XEROX

Xerox 4219/MRP
Xerox 4215/MRP
Mid Range Systems Printers
Installation Planning Guide

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Xerox Corporation
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Changes are periodically made to this document. Changes, technical inaccuracies, and typographic errors will be corrected in subsequent editions.

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Notices

Installation caution

The Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers cannot be installed by customers. Only a Xerox service representative should install the equipment.

Safety

CAUTION: This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the installation requirements, may cause interference to radio communications.

U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at personal expense.

Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian department of communications.

Les present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils de Classe A prescitees dans le reglement sur le brouillage radioelectrique edicte par les ministre des communications du Canada.

Europe: 50 Hz, 220 to 240 V equipment

This equipment has been tested and certified in conformance with European commission directive 82/499/ECC and VDE 0871/0875, Class A, relating to radio frequency interference.

Laser safety

The 4219/MRP and 4215/MRP comply with appropriate safety standards.

Specifically regarding lasers, the equipment complies with laser product performance standards set by governmental, international and national agencies as a Class 1 laser product. It does not emit hazardous light; the beam is totally enclosed during all phases of customer operation and maintenance.

WARNING: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Warning labels

There are several user accessible Laser Safety Warning labels located on the printer. An example is shown below.

These laser warning labels are placed on panels that cover areas that are not operator serviceable. These panels are not to be removed.

Operational safety

Your Xerox equipment and supplies are designed and tested to meet strict safety requirements. These include safety agency examination, approval, and compliance with established environmental standards.

Attention to the following notes ensures the continued safe operation of your equipment.

Do this

Always connect equipment to a properly grounded power source receptacle. If in doubt, have the receptacle checked by a qualified electrician.

WARNING: Improper connection of the equipment grounding conductor can result in electrical shock.

Always place equipment on a floor or table with adequate strength for the weight of the machine.

Always have at least two people move or relocate the equipment.

Always use materials and supplies specifically designed for your Xerox equipment.

WARNING: Use of unsuitable materials may result in poor performance and can possibly create a hazardous condition.

Do not do this

Never attempt any maintenance function that is not specifically described in this document.

Never remove any covers or guards that are fastened with screws unless otherwise instructed. You cannot service areas within these covers.

Never override or "cheat" electrical or mechanical devices.

Never operate the equipment if you notice unusual noises or odors. Disconnect the power cord from the power source receptacle and call Xerox service to correct the problem.

U.S. only: If you need any additional safety information concerning the equipment or Xerox supplied materials, call the following toll-free number: **1-800-828-6571**.

Approvals and certification

60 Hz, 115 V Listed by Underwriters Laboratories, UL1950 (UL). Meets CSA standards, C22.2 NO 950 (CSA).

50 Hz, 220 to 240 V Meets the British Standards Institution, IEC950 (BSI).

Table of contents

Introduction

This guide helps you prepare for the installation of the Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers. Information is provided on each 4219/MRP and 4215/MRP component and its installation requirements.

About this guide

This guide directs the site planner in preinstallation procedures, as well as ongoing activities after the printer has been installed.

Contents

This guide contains the following chapters:

Chapter 1 "Overview" presents a general overview of the printer and its components.

Chapter 2 "Installation planning tasks" discusses preinstallation and installation planning tasks. It identifies areas of responsibility and the assignment of tasks. An installation countdown log is included.

Chapter 3 "Preinstallation" explains tasks that must be performed prior to installation to prepare the site. Electrical and environmental specifications are included in this chapter.

Chapter 4 "Connectivity" gives an overview of the connectivity possibilities by environment.

Chapter 5 "Preparing the installation checklists" guides you through the options listed on the installation checklists which you must complete prior to installation day.

Appendix A "Ordering fonts, options, and supplies" describes how to order fonts, describes the available printer options, and explains how to obtain Xerox service and supplies. A complete supplies and accessories list is included.

Appendix B "Interface support" discusses the interface support available for the printer.

Appendix C "Checklists" contains configuration checklists that help your Xerox service representative configure your 4219/MRP or 4215/MRP on installation day.

A glossary is also included at the end of this guide.

Conventions

This guide uses the following conventions throughout.

italics Italics are used for document and library names (for example, the *Xerox Coax Command Reference*).

WARNING: Warnings are associated with the safety of people.

1. Overview

The Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers connect directly to your IBM AS/400 mid range computer or IBM host system. The paper handling features support shared printer requirements.

Your printer accepts commands and data from an IBM coax or twinax host, depending on the interface card installed on the printer controller board.

This chapter describes standard and optional features, as well as those features uniquely designed to support the coax or twinax environments.

