IBM Network Color Printer:

Token-Ring Guide

G544-5429-01

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Second Edition (March 1997)

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    c. Inform IBM or your re-seller of changes in a Machine's location, and
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Contents

STATEMENT OF LIMITED WARRANTY iii
Production Status iii
The IBM Warranty iii
Warranty Service iv
Extent of Warranty iv
Limitation of Warranty v

Notices ix
Trademarks x
Communications Statements xii
Safety Notices xiii
DANGER Notices xiii
Caution Notices xiii
Attention Notice xiii
Safety Precautions xiv

Preface xv
Audience xv
Organization and Contents of this Guide xv
Related Publications xv

Chapter 1. Installing or Removing the Token-Ring Card 1-1
Installing the Token-Ring card Card 1-1
Install New Software Drivers for the Printer 1-7
Upgrade Microcode on the IBM Network Color Printer 1-8
Upgrading Microcode over Ethernet or Parallel Connections 1-8
Upgrading Microcode over the Parallel Port 1-9
Upgrading Microcode Over Ethernet Networks 1-11
Upgrading Microcode using an External SCSI II CD-ROM Drive 1-13

Chapter 2. Configuring the Printer for Token-Ring Operation 2-1
Setting Token Ring Card Options 2-2
Choosing Network Setup Options 2-5
Choosing Novell Setup Options 2-5
Choosing TCP/IP Setup Options 2-9
Exiting the Setup Menus 2-10

Chapter 3. Troubleshooting for the Token-Ring Card 3-1
If NETWORK TYPE Does Not Display 3-1
What the Diagnostics Do 3-1
When to Use the Diagnostics 3-1
Running the Token Ring Diagnostics 3-2
Details on the Diagnostic Tests 3-3

Appendix A. Using the Operator Panel A-1

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Lights A-1
Online Push Button and Light A-1
Cancel Push Button A-2
Display Panel A-2
Control Push Buttons A-2
Paper Source Lights A-3
Printing a Configuration Page A-4

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VCCI

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A **DANGER** notice calls attention to a possible lethal condition. **DANGER** notices are numbered <1-1>, <1-2>, and so forth where they appear in the text of this manual. Use the notice number to locate the national language translation of that notice in *IBM Network Color Printer: Safety Notices*, G544-5352.

Caution Notices

A **CAUTION** notice calls attention to a possible hazard to people. **CAUTION** notices are numbered <2-1>, <2-2>, a and so forth where they appear in the text of this manual. Use the notice number to locate the national language translation of that notice in *IBM Network Color Printer: Safety Notices*, G544-5352.

Attention Notice

An **Attention** notice warns of possible of damage to a program, device, system, or data. **Attention** notices are located throughout this publication. Attention notices are not translated.

Safety Precautions

Electrical Safety

This printer is inspected and listed by recognized national testing laboratories, such as Underwriters Laboratories, Inc. (UL) in the U.S.A. and Canadian Standards Association (CSA) in Canada. Listing of a product by a national testing laboratory indicates that the product is designed and manufactured in accordance with national requirements intended to minimize safety hazards. IBM equipment meets a very high standard of safety in design and manufacture. Remember, however, that this product operates under conditions of high electrical potentials and heat generation, both of which are functionally necessary.

Because the paper and toner used in the printer can burn, you should take normal precautions to prevent fire. These precautions include common-sense measures, such as keeping potentially combustible materials (for example, curtains and chemicals) away from the printer, providing adequate ventilation and cooling, limiting unattended operation, and having trained personnel available and assigned to the printer.

Preface

The information in this document guides you through installation and use of the IBM Network Color Printer Token-Ring Card (hereafter referred to as the Token-Ring card). This publication is not meant for any other purpose. Refer to *IBM Network Color Printer Administrator's Guide*, S544-5364, for system and network attachment instructions.

Audience

This publication is intended to guide a user of the IBM Network Color Printer through the installation, configuration, and use of the Token-Ring card.

Organization and Contents of this Guide

Chapter 1, “Installing or Removing the Token-Ring Card” guides you through the steps of upgrading your printer’s microcode, physically installing the Token-Ring card, and installing the software drivers for the card.

Chapter 2, “Configuring the Printer for Token-Ring Operation” guides you through configuring the Token-Ring card and the IBM Network Color Printer for optimal performance on the Token Ring.

Chapter 3, “Troubleshooting for the Token-Ring Card” guides you through problem resolution in the event of errors with the Token Ring.

Appendix A, “Using the Operator Panel” includes information on using the printer’s operator panel. It also includes the Network Color Printer Help Map.

Related Publications

The following books provide additional information about the IBM Network Color Printer:

IBM Network Color Printer Installation and Relocation Guide, G544-5362

IBM Network Color Printer Operator's Guide, G544-5361

IBM Network Color Printer User's Guide, G544-5363

IBM Network Color Printer Administrator's Guide, G544-5364

IBM Network Color Printer Safety Notices Guide, G544-5352

Note: The above publications are available in Portable Document Format (.pdf) on the CD-ROM shipped with the printer. You can view these publications or print them using Adobe Acrobat Reader. Instructions for installing Acrobat reader and the documentation are in the *User’s Guide* and in the README file on the CD-ROM.

If you wish to purchase additional copies of the publications, please contact your dealer representative or your IBM Marketing Representative.

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Chapter 1. Installing or Removing the Token-Ring Card

This chapter describes installing and removing a Token-Ring card in an IBM Network Color Printer. It describes the physical installation of the card and the installation of related software. Information covers both first-time installation and upgrading software.

Note to Readers

For the most recent information on this card or its supporting code, please see the following location on the World Wide Web:

`http://www.can.ibm.com/ibmprinters/ncpdr.html`

Installing the Token-Ring card Card

To install the Token-Ring card:

1. **Prepare the Printer**, which includes updating your printer's microcode,
2. **Install the Token-Ring Card.** and **Attach the Token Ring Cable** to the card,
3. **Install New Software Drivers for the Printer**, and
4. **Configure the Printer for Token Ring**.

Before proceeding, read the Electrostatic Discharge Procedures that follow.

Electrostatic Discharge Procedures

If you discharge static electricity into the circuitry of an integrated circuit, you can damage the circuit.

- Keep an ESD-sensitive part in its original shipping container, usually a protective bag, until you are ready to install it.
- Make the fewest possible movements to minimize static electricity.
- Touch the metal frame of the controller assembly to discharge static electricity in your body just before touching the ESD-sensitive part.
- Hold the ESD-sensitive part by the edges, and do not touch any components, pins, or connectors. If possible, keep one hand on the frame while you insert or remove an ESD-sensitive part.
- Do not place an ESD-sensitive part on anything that can provide a discharge path from your body through the ESD-sensitive part. If you need to put down the ESD-sensitive part, first put it into the ESD protective wrapper in which it was shipped.
- Do not let other people touch the ESD-sensitive parts.
- Be careful when you work with cables that connect to logic cards or boards that are ESD-sensitive.

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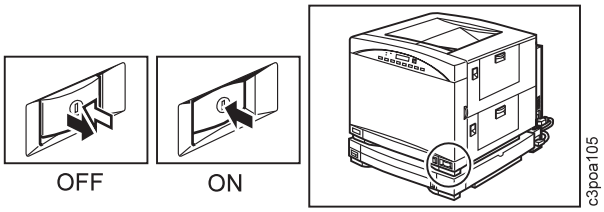
- Be careful when you work with ESD-sensitive parts when the humidity is low. Low humidity increases static electricity.

Prepare the Printer

1. Make sure that you have the latest level of microcode on your printer to ensure optimal printer operation. At a minimum, you need microcode Version 2.0 to connect the printer to a Token Ring.

   For instructions on upgrading printer microcode, see “Upgrade Microcode on the IBM Network Color Printer” on page 1-8. To check the level of microcode installed on your printer, print a configuration page. See “Printing a Configuration Page” on page A-4 for instructions.

2. Make sure that printer power is turned off.

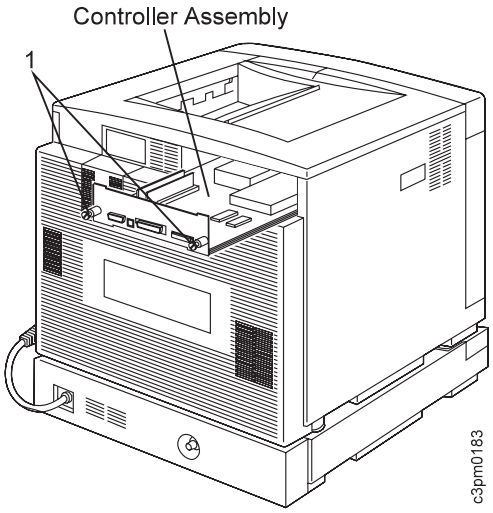


3. Prepare a work area suitable for working on ESD-sensitive parts. Read “Electrostatic Discharge Procedures” on page 1-1 if you have not already done so.

