.

Cause 2: The communication parameters set for the PC's serial output port do not correspond to those set for the input port of the Multiport Spooler VIII (specifically, the number of data bits is not set to eight).

Solution 2: Make sure that all serial-communication parameters of the PC's output port that is connected to the MPS-VIII match those of the input port on the unit. Set the number of data bits for both ports to eight.

Several print requests are sent in a queue, or
S**everal copies are requested for one task and none of these are printed**, or
Some tasks are printed while others are not.

Cause: Redirection has probably not been set on the input port. This
                means that tasks are sent to all available peripherals.

Solution: You can set up redirection to a specific output port using
                redirection commands. If a name with a wild-card character has
                been defined, tasks may be redirected to this group of ports.
                These commands are described in **Appendix D**.

NOTE

**A bidirectional serial port is considered to be available even when it
is connected to a computer.**

I'm unable to configure the unit because I don't remember the new password.

Solution: Turn the Multiport Spooler VIII off and back on; when the
                LED sequence starts (the LEDs light sequentially), turn it off
                and back on again. When the unit is turned on the second
                time, a coded password is printed on the first available printer
                port. Call Black Box to obtain the password corresponding to
                the coded printout.

**The UCTP does not load on startup, even though I specified that it should
when I installed it.**

Solution 1:   Edit your AUTOEXEC.BAT file and move the UCTP line to an
                earlier line in the file, before any lines that call other batch
                jobs.

Solution 2:   If your AUTOEXEC.BAT contains no calls to other batch files,
                edit your AUTOEXEC.BAT and place the UCTP line later in
                the file.

I cannot communicate with the Multiport Spooler VIII.

Solution: Reset the default communication parameters on Port 1 of the MPS-VIII by doing the following:

Turn the MPS-VIII on, and when the LED sequence starts (the LEDs light sequentially) turn it off and back on again. Port 1's LED will flash red, indicating that the default communication parameters for Port 1 have been restored:

Direction of port: Input in the case of a parallel port, bidirectional in the case of a serial port.

Communication parameters (serial ports only): 9600,N,8,1, DTR/CTS.

Port 1's LED continues flashing red until a task is sent to Port 1, when it will alternately flash green and be dimly lit red. You can get out of this special "reset mode" by turning the unit off and back on or by sending a new configuration to the unit.

8.2 Errors Indicated by the Multiport Spooler VIII's LEDs

Serial Error

Description: An input port's green LED briefly flashes on and off for about 10 seconds when a character is received during attempted transmission.

Cause: The transmission parameters of a serial port are incorrect when a character is sent.

Solution: Use the DOS MODE command or the Windows Control Panel to make sure that the proper serial-communication parameters are set for the PC output port connected to the Multiport Spooler VIII port where the error occurred.

Backup Error

Description: All port LEDs rapidly flash on and off for approximately 10 seconds.

Cause 1: The rechargeable battery that backs up the RAM where the Multiport Spooler VIII stores its configuration parameters has expired. As a result, any custom configuration on the MPS-VIII is lost.

Solution 1: You should have a new battery installed. You can, however, continue to use the Multiport Spooler VIII, either with the default configuration, if that is sufficient, or by reconfiguring each time you turn the unit on. (Reconfiguring means using the MPSCONF program, loading the default configuration from the unit, and then modifying it, or loading and sending to the unit a configuration saved in a file on disk. Refer to **Chapter 4**.)

Cause 2: A backup error can also occur when you are saving a configuration in the Multiport Spooler VIII. This occurs when the configuration has parameters that conflict with your MPS-VIII model.

Solution 2: Check to make sure that the configuration is compatible with your Multiport Spooler VIII model. Refer to **Chapter 4** for configuration information.

I/O Error, RAM Error, or Internal Error

Description: All port LEDs flash continuously. (This might be just the "Buffer Full" condition; see **Section 8.3**.)

Cause 1: I/O Error: Usually caused by a defective port.

Cause 2: RAM Error: No RAM is found, or a RAM error is detected.

Cause 3: Internal Error: An internal component has gone bad.

Solution: Turn the Multiport Spooler VIII off and back on. If the same error occurs, the unit might require service. Call Black Box for technical support.

8.3 Non-Error Display Codes

When the Multiport Spooler VIII is being used, the LEDs on its front panel flash. This section explains what the flashing lights indicate. If they flash in a way different from those described here, the Multiport Spooler VIII may be signaling an error.

Input Ports
The port LED of a parallel input port or a serial bidirectional port used for input flashes *slowly* when receiving a command and *quickly* when receiving a task. If you reserve a peripheral, the port LEDs of both the computer and peripheral flash until you cancel the reservation.

Output Ports
The port LED of a parallel output port or a serial bidirectional port used for output stays on until its buffer is empty, or if transmission has not been completed, or the timeout on the ports has not expired. (Timeouts for output ports are required only if two or more Multiport Spooler VIIIs are connected together; see **Section 7.4**.) The LED of a reserved port flashes until you cancel the reservation. If a job sent to the port is on pause, the port's LED flashes with an interval of several seconds.

Buffer Full
If the Multiport Spooler VIII's buffer becomes full, all of the port LEDs flash until space becomes available. Note that when the buffer is full, the transfer of data is substantially slower than normal.

Restoring the Default Parameters of Port 1
If you are having difficulties communicating with the Multiport Spooler VIII, perform the following procedure:

- Connect your PC-to-MPS-VIII cable to MPS-VIII port 1.
- Turn the unit on; when the port LEDs flash sequentially, turn the unit off and back on.

Port 1's LED will flash red once every second. The communication parameters of port 1 have been reset to their defaults: 9600 bps, no parity, 8 data bits, and 1 stop bit. The LED will continue to flash red until you send the Multiport Spooler VIII a command.

8.4 Error Messages

You might see any of the following messages during installation, configuration, or operation of MPSWIN or MPSDOS.

8.4.1 INSTALLATION-TIME MPSWIN ERROR MESSAGES

Error deleting MPSWIN group
This problem occurs when re-initialization is requested but MPSWIN is already installed.

Help file not found
Help file has not copied during installation.

No response from Windows Program Manager
The installation program cannot communicate with the Windows Program Manager. Consequently, the MPSWIN Applications window cannot be created.

The character xxx must be given in hexadecimal
You must enter this character in hexadecimal code between parentheses.

The character "(" must be followed by a hexadecimal number
You must enter the "open-parenthesis" character in hexadecimal code between parentheses as "**(28)**".

The Config program is already loaded in memory
This message is displayed when you try to load the Config program but it is already loaded.

The string must not exceed 128 characters. The string has xxx characters.
Strings must not exceed 128 characters.

Unable to copy MPSWIN.DRV
Unable to copy MPSWIN.INI
Unable to copy MPSWIN.HLP
Unable to copy SETUPWIN.EXE
Unable to copy EDITOR.EXE
Unable to copy EDITOR.ICO
Unable to copy README.WIN
Unable to copy SYSTEM.INI
Unable to copy WIN.INI
Unable to copy WINUCTP.EXE
Unable to copy WINUCTP.PRO
Either the source disk and directory are not valid, the file is not on the floppy disk, or the hard disk is full.

Unable to create the MPSWIN subdirectory
The installation program cannot create the MPSWIN subdirectory. Make sure your hard disk is not full.

Unable to create MPSWIN group
The installation program cannot communicate with the Windows Program Manager. Consequently, the MPSWIN Applications window cannot be created.

Unable to start up the automatic loading of the WINUCTP program
The installation program cannot open the WIN.INI file.

Unable to insert the new port in WIN.INI file
The installation program cannot create the COM5 to COM9 phantom ports.

Unable to install the MPSWIN interface
The installation program cannot open the SYSTEM.INI file.

Unable to modify spooler status
General error. The installation program cannot open the WIN.INI file.

8.4.2 INSTALLATION-TIME MPSDOS ERROR MESSAGES

Unable to copy file xxxx.xxx
Either the file in question (xxxx.xxx) is not on the floppy disk, the hard disk is full, or the source disk and directory are not valid.

Unable to open the configuration file.
The configuration program cannot open the file called CONFDOS.CFG. Verify if CONFDOS.CFG is on the current drive.

The line path of the AUTOEXEC.BAT file is too long.
The PATH statement in the AUTOEXEC.BAT file should not exceed 128 characters.

8.4.3 OPERATION-TIME MPSWIN ERROR MESSAGES

The LPTx port is currently assigned to a DOS application.
Do you want to re-assign the port to Windows?
or
The COMx port is currently assigned to a DOS application.
Do you want to reassign the port to Windows?
The same printer port is requested by two applications (in Enhanced mode), or the LPTx or COMx redirection command is wrong.

Warning: no confirmation received.
Do you wish to continue?
One of these things is wrong:

- The communication parameters for a serial port are not valid.

- No command was defined when defining a "String." To avoid this message, write a command at the beginning of the string or disable the MPSWIN message-return function.

- The port selected for printing and the one used by MPSWIN to communicate with the Multiport Spooler VIII are the same port. Open the Printer menu in the Windows Control Panel to change the port linked to the MPS-VIII.

8.5 Operation-Time MPSDOS Errors: The CHKERR Program

The CHKERR program enables you to determine the nature of a particular problem. When an error is detected, two or seven consecutive beeps will sound; when this occurs, execute the program from the DOS prompt. *Two* beeps indicates that the port is busy or not ready. *Seven* beeps indicates that the message was not received from the Multiport Spooler VIII or an error was detected.

The CHKERR Program can be executed in the following ways:

- **CHKERR**
  Will show the error message. The possible messages are:

  No error
  No error to indicate.

  String cannot be transmitted
  The chosen port is occupied or not ready.

  No confirmation received
  Returned messages not received or an error was detected.

  MPSDOS is not installed
  MPSDOS is not installed.

  Error # x unidentified
  Nature of error # x unknown.

  Invalid parameters
  String command parameter invalid.

- **CHKERR/C**
  Will show the MPSDOS configuration, as well as an error message if necessary.

- **CHKERR/R**
  Will show all port redirections.

- **CHKERR/S**
  Will show the contents of each character string.

8.6 Calling Black Box

If you determine that your Multiport Spooler VIII is malfunctioning, *do not attempt to alter or repair it.* Contact Black Box. The problem might be solvable over the phone.

Before you do, make a record of the history of the problem. Black Box will be able to provide more efficient and accurate assistance if you have a complete description, including:

- The type of MPS-VIII model you have, including buffer size.

- The nature and duration of the problem.

- When the problem occurs.

- The state of the unit's LEDs when the error occurs.

- The components involved in the problem.

- Any particular application that, when used, appears to create the problem or make it worse.

8.7 Shipping and Packaging

If you need to transport or ship your Multiport Spooler VIII:

- Package it carefully. We recommend that you use the original container.

- Before you ship a unit for repair or return, contact Black Box to get a Return Materials Authorization (RMA) number, and make sure you include everything you received with the unit (especially its power supply) when you ship it.

Appendix A: Cable Pinouts

A.1 Cable Information

The following information is provided for those who plan to buy or construct their own cables.

Use shielded, low-capacitance (less than 15 pf per foot [49.2 pf/m]) cable for all serial and parallel cables.

For distances up to 25 feet (7.6 m), we recommend double-shielded cables; for distances greater than 25 feet (7.6 m) and up to 75 feet (22.9 m), we recommend low-capacitance shielded cables.

The Multiport Spooler VIII uses special filtering on its parallel input ports that permits the PC-to-MPS-VIII parallel cable to be up to 75 feet (22.9 m) long (substantially more than the standard 25-foot [7.6-m] maximum).

Serial cables may be up to 600 feet (182.9 m) long.