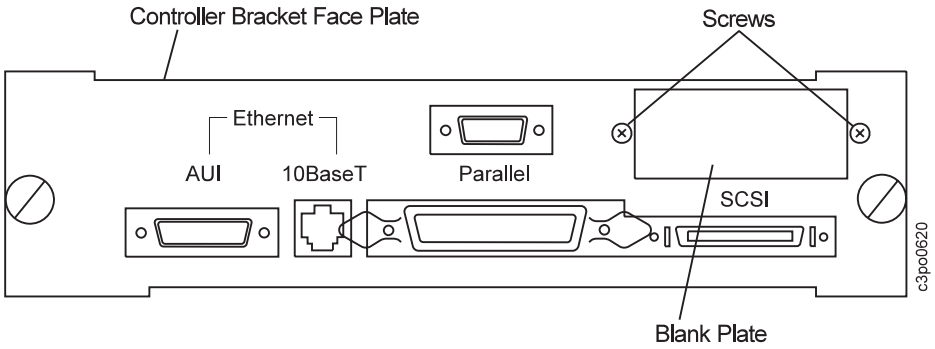
Remove the Controller Card

Attention: ESD Sensitive Area

1. Loosen the 2 screws [1]. Hold the controller assembly by the metal bracket and the edges. Slide the controller assembly out of the printer and put it in the prepared work area.

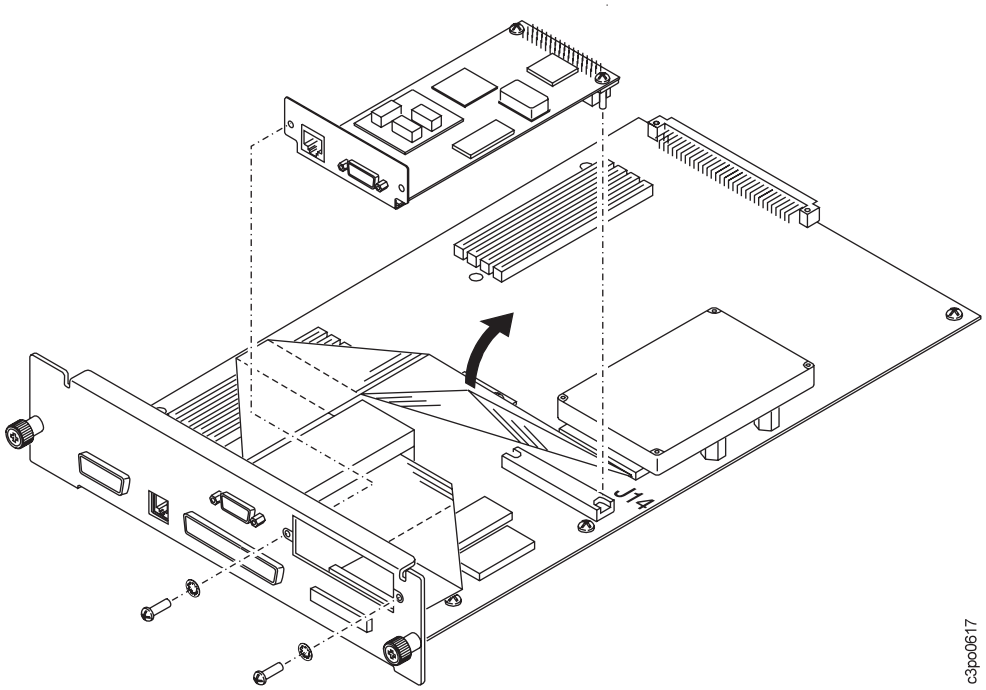


2. Remove the two screws that attach the blank plate to the upper right-hand corner of the controller bracket face plate. Set the blank plate aside but **save the screws**.

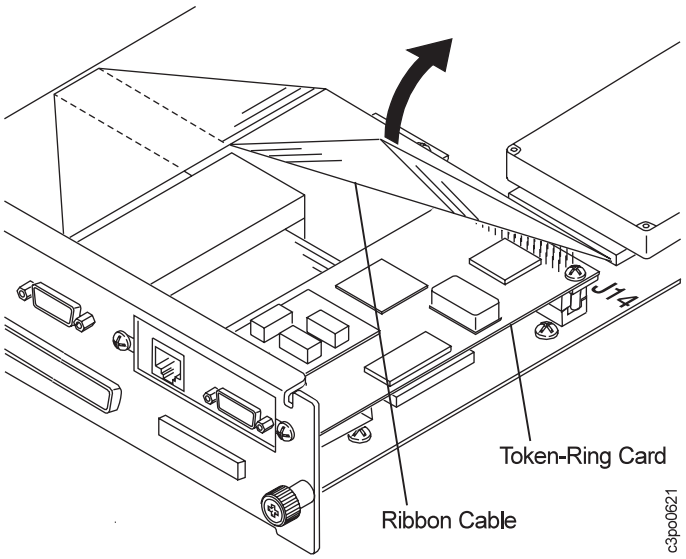


Install the Token-Ring card

1. Orient the Token-Ring card as shown in the following figure. The two connector ports on the card face out through the hole in the controller bracket face plate.



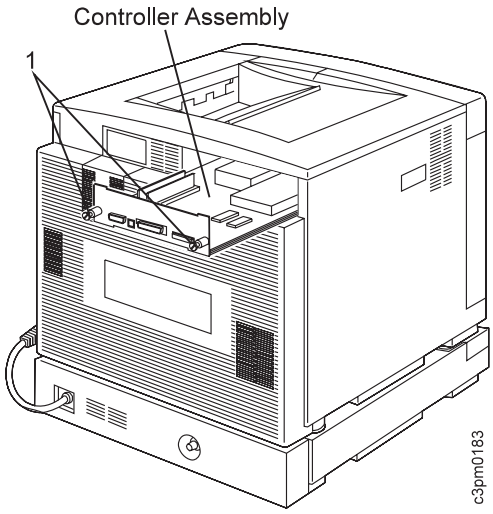
2. Place the card in position by lifting the flat ribbon cable up and sliding the Token-Ring card underneath it.



3. With the card in position, gently press the card connector into the controller assembly board socket labeled J14.
4. Fasten the Token-Ring card to the controller bracket face plate with the two screws you removed previously.
5. Screw the two captured screws on the Token-Ring card into connector J14 on the controller assembly board.

Replace the Controller

1. Hold the controller assembly by the metal bracket and the edges of controller assembly. Place the assembly between the centers of the blue rails and gently guide it into the printer. If you feel any resistance, gently move the assembly up and down to find the center of the rails again. Guide the assembly in until the controller bracket-face plate is flush with the outside of the printer.
2. Position the thumbscrews [1] in the holes and hand-tighten them.

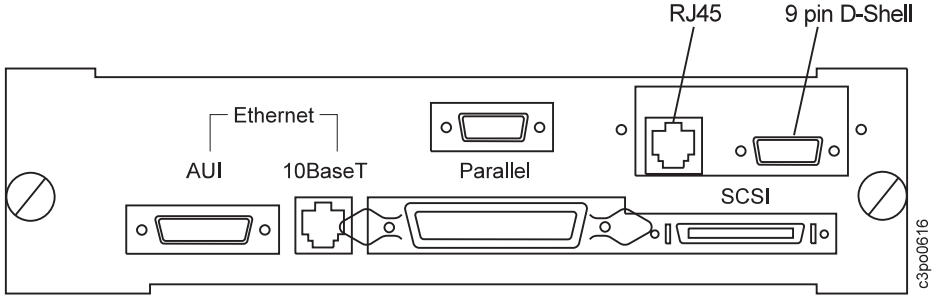


Attach the Token Ring Cables

Attach the Token Ring cable to either the RJ45 port or the 9 pin D-shell port, as shown in the figure below.

Note: Connect only one cable to the Token-Ring card. If a cable is connected to both ports, only the RJ45 port will be recognized by the adapter.

Continue with “Install New Software Drivers for the Printer” on page 1-7.



Install New Software Drivers for the Printer

You must install new printer drivers even if you already have printer drivers installed.

The drivers provided with the Token-Ring card include a new PostScript Printer Description (PPD) file. The new printer drivers are provided on the customer CD-ROM.

These steps are required to successfully install and setup the new printer drivers:

- Install the new printer drivers,
- Install the Printer Description File,
- Connect the printer to the system

There are several sources of instructions for performing the printer driver install. The most up-to-date sources are the README files provided on the customer CD-ROM and on the IBM Web page. To access the README files on the customer CD-ROM, look in the root directory of the CD-ROM. The file is called README.1ST.

To access the README files on the Web, go to:

`http://www.can.ibm.com/ibmprinters/ncpdr.html`

The *IBM Network Color Printer User's Guide* also provides instructions for installing printer driver files for the Macintosh and Windows operating systems. The *User's Guide* has more detailed instructions as well as graphics of various screens you will see on your computer during the driver installation process. However, the README files contain the most up-to-date instructions, as well as tips and hints to help you during setup.

Upgrade Microcode on the IBM Network Color Printer

This section contains instructions for upgrading the system microcode on your IBM Network Color Printer.

Before You Begin

Close all open Spooler and Downloader utility sessions. Open utility sessions prevent the printer from going offline. To do a microcode upgrade without risking the loss of print jobs or damage to the printer, you must be able to take the printer offline.

The upgrade will cause these changes to your printer configuration:

- The printer name will be the default, `IBMnetcolor`.
- Any connections to NetWare Print Servers will be deleted. Make sure that you will be able to restore NetWare connections, if necessary. For example, make sure that you have any needed NetWare server passwords.

You will use the Network Color Printer operator panel during the microcode upgrade procedures. For general information on how to use the operator panel, see Appendix A, "Using the Operator Panel."

Choosing the Right Upgrade Procedure

Use the following table to choose the correct microcode upgrade procedure for your printer.

If:	Then:
You want to upgrade the microcode to take advantage of new functionality.	Perform the microcode upgrade over the network. See the following section, "Upgrading Microcode over Ethernet or Parallel Connections."
The printer does not print or does not print correctly, although when you power on the printer, it passes internal diagnostics and comes to a ready state.	Perform the microcode upgrade over the network. See the following section, "Upgrading Microcode over Ethernet or Parallel Connections."
When you turn the printer on, it does not pass internal diagnostics, stopping before coming to a ready state.	Perform the upgrade from a SCSI II CD-ROM drive that is attached to the printer. See "Upgrading Microcode using an External SCSI II CD-ROM Drive" on page 1-13.

Upgrading Microcode over Ethernet or Parallel Connections

Use this section to upgrade the microcode on your printer if the printer passes internal diagnostics and reaches a ready state when powered on. This section contains information on:

- Getting the microcode upgrade file
- Upgrading microcode using the printer parallel port
- Upgrading microcode using Ethernet

To get the Microcode upgrade file

The first step is to get the microcode upgrade file. Microcode upgrades are available at no charge from the IBM World Wide Web (WWW) site. To get a new microcode upgrade file from the IBM WWW site:

1. Access the IBM Network Color Printer drivers at

   `http://www.can.ibm.com/ibmprinters/ncpdr.html`

2. Use the menu selections to find and download the IBM Network Color Printer microcode upgrade you want. Choose the microcode upgrade that is the appropriate version and is in the format that works with your operating system. Readme files located next to each upgrade file describe how to use that file format.
3. Save the file to your PC or workstation hard disk. You will need at least 36 MB of free space on your hard disk to save and uncompress the file. In addition, if you are attaching the the printer through the parallel port, you will need another 23 MB of free space (a total of 59 MB of free space for parallel attachment).

   Note: Do not change the name of the file. If you do so, the microcode upgrade may not work properly.
4. Double-click on the file to uncompress it.

Once you have the microcode upgrade file uncompressed, use one of the two following sections to upgrade the printer system microcode.

- If the printer is connected to your Ethernet network, see “Upgrading Microcode Over Ethernet Networks” on page 1-11.
- If the printer is parallel-attached, see the next section, “Upgrading Microcode over the Parallel Port.”

Upgrading Microcode over the Parallel Port

Use the instructions in this section to upgrade the microcode on your IBM Network Color Printer using a parallel attachment. The instructions describe how to take the printer offline, disconnect the printer from the Ethernet network, and bring the printer online again to do the microcode upgrade.

Before you begin

- Get the microcode upgrade file from the IBM WWW home page. See “To get the Microcode upgrade file.”
- Make sure that you have a PC or workstation parallel-attached to the printer.
- Ask your users to shut down open utilities sessions with the printer.

To upgrade printer microcode over the parallel port

1. Press the Online push button on the printer's operator panel to take the printer offline. The printer may not go offline immediately.
   - If the printer does not respond at all when you press the Online push button, the printer is receiving a file. When the printer has finished receiving the file, it will respond.

- If the display panel shows OFFLINE PENDING, the printer is processing something or there is an open utility session. In this case, continue at the next step.

2. Wait for the printer to go offline. If the busy light continues to flash and the printer stays in the offline pending state, someone is probably connected to the printer with a Spooler or Downloader. In this case, wait until you believe that the printer has had enough time to finish receiving any job it may have been receiving when you pressed the Online push button.
3. Once the printer has gone offline or you believe enough time has passed since you pressed the Online push button for any file in transfer to finish transferring, disconnect the Ethernet cable from the back of the printer. Leave the parallel cable and power cables attached. If the printer was in an offline pending state because of open utilities sessions, disconnecting the Ethernet cable should allow it to go offline.
4. After the printer has gone offline, press the Online push button again to bring the printer back online.
5. From the parallel-attached PC or workstation, open a DOS window.
6. Use the **print** command to submit the microcode upgrade file to the IBM Network Color Printer connected to the parallel port. For example, use the command:

   ```
   PRINT /D:LPT1 /b INSTALL.2
   ```

   where *filename* is the name of the microcode upgrade file and LPT1 is the port to which the printer is connected.
7. When the printer finishes receiving the file, the Busy Light on the operator panel starts flashing. The busy light flashes until the printer finishes processing the upgrade file.
8. When Busy light stops flashing and the printer returns to a ready state, take the printer offline by pressing the Online push button.
9. When the printer goes offline, turn the printer off by pressing the power button on the lower right front corner of the printer.
10. Wait a moment and then turn the printer back on. As the printer starts up, booting and scanning messages are displayed on the operator panel.
11. Wait until the following message is displayed:

    UPGRADE CODE NOW
    YES
12. Press the Enter push button to upgrade the system microcode now. (If you select NO, there will be a short delay, the printer will continue initializing, and the upgrade option will display again the next time you turn the printer on.)

    If you select YES, the following message is displayed:

    UPDATING CODE
    DO NOT POWER OFF

Note: Do not turn off power to the printer at this point. If you do so, you will damage the printer's hard disk.

13. *Wait* until the following message is displayed:

    SELECT FUNCTION
    RUN SETUP

14. Attach the Ethernet cable to the back of the printer.
15. What you do next depends on what the name of the printer should be and whether or not the printer should be connected to a Novell NetWare server.
    - If the name `IBMnetcolor` is acceptable and the printer is not connected to a NetWare server, press the Menu push button to exit. The printer initializes and enters a ready state.
    - If the name of the printer needs to be something other than `IBMnetcolor`, or if there were connections in place to a NetWare server before the microcode upgrade, press the Enter push button to enter the setup menus. Use the IBM Network Color Printer configuration instructions in the *IBM Network Color Printer Administrator's Guide* to change the printer name and review connections to the NetWare server. You may need to recreate the connections to the NetWare server.

You have finished upgrading the printer microcode.

Note: Although the microcode is new, page count information, error log information and most configuration information is saved.

Upgrading Microcode Over Ethernet Networks

Use this section to upgrade printer microcode from a workstation or PC that is connected to the printer over the Ethernet network. This section discusses using the **lpr** command to submit the microcode upgrade to the printer.

Before you begin

- Get the microcode upgrade file from the IBM World Wide Web home page. See "To get the Microcode upgrade file" on page 1-9.
- Make sure that you have a networked PC or workstation that can use the lpr command. Put the microcode upgrade file on this PC or workstation.
- Make sure that the printer is connected to the Ethernet network.
- Make sure that you have the TCP/IP address of the printer.
- Ask users to delay submitting print jobs to the printer until after you have finished the microcode upgrade.
- Ask users to shut down open Spooler and Downloader utilities sessions with the printer.