To avoid potential signal-corruption problems, avoid running cables near fluorescent light fixtures, generators, large electric motors, and any other potential source of electromagnetic interference.
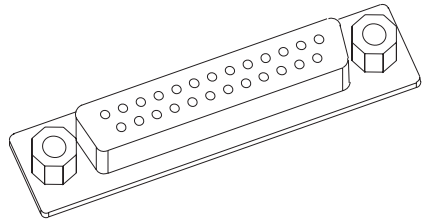
A.2 Various Connector Types

In this section and in **Section A.4**, product codes are shown after the cable descriptions in the headers for cables we have in stock. Where the word "Quote" appears instead, call Black Box for a special quote.
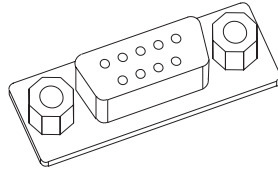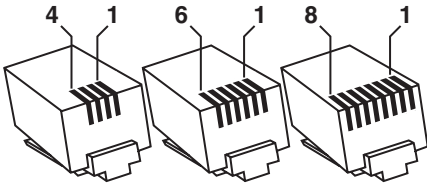
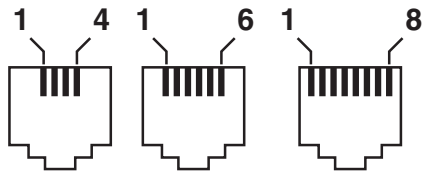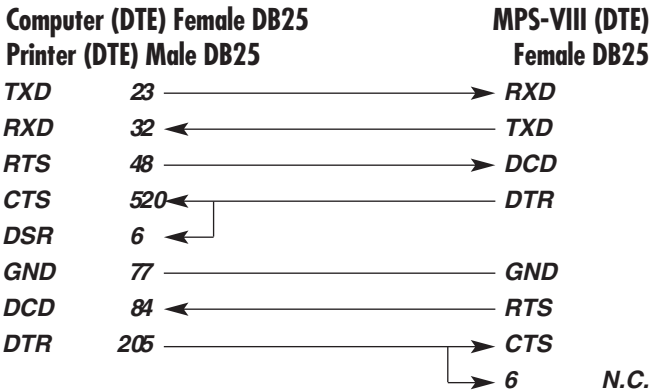These are the connector types:
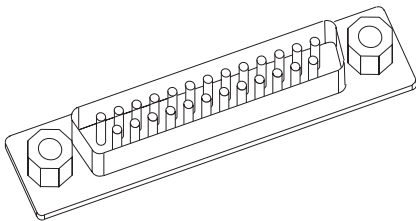
DB25 male   **DB25 female**

DB9 male

RJ-11 or RJ-45 male
4-, 6-, and 8-pin

RJ-11 or RJ-45 female
4-, 6-, and 8-pin

A.2.1 DTR/CTS HANDSHAKE 7-WIRE (EVNBXL)

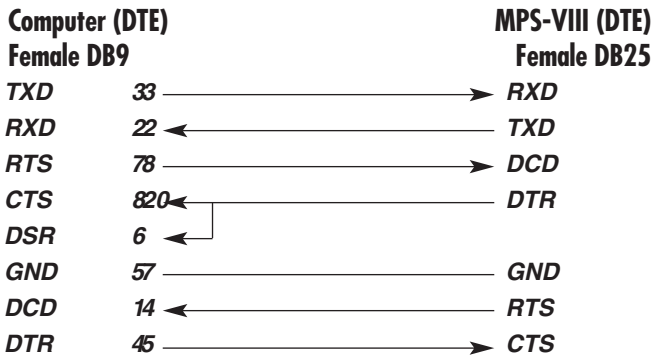| Computer (DTE) Female DB25 Printer (DTE) Male DB25		MPS-VIII (DTE) Female DB25
TXD	23 ————————————→	RXD
RXD	32 ←————————————	TXD
RTS	48 ————————————→	DCD
CTS	520←———————————	DTR
DSR	6 ←	
GND	77 ————————————	GND
DCD	84 ←————————————	RTS
DTR	205 ———————————→	CTS
		6 N.C.

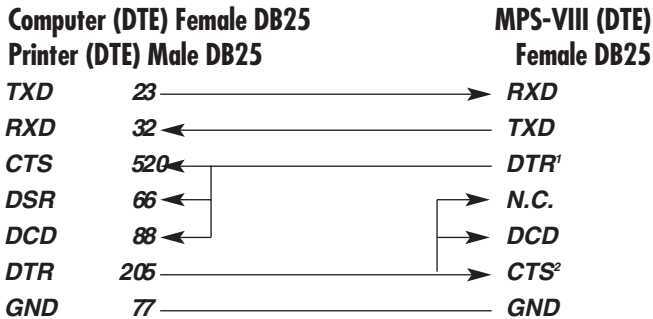This serial cable arrangement supports all modem features.

It is preferable to use DTR/CTS hardware flow control whenever possible. This handshaking technique is faster than X-ON/X-OFF, and is the only one supported by DOS and all applications that use DOS to print.

A.2.2 DTR/CTS HANDSHAKE 7-WIRE FOR AT (9-PIN) (QUOTE)

Computer (DTE) Female DB9		MPS-VIII (DTE) Female DB25
TXD	33 ——————————→	RXD
RXD	22 ←——————————	TXD
RTS	78 ——————————→	DCD
CTS	820←——————————	DTR
DSR	6 ←	
GND	57 ——————————	GND
DCD	14 ←——————————	RTS
DTR	45 ——————————→	CTS

A.2.3 DTR/CTS HANDSHAKE 5-WIRE (EVNBPC)

Computer (DTE) Female DB25 / Printer (DTE) Male DB25		MPS-VIII (DTE) Female DB25
TXD	23 ——————————→	RXD
RXD	32 ←——————————	TXD
CTS	520←——————————	DTR[1]
DSR	66 ←	N.C.
DCD	88 ←	DCD
DTR	205 —————————→	CTS[2]
GND	77 ——————————	GND

[1]*This line may be omitted if the cable is used between the MPS-VIII and a printer or plotter.*

[2]*The line from the PC to the MPS-VIII is used for hardware flow control. It may be omitted if the data flows in one direction only, as when printing from the PC through the MPS-VIII.*

A.2.4 DTR/CTS HANDSHAKE 5-WIRE FOR AT (9-PIN) (QUOTE)
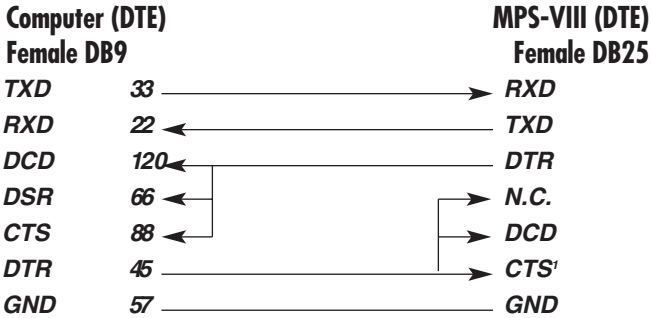
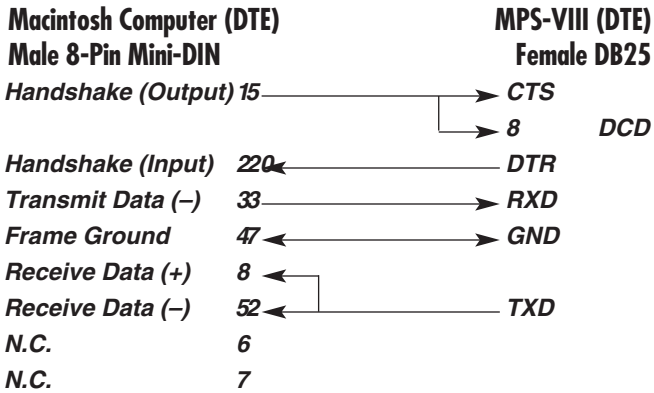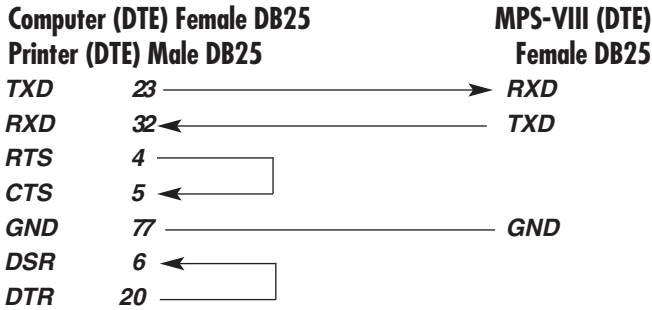| Computer (DTE) Female DB9			MPS-VIII (DTE) Female DB25
TXD	3	3 ──────────────▶	RXD
RXD	2	2 ◀──────────────	TXD
DCD	12	0 ◀──────────────	DTR
DSR	6	6 ◀──────────────	N.C.
CTS	8	8 ◀──────────────	DCD
DTR	4	5 ──────────────▶	CTS[1]
GND	5	7 ──────────────	GND

[1]*The line from the PC to the MPS-VIII is used for hardware flow control. It may be omitted if the data flows in one direction only, as when printing from the PC through the MPS-VIII.*

A.2.5 HANDSHAKE 5-WIRE FOR APPLE® MACINTOSH® (EVNA09)

Macintosh Computer (DTE) Male 8-Pin Mini-DIN		MPS-VIII (DTE) Female DB25	
Handshake (Output)	1	5 ──────────▶ CTS	
		──▶ 8	DCD
Handshake (Input)	2	20 ◀────────── DTR	
Transmit Data (–)	3	3 ──────────▶ RXD	
Frame Ground	4	7 ◀────────── GND	
Receive Data (+)	8	◀──	
Receive Data (–)	5	2 ◀────────── TXD	
N.C.	6		
N.C.	7		

A.2.6 X-ON/X-OFF HANDSHAKE **3-W**IRE **DB25 (EYN251)**

Computer (DTE) Female DB25 Printer (DTE) Male DB25				MPS-VIII (DTE) Female DB25
TXD	23	⟶		RXD
RXD	32	⟵		TXD
RTS	4	⟶┐		
CTS	5	⟵┘		
GND	77	———		GND
DSR	6	⟵┐		
DTR	20	——┘		

A.2.7 X-ON/X-OFF HANDSHAKE **3-W**IRE **FOR AT (9-P**IN**) (Q**UOTE**)**

Computer (DTE) Female DB9				MPS-VIII (DTE) Female DB25
TXD	33	⟶		RXD
RXD	22	⟵		TXD
RTS	7	⟶┐		
CTS	8	⟵┘		
GND	57	———		GND
DSR	6	⟵┐		
DTR	4	——┘		
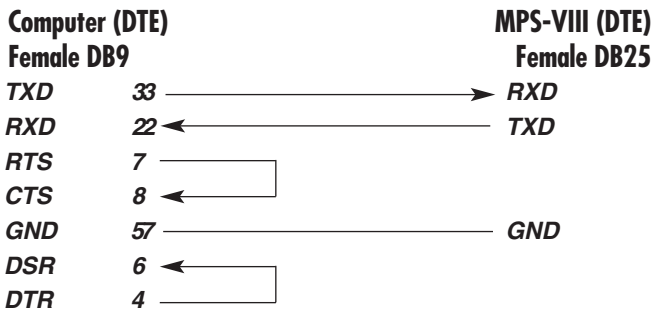
A.2.8 MODEM **7- OR 8-W**IRE **(ECN25C)**

Modem (DCE) Male DB25				MPS-VIII (DTE) Female DB25
TXD	22	⟵		RXD
RXD	33	⟶		TXD
RTS	44	⟵		RTS
CTS	55	⟶		CTS
(optional) DSR	66	·······⟶		DSR (optional)
GND	77	———		GND
DCD	88	⟶		DCD
DTR	2020	⟵		DTR
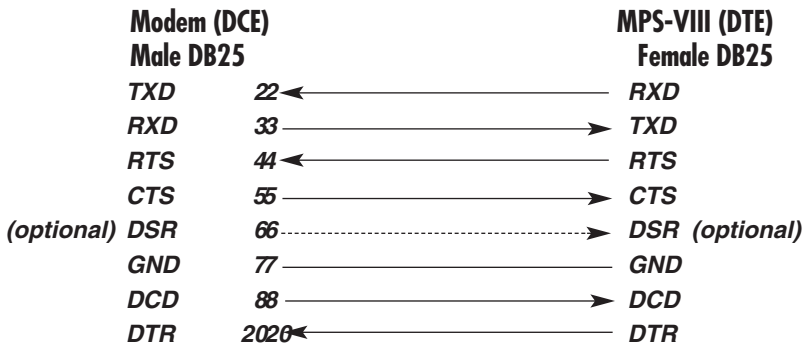
If a modem is connected to the MPS-VIII, see the notes for the DTR/CTS Handshake diagram on page 100.

A.3 Telephone Cables and Modular Adapters

The modular adapters shown in this section are not preassembled stock items. You can use the illustrations as blueprints to build your own adapters from the recommended adapter kits, or you can call Black Box for a quote on preassembled adapters.

   Note that all of the telco cables shown in this section are cross-pinned (our product codes EL0XM) rather than straight-through pinned (EL0XMS). Also, the wiring schemes of the modular adapters in **Sections A.3.1** through **A.3.3** are downward-compatible. For example, if you have an adapter pinned for an 8-wire cable, it will perform the functions of the 6-wire adapter with 6-wire cable or of the 4-wire adapter with 4-wire cable.
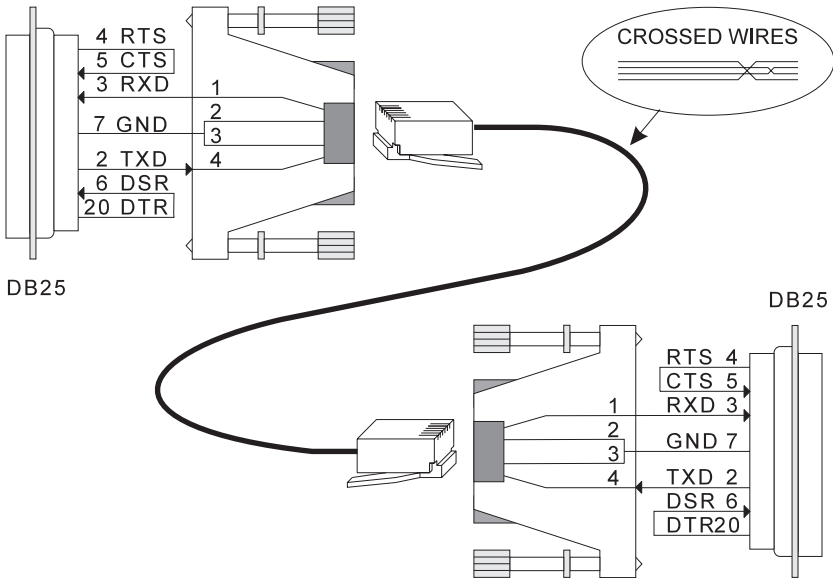
A.3.1 USING 4-CONDUCTOR TELEPHONE CABLES WITH RJ-11 CONNECTORS (EL04M) (X-ON/X-OFF FLOW CONTROL ONLY)

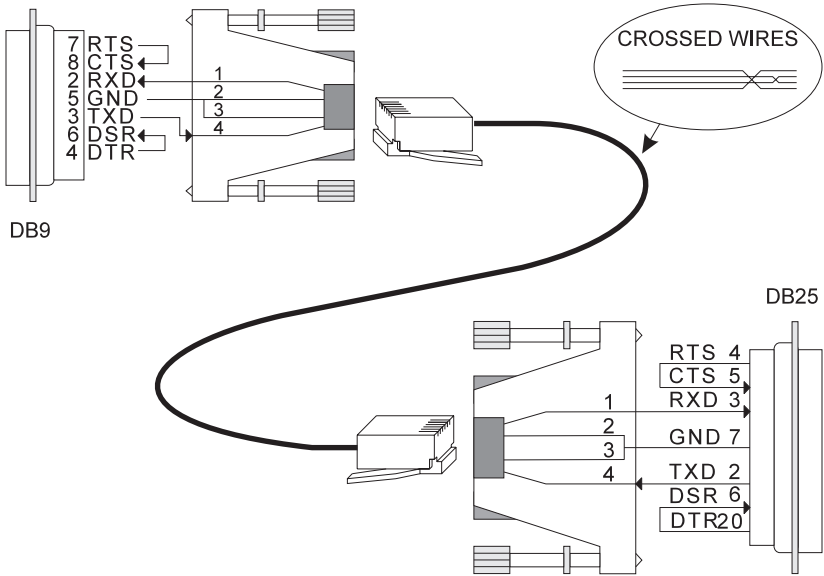The wiring schemes on this page and the next support only software (X-ON/X-OFF) flow control.

IBM PC or PC/XT to MPS-VIII (DB25M to DB25M)
Use two FA752 modular adapter kits.

IBM AT to MPS-VIII (DB9M to DB25M)
Use an FA756 modular adapter kit on the computer end and an FA752 kit
on the MPS-VIII end.

A.3.2 USING 6-CONDUCTOR TELEPHONE CABLE WITH RJ-11 CONNECTORS (EL06M)

The wiring schemes on this page and the next support both hardware (DTR/CTS) and software (X-ON/X-OFF) flow control in both directions.

IBM PC or PC/XT to MPS-VIII (DB25M to DB25M)
Use two FA752 modular adapter kits.

IBM AT to MPS-VIII (DB9M to DB25M)
Use an FA756 modular adapter kit on the computer end and an FA752 kit
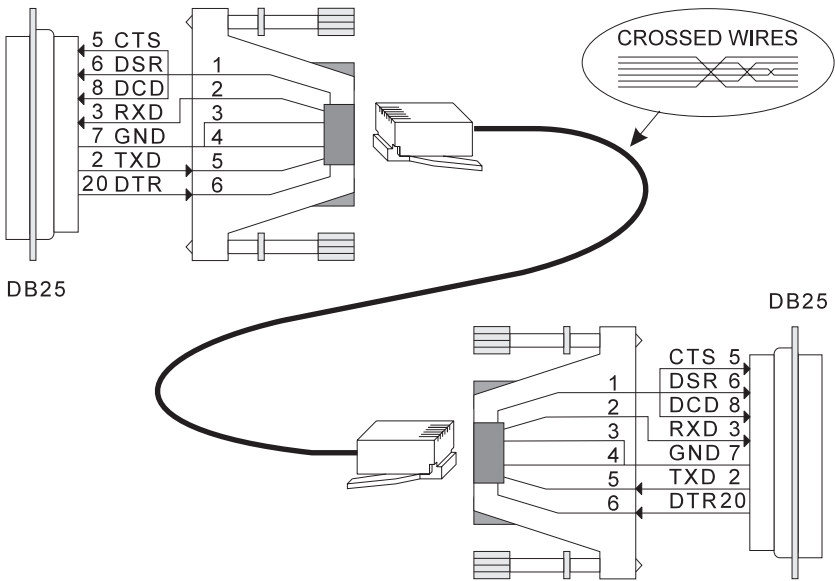on the MPS-VIII end.

CROSSED WIRES

DB9

DB25

A.3.3 USING 8-CONDUCTOR TELEPHONE CABLES WITH RJ-45 CONNECTORS (EL08M)

The wiring schemes on this page and the next support both hardware (DTR/CTS) and software (X-ON/X-OFF) flow control in both directions.
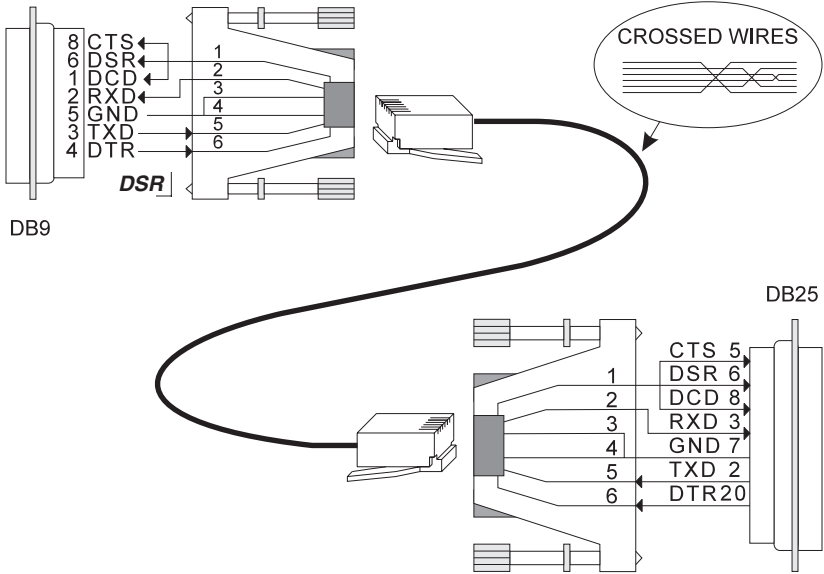
IBM PC or PC/XT to MPS-VIII (DB25M to DB25M)
Use two FA771 modular adapter kits.

IBM AT to MPS-VIII (DB9M to DB25M)
Use an FA756 modular adapter kit on the computer end and an FA771 kit on the MPS-VIII end.
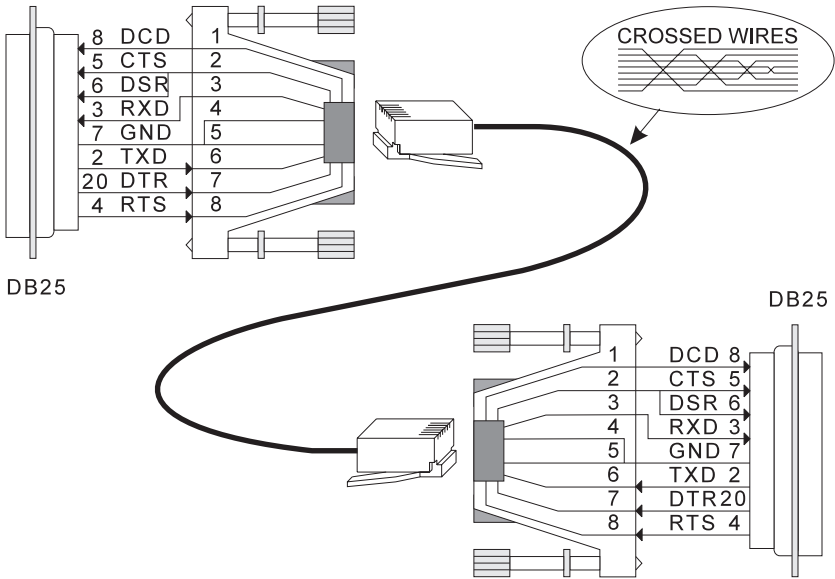
A.3.4 USING 4-CONDUCTOR TELEPHONE CABLES WITH RJ-11 CONNECTORS (EL04M) (DTR/CTS AND/OR X-ON/X-OFF FLOW CONTROL)

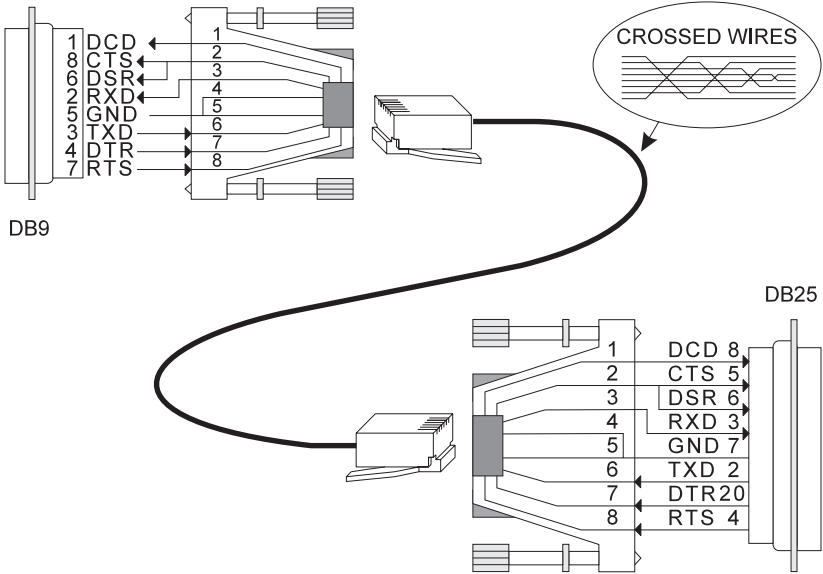The wiring schemes on this page and the next support both hardware (DTR/CTS) and software (X-ON/X-OFF) flow control in both directions. They are *not* compatible with the wiring schemes shown in **Sections A.3.1** through **A.3.3.**

IBM PC or PC/XT to MPS-VIII (DB25M to DB25M)

IBM AT to MPS-VIII (DB9M to DB25M)

CROSSED WIRES

DB9

2	RXD
1	DCD
6	DSR
8	CTS
5	GND
3	TXD

1
2
3
4

DB25

1	RXD	3
2	GND	7
3	DTR	20
4	TXD	2
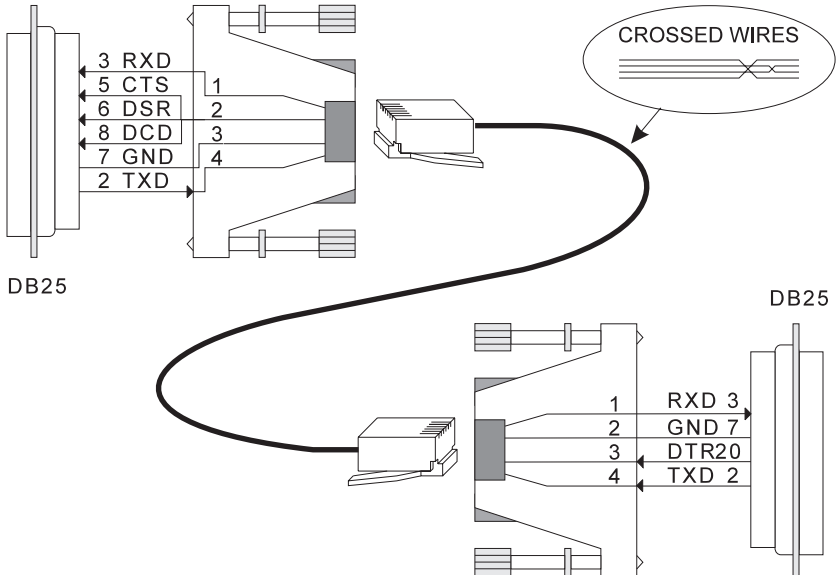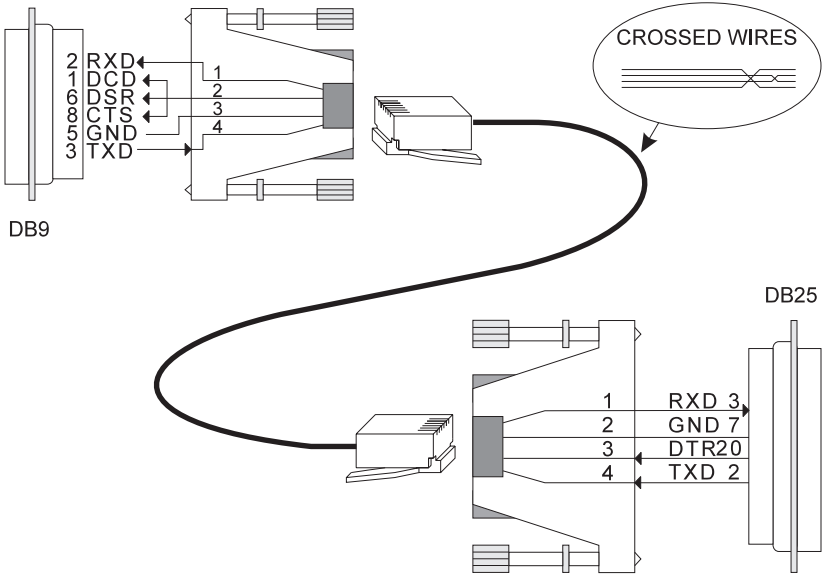
A.4 Parallel Cables