To upgrade printer microcode over the Ethernet network

1. Wait for the Busy Light on the operator panel to stop flashing and for the printer to reach a ready state. This indicates that all jobs in the printer have finished processing and printing and that all utilities sessions have been shut down.

   Note: If the printer reaches a ready state but the Busy light continues to flash, there is an open utilities session. Ask your users to close all utilities sessions. If this is not possible, you can still upgrade, but the process is less simple.

2. From the network-attached PC or workstation, open a DOS window or go to an AIX or UNIX shell prompt.

3. Use the **lpr** command to submit the microcode upgrade file to the printer as a PostScript job. For example, from Windows NT DOS, use the command:

   ```
   lpr -Sserveraddress -Pibmcolor_direct filename
   ```

   where *serveraddress* is the TCP/IP address of the printer and *filename* is the name of the microcode upgrade file. The TCP/IP name of the Direct queue depends on the level of code being upgraded.

   - For code levels prior to Version 2.0, the name of the Direct queue is always `ibmcolor_direct`.
   - For code levels 2.0 or later, the name of the Direct queue is `ibmncp_direct`.

   Either the Print or the Hold queues will work equally well as long as the specified queue is enabled.

4. When the printer finishes receiving the file, the Busy Light on the operator panel begins to flash. After the busy light stops flashing, press the Online push button to take the printer offline.

   Note: If, because of an open utilities session, the busy light never stops flashing, wait 20 minutes to be sure the upgrade file is done processing before pressing the Online push button. The printer enters the offline pending state. If you think anyone may have submitted additional jobs to the printer during the time when you were waiting for the upgrade file to process, wait until you think those files have finished processing. Then turn the printer off by pressing the power button on the lower right front corner of the printer, and go to step 6.

5. Once the printer has gone offline, turn the printer off by pressing the power button on the lower right front corner of the printer.

6. Wait a moment and then turn the printer back on. As the printer starts up, booting and scanning messages display on the display panel.

7. *Wait* until the following message is displayed:

   UPGRADE CODE NOW
   YES

8. Press the Enter button to upgrade the system microcode now. (If you select NO, the upgrade option will display again the next time you turn the printer on.)

   The following message is displayed:

UPDATING CODE
DO NOT POWER OFF

Note: Do not turn off power to the printer at this point. If you do so, you may damage the printer's hard disk.

9. Wait until the following message is displayed:

   SELECT FUNCTION
   RUN SETUP

10. What you do next depends on what the name of the printer should be and whether or not the printer should be connected to a Novell NetWare server.
11. If the name `IBMnetcolor` is acceptable and the printer is not connected to a NetWare server, press the Menu push button to exit. The printer initializes and enters a ready state.
12. If the name of the printer needs to be something other than `IBMnetcolor` or if there were connections in place to a NetWare server before the microcode upgrade, press the Enter push button to enter the setup menus. Use the IBM Network Color Printer configuration instructions in the *IBM Network Color Printer Administrator's Guide* to change the printer name and review connections to the NetWare server. You may need to recreate the connections to the NetWare server.

You have finished upgrading the printer microcode.

Note: Although the microcode is new, page count information, error log information and most configuration information is saved.

Upgrading Microcode using an External SCSI II CD-ROM Drive

Use this procedure to apply a microcode update using a system upgrade CD-ROM provided to you by IBM support. This procedure is only necessary if the printer will not finish its boot sequence and reach a ready state. If the printer will reach a ready state, you should use the simpler procedure documented in "Upgrading Microcode over Ethernet or Parallel Connections" on page 1-8.

In this section you will do both a low- and high-level disk format and then install new printer system software.

Before you begin

- Make sure that you have an external SCSI II CD-ROM drive
- Make sure that you have a SCSI cable with which to connect the CD-ROM drive to the SCSI port on the back of the printer. The cable:
  - Should be a meter or less in length (if the cable is longer, you may need to use a passive terminator),
  - Must have a 50-pin male Centronics connector on one end and a 50-pin male SCSI II connector on the other.
- Make sure that you have a microcode upgrade CD-ROM, provided to you by IBM support.

- Disconnect the Ethernet cable from the printer. This prevents users from submitting print jobs or opening utilities sessions while the upgrade is in progress.

To upgrade microcode using a SCSI II CD-ROM drive

1. Turn off the printer by pressing the power button on the lower right front corner of the printer.
2. Connect the SCSI II CD-ROM drive to the printer's SCSI port. As you face the back of the printer, the SCSI port is on the far right.
3. Turn on power to the CD-ROM drive.
4. Insert the microcode upgrade CD-ROM. After a moment, the light on the CD-ROM drive will blink.
5. When the CD-ROM drive light stops blinking and goes dark, turn on the printer power. As the printer starts up, booting and scanning messages display on the printer display panel. Then the message PRESS MENU FOR SETUP displays on the display panel.
6. When PRESS MENU FOR SETUP is displayed, do not press the Menu push button. Press the left and right Cursor Position push buttons at the same time.
7. First, SCANNING FILES displays, then the following displays:

   SELECT FUNCTION
   INSTALL SOFTWARE

   Note: If LOADING SYSTEM... is displayed instead of SCANNING FILES... you did not press the buttons quickly enough. Turn the printer power off and return to step 5.
8. Use the Menu Scrolling push buttons to scroll to:

   SELECT FUNCTION
   FORMAT DISK
9. Press the Enter push button to select FORMAT DISK. The following message displays:

   FORMAT DISK?
   NO
10. Scroll until YES is displayed on the second line and press the Enter push button. The following message is displayed:

    FORMAT METHOD
    HIGH-LEVEL
11. Scroll until LOW-LEVEL is displayed on the second line of the display panel and press the Enter push button. The printer performs a low-level disk format while displaying the FORMATTING... message.
12. After the low-level disk format is completed, the SELECT FUNCTION menu is displayed again. The following message appears on the display panel:

    SELECT FUNCTION
    FORMAT DISK

13. Press the Enter push button to again select FORMAT DISK. The following message displays:

    FORMAT DISK?
    NO

14. Scroll until YES is displayed on the second line and press the Enter push button. This message appears on the display panel:

    FORMAT METHOD
    HIGH-LEVEL

15. Press the Enter push button to select a high-level disk format. The printer quickly performs a high-level disk format while displaying the FORMATTING... message.

16. After the high-level disk format is completed, you are returned to the SELECT FUNCTION menu. The following message displays:

    SELECT FUNCTION
    FORMAT DISK

17. Scroll until the display panel shows:

    SELECT FUNCTION
    INSTALL SOFTWARE

    Press the Enter push button. The following message is displayed:

    INSTALL SOFTWARE
    NO

18. Scroll until YES is displayed on the second line of the display panel and press the Enter push button. Several messages are displayed:

    SCANNING
    DIRECTORIES...

    then

    INSTALLING...

    A status bar appears on the display panel, showing the progress of the installation. When the installation is done, PRESS ENTER TO RESTART SYSTEM is displayed.

19. Turn off the CD-ROM drive.

20. Press the Enter push button.

21. As the printer restarts, booting and scanning messages are displayed.

22. *Wait* until the following is displayed:

    SELECT FUNCTION
    RUN SETUP

    You must enter the Setup menus and save changes to complete the microcode upgrade. Press the Enter push button.

23. What you do next depends on what the name of the printer should be and whether or not the printer should be connected to a Novell NetWare server:

    - If the name `IBMnetcolor` is acceptable and the printer is not connected to a NetWare server, press the Menu push button to exit the Setup menus. Scroll to:

      EXIT
      YES

      Press the Enter push button and scroll to:

      SAVE CHANGES
      YES

      Press the Enter push button. The printer initializes and enters the ready state.

    - Use the IBM Network Color Printer configuration instructions in the *IBM Network Color Printer Administrator's Guide* if you need to change the printer name or review connections to the NetWare server. You may need to recreate the connections to the NetWare server.

    Notes:

    a. When you exit the setup menus, you must select YES to the SAVE CHANGES option.

    b. Although the microcode is new, page count information, error log information and most configuration information is saved.

    You have finished upgrading the printer microcode.

Chapter 2. Configuring the Printer for Token-Ring Operation

This chapter describes how to set configuration options for the IBM Network Color Printer on a Token Ring. It includes information on how to attain optimal performance and recommendations on how to make the setup go smoothly.

Important

Before setting configuration options, you must ensure that:

- An *active* Token Ring is available, and
- A cable connects the active Token Ring to the Token-Ring card installed in the printer.

If these two conditions are not met, an error message will display at the conclusion of setup.