25-Wire DB25 to 25-Wire DB25 (ECN25C)

MPS-VIII Male DB25			Computer Male DB25
Signal description	Pin number		Pin number
$\overline{\text{STB}}$	1	←	1
Data 0	2	←	2
Data 1	3	←	3
Data 2	4	←	4
Data 3	5	←	5
Data 4	6	←	6
Data 5	7	←	7
Data 6	8	←	8
Data 7	9	←	9
$\overline{\text{ACK}}$	10	→	10
BUSY	11	→	11
(PE) TTL LOW	12	→	12
(SELECT) P.U.	13	→	13
($\overline{\text{AUTO LF}}$)	14	←	14
($\overline{\text{ERROR}}$) P.U.	15	→	15
$\overline{\text{INIT}}$	16	←	16
(SELECT IN) N.C.	17	←	17
GND	18-25	—	18-25

P.U.: Pull Up to +5V
N.C.: Not Connected

25-Wire DB25 to 36-Pin Centronics® (EYN600)

MPS-VIII Male DB25			Printer Male 36-Pin Centronics
Signal description	Pin number		Pin number
$\overline{\text{STB}}$	1	←	1
Data 0	2	←	2
Data 1	3	←	3
Data 2	4	←	4
Data 3	5	←	5
Data 4	6	←	6
Data 5	7	←	7
Data 6	8	←	8
Data 7	9	←	9
$\overline{\text{ACK}}$	10	→	10
BUSY	11	→	11
(PE) N.C.	12	→	12
(SELECT) N.C.	13	→	13
($\overline{\text{AUTO LF}}$) P.U.	14	←	14
($\overline{\text{ERROR}}$) N.C.	15	→	32
$\overline{\text{INIT}}$	16	←	31
(SELECT IN) TTL low	17	←	36
GND	18	—	33
GND	19	—	19
GND	20	—	21
GND	21	—	23
GND	22	—	25
GND	23	—	27
GND	24	—	29
GND	25	—	30

P.U.: Pull Up to +5V
N.C.: Not Connected

Appendix B: Quick Reference
(Direct Commands and Display Codes)

Once you're familiar with the features of the Multiport Spooler VIII, you can use these charts as a quick reference. They're meant only as brief summaries; for more detailed information, see the main part of the manual.

The chart on the next two pages lists all the MPS-VIII commands, along with examples of how to use them.

After that is a chart of the display codes. Refer to this chart when you need to know what a particular pattern on the LEDs means.

Commands	Examples	Explanations of Examples	Requirements	Notes
/P—Select a peripheral	@@/P4@	Sends the next job to port #4.	Port #4 is bidirectional or output.	/P* causes a task to be sent to the first on-line peripheral available.
/L—Reserve a peripheral	@@/L4@	Link is set between requester and port #4.	Configuration must allow the requester to reserve a peripheral.	All commands, except Break, are disabled during a log.
/B—Broadcast a job	@@/BLASER?@	Sends the job to all ports whose names begin with LASER.	Selected ports must be output or bidirectional.	You must select ports with wild-card characters. The command stays active until you select a different output port.
/C—Number of copies	@@/C87@	87 copies are printed.	One copy of the task must fit in the MPS-VIII's memory buffer.	Can specify 2-99 copies. Reset to 1 at end of task.
/D—Return to initial configuration	@@/D@	Header and form feed deactivated, input redirected to first available output port, time-out set to 6 seconds, copies to 1.	Port #4 is bidirectional or output.	/P* causes a task to be sent to the first on-line peripheral available.
/F—Activate/deactivate form feed	@@/F1@ @@/F0@	Activates automatic form feed for every task. Deactivates form feed.		

/H—Activate/deactivate header	@@/H1@	Activates header.	A default header is defined if you have not defined one.
	@@/H0@	Deactivates header.	
/S—Define header	@@/SJOHN@	The header "JOHN" is printed ahead of each task.	Header is preserved even if deactivated. Maximum length is 60 characters. The header must be activated before printing.
/K—Cancel a task	@@/K@	All tasks received by the current port are canceled.	
/T—Modify a timeout	@@/T39@	Sets the end-of-job timeout to 39 seconds.	Timeout can be 1 to 999 seconds.
Use several cascaded MPS-VIIIs	@@/1P4@	The command **P4** will bypass the first MPS-VIII and be executed by the second MPS-VIII.	You must have at least two MPS-VIIIs. Input port must be redirected to output port leading to next MPS-VIII. Timeout on output port of preceding MPS-VIII must be longer than on input port of next MPS-VIII.
/A—Pause between tasks	@@/A1@	Activate pause for all following tasks.	
	@@/A0@	Deactivate pause for all tasks sent to this port.	
	@@/A2@	Release first job in buffer from pause.	
	@@/A3@	Release all jobs from pause.	
/Y—Set temporary bidirectional link	@@/Y5@	Link with port #5 until timeout expires or Break is sent.	All commands disabled for duration of link. Link allowed only between 2 serial bidirectional ports.
/Z—Set permanent bidirectional link	@@/Z5@	Link with port #5 until Break is sent.	All commands disabled for duration of link. Link allowed only between 2 serial bidirectional ports.

Event	Display Codes	Notes
Turning on MPS-VIII	All LEDs turn on together, then off, then sequentially turn on and off	
Configuration parameters of port 1 reset to default values	Port #1's LED flashes red	
Reception of task	Input port's LED flashes (about three times a second)	
Task transmission	Output port's LED is constantly lit	LED stays on until port timeout expires
Reception of command	Current input port's LED flashes (about once a second)	
Permanent (/L command) or bidirectional (/Y or /Z) link	Bidirectional ports' LEDs flash	
Pause	Output port's LED flashes (about ⅛ pulse per second)	
Memory full	All LEDs flash together	LEDs keep flashing until memory becomes available
Transmission error	Input port's LED rapidly flashes for about 10 seconds	Correct serial-port communication parameters
Backup error	All LEDs flash 10 times after power-up	MPS-VII returns to configuration mode
I/O error	All LEDs flash	Service required
RAM error	All LEDs flash	Service required
Fatal error	All LEDs flash	Service required

Appendix C: Software Files and Utilities

C.1 Files on the Included Diskettes

The following software utilities for communication with the Multiport Spooler VIII are provided on the included support-software diskettes:

CHKERR.EXE
Enables you to see the nature of a problem encountered in MPSDOS.
An error is encountered when you hear two or seven beeps from your PC.
Refer to **Section 8.5** for more information about this program.

COMX.SYS
Printing-interface program for the phantom ports COM5 through COM9 used by MPSDOS and MPSWIN.

CONFDOS.EXE
Configuration program that allows you to change MPSDOS operating parameters. Refer to **Chapter 5** for information about this program.

DELAY.COM
Generates a delay on the PC. This delay is programmable from 1 to 999 seconds. When a series of control commands are specified in a batch file (.BAT), the DELAY command can be specified after each command, so that a pause in command transmission lets the Multiport Spooler VIII timeout expire.
   For example, the DELAY 25 command sets up a 25-second timeout.

EDITOR.EXE
The EDITOR program allows you to change the commands in the default UCTP command file. If the resident UCTP is already loaded in memory when such changes are made, the computer must be rebooted to put the modified command file into effect. See **Appendix E**.

INSTWIN.EXE
Installs the software package on your hard disk under Windows.

MPSCONF.EXE
The MPSCONF program allows you to configure (see **Chapter 4**) the Multiport Spooler VIII according to your requirements.

MPSCONF.HLP
A help file designed to assist you with the MPSCONF program.

MPSDOS.COM
The MPSDOS printing-interface program for use under DOS.

MPSSETUP.BAT
Installs the software package on your hard disk under DOS.

MPSWIN30.DRV and **MPSWIN31.DRV**
The MPSWIN printing-interface program for use under Windows 3.0 or Windows 3.1/3.11 respectively.

MPSWIN.HLP
A help file designed to assist you with the MPSWIN program.

MPSVIII.TXT
Contains information about Multiport Spooler VIII updates and new features not documented in this manual. Use README to display this file.

PSEND.EXE
This program facilitates transmission of files and commands to the Multiport Spooler VIII. The command arguments are described below.

        PSEND [QUIET] port "command" ["return_message"]
"QUIET" is optional; it suppresses screen messages.

   "Port" is the PC port used to send the file. The choices are LPT1, LPT2, LPT3, COM1, COM2, COM3, and COM4. When using the serial ports, the communication parameters can be declared directly from the command line by entering them after the "port" argument:

        ... COMx:data_rate,parity,data_bits,stop_bits ...
"Command" is the command string or file to be sent to the MPS-VIII. The command string or filename must be enclosed within double quotes ("). Up to 80 characters may be used for this field. Characters not directly represented on the keyboard may be included in the string by typing their hexadecimal equivalent within parentheses.

To transmit a file, use the /**F** switch, as shown in Example 2 below.

"Return_message" is optional. It confirms for the user that the Multiport Spooler VIII returned an expected message. If the expected message does not correspond to the one returned by MPS-VIII, a DOS ERRORLEVEL 1 is flagged. (This feature is useful in batch files used for systems programming.) The wording of the expected message must be included within double quotes ("), and it must correspond to one of the preprogrammed Multiport Spooler VIII messages. The entry for **Return Message** on page 35 includes a table of Multiport Spooler VIII messages.

Example 1: `PSEND LPT1 "@@/P12@" "(OK)"`
Example 2: `PSEND COM1:96,N,8,1 "/F=C:\PATH\FILE.EXT"`

README.COM

This program enables you to read the text file **MPSVIII.TXT**. Type **README** at the DOS prompt and press Enter. The contents of **MPSVIII.TXT** are displayed.

README.WIN

Displays information about MPSWIN updates and new features that are not documented in this manual. Select the **ReadMe** icon in the MPSWIN Applications window to see this file.

SBRK.COM

Use the SBRK command to send a 250-millisecond Break signal to a serial or parallel port. You can add a parameter to the SBRK command to specify the duration of the signal in milliseconds. For example, use the SBRK 500 command to trigger a 500-ms Break signal. You can specify any signal length from 1 to 9999 ms. If you are using a slow data rate (below 1200 bps), you will probably require a long (500-ms) Break signal.

SETDTR.COM

Software utility that activates the DTR and RTS signals for serial port COM1, COM2, COM3, or COM4. For example, `SETDTR COM1`.

SETUPWIN.EXE
Configuration program for changing MPSWIN operation parameters.
You can access this program by selecting the Config icon in the MPSWIN
Applications window. Refer to **Chapter 6** for information about this program.

SMODE.COM
Allows you to set the serial communication parameters of your PC's serial port
(see **Appendix D** for more information on this program).

UCTP.PRO
Contains Multiport Spooler VIII control commands. This is the command file
addressed by the UCTP program when you choose the Advanced menu
during the installation. You can modify this file as described in **Appendix E**.

NOTE

**Under Windows, the commands this file contains will vary depending on
whether you install the Default or Advanced menu.**

UCTP_4.PRO, **UCTP_8.PRO**, and **UCTP_12.PRO**
Contains some Multiport Spooler VIII control commands. This is the default
command file addressed by the UCTP program when you choose Default
during the installation. You can modify this file as described in **Appendix E**.
   Under Windows, whether you chose Advanced or Default installation, the
file is renamed UCTP.PRO.

UCTPEGA.EXE, **UCTPVGA.EXE**, **UCTPCGA.EXE**, and
   UCTPHER.EXE
The actual UCTP engines. Which one you should use depends on which type
of display adapter (graphics card) is installed in your PC. The last three letters
before .EXE in each filename indicate the type of display adapter each file
supports: EGA, VGA, CGA, or HER (for Hercules).

UPDATE.COM
Allows you to update a Multiport Spooler VIII configuration after changing the memory capacity of the MPS-VIII unit. First save the configuration to be updated to a file on disk. Then make the necessary physical changes to the unit. Then use the UPDATE program to correct the configuration file. At the DOS prompt, enter

```
UPDATE filename -Mx
```

where "filename" is the name of the configuration file you saved and "x" is the new memory capacity in megabytes (1, 2, 3, or 4).

   For example, if your MPS-VIII configuration is saved in a file called MPSVIII and you have augmented the memory capacity of your unit to 4 MB, enter the command `UPDATE MPSVIII -M4`.

VIDEOCHK.COM
Returns your computer's display-adapter (graphics-card) type. EGA , VGA, CGA, and Hercules display adapters are supported.

WINUCTP.EXE
The version of the UCTP used for transmitting commands to the Multiport Spooler VIII under Windows.

C.2 Files Created During Installation

During installation, the files described in this section (which contain information pertinent to the UCTP, MPSDOS, MPSWIN, and/or MPSCONF) are generated.

NOTE

If you want to run the UCTP program with operating parameters that are different from those specified during installation, you can reinstall the UCTP with the MPSSETUP program (see *Section 5.2*), or you can use the procedure described in this section to change the UCTP parameters.

C.2.1 MPSDOS.CFG AND MPSWIN.INI

The MPSDOS.CFG and MPSWIN.INI configuration files contain information about MPSWIN and MPSDOS respectively. MPSWIN.INI is divided into two sections: [SETTINGS] (contains MPSWIN information) and [UCTP] (contains UCTP information). MPSDOS.CFG consists of only one section, [SETTINGS], which contains MPSDOS information.

C.2.1.A The [SETTINGS] Section of MPSDOS.CFG and MPSWIN.INI
The following parameters are listed:

LEVEL
UCTP menu level (**DEFAULT** or **ADVANCED**).

NBRPORT
Number of ports on chosen Multiport Spooler VIII model (**4**, **8**, or **12**).

SOUND (MPSDOS.CFG only)
Advises the user if one of the following situations occurs: The time-out has expired, a message was not received or an error was detected, or if the computer port attached to Multiport Spooler VIII is occupied or is not ready. The choices are **YES** (enabled) and **NO** (disabled).

TIME-OUT (MPSDOS.CFG only)
How long to wait before declaring an end-of-job (**001** to **999** seconds).

PORT
Name of the computer port that the Multiport Spooler VIII is connected
to (**COM1**, **COM2**, **COM3**, **COM4**, **LPT1**, **LPT2**, or **LPT3**).
If the port connected to the MPS-VIII is a serial port, these additional
parameters are listed:

BAUDRATE
Serial-port data rate (300, 600, 1200, 2400, 4800, 9600, 19,200 or 38,400 bps).

DATA
Number of serial-port data bits (7 or 8).

STOP
Number of serial-port stop bits (1 or 2).

PARITY
Serial-port parity (NONE [no parity], EVEN [even parity], or ODD [odd
parity]).

FLOW
Serial-port flow control: *MPSWIN.INI:* **HARD** (DTR/CTS), **SOFT** (X-ON/
                             X-OFF), or **BOTH** (DTR/CTS and X-ON/
                             X-OFF);
                             MPSDOS.CFG: **HARD** (DTR/CTS) only

CHECK
Shows if returned messages will be interpreted (**YES** or **NO**).

TYPE
Command format according to device model.

COM1 to COM4
Serial-port redirection. Options available are **COM1** to **COM4**, **SHARER**,
SHARER,PORT1 to **SHARER,PORT4** (or **8** or **12**, depending on the model),
and **SHARER,STRING**:

> **SHARER** without a modifier (LPT1=SHARER, for example) must occur
> only once, because it corresponds to the computer port linked to the
> Multiport Spooler VIII.

    SHARER,PORT1 to **SHARER,PORT12** are used to send the redirecting command matching the Multiport Spooler VIII port number through the computer port linked to it.

    SHARER,STRING is used to send the user-defined string to the Multiport Spooler VIII through the computer port linked to it.

COM5 to COM9
Serial-port redirection. Options available are **SHARER**, **SHARER,PORT1** to **SHARER,PORT4** (or **8** or **12**, depending on the model), **SHARER,STRING**, and **NONE**.

    SHARER without a modifier (LPT1=SHARER, for example) must occur only once, because it corresponds to the computer port linked to the Multiport Spooler VIII.

    SHARER,PORT1 to **SHARER,PORT12** are used to send the redirecting command matching the Multiport Spooler VIII port number through the computer port linked to it.

    SHARER,STRING is used to send the user-defined string to the Multiport Spooler VIII through the computer port linked to it.

    NONE is used to indicate that there is no redirection. Thus, this port will not be available to print.

STRING_COM1B to **STRING_COM9B** and
STRING_COM1A to **STRING_COM9A**
Defined string to be sent before ("**B**" suffix) or after ("**A**" suffix) a job. Character strings cannot be more than 128 characters. You can include ASCII characters or their hexadecimal codes in parentheses (a form feed, for example, would be "**(0C)**" and would count as four characters toward the length of the string). ASCII characters that cannot be displayed (numbers below 32) must be represented by their hexadecimal code. Some specific operations are also allowed (these also count as four characters in the string): **(BR)** generates a Break signal and **(DL)** performs a 500-ms delay.

C.2.1.B The [UCTP] Section of MPSWIN.INI
The following parameters are listed:

BREAK
Sends a Break signal before each command to be sent to the UCTP.
Options available are **ON** (enabled) and **OFF** (disabled).

TOKEN
The current value of the UCTP's token (a single digit from **0** to **9**).

FILE
Command file currently being used by the UCTP.

WIDTH
Width of the UCTP window. (We recommend that you do not modify this
value.)

HEIGHT
Height of the UCTP window. (We recommend that you do not modify this
value).

C.2.2 MPSVIII.CFG
This file contains the operation parameters of the MPSCONF.EXE
configuration program.

C.2.3 UCTPNRES.BAT AND UCTPRES.BAT

These files contain information about the nonresident and resident UCTP respectively. You can change these files with the commands and parameters listed in this section.

Filename
At the DOS prompt, type one of the following: UCTPCGA, UCTPEGA, UCTPVGA or UCTPHER (the last three letters depend on your graphics card). After that command and on the same DOS line, you can specify any of the parameters described in the rest of this section. (If the UCTP file is not on your hard disk, copy the file you need from the appropriate Multiport Spooler VIII diskette.)

NOTE

You can enter the parameters in any order after the initial *UCTP*** command. They must be separated by at least one space. Upper- and lowercase characters are treated identically. If you repeat a parameter, only its first occurrence is used. Incorrect parameters are ignored and the default values are used. If you want to change only some parameters, omit mentioning those parameters that should remain at their default values.

PC Output Port
The valid port names are LPT1, LPT2, LPT3, COM1, COM2, COM3, and COM4. If you select a serial port, you can include sub-parameters to set the data rate, parity, data bits, and stop bits. To make these parameters remain active on the PC output port after you exit the UCTP program, append an **S**.
   For example: `UCTPVGA COM1:96,N,8,1,S`

Loading as a TSR
Enter RES to load the nonresident program as resident. The UCTP will be available through the chosen hotkey combination for the rest of the session. If you do not choose a hotkey combination in this command line (see the entry for **Hotkey Selection** on the next page), the default hotkey (Left Shift + Right Shift) will be assumed.

   • `UCTPVGA COM1:96,N,8,1,S RES`

Token

If two or more Multiport Spooler VIII units are connected together, you have to be sure you are addressing the unit that governs your peripheral. In this case, specify the token parameter **T** followed by a digit from 0 to 9 (0 being the first unit in the chain, 9 the tenth).

- `UCTPVGA COM1:96,N,8,1,S RES T2`

Break Signal Activation

The Break signal forces the Multiport Spooler VIII input port's timeout to expire, enabling you to send a series of control commands without having the unit count down the timeout before recognizing a subsequent command. Enter **BR** to activate the Break signal.

- `UCTPVGA COM1:96,N,8,1,S RES T2 BR`

Hotkey Selection

You can choose from ten hotkey combinations. Enter **K**, followed by a one-digit "hotkey ID" number from 0 to 9 (see the table below).

- `UCTPVGA COM1:96,N,8,1,S RES T2 BR K3`

Hotkey ID	Key Combination
0	Left-Shift + Right-Shift
1	Ctrl + Right-Shift
2	Ctrl + Left-Shift
3	Alt + Right-Shift
4	Alt + Left-Shift
5	Alt + Ctrl
6	Ctrl + Left-Shift + Right-Shift
7	Alt + Left-Shift + Right-Shift
8	Alt + Ctrl + Right-Shift
9	Alt + Ctrl + Left-Shift

Command-File Selection
You can edit (see **Appendix E**) the default UCTP command file or write your own UCTP command file. Specify the command file by entering its name in brackets. In this example, the UCTP runs using a file called MYUCTP.

- UCTPVGA COM1:96,N,8,1,S RES T2 BR K3 [MYUCTP]

Monochrome Display
To suspend the color display of the UCTP menu, add M. You might want this if your video display cannot present a clear image of the UCTP menu.

- UCTPVGA COM1:96,N,8,1,S RES T2 BR K3 [MYUCTP] M

Sample DOS Command Line
You could enter the following at the DOS command line, rather than use the nonresident UCTP. Note that the use of the RES parameter implies that the UCTP program was not originally installed as resident and that you now want to run the program as resident.

- UCTPVGA RES T3 BR K5 COM2:96,N,8,1,S [MPSVIII1]

UCTPVGA	The UCTP command for a VGA display adapter
RES	Program loaded as TSR
T3	Token: 3
BR	Activate Break signal
K5	Hotkey combination: Alt + Ctrl (ID number 5)
COM2:96,N,8,1,S	Set output port to COM2 and initialize it to 9600 bps, 8 data bits, and 1 stop bit
[MPSVIII1]	Use UCTP command file MPSVIII1.PRO

Some of these parameters are also used in the **RESUCTP.BAT** and **NRESUCTP.BAT** files. You can access those files and modify the parameters as discussed above.

Appendix D: Sending Direct Commands to the MPS-VIII

This chapter explains how to send direct control commands to the Multiport Spooler VIII without using the UCTP menu.

You can use direct control commands to do such things as specify the number of copies sent to a printer, reserve a peripheral for your use, or activate a header for print jobs. Note that you do not need to use control commands to simply send a standard job to your current printer (or other peripheral). Only if you wish to perform an action different from what your defaults specify do you need to use control commands. For instance, if:

- you did not install MPSDOS, MPSWIN, or the UCTP,

- you have several printers connected to the MPS-VIII, and

- you need to be able to switch between these printers depending on particular job requirements,

you need these control commands to give the Multiport Spooler VIII the appropriate directions.

You can use either of the following direct-command transmission methods to send control commands to the Multiport Spooler VIII:

- Send the command from the DOS prompt, or

- Embed the command in the first 256 characters of a job transmitted to the Multiport Spooler VIII.

However you choose to send control commands—whether with one of these methods or with the UCTP—the command stream sent to the Multiport Spooler VIII is identical.

D.1 Transmission Methods

D.1.1 TRANSMISSION FROM THE DOS PROMPT

To send control commands directly from the DOS prompt to the Multiport Spooler VIII, use the DOS "Enable Console Printing" control-key combination Ctrl-PrintScreen. (To generate Ctrl-PrintScreen, hold down the Ctrl key and press the PrintScreen key.) Following Ctrl-PrintScreen, type the command or command group, another Ctrl-PrintScreen, an ESC, and finally Enter. (ESC eliminates the DOS error message that would otherwise be displayed.) Alternatively, you can use Ctrl-p instead of Ctrl-PrintScreen.

D.1.1.A Example
Here's an example of a direct command transmitted in this way:

```
[Ctrl-PrtScr]@@/P4@[Ctrl-PrtScr][ESC][Enter]
```

[Ctrl-PrtScr]	Pressing Ctrl-PrtScr together enables direct transmission of keystrokes to port LPT1. This is a toggle function, so pressing Ctrl + PrtScr again disables keystroke transmission.
@@	Command-Start character.
/P4	Redirect to Port#4
@	End-of-Command character.
[Ctrl-PrtScr]	Disable direct keystroke transmission.
[ESC]	Eliminates the DOS error message that would otherwise be displayed.

D.1.1.B Redirecting LPT1 to COM1

To send a command through a serial port, you need to set the serial port's communications parameters to match the parameters of the corresponding Multiport Spooler VIII input port. Then you must redirect parallel port LPT1 to serial port COM1.

The following templates and example show how to use the SMODE command that comes with the included software and the DOS MODE command to set serial parameters. The only difference between the two is that the SMODE permits the serial port to be set to 19,200 or 38,400 bps.

```
SMODE COMn:data_rate,parity, data_bits, stop_bits
MODE COMn: data_rate, parity, data_bits, stop_bits
```

n	1, 2, 3 or 4 (serial port number).
data_rate	300, 1200, 2400, 4800, 9600, 19200, or 38400 (bps) for SMODE; 110, 150, 300, 1200, 2400, 4800, or 9600 (bps) for MODE; only the first two digits are required by either command.
parity	N (no parity), O (odd), or E (even). The default is E.
data_bits	7 or 8. The default is 7.
stop_bits	1 or 2. The default is 2 at 110 bps, and 1 at all other data rates.

For example, the command "SMODE COM1:96,N,8,1" selects 9600 bps, no parity, 8 data bits and 1 stop bit.

The following template and example show how to use MODE to redirect port LPT1 to port COM1:

```
MODE LPTx:=COMy
```

x	parallel-port number (1, 2, or 3)
y	serial-port number (1, 2, 3, or 4)

For example, the command "MODE LPT1:=COM1" redirects all data sent to LPT1 to COM1.