Once the conditions listed above are met, two steps are required to configure Token-Ring card operation on the printer:

1. First, set the configuration items in the NETWORK TYPE menu on the printer. This is described in “Using the Network Type Menu” on page 2-2.
2. Next, set the configuration parameters for your network. See “Choosing Network Setup Options” on page 2-5 for information about choosing setup options for Novell or TCP/IP networks as appropriate.

For general information on how to use the operator panel see Appendix A, “Using the Operator Panel.” This appendix also has a copy of the printer’s help map.

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Setting Token Ring Card Options

Use the Network Setup Menu to set the printer's Token Ring specifications.

The organization of the Network Setup menu and its submenus is shown in the Network Color Printer Help Map in Appendix A, "Using the Operator Panel."

Using the Network Type Menu

Use the following procedure to configure the token ring card with the Network Setup menu.

1. Check that the printer is offline (the **Online** light is not on). If the printer is not offline, press the **Online** push button.
2. Press the **Menu** push button. You see SELECT FUNCTION on the first line of the display panel and RUN SETUP on the second line.
3. Press the **Enter** push button. If your system administrator has set a password for the Run Setup menu, you must enter that password now.
4. You see SETUP MENU on the first line of the display panel and PRINTER SETUP on the second line. Use the Menu Scrolling push buttons to scroll through the menus until NETWORK SETUP appears on the second line of the display panel.
5. Press the **Enter** push button. NETWORK SETUP displays on the first line of the display panel, and you see NETWORK TYPE on the second line.

   Note: If NETWORK TYPE does not appear on the display panel, then see Chapter 3, "Troubleshooting for the Token-Ring Card" on page 3-1.
6. Press the **Enter** push button. NETWORK TYPE displays on the first line of the display panel, and you see either TOKEN RING or ETHERNET on the second line.
7. If TOKEN RING is displayed, press the **Enter** push button. If ETHERNET is displayed, use the menu scrolling push buttons to scroll until TOKEN RING displays -- then push the **Enter** push button.

   TOKEN RING SETUP displays on the first line of the display panel, and you see SPEED (MB/S) on the second line.
8. Press the **Enter** push button. SPEED (MB/S) moves to the first line, and either 4 or 16 displays on the second line. Use the menu scrolling push buttons to display the speed of your Token Ring, either 4 Megabits per second (Mbps) or 16 Mbps. Most token ring networks run at 16 Mbps. When you have selected either 4 or 16, press the **Enter** push button.
9. MAC ADDRESS displays on the first line. Set the MAC Address (Medium Access Control Address) on the second line. Use the Cursor Position push buttons to move the cursor from one character to the next, and use the Menu Scrolling pushbuttons to increment or decrement each character's value. When you have set the correct MAC Address, press the **Enter** push button.
10. MAX. FRAME SIZE displays on the first line, and one of several options for maximum frame size displays on the second line. Use the Menu Scrolling push

buttons to scroll through the options for maximum frame size. When the correct value is displayed, press the **Enter** push button.

11. SOURCE ROUTING displays on the first line. Use the Menu Scrolling pushbuttons to select either YES or NO. When the desired value is displayed, press the **Enter** push button.

    Note: Source routing is used to specify TCP/IP source routing for Token Ring network interface cards using any supported protocol. Source routing determination is used when a network interface card has a Token Ring frame to transmit, but has no source route. The source routing command allows frames to traverse up to eight Token Rings across seven bridges in any given direction. If source routing is disabled, the network interface card will send and receive only Token Ring frames that do not contain routing information.

12. If you selected NO to disable source routing, continue at step 14.

    If you selected YES to enable source routing, SEND REQUEST BY displays on the first line. Use the Menu Scrolling push buttons to select either SINGLE ROUTE or ALL ROUTES. When the desired value is displayed, press the **Enter** push button.

13. If you selected to send the request by ALL ROUTES, continue at step 14.

    If you selected to send the request by SINGLE ROUTE, then RESPOND BY displays on the first line. Use the Menu Scrolling push buttons to select either SPECIFIC ROUTE or ALL ROUTES. When the desired value is displayed, press the **Enter** push button.

14. SPEED (MB/S) displays on the display panel.

    You have now set all the specifications for the token ring card. Continue with the following steps to save these values.

15. Press the **Menu** push button until this message displays:

    RESETTING TRING
    PLEASE WAIT

    Note: If an error displays instead of the above message, ensure that the printer is correctly connected to an active token ring. See Chapter 2, “Configuring the Printer for Token-Ring Operation.”

    If the error still displays after you have verified a good setup and configuration, go to Chapter 3, “Troubleshooting for the Token-Ring Card.”

    When the Token Ring finishes resetting, the following displays:

    NETWORK SETUP
    NETWORK TYPE

16. Proceed with Novell and/or TCP/IP setup as appropriate. Instructions for choosing setup options for Novell and TCP/IP are in “Choosing Network Setup Options” on page 2-5 Parallel options are not described here as there is no co-dependency between Token Ring and the parallel port.

17. When you have finished setting all printer options, press the **Menu** push button until the display panel shows:

SETUP MENU
EXIT SETUP

Press the **Enter** push button.

18. EXIT SETUP displays on the first line of the printer display panel. Use the Menu Scrolling push buttons to display YES.

    Press the **Enter** push button.

19. SAVE CHANGES displays on the first line. Use the Menu Scrolling push buttons to select either YES or NO (normally select YES) When the desired value is displayed, press the **Enter** push button.

20. The printer reinitializes. When reinitialization is complete, OFFLINE displays on the first line. You may then press the **Online** push button to bring the printer back online.

Choosing Network Setup Options

Use the information in this section to choose Network Setup menu options.

In the Network Setup menu, you enable all the network communication protocols that network users and servers will use to communicate with the printer. For each protocol you enable, the menu prompts you for settings pertaining to that protocol. You must specify network addresses and names that will be used by workstations, servers, and the printer when they communicate with each other.

If the printer is configured to enable more than one protocol, it automatically switches to the correct protocol when it receives a print request.

Important: Before entering any Network Setup options, ensure that the network cable is connected to the printer. During Network setup, the printer queries the network for zones and servers. If you do the network setup without the printer being connected to a functioning network, the printer will use default settings that may not work later. For instructions on cabling the printer, refer to the *IBM Network Color Printer Installation and Relocation Guide*.

Choosing Novell Setup Options

Use the information in this section to choose Novell Setup options.

Notes:

1. If you have a Novell network, configure the NetWare server that you want to attach to the printer before you enter Network Setup options. See the *IBM Network Color Printer Administrator's Guide* for instructions on configuring your Novell network.
2. If you are defining connections to more than one NetWare file server, you must enter all of the options for all of the connections at the same time. If you have one file server defined and want to add another one, you will have to define the first server again when you add the second one.
3. The 16-MB configuration will support connection to one Novell server. The 32- and 48-MB configurations will support connection to up to three Novell servers.

The following table summarizes Novell network setup options and their network and operating system implications.

Table 2-1 (Page 1 of 4). Network Setup Options and Client/Server Implications: Novell

ENABLE NOVELL	Notes	NetWare
YES (default) NO	• Select YES if you have a Novell network. When you select YES, the printer scans the network for NetWare file servers. • If you select NO, skip to “Choosing TCP/IP Setup Options” on page 2-9.	Selecting YES enables the printer to connect to NetWare file servers and print servers.

Table 2-1 (Page 2 of 4). Network Setup Options and Client/Server Implications: Novell

IPX FRAMETYPE	**Notes** Select the Ethernet Frame Type that your NetWare file server uses.	
IPX SETTINGS VIEW (default) CHANGE	**Notes** • Select VIEW to see a list of connected file servers. • Select CHANGE to delete all existing connections to NetWare file servers and print servers, and begin connecting a new set of file servers and print servers to the printer.	
AVAILABLE SERVRS Select one of the displayed available NetWare file servers	(Appears only if you selected CHANGE for IPX SETTINGS) **Notes** The printer displays the first item in a scrollable list of available NetWare file servers. • Select the file server within which you created a print server and queue for the printer. • When you select a server, the printer immediately tries to log in to the server as Guest without a password. If successful, the printer skips over the FS LOGIN menu item and goes to FS PASSWORD.	**NetWare** Selecting YES enables the printer to attach to a print server on a NetWare file server.
FS LOGIN SUPERVISOR (default) ADMIN LOGIN NAME	(Appears only if the printer cannot log in as Guest) **Notes** • Selecting LOGIN NAME allows you to login as Guest or to enter a login name. • Selecting SUPERVISOR or ADMIN skips to the FS PASSWORD menu item.	
ENTER NAME GUEST (default)	(Appears only if you selected LOGIN NAME as the FS LOGIN menu item option) **Notes** • Select GUEST to again try to log in with the Guest login name. • To enter a different File Server login name, use the Menu Scrolling push buttons to enter each character.	