D.1.2 TRANSMISSION WITHIN A TASK

Alternatively, you can embed control commands in the first 256 characters of a job sent to the Multiport Spooler VIII. Any control commands embedded after the first 256 characters are treated as normal data characters.

D.2 Command Format

You can send commands to the Multiport Spooler VIII individually or in a group. The "Command-Start Character" ("@") must appear twice at the start of each command and once at the end (as the "End-of-Command Character"). The default value for this character is "@", so each command must begin with "@@" and end with "@".

NOTE

Commands are not case-sensitive. For example, *@@/P*@* and *@@/p*@* are identical to the Multiport Spooler VIII.

D.2.1 SINGLE-COMMAND FORMAT

This is the template for the format of a single command:

@@/ ◇ ◆ @

Description:

@@	Command-Start Characters
/◇	Command
◆	Parameter (if required)
@	End-of-Command Character

Example 1
@@/P12@

Description:

@@	Command-Start Characters
/P	Command (Peripheral redirection to a port)
12	Parameter (Port number 12)
@	End-of-Command Character

Example 2
```
@@/F1@
```

Description:

@@	Command-Start Characters
/F	Command (Automatic form feed)
1	Parameter (Turn ON Automatic form feed)
@	End-of-Command Character

Example 3
```
@@/SThis Print Job is for Jack Smith@
```

Description:

@@	Command-Start Characters
/S	Command (Header definition)
This Print Job is for Jack Smith	Parameter (Header "This Print Job is for Jack Smith")
@	End-of-Command Character

Example 4
```
@@/H1@
```

Description:

@@	Command-Start Characters
/H	Command (Activation/Deactivation of Header)
1	Parameter (Turn ON Header)
@	End-of-Command Character

D.2.2 GROUPED-COMMAND FORMAT

You may send two or more commands in the same command string by typing them one after the other. These strings of grouped commands (also called "compound commands," "command groups," or "command clusters") can contain up to 256 characters. This is the template for the format of a grouped-command string:

@@/ ◇ ◆ / ◇ ◆ @

Description:

@@	Command-Start Characters
/ ◇	Each command
◆	Each parameter (as required)
@	End-of-Command Character

Example
```
@@/F1/SAccounting Dept/H1@
```

Description:

@@	Command-Start Characters
/F	Command (Automatic form feed)
1	Parameter (Turn ON Automatic form feed)
/S	Command (Header definition)
Accounting Dept	Parameter (Header "Accounting Dept")
/H	Command (Activation/Deactivation of Header)
1	Parameter (Turn ON Header)
@	End-of-Command Character

D.2.3 COMMAND FORMAT FOR DAISYCHAINING OR CASCADING

Multiple Multiport Spooler VIII units may be daisychained or cascaded (connected together—see **Section 7.4**). So long as there are not more than nine MPS-VIII units between the source PC and the destination MPS-VIII, you can send a command to any MPS-VIII in the chain or cadcade by using the token in the command line. This is the template for the format of a command in a daisychained or cascaded system:

`@@/n◇ ♦@`

Description:

@@	Command-Start Characters
/	Slash (first half of command)
n	Token (a number from 0 to 9 that represents the number of MPS-VIII units between the source PC and the destination MPS-VIII)
◇	Letter (second half of command)
♦	Parameter (if required)
@	End-of-Command Character

Example
`@@@/4P3@`

The token (the number 4) indicates that the P3 command passes through the first four Multiport Spooler VIII units and is interpreted by the fifth. The fifth unit will execute /P3 (a port-redirection command).

NOTE

It is important that the timeout on the output port be longer than on the input port of the next Multiport Spooler VIII unit to allow the detection of the end of each task. See the entry for the *Time-Out* parameter in *Section 4.7.2*.

You can send grouped commands (see *Section D.2.2*) when you daisychain or cascade by typing them one after the other in a single string. However, to send all commands in the string to the chosen unit, the token must be included in each command in the string (for example, @@/4P8/4T6@).

D.3 Command Descriptions

This section takes a detailed look at each command.

For the Multiport Spooler VIII to detect and interpret a command, the beginning of the command (the command-start character followed by "/") must be within the first 256 characters of a new task. Each transmission after a timeout is considered a new task. This applies to all transmission methods used.

If you use the UCTP to send commands, you do not need to wait for a timeout, because the UCTP sends a Break signal before each command. The Break signal forces the timeout to expire, thus allowing the next command to be sent immediately.

Some third-party terminal-emulation packages also offer a break-signal generation feature. Note that the Break key on a normal PC/XT or AT keyboard does not generate a Break signal.

D.3.1 WILD-CARD CHARACTERS

Wild-card characters permit groups of names to be selected with a single entry. You can use them to select a port, a group of ports, or all ports. The wild-card characters are:

*	Designates one or more characters
?	Designates a single character

For example, you can use these to select a port:

*	Select all the Multiport Spooler VIII ports configured as output (serial or parallel) or serial bidirectional.
PORT#*	Select all the ports whose names consist of "PORT#" followed by any other characters.
PORT#?	Select all the ports whose names consist of "PORT#" followed by any single character.
PORT#?1	Select all the ports whose names consist of "PORT#" followed by any single character followed by "1".

The detailed command descriptions in **Section D.3.3** indicate when wild-card characters may be used.

D.3.2 COMMAND SUMMARY

The table below lists the available MPS-VIII direct commands; these are explained in detail on the following pages. For possible settings and examples, see the direct-command quick-reference table in **Appendix B**.

Command	Description
/A	activate/deactivate pause
/B	Broadcast
/C	number of Copies
/D	return to Default port configuration
/F	activate/deactivate Form Feed
/H	activate/deactivate Header
/K	Kill (cancel) a job
/L	Log (reserve a peripheral)
/P	select a Port
/S	define header String
/T	set Timeout
/Y	establish temporary bidirectional link
/Z	establish permanent bidirectional link

D.3.3 THE COMMANDS IN DETAIL

/A

activate/deactivate pause

Use this command to suspend transmission to an output port until the job is released. This is useful when you need to replace or load paper for a peripheral in between two jobs.

Formats:

`@@/A0@`	Deactivates the pause for all subsequent jobs.
`@@/A1@`	Activates the pause for all subsequent jobs.
`@@/A2@`	Releases the first job in the print queue from pause.
`@@/A3@`	Releases all jobs in the print queue from pause.

NOTE

When the Multiport Spooler VIII encounters a buffer-full condition and paused jobs are present, the first paused job is automatically released. The pause remains active for all subsequent jobs.

/B

Broadcast a message or file

Use this command to send jobs to several ports simultaneously. This can include ports that are configured as outputs or bidirectional. Port linking must be permitted for each port selected.

Format:

`@@/B♦@`

♦   The name or number of a port or port group to which you want to send a copy.

Example

`@@/BLASER?@`

Sends a copy of the next job to those output ports whose name starts with LASER followed by a single character (LASER1, LASER2, LASERA, etc.)

NOTES

The ports may be selected with wild-card characters.
    This command stays active until the /P command is sent.
    Once you send the /B command, no matter how many copies you request with the */C* command (see below), the number of copies is limited to ten (only ten copies will be printed).

/C

set number of Copies

Use this command to specify the number of copies you want of the next print job. If a header and/or form feed are active, they are also printed with each copy. If you don't select a port, the copies are sent simultaneously to all of the Multiport Spooler VIII's available output ports. If you select a group, the copies are sent simultaneously to all of the available ports in the group.

Format

`@@/Cn@`

n   The number of copies you want printed from 1 to 99.

Example

`@@/C12@`

The next job will print 12 times.

NOTES

The number of copies is automatically returned to 1 after each multiple-copy job is completed.
    If the buffer becomes full during the input of a multiple-copy job, the number of copies is reset to 1.
    Only one copy is printed if you specify 0 copies or a number of copies greater than 99.
    The copy command does not affect the link commands */L*, */Y*, or */Z*.
    Once you send the */B* command (see above), no matter how many copies you request with the */C* command, the number of copies is limited to ten (only ten copies will be printed).

/D
return to Default port configuration
Use this command to reset to their defaults several port-configuration parameters of the Multiport Spooler VIII input port connected to your PC. This command resets these parameters:

- Links between ports or groups of ports are deactivated. The first port available becomes active (/**P***).
- Form feed for the port is deactivated.
- Any header defined for the port is deactivated.
- Any pause set for the port is deactivated.
- The timeout for the port returns to 6 seconds.
- The number of copies is set to 1.

Format
@@/D@

Resets to their default settings the above-listed parameters of the current MPS-VIII input port.

/F
set automatic Form Feed
Use this command to have a form feed automatically sent at the end of all jobs from your input port. The form feed is sent after the timeout expires.

Format
@@/F1@	Activates sending form feeds at the end of each job from this port.
@@/F0@	Deactivates sending form feeds at the end of each job from this port.

You can use /**F** when screen capturing (screen printing). To do this, activate automatic form feed with /**F**. Simultaneously press the Shift and Print Screen keys on your keyboard to capture the screen image. A form feed is generated after each screen capture, so you get one screen per page. If several screens must be sent, one after the other, set the timeout to 1 second (see the entry for the /**T** command) so that it will expire quickly enough to allow each screen printout to be separated from the next by a form feed.

/H

activate/deactivate Headers

Use this command to activate or deactivate a header for the connected Multiport Spooler VIII input port. The header is printed at the beginning of each job until you deactivate it. /H may be used with a parallel input port or a bidirectional serial port. See the entry for /S for details on how to *define* a header.

Format

@@/H0@	Deactivates the header for this port.
@@/H1@	Activates the header for this port. Headers will not be followed by form feeds unless you have activated sending form feeds (see the entry for **F**).

NOTE

If you activate the header without defining it, the default header PORT#n (where n is the input-port number) is generated.

/K

Kill (cancel) jobs

Use this command to cancel all jobs from your input port that are being sent to or are already in the Multiport Spooler VIII. Any job that is waiting to be printed, even if you have specified that multiple copies should be printed, is completely deleted from the Multiport Spooler VIII by the /K command.

Format

@@/K@

Cancels all jobs being sent through the current port.

/L

Log (reserve a peripheral)

Use this command to reserve a peripheral (output port), so that only you (your input port) will have access to it. The peripheral will be reserved until you cancel the reservation by sending a Break signal. You can have only one peripheral reserved at a time. Note that data flows in only one direction. To establish bidirectional links, refer to the entries for the /**Y** and /**Z** commands.

Format

@@/L♦@

♦   The name or number of the port you want to reserve.

Examples

@@/L6@   Reserves Port 6 on the Multiport Spooler VIII for your
                       exclusive use.

@@/LLASER3@ Reserves the MPS-VIII port called "LASER3" for your
                       exclusive use.

@@/LPR*@   Reserves the first available MPS-VIII port whose name
                       starts with the two characters "PR" for your exclusive use.

NOTES

To use this command you must have Log permitted in the Multiport Spooler VIII's configuration (see the entry for the Log parameter in *Section 4.7.2*).

You cannot reserve a port to which you have restricted access (see *Section 4.8.1*).

The reserved port must be an output or bidirectional port.

All commands are disabled during the reservation. To end the reservation, send a Break signal.

Reserving a port does not change other properties set for that port. If you have activated headers (see the entry for */H*), a header will be generated at the beginning of each job. If you have activated form feeds (see the entry for */F*), a form feed will be generated whenever the port's timeout expires. If you have specified a number of copies (see the entry for */C*), that number of copies will be printed unless the buffer is full.

You can reserve any one of a group of peripherals by using wild-card characters.

/P
select a Port

Use this command to direct all subsequent transmissions (jobs) from your input port to a selected output port. For example, if you have been transmitting to Port 4 and then use this command to select Port 3, all subsequent transmissions are sent to Port 3.

Format

@@/P♦@

♦ The name or number of the port or port group that the desired peripheral is connected to. If a group name is used, any of the peripherals attached to ports in that group may be selected. Therefore, make sure it doesn't matter which of the group's peripherals is selected.

Examples

@@/P4@   Sends subsequent jobs to the Multiport Spooler VIII's Port 4.

@@/PModem@   Sends subsequent jobs to the MPS-VIII port called "Modem."

@@/PPR*@   Sends subsequent jobs to the first available MPS-VIII port whose name starts with the two characters "PR."

Conditions

The specified port must be a bidirectional or output port.

   If you send a task after issuing the **/P** command, but the peripheral is busy, the task is buffered in the Multiport Spooler VIII. Once the desired peripheral is free, tasks are transmitted to it.

NOTE

You can use wild-card characters to select the port or group. */P sends a task to the first available peripheral. (Keep in mind that a bidirectional serial port is considered an available peripheral, even if it is connected to a computer.) If ♦ in *@@/P♦@* is a group name, subsequent output will automatically be directed to the first available port in that group.**

/S

define a header String

Use this command to define a header up to 60 characters long to be printed before each job from your port. This is especially useful when many users are sending jobs to the same printer. The header stays in memory even if you deactivate it with the /**H0** command or if you turn the Multiport Spooler VIII off. Be aware that you must activate the header (see the entry for the /**H** command) before any header you define will be printed. Also, for the header to be followed by a form feed when it is printed, you must activate form feeds (see the entry for the /**F** command).

Format

```
@@/S◆@
```

◆   The string of characters (60 characters maximum) you want printed before each job from your port.

Example

```
@@/SJack Smith's Office 1005@
```

If the header is activated, the header "Jack Smith's Office 1005" will print before each job from your port.

NOTES

The header can contain any ASCII character except "/" and "@", and you can represent even these characters by enclosing their two-digit hexadecimal codes in parentheses—*(2F)* and *(40)* respectively. (Each character represented by its hex code in parentheses counts as four characters toward the length of the header.)

The default header is *PORT#n*, where *n* is the number of the current port. This is followed by a form feed only if form feeds are active (see the entry for /F).

You can use the header to replace the token (see *Section D.2.3*) if you want to send a command through one Multiport Spooler VIII to another. For example, you can send the command *@@/S(40)(40)(2F)P5(40)@* to define a header that is in fact the command *@@/P5@*. The first MPS-VIII that receives this header from a PC does not interpret it, but instead transmits it on to the second MPS-VIII. The second MPS-VIII interprets the command.

/T

set Timeout delay

Use this command to define the length (1 to 999 seconds) of the timeout. A timeout is used to indicate when the end of a task has been reached. End-of-task identification is important for two reasons:

- At the end of each task (when the timeout expires), new commands may be sent to the Multiport Spooler VIII.

- When a task is being transferred to a peripheral, no one else can use the peripheral until the sending port's timeout expires. Therefore you must set an adequate timeout before transmitting a task.

When some application programs transmit data, they do so more or less continuously. Printing from a word-processing package is a good example. For this type of application, we recommend that you set the timeout to 6 seconds. By contrast, complex graphics-software packages such as AutoCAD perform many calculations as they print or plot, which causes temporary pauses in data transmission even though the task is still active. If you expect transmission delays, set the timeout to 20 to 30 seconds. If the timeout is too short, the Multiport Spooler VIII concludes (when the timeout expires) that the task was finished and goes on to the next one prematurely.

Format

@@/Tn@

n   The length of the timeout in seconds (1 to 999).

Example

@@/T25@

Sets the timeout to 25 seconds for the current port.

NOTES

A port's LED stops flashing when the port's timeout expires.
The timeout must expire before another command may be transmitted. The UCTP's Break feature automatically cancels the timeout before each command, making it easier to send a series of commands.

/Y and /Z
set exclusive bidirectional link

Use these commands to obtain exclusive bidirectional use of a peripheral. This is useful when the peripheral returns data to the PC, as do modems and plotters. An exclusive link approximates having the PC directly connected to the peripheral, but with an active Multiport Spooler VIII buffer. To establish an exclusive link, both serial ports must be available when the MPS-VIII receives the /**Y** or /**Z** command. Otherwise, the MPS-VIII refuses to establish the link.

You can establish an exclusive link between:

• Two bidirectional serial ports or

• A bidirectional serial port and a serial output port.

In both cases, data can be simultaneously transmitted in both directions.

A /**Z** bidirectional link is also called a *permanent* bidirectional link. To sever the link, you must send a Break signal via the source port.

A /**Y** bidirectional link, also called a *temporary* bidirectional link, is automatically terminated when the timeout expires (or when you send a Break signal).

The Multiport Spooler VIII port which receives the command from the PC is called the "source port" and the MPS-VIII port you want to link to (that is connected to the desired peripheral) is called the "destination port." For some applications you might want to use the MPS-VIII's configuration program to set both the source and destination ports to be bidirectional. For other applications, you might want to set the source port to be bidirectional and the destination port to be output only. This will depend on the handshaking protocol the peripherals are using:

1. When the serial port's flow control is hardware (DTR/CTS):

   The exclusive link is established and functions equally well whether both ports are bidirectional or whether the source port is bidirectional and the destination port is serial output. In either case, optimum use is made of the Multiport Spooler VIII's memory buffer. The DTR and RTS signals of the source port follow the CTS and DCD signals of the destination port. The DTR and RTS signals of the destination port follow the CTS and DCD signals of the source port. If you are using a fax modem, your communications software will be able to control it properly; you will also get proper handshaking between external devices connected to two linked ports.

2. When the serial port's communication protocol is software (X-ON/ X-OFF):

   You should set the source port to bidirectional and the destination port to serial output. This makes for optimum use of the Multiport Spooler VIII's memory buffer, because the MPS-VIII will be able to properly interpret any X-ON and X-OFF characters that may be generated during the job. (If you set both ports to bidirectional, the buffer will not work as effectively, because the MPS-VIII will improperly interpret X-ON and X-OFF characters as an incoming job.)

If both ports are bidirectional ports, a Break signal sent by the user to break the link is forwarded to the destination port. By contrast, if the source port is bidirectional and the destination port is serial output, a Break signal sent to break the link is not forwarded to the destination port—a useful feature for those peripherals that respond unpredictably when they receive a Break signal.

   Commands are not interpreted during the link. The header, form feed, and character strings (if any) are sent only once during the link. The number of copies is automatically set to 1 during the link.

Formats
```
@@/Y♦@
@@/Z♦@
```

♦   The name or number of a serial output or bidirectional port, or the name of a group of such ports, that you wish to link to.

Example
```
@@/YLASER@
```

Creates an exclusive temporary bidirectional link with the port named LASER, if it is available (the link is refused if LASER is unavailable).

NOTES

The specified destination port must be a serial output or bidirectional port.
    To use these commands, you must be granted the right to reserve a peripheral in the Multiport Spooler VIII's configuration (see the entry for the *Log* parameter in *Section 4.7.2*).
    Wild-card characters can be used in the port number/name.

Appendix E: Editing the UCTP

You can use the included String Editor program to customize the UCTP by removing command files, modifying them, or creating new ones. You can edit any UCTP file, whether it is for a Default or Advanced menu.

In the DOS environment, access the Editor by typing EDITOR at the DOS prompt and pressing Enter. You can specify a file by entering its name after EDITOR. In the Windows environment, select the Editor icon in the MPSWIN Applications window.

From within the Editor you can load files (if you have created or copied any). The Default Menu files are UCTP_4, UCTP_8 and UCTP_12; the Advanced Menu file is UCTP. (All these files use the .PRO extension.)

Once you've loaded a file, the EDITOR screen looks something like this:

```
MPS-VIII  String Editor  Version: 4.00       (C) Protec Microsystems Inc.
 File: UCTP.PRO
 Active Line:  Text         Column  1        Line  1              INSERT

┌──────────────────────────────────────────────────────────────────┐
│  ************ MPS-VIII (4,8,12) *************                      │
│  ▓1                                                                │
│  Select an Output Port  (Port Name or Number)                     │
│  @@/P▓3@                                                           │
│  Reserve a peripheral   (Port Name or Number)                     │
│  @@/L▓3@                                                           │
│  Temporary Bi-dir Link  (Port Name or Number)                     │
│  @@/Y▓3@                                                           │
│  Permanent Bi-dir Link  (Port Name or Number)                     │
│  @@/Z▓3@                                                           │
│  Cancel Link                                                       │
│  ▓2                                                                │
│  Pause             (Activate:1  Deactivate:0)                     │
│  @@/A▓3@                                                           │
│  Release Pause     (First Job:2  All Jobs:3)                      │
│  @@/A▓3@                                                           │
│  Number of copies                (1 - 99)                         │
│  @@/C▓3@                                                           │
└──────────────────────────────────────────────────────────────────┘

 Home         End          PgUp         PgDn         Ins   ←↑↓→
 F1 Help      F6 Print     F8 Save      F9 New       F10 Quit
```

Active Line
This field shows either of two values—**Text** or **Command**—depending on where your cursor is located.

Text refers to the characters that appear on the UCTP program's screen. A text line may be up to 44 characters long.

Command refers to the characters that will actually be sent by the UCTP over the communication port. A command is described by the line of text preceding it. A command may be up to 200 characters long. **Appendixes B and D** contain descriptions of the available commands.

EXAMPLE:

Text Line: Number of Copies (1 - 99)

Command Line: @@/C█3@

█   is a control character used by the UCTP. To send this character in a command line, you must enter it twice without intervening spaces. You can specify this character by pressing F2.

The following list shows some uses of this control character:

█1   No command is sent. In UCTP menus, this allows you to define a title line (header) that identifies a list of commands.

█2   Break. Sends a Break signal.

█3   Parameter. UCTP requires the user to enter a parameter.

██   Sends the actual control character once.

A command sequence must begin with "@@" and end with "@". Refer to **Sections D.2** and **D.3** in **Appendix D** for the exact command syntax.

The Editor's Command Characters
You can control the editor with several special command characters. These characters are shown in the two lines at the bottom of the screen. The functions of some of the characters are:

Enter   Insert a line
Ctrl-Y   Delete a line
F1   Load the help menu
F6   Print the contents of a file
F8   Save the file
F9   Create a new file
F10   Exit program

To insert a Backspace, Esc, or Enter character into a file you are editing, hold the Shift key while pressing the corresponding key.

   You can enter any of the 256 available ASCII characters numerically by holding down the Alt key and entering the numeric character code (0 to 255) on the numeric keypad (not the digit keys above the letter keyboard).

[F6] Printing
When you select [F6] to print the currently loaded command file, the print job is always sent out of the PC's LPT1 parallel port. If you want to redirect this to a serial port, use the DOS MODE command.

[F9] Reinitializing
Used to remove the current file in the Editor and create a new one.

NOTE

If the resident UCTP is already loaded in memory, the computer must be rebooted to update or change the active .PRO file.

Appendix F: Sharing a Fax Modem

You can use the Multiport Spooler VIII to share a fax modem as well as a printer. Because it's one of the most popular packages, we use Delrina WinFax® PRO as an example in these installation instructions. You can use any fax communications software, as long as it uses the Windows drivers. (If the software accesses the hardware directly, it probably will not work.)

Before installing Delrina WinFax PRO and MPSWIN, make sure that Windows Program Manager is enabled. The "SHELL" line of the SYSTEM.INI file should read **SHELL=PROGMAN.EXE**.

F.1 Installing Fax Software on the First PC

1. Connect the PC to the external fax modem you intend to install.

2. Refer to the Quick Installation Guide supplied by Delrina for instructions on how to install WinFax PRO.

3. Answer "Yes" to the question "Test the COM ports for presence of a FAX device?"

4. Make note of the type and description of the fax modem detected. This information will be helpful for further installations.

5. Disconnect the external fax modem from the PC and connect it to the MPS-VIII.

F.2 Hardware Connections

1. Make sure that the MPS-VIII, PC, and fax modem are all off.

2. On the MPS-VIII, select an available serial port to connect the fax modem.

3. Power up the PC and connect it to the MPS-VIII's serial port. Using the MPSSETUP program, configure this port as bidirectional (S-Bdir).

4. Assign a name to the fax-modem port (for example, MODEM).

F.3 Installing MPSWIN

1. Insert the MPS-VIII software into the appropriate drive on the PC.

2. Activate that drive, type **INSTWIN**, and press Enter.

3. Select the disk drive where MPSWIN has been loaded.

4. Select the PC port connected to the Multiport Spooler VIII and set its communication parameters. Make sure that the "Handshake" parameter is set to "Both"; this setting supports the most fax modems.

5. Answer "No" to the question "Will you install only the User's Command Transmission Program?"

6. Define a command that permits the creation of a bidirectional link with the fax modem on the selected port (for example, the COM8 port). To do so:

   • Select "Define String"; select Serial Port (for example, COM8), assuming that the fax-modem port is called MODEM.

   • Use the following syntax for String Before:
     (BR)@@/ZMODEM@

   • Use the following syntax for String After:
     (BR)
     (This cuts the bidirectional link, freeing up the fax modem.)

   • Repeat the above for each PC that will have access to the fax modem.

   • Exit and return to DOS.

   • Type **WIN** at the DOS Prompt.

   • Open the Windows Program Manager.

   • Open the Control Panel.

   • Open Printer; this will enable you to connect the printer "WINFAX" to the selected serial port (for example, COM8).

F.4 Subsequent Installations

Repeat the MPSWIN installation for each PC that will be used with the fax modem. For all subsequent WinFax PRO installations, use the same fax-modem type and description detected as the first PC, and answer "No" to the question "Test the COM ports for presence of a FAX device?" For each PC, use an original copy of Delrina WinFax PRO.

Appendix G: Installing and Operating Windows 95 Software

G.1 Installation

To install the Spooler's Windows 95 utility software, you can follow the general procedure outlined in **Chapter 6** of your manual for the Windows 3.1x software. However, there are many significant differences; most of these are described in this section of the addendum.

G.1.1 FILENAMES

The names of many of the Windows 95 software elements reflect that they are designed for Windows 95 rather than for Windows 3.x. The entire print-utility package is called **MPSWIN95** rather than **MPSWIN**; the installation program is called **Setupwin95** rather than **SETUPWIN**, etc.