Table 2-1 (Page 3 of 4). Network Setup Options and Client/Server Implications: Novell

FS PASSWORD	**Notes**
Enter the File Server password	• Use the Menu Scrolling push buttons to enter each character of the File Server password. • If you enter an incorrect password, you are prompted to try again. • Select YES to try entering the password again. • Select NO to exit this menu item and return to the FS LOGIN menu item, where you can choose a different login name.
PRINT SERVER	**Notes**
Select a print server	The printer displays the first item in a scrollable list of print servers on the NetWare file server. • Select the print server that you previously created for the printer. • When you select a print server, the printer immediately tries to log in as Guest without a password. If successful, the printer skips over the PS PASSWORD menu item, and goes to the SELECT QUEUE menu item.
PS PASSWORD Enter your print server password	(Displays only if the printer cannot log into the print server without a password) **Notes** • Use the Menu Scrolling push buttons to enter each character of your print server password. • If you enter an incorrect password, you are prompted to try again. – Select YES to try entering the password again. – Select NO to exit this menu item and return to the PRINT SERVER menu item, where you can choose a different print server.
IPX POLL INTERVAL 15 (default)	**Notes** In seconds, set the interval at which the printer queue will poll the NetWare print server for jobs. Use the Menu Scrolling push buttons to select the interval you want.

Table 2-1 (Page 4 of 4). Network Setup Options and Client/Server Implications: Novell

SELECT QUEUE	**Notes**
DIRECT (default) PRINT HOLD	• The printer displays the first item in a scrollable list of the enabled printer queues. **Note:** These are the built-in printer queues, not NetWare queues. • Select the printer queue to which you want to connect the NetWare print server. • The first two times through this menu item, selecting one of the queues returns you to the AVAILABLE SERVRS menu item. You can then connect another file server and print server, for a total of three connections. • After you have connected to a third print server, you exit this menu. **Note:** If the print server you are working with is already connected to one of the other printer queues, the message Q ASSIGNED is displayed. Press the Enter button to go on to the REASSIGN prompt.
REASSIGN YES (default) NO	(Appears only if you try to connect an already-connected print server to a different printer queue than that to which it is already assigned.) **Notes** • Select YES to move the print server from one printer queue to another. • Select NO to leave the print server with the printer queue to which it is already connected.

Choosing TCP/IP Setup Options

The following table summarizes TCP/IP network setup options and their network and operating system implications.

Table 2-2. Network Setup Options and Client/Server Implications:TCP/IP

ENABLE TCP/IP	**Notes**	**Windows NT**
YES (default) NO	Select YES to enable and configure TCP/IP on the printer.	Select YES if you will use TCP/IP to connect an NT server or workstation to the printer. **TCP/IP** You must select YES for TCP/IP printing.
IP ADDRESS	**Notes**	
Enter an IP address for the printer.	• Use the Menu Scrolling push buttons to enter each character of the IP address exactly. • Obtain the IP address from the AIX or TCP/IP ad- ministrator for your site.	
SUBNET MASK	**Notes**	
255.0.0.0 (default) Leave default or enter a selection.	• If your network uses a subnet mask, use the Menu scrolling push buttons to enter each character exactly. • If your network does not use a subnet mask, leave the default of 255.0.0.0 • Obtain the subnet mask from the AIX or TCP/IP administrator for your site.	
GATEWAY ADDRESS	**Notes**	
Leave blank or enter a selection.	• If your network uses gateways, use the Menu Scrolling push buttons to enter each character of the gateway address exactly. • If your network does not use gateways, leave this blank. • Obtain the gateway address from the AIX or TCP/IP administrator for your site.	

Exiting the Setup Menus

While in the Setup menus, if you repeatedly press the Menu push button, the printer skips through the other menus directly to this one. Use this menu to save or not save the changes you have made and to exit the Setup menus.

Table 2-3. Exit Setup and Save Changes

EXIT SETUP	**Notes**
NO (default) YES	• Select YES if you are done configuring the printer. • Select NO to go back into the setup menus.
SAVE CHANGES	**Notes**
YES (default) NO	• Select YES to save the changes you have made to the printer configuration. • Select NO to return the printer to the configuration it had when you started.

If you accessed the Setup menus during a power-on sequence, the printer will initialize your changes and continue with the power-on sequence. If you accessed the Setup menus by pressing the Online push button, press it again now. The printer initializes any changes you have made and comes online.

Chapter 3. Troubleshooting for the Token-Ring Card

This chapter describes troubleshooting and diagnostics on the IBM Network Color Printer for the Token-Ring card.

If you notice that NETWORK TYPE does not display under the NETWORK SETUP menu on the printer operator panel, go to “If NETWORK TYPE Does Not Display” in the following section.

For all other problems, go to “What the Diagnostics Do” on this page.

If NETWORK TYPE Does Not Display

If NETWORK TYPE does not display under the NETWORK SETUP menu on the printer display panel, then the printer is not sensing that the card is installed. The most likely cause is a failed physical installation of the card. Repeat the card installation using the instructions in Chapter 1, “Installing or Removing the Token-Ring Card.”

If you re-install the card, and NETWORK TYPE still fails to appear under the NETWORK SETUP menu, then:

1. Verify that the microcode level is at least 2.0. Print a configuration page to check the level. See “Printing a Configuration Page” on page A-4 for instructions.
2. Replace the Token-Ring card.

What the Diagnostics Do

The Token Ring Card Diagnostic Procedures isolate the cause of a network communication problem to the card connection, the card itself, or the network.

The diagnostic test takes less than one minute to complete. If a problem is found with the card, card connection, the cable or the physical ring connection, an error code is returned. If no problem is found with the card or card connection, the message PASSED is displayed on the display panel. The test eliminates the card hardware as a problem source by sending data onto the Token Ring, receiving it back again, and comparing it. Therefore, if PASSED is displayed, the problem is either due to the options set in the Network Setup Menu or to the Token Ring network configuration itself.

For details on the test procedures, see “Details on the Diagnostic Tests” on page 3-3.

When to Use the Diagnostics

Use the diagnostic tests if you believe there is a problem with Token Ring-connected Network Printing. You might notice that jobs sent to the printer over the Token Ring connection fail to print, or no communication can be established with the printer over the Token Ring If any of these problems exist, perform the procedure described in “Running the Token Ring Diagnostics” on page 3-2.

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Problems with print quality or with communication over other connections are diagnosed with separate tests. See the *IBM Network Color Printer Operator's Guide* for information on diagnosing such problems.

Running the Token Ring Diagnostics

Use the following procedure to run Token Ring diagnostics.

1. Check that the printer is offline (the **Online** light is not on). If the printer is not offline, press the **Online** push button.
2. Press the **Menu** push button. You see SELECT FUNCTION on the first line of the display panel and RUN SETUP on the second line.
3. Press the **Enter** push button. If your system administrator has set a password for the Run Setup menu, you must enter that password now.
4. You see SETUP MENU on the first line of the display panel and PRINTER SETUP on the second line. Use the Menu Scrolling push buttons to scroll through the menus until NETWORK SETUP appears on the second line of the display panel.
5. Press the **Enter** push button. NETWORK SETUP moves to the first line of the display panel, and you see NETWORK TYPE on the second line.
6. Use the Menu Scrolling push buttons to scroll through the menus until TR DIAGNOSTICS appears on the second line of the display panel.
7. Press the **Enter** push button. RUN TESTS displays on the first line. Use the Menu Scrolling push buttons to display YES on the second line.
8. Press the **Enter** push button. TEST RUNNING PLEASE WAIT displays on the display panel, and the diagnostic tests start.

The tests take less than one minute to complete. When the tests have completed, either an error code or PASSED will appear in the display panel. See the following table for the action to take.

Table 3-1. Diagnostic Test Messages and Actions

Message	Description	Action
PASSED	The Token-Ring card and its physical connections have passed the test.	There are two likely causes of the problem you have noticed. One is that the Token-Ring card configuration, set on the printer display panel, is incorrect. See Chapter 2, "Configuring the Printer for Token-Ring Operation" for information and instructions on setting up the Token-Ring card. Review the settings for SPEED (MB/S), MAC ADDRESS, MAX. FRAME SIZE, and SOURCE ROUTING, and the settings for Novell or TCP/IP as appropriate, with your system administrator. Another possible cause is the Token Ring network itself. Contact your system administrator if further problem isolation of the network is required.
842	The Transmit and Receive part of the test has failed, indicating an ***unreliable connection*** between the card and the ring.	Check the cabling and connections between the Token-Ring card and the Token-Ring network.
844	There is a ***bad connection*** as no data can be transmitted between the card and the ring.	Check the cabling and connections between the Token-Ring card and the Token Ring network.
846	The card has failed to initialize.	Replace the Token-Ring card.
848	The controller failed to communicate with the Token-Ring card.	Replace the Token-Ring card. If the problem continues, call technical support.

Details on the Diagnostic Tests

The Token Ring diagnostic test consists of three parts:

- Hardware Test
- Initialization Test
- Transmit and Receive Test

The Hardware Test: This test consists of three parts:

- Card existence
- Card register I/O
- Card memory

The card register subtest checks basic communication from the motherboard to the adapter. The card memory subtest checks the ability to store received and transmitting frames.

Initialization Test: The initialization test consists of two parts. The first part tests microcode initialization of the Token Ring controller chip. The second part tests basic communication with the network by sending out one frame to the Token Ring and receiving it back.

Transmit and Receive Test: This test transmits 10 frames to the network, receives them back, and compares the received packets to the original packet. This is the last test performed, and if it passes, it ensures reliable operation of the Token-Ring card and of its direct connection to the Token Ring network.

Appendix A. Using the Operator Panel

This appendix describes how to use the operator panel and includes a copy of the printer's help map. Use the lights and push buttons on the operator panel to control the printer and to learn its status.

Figure A-1 shows the operator panel and a description of each of its parts.

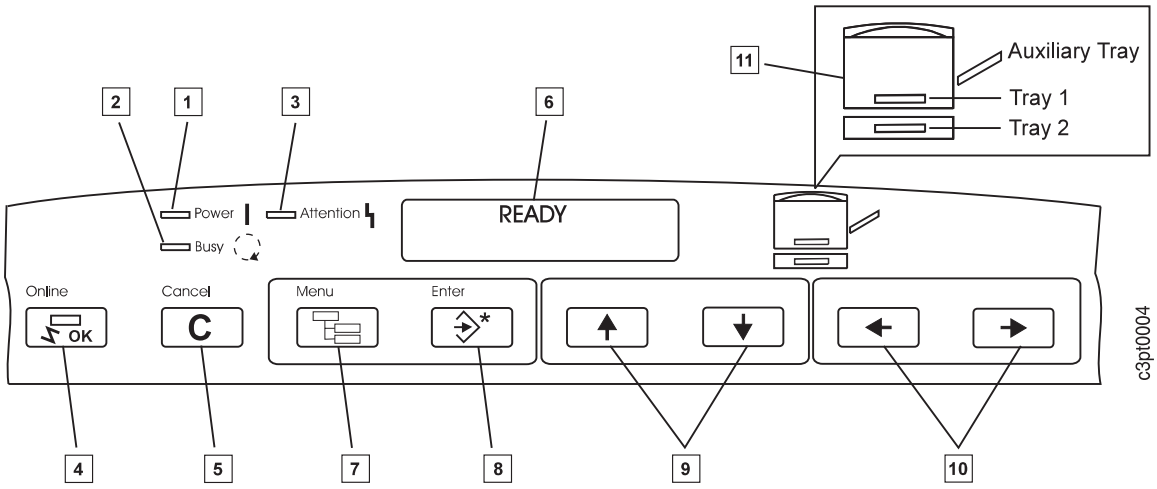

Figure A-1. IBM Network Color Printer Operator Panel

Lights

1 Power

The **Power** light is green. When it is lit, the printer is on.

2 Busy

The **Busy** light is green. When it is lit, the printer is processing or printing a job.

3 Attention

The **Attention** light is yellow. It flashes to alert you to an error or warning condition.

Online Push Button and Light

4

Press the **Online** push button to take the printer online or offline. Online means that the printer is communicating with the network. Offline means that the printer is not communicating with the network.

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When you take the printer offline,

- A job that is printing finishes printing before the printer goes offline.
- A job that is spooling to a queue finishes spooling before the printer goes offline.
- The printer does not accept jobs to be spooled or printed.

Press the **Online** push button to take the printer online again.

The **Online** light shows the status of the printer. This table tells you what each kind of Online light means.

Light	What it means
Solid green	The printer is processing or printing a job or communicating with a remote computer (for example, through the printer Spooler utility).
Flashing green	The printer is preparing to go offline.
Off	The printer is offline or is starting up.

Cancel Push Button

5

Press the **Cancel** push button to stop printing the current job. If no job is printing, pressing the **Cancel** push button deletes the oldest job from the printer's queue.

Display Panel

6

The display panel tells you about the status of the printer, shows menu information, and enables you to view and edit information to configure the printer.

You can see three types of messages on the display panel: error messages, status messages, and warning messages. See the *IBM Network Color Printer Operator's Guide* for a description of each of these message types.

Control Push Buttons

7 through 10

Menu 7

Press the **Menu** push button to see menus on the display panel.

This table shows you the relationship between the online/offline status and the function of the **Menu** push button.

When you are.....	Press the Menu push button to...
Online	Access the Print Pages menu
Offline and not in any menu	Enter the Setup menu
Offline at the top level of a menu	Exit the Setup menu
Inside a menu, displaying an item	Go up 1 level in the menu structure

Enter **8** Use the **Enter** push button as shown in the following table.

When you...	Press the Enter push button to...
See the **Attention** light flash but there is no error message on the display panel	See 1 or more warning messages
See warning messages on the display panel	See the current status message
See a Setup menu	Choose the menu on line 2 of the display panel and access the next level of menus
See a menu setting	Make that setting the current one. The current setting has an asterisk (*) in column 1 of the display. When you exit the Setup menu, answer YES to the SAVE CHANGES message to save that setting.

Menu Scrolling **9**

These arrows are called the Menu Scrolling push buttons in this publication. Use the Menu Scrolling push buttons to scroll through a menu and the settings in a menu. The up push button (↑) shows the previous menu or setting; the down push button (↓) shows the next menu or setting.

If you see a warning message with a (+) in the rightmost column of the display, you also can use these push buttons to display additional warning messages.

Cursor Position **10**

These arrows are called the Cursor Position push buttons in this publication. Use the Cursor Position push buttons to enter text and numbers for some menu settings (such as a password or a numeric setting). The right push button (→) moves the cursor one position to the right. The left push button (←) moves the cursor one position to the left.

Paper Source Lights **11**

The paper source lights show whether the paper is coming from tray 1, tray 2, or the auxiliary tray.

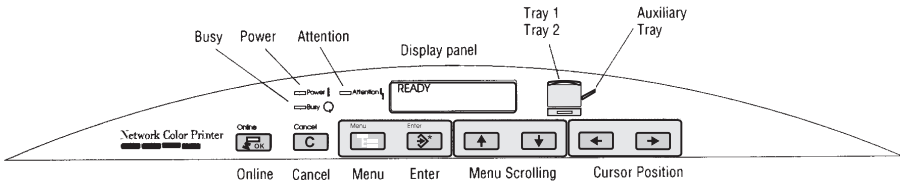
Printing a Configuration Page

To print a configuration page:

1. Check that the printer is online (the **Online** light is on). If the printer is not online, press the **Online** push button.
2. Check that the **Attention** light is not on. If it is, refer to the section on operator messages in your *IBM Network Color Printer Operator's Guide* and take appropriate action.
3. Press the **Menu** push button. PRINT PAGES displays on the first line of the display panel.
4. Use the Menu Scrolling push buttons to scroll through the Print Pages menu until CONFIGURATION displays on the second line of the display panel.
5. Press the **Enter** push button. Several messages appear on the display panel that tell you what the printer is doing until the Configuration Page is printed. READY is displayed when the print job is finished.