G.1.2 INSTALLATION PROCEDURE

Follow these steps, instead of those in **Section 6.2** of your manual, to install the Windows 95 software:

1. With the Spooler's Windows 95 diskette in one of your PC's diskette drives, select **Run** from Windows 95's **Start**-button menu. Select **Browse** at the **Run** screen, then select the diskette drive and the **Setupwin95** program. (The SETUPW95 screens will display the name "MPS-VIII 95 Installation & Configuration.")

   Use the same keys with Setupwin95 as you would with Windows to edit, switch between options, etc. (This program also supports the mouse.) Here are some of the other keys you can use to control the installation process within Setupwin95:

Tab	To go to the next option
Shift-Tab	To go back to the previous option
Alt-♦	To select the option with an underlined letter (♦)
Enter	To accept all entries and go to the next screen
Up-Arrow	To move up in the option list
Down-Arrow	To move down in the option list

   You can also use the icons in the lower right-hand corner of the installation screens to go one screen back or quit the installation program. The screens that appear are more or less the same as those described in detail in **Section 6.3** of your manual.

2. At the initial screen that appears, tell Setupwin95 which diskette drive contains the MPSWIN95 diskette, as well as which type of MPS-VIII model is connected to the PC.

3. Tell Setupwin95 which PC port is connected to the MPS-VIII. If the PC port is a serial port, set parameters for that PC port.

4. Set port redirection and enter any desired character strings.

5. Choose whether or not the UCTP will load automatically when Windows 95 starts up.

6. Choose the desired UCTP menu level.

7. Choose whether returned messages are verified.

8. Print the configuration.

9. Confirm installation. Windows 95 will be restarted; a program group called "MPSWIN95 Applications" will appear. If you have chosen for UCTP to load automatically in Step 5, it will load and run now; simply close the "W95UCTP – UCTP.PRO" window if it appears.

10. From the Windows 95's **Start**-button menu, select **Settings**, then Select **Printers** from the **Settings** menu.

11. Select one of your printers.

12. Select **Properties** from the **File** menu.

13. Select **Details** from the **Properties** menu

14. Select the new destination port from the available ports listed in the **Print to the following port** window. (Do *not* select the port to which the MPS-VIII is attached.)

15. Click on "OK" to confirm your selection.

16. Repeat steps 11 through 15 for each of your remaining printers.

17. When you have finished configuring all of your printers, exit from the **Printers** menu.

This completes the installation process. From this point on, you should be able to select output (printer) ports from inside your applications.

G.2 Operation

G.2.1 THE MPSWIN95 PROGRAM GROUP

After you have installed MPSWIN95, you can work with your Windows 95 applications as usual. However, MPSWIN95 handles external I/O (printing, file transfer, etc.) for Windows 95. It does so in the background, so you can continue working undisturbed.

When you launch Windows 95 a new "MPSWIN 95 Applications" program group will exist. You will see it listed in the **Programs** submenu in Windows 95's **Start**-button menu. It contains:

- **UCTP**
  The User's Command Transmission Program (UCTP) enables you to send direct commands to the Multiport Spooler VIII.

- **Config**
  Config enables you to change MPSWIN95 parameters.

- **Editor**
  Editor enables you to edit the command file UCTP.PRO used by the UCTP program.

- **Help**
  Help is a help file that might assist you in using MPSWIN95 applications.

These programs are briefly described in the following subsections.

G.2.2 CONFIG: CHANGING MPSWIN95 SETTINGS

To change the settings of the Multiport Spooler VIII with the Windows 95 software any time after you've installed the software, select **Programs** from Windows 95's **Start**-button menu. Select **MPSWIN95 Applications** from the program list, then select **Config** from the four programs in that group. The main configuration screen will appear, headed "MPS-VIII Windows 95 Software Installation/Configuration." Click and drag the single main menu item, **Settings**, to choose from any of these options:

P̲C Port Parameters...   Modify the port parameters of the PC port linked to the Multiport Spooler VIII. The PC Port Parameters screen appears (see **Section 6.3.2** of your manual).

Assign port...	Redirect any of the nine phantom ports. The Port Redirection screen appears (see **Section 6.3.3**). Here you can select **Define String** to define a "before" and "after" string for any port; the String Definition screen appears (see **Section 6.3.4**).
W95UCTP auto...	Specify whether or not the UCTP program should be loaded automatically. The UCTP Autoloading screen appears (see **Section 6.3.5**).
Command validation...	Specify whether or not returned messages are verified. The Message-Return Verification screen appears (see **Section 6.3.7**).
Print settings	Print the MPSWIN configuration. The configuration-printing screens appear (see **Section 6.3.9**).
Help	Displays MPSWIN95's Help file.
A**b**out	Displays the title screen shared by Config and Setupwin95.
Sa**v**e	Save the revised configuration.
E**x**it	Quit the configuration program.

If you select Exit to quit the configuration program, and did not modify the configuration, you immediately return to Windows 95. However, if you did modify the configuration, you are prompted to save it (if you have not done so already). After saving, you are prompted to restart Windows 95 to make the new parameters active. If you exit the configuration program without accepting the modifications you made, you will return to Windows 95 without restarting.

G.2.3 EDITOR: EDITING THE UCTP

The Windows 95 Editor program is almost the same as the DOS and Windows versions. See **Appendix E** in your manual for detailed information. One note of caution: If you click on the Editor's Full Screen button, the program will fill the entire screen; you must press [Alt][Enter] to reduce the display to a window again, and ever after that the Editor will always start up in full-screen mode when you run it—it can't be reset to start in a window.

G.2.4 HELP: UNDERSTANDING MPSWIN95

MPSWIN95's Help is a standard Windows Help file; select the green underlined topics or cross-references and read the displayed information, just as you would with the Help file of any other Windows 95 application.

G.2.5 UCTP: SENDING COMMANDS

MPSWIN95's User Command Transmission Program is much like that of the MPSWIN (Windows 3.x) version. However, the Windows 95 UCTP.PRO file, which contains the default UCTP command list, is slightly different from the DOS and Windows 3.x versions of UCTP.PRO; the commands in the Windows 95 version of the file are listed below. Bear in mind that you can always add commands to the UCTP by using the Editor program (see **Appendix E**).

For some of these commands the Parameter window is displayed after you press Enter. Type in the specifics of your request at this window.

For more information about some of these commands, refer to **Section 7.3.2** of your manual, which describes the commands found in the DOS and Windows 3.x versions, as well as **Chapter 4**, which explains the commands in the context of default settings for each port. **Appendix D** lists these commands in exact DOS direct-command format and provides additional information about them.

Commands marked with a single asterisk ("*") appear only in the Advanced menu. Those marked with a double asterisk ("**") appear only in the Default menu.

Broadcast* *(24-port version only)*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Peripheral Connection* *(4-, 8-, or 12-port version)* or **Select an Output Port*** *(24-port version)*
Same as the DOS and Windows 3.x **Select an Output Port** command (see **Section 7.3.2**).

Use First Printer**, **Use Second Printer****, **Use Third Printer****, and **Use Fourth Printer****
Same as the DOS and Windows 3.x commands (see **Section 7.3.2**).

*Appears only in the Advanced menu.
**Appears only in the Default menu.

Reserve a Peripheral*
Same as the DOS and Windows 3.x commands (see **Section 7.3.2**).

Cancel Peripheral Reservation*
Use this command to cancel peripheral reservations by sending a Break to the MPS-VIII. This command does essentially the same thing as the **Send a Break** command. Refer to the entry for that command in **Section 7.3.2**, as well as to the entry for the Break signal in **Section 7.3.3**. NOTE: In the 24-port version of the UCTP, this command is used to cancel bidirectional links as well.

Cancel All Print Jobs**
Use this command to cancel all jobs sent from your input port. The same as the Default DOS and Windows **Cancel Jobs** command (see **Section 7.3.2**).

CAUTION!

If you send this command when an MPS-VIII is not attached to your computer, the UCTP will crash.

Cancellation of a Running or Waiting Task* *(4-, 8-, or 12-port version)* or
  Cancel Task* *(24-port version)*
Use this command to cancel a specific job. Same as the Advanced DOS and Windows 3.x **Cancel Jobs** command (see **Section 7.3.2**).

CAUTION!

If you send this command when an MPS-VIII is not attached to your computer, the UCTP will crash.

Temporary Bi-directional Link* *(4-, 8-, and 12-port version only)*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**). Please note that the 24-port version of UCTP, as it is shipped, does not include this command, but you can add it with the String Editor (see **Appendix E**) if you want to.

Permanent Bi-directional Link* *(4-, 8-, and 12-port version)* or
  Bi-directional Link* *(24-port version)*
Same as the DOS and Windows 3.x **Permanent Bi-directional Link** command (see **Section 7.3.2**).

*Appears only in the Advanced menu.
**Appears only in the Default menu.

Cancel Bi-directional Link* *(4-, 8-, and 12-port version only)*
Use this command to cancel bidirectional links by sending a Break to the
MPS-VIII. This command does essentially the same thing as the **Send a Break**
command. Refer to the entry for that command in **Section 7.3.2**, as well as to
the entry for the Break signal in **Section 7.3.3**. NOTE: To perform this
function in the 24-port version of the UCTP, use either the **Send a Break** or
Cancel Peripheral Reservation command.

Modify Time-Out *(Default versions)*, **Time-Out Modification** *(4-, 8-, and
  12-port Advanced versions)*, or **Time Out** *(24-port Advanced version)*
Same as the DOS and Windows 3.x **Modify Time-Out** command (see
Section 7.3.2).

Number of Copies*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Activate Auto Form Feed**
Use this command to begin sending a form feed after the timeout expires for
each of your jobs. Note that some application software already includes this
function, in which case you need not add another form feed with this
command. To insert the form feed after a job, enter **AF**; to insert it before a
job, enter **BE**; to insert it both places, enter **BO**. Refer to the entry for the /**FF**
(specifically /**FFY**) command in **Appendix D**.

Deactivate Auto Form Feed**
Use this command to stop sending a form feed after the timeout expires for
each of your jobs. Refer to the entry for the /**FF** (specifically /**FFN**) command
in **Appendix D**.

Automatic Form Feed* *(4-, 8-, and 12-port version)* or **Form Feed*** *(24-port
  version)*
Use this command to control whether a form feed is sent after the timeout
expires for each of your jobs. Note that some application software already
includes this function, in which case you need not add another form feed
with this command. Activate the form feed by entering **Y**; deactivate it by
entering **N**. To insert the form feed after a job, enter **Y,AF**; to insert it before
a job, enter **Y,BE**; to insert it both places, enter **Y,BO**. Refer to the entry for
the /**FF** command in **Appendix D**.

*Appears only in the Advanced menu.
**Appears only in the Default menu.

Define a Header *(Default versions)* or **Header Definition** *(Advanced versions)*
Use this command to define the header for your input port. A window
appears in which you can enter a header of up to 60 characters (Default
versions) or 80 characters (Advanced versions). Refer to the entry for the
/**HD** command in **Appendix D**.

Activate Header**
Use this command to activate the header for your input port. An active
header will be printed at the beginning of each job from your port until you
deactivate it. If you activate a header but do not define it, the UCTP will use
the default header for your input port. Note that if you use a header, you may
also want to activate the form feed, because otherwise the header prints at the
top of the first page of the job itself. Refer to the entry for the /**HA**
(specifically /**HAY**) command in **Appendix D**.

Deactivate Header**
Use this command to deactivate a header. Until you reactivate it, no header
will be printed at the start of each job from your port. Refer to the entry for
the /**HA** (specifically /**HAN**) command in **Appendix D**.

Header Activation*
Use this command to activate or deactivate your input port's header. An
active header will be printed at the beginning of each job from your port until
you deactivate it. If you activate a header but do not define it, the UCTP will
use the default header for your input port. Note that if you use a header, you
may also want to activate the form feed, because otherwise the header prints
at the top of the first page of the job itself. To activate a header, enter **Y**; to
deactivate one, enter **N**. Refer to the entry for the /**HA** command in
Appendix D.

Name Task* *(24-port version only)*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Pause Activation* *(4-, 8-, and 12-port version)* or **Activate Pause*** *(24-port
  version)*
Same as the DOS and Windows 3.x **Activate Pause** command (see
Section 7.3.2).

*Appears only in the Advanced menu.
**Appears only in the Default menu.

Release Pause*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Release First Task*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Redirection of Output Port* *(24-port version only)*
Use this command to select a different output port to receive your jobs.
See the entry for the /**PR** command in **Appendix D**.

Return Status Message* *(24-port version only)*
Same as the DOS and Windows 3.x **Activate Message Return** command
(see **Section 7.3.2**).

Return to Initial Configuration*
If you are having difficulty communicating through the MPS-VIII, you can use
this command to reset some of your input port's configuration parameters to
their factory-default values. See the entry for the /**DE** command in **Appendix D**.

CAUTION!

**If you send this command when an MPS-VIII is not attached to your
computer, the UCTP will crash.**

Priority of the Task*
Same as the DOS and Windows 3.x **Task Priority** command (see
Section 7.3.2).

Command Interpreter*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Send a String (not available in 4-, 8-, and 12-port Default version)
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

Send a Break*
Same as the DOS and Windows 3.x command (see **Section 7.3.2**).

*Appears only in the Advanced menu.