IBM Network Color Printer

Help Map
page 1 of 3



Button functions

	When printer is online	During Setup
Online	Toggles to take printer on and off the network	None
Cancel	Stops printing the current job, if any	None
Menu and Enter	Menu displays the Print Pages menu. When offline or during powerup, starts Setup	Menu displays previous level in menu. At top level, prompts to exit Setup
	In Print Pages menu, Enter selects current choice and proceeds. When Attention light is flashing, displays any warning message. Then toggles between status and warning message.	Enter selects menu or accepts menu item or setting and proceeds to next item
Menu Scrolling	In Print Pages menu, Menu scrolling keys display other pages. If Attention is flashing, and + appears at right of display panel, they display additional warning message(s).	Scroll to display menu items or settings.
Cursor Position	None	Backspace or advance cursor for text entry

Panel lights

Tray 1 Tray 2 Auxiliary Tray	Tray light indicates default paper source, or paper source requested by current print job
Power	Power light indicates that printer is getting power
Attention	Attention light alerts you to check the display panel for error or warning message. Pressing Enter displays warning message.
Busy	Busy light indicates that printer is processing or printing a job
Online	Online light is lit when printer is online to the network, flashing when offline is pending, and off when printer is offline

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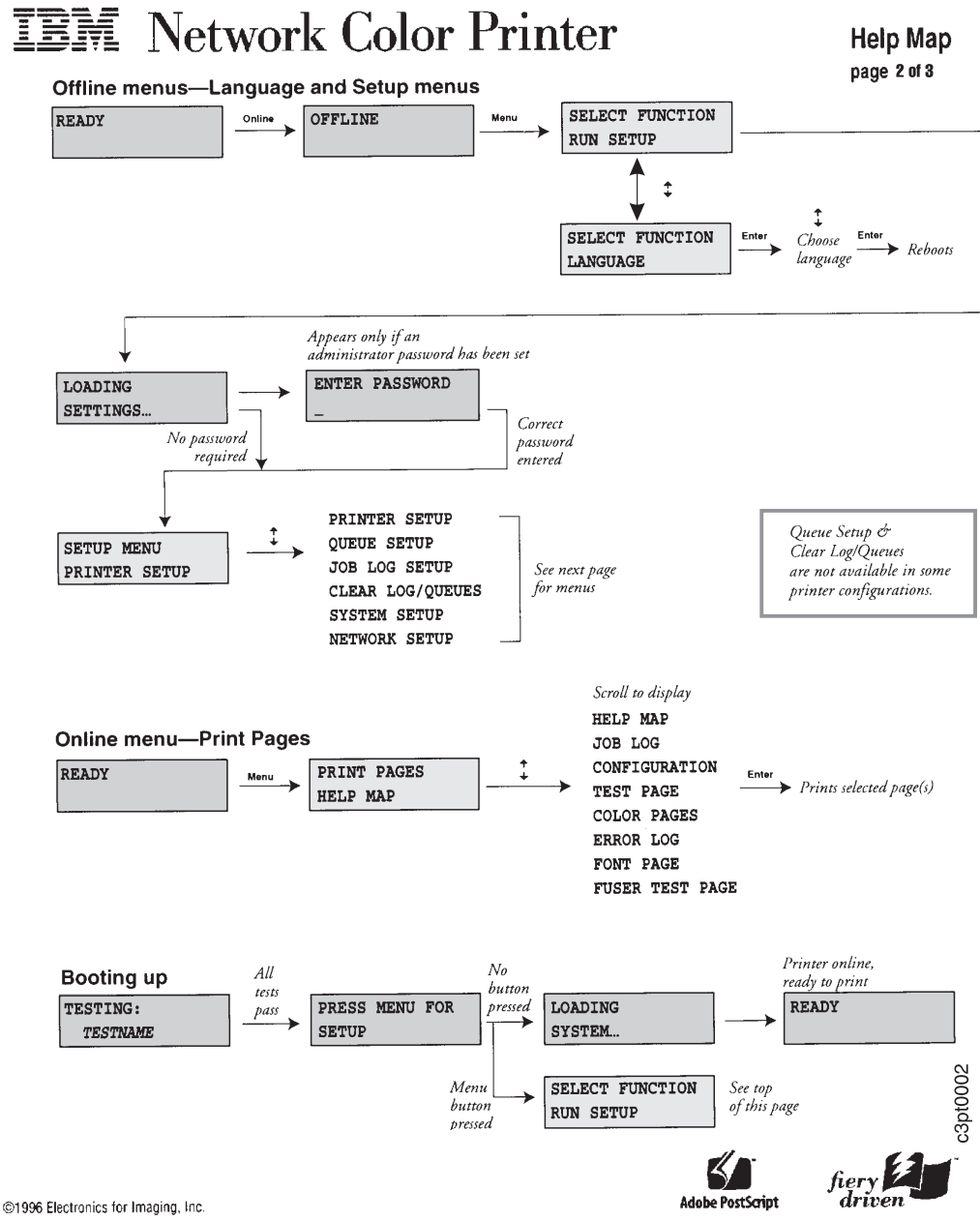
IBM Network Color Printer
Help Map
page 2 of 3
Offline menus—Language and Setup menus
READY
Online
OFFLINE
Menu
SELECT FUNCTION
RUN SETUP
SELECT FUNCTION
LANGUAGE
Enter
Choose language
Enter
Reboots
Appears only if an administrator password has been set
LOADING SETTINGS...
ENTER PASSWORD
_
No password required
Correct password entered
SETUP MENU
PRINTER SETUP
PRINTER SETUP
QUEUE SETUP
JOB LOG SETUP
CLEAR LOG/QUEUES
SYSTEM SETUP
NETWORK SETUP
See next page for menus
Queue Setup & Clear Log/Queues are not available in some printer configurations.
Online menu—Print Pages
READY
Menu
PRINT PAGES
HELP MAP
Scroll to display
HELP MAP
JOB LOG
CONFIGURATION
TEST PAGE
COLOR PAGES
ERROR LOG
FONT PAGE
FUSER TEST PAGE
Enter
Prints selected page(s)
Booting up
TESTING:
TESTNAME
All tests pass
PRESS MENU FOR SETUP
No button pressed
LOADING SYSTEM...
Printer online, ready to print
READY
Menu button pressed
SELECT FUNCTION
RUN SETUP
See top of this page
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IBM Network Color Printer

Help Map
page 3 of 3

Setup menus

PRINTER SETUP
- PAPER SOURCE
- PAPER SIZE
- COLOR MODE
- PRINT COVER PAGE
- PRINT TO PSERROR
- PRINT START PAGE

QUEUE SETUP
- ENABLE PRINT Q
- ENABLE DIRECT Q
- ENABLE HOLD Q
- ENABLE PRINTED Q
- JOBS TO SAVE

JOB LOG SETUP
- AUTO PRINT
- AUTO CLEAR

CLEAR LOG/QUEUES
- CLEAR LOG/QUEUES
- CONFIRM CLEAR

SYSTEM SETUP
- PRINTER NAME
- DATE (MM/DD/YY)
- SYSTEM TIME
- CHANGE PASSWORD
- POWER SVNGS (M)

Menu scrolling (arrow) keys *display other options*
Enter *key accepts current selection*
Menu *key displays higher level menu*
When you have completed setup, press the Menu key until you are prompted to exit setup, and save changes.

NETWORK SETUP
NETWORK TYPE*

↕ →

- NETWORK TYPE*
- NOVELL SETUP
- TCP/IP SETUP
- PARALLEL SETUP
- APPLETALK SETUP
- TR DIAGNOSTICS*

*NETWORK TYPE *and* TR DIAGNOSTICS *appear only if Token Ring hardware is installed; otherwise Ethernet is assumed, and* NOVELL SETUP *is the first option*

NETWORK TYPE
- TOKEN RING
  - SPEED (MB/S)
  - MAC ADDRESS
  - MAX. FRAME SIZE
  - SOURCE ROUTING
    - SEND REQUEST BY
    - RESPOND BY
- ETHERNET

NOVELL SETUP
- ENABLE NOVELL
- IPX FRAME TYPE
- IPX SETTINGS
  - VIEW
    - CONNECTED SERVRS
  - CHANGE
    - AVAILABLE SERVRS (YES)
    - PRINT SERVER
    - IPX POLL INT
    - SELECT QUEUE
    - SELECT FS

If the printer supports multiple Novell servers, set up each Novell server (up to three)

TCP/IP SETUP
- ENABLE TCP/IP
- IP ADDRESS
- SUBNET MASK
- GATEWAY ADDRESS

PARALLEL SETUP
- ENABLE PARALLEL
- TIMEOUT
- IGNORE EOF
- SELECT QUEUE

APPLETALK SETUP
- ENABLE APPLETALK
- APPLETALK ZONE

AppleTalk is not available if Token Ring is enabled

TR DIAGNOSTICS
- RUN TESTS

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Token-Ring Guide

Publication No. G544-5429-01

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