Standard features

Standard features of the printer include:

- Support for twinaxial or coaxial environments, depending on the interface card installed
- Emulation of IBM printers
- Support of popular industry standard print languages:
  - — IBM Standard SCS
  - — Hewlett-Packard Printer Control Language (PCL 5)
  - — Adobe PostScript Level 2
  - — Intelligent Printer Data Stream (optional)
- Xerox Configuration and Resource Utility that allows you to configure the printer twinax or coax interface through a menu-driven interface from your host system. This utility also downloads fonts and forms from the host system to the printer
- PS/PCL Sensing that allows the printer to switch automatically among the print languages, based on the print language of the incoming job in the data stream sent to the printer
- R-S232C serial interface
- Enhanced parallel port (Centronics)
- 105 fonts:
  - — 35 PostScript scalable fonts
  - — 8 scalable Hewlett-Packard IIISi fonts
  - — 7 bitmapped Hewlett-Packard IIISi fonts
  - — 55 IBM 3816 downloadable emulation fonts
- Multiple active ports, with sequential or priority servicing
- Connections for two optional I/O interfaces

- 300 x 300 dots per inch (dpi), 400 x 400 dpi, and high resolution 400 x 800 dpi available in Adobe PostScript Level 2 page description language (PDL)
- 300 x 300 dpi in PCL 5 printer language
- 300 x 300 dpi in SCS
- Xerox Print Enhancement Technology (PET) available in 300 x 300 dpi
- High-capacity output tray (approximately 500 sheets) with tray-full detection
- 4215/MRP only: one High Capacity Paper Tray (letter, 8.5 x 11 inches or A4 (210 x 297 millimeters) and one nonmotorized Letter or A4 Paper Tray. The 4215/MRP holds approximately 750 sheets in its standard configuration.

  4219/MRP only: three High Capacity Paper Trays (letter, 8.5 x 11 inches or A4, 210 x 297 millimeters) holding approximately 1,500 sheets in its standard configuration.
- 4215/MRP only: prints up to 15 letter or A4 pages per minute (ppm)

  4219/MRP only: prints up to 20 letter or A4 ppm
- Handles paper sizes from 8.5 by 5.5 inches up to 11 by 17 inches or A3.
- Prints on the following materials:
  - 16 to 32 pound (60 to 120 GSM) paper in the main trays
  - Transparencies
  - Labels
  - Letterheads
  - Drilled paper
  - Card stock (from Manual Feed slot)
  - Envelopes (from Manual Feed slot).
- Eight MB of memory expandable to 20 MB
- Customer replaceable supplies help keep maintenance simple.

Coax interface features

Your Xerox coax printer supports the following:

- IBM 9370 and 4381 host systems
- Coax Function Selection through Line (FSL) setup commands
- Support of SCS, DSC, 3270 Data Stream (LU1), PCL 5, PostScript Level 2 and Intelligent Printer Data Stream (option)
- Flash PROM downloading of new firmware from the Coax connector or shareport
- Emulation of the IBM printers listed below.

Table 1-1. **Xerox coax printer emulations**

Printer (Model)	Type	Speed	CPI	LPI	Character sets
3287 (1,2)	Dot-matrix	80/120 cps (models1/2)	10	3, 4, 6, 8	Various
3268 (2, 2C)	Dot-matrix	Up to 340 cps	10, 16.7	3, 4, 6, 8	Various
3262 (3, 13)	Band printer	Up to 650 lpm	10	3, 4, 6, 8	Depends on band mounted: 48—128 characters
3812/3816 (1, 2) Model 2-IPDS	Laser (240 dpi)	Up to 12/24 ppm	10, 12, 15, 17	3, 4, 6, 8	User selectable with 61 standard fonts
4028 (NS1)	Laser (300 dip)	Up to 10 ppm	N/A	N/A	Various fixed pitch and typographic with 32 resident
4214 (1)	Dot-matrix	Up to 200 cps	5, 10, 12, 15, 16.7	3, 4, 6, 8	Various
4245 (D12, D20)	Band printer	1,200/2,000 lpm (D12/D20)	10	3, 4, 6, 8	Depends on band mounted: 48—142 characters
6262 (D12, D14, D22)	Band printer	1,200/1,400/ 2200 lpm (D12/D14/ D22)	10	3, 4, 6, 8	Depends on band mounted: 48—192 characters

Twinax interface features

The Xerox twinax printer supports the following:

- IBM AS/400 mid-range computer, System/36, and System/38 host systems
- Operation in the EBCDIC mode and guarantees compatibility with the AS/400 and host mainframe packages
- Twinax Function Selection via Line (FSL) setup commands
- Emulation of the IBM printers listed below.

Table 1-1. **Xerox twinax printer emulations**

Printer (Model)	Type	Speed	CPI	LPI	Character sets
3812/16 (in 5219 emulation mode)	Laser (240 spi)	12/24 ppm	10, 12, 15 proportional	4, 5.33, 6, 8, 9, 12	User selectable with 62 fonts
4028 (AS1)*	Laser	10 ppm			Various fixed pitch and typographic with 32 resident
4234 (2, 12, 13)	Dot-band	410 lpm	10, 15	3, 4, 6, 8, 9 (*n*/288")	Depends on band mounted: 198 characters
4245 (T12, T20)	Band printer	2,000 lpm	10	6, 8	Depends on band mounted: 48 to 142 characters
5219 (D01, D02)	Daisywheel	24-38 cps	10, 12, 15 proportional	4, 5.33, 6, 8, 9, 12, 24, 48	Depends on daisy-wheel mounted
5224 (1, 2)	Dot-matrix	60-240 lpm	10, 15	3, 4, 6, 8	Various with 96 and 188 characters
5225 (1, 2)	Dot-matrix	90-400 lpm	10, 15	3, 4, 6, 8	Various with 96 and 188 characters
5256 (1, 3)	Dot-matrix	120 cps	10	6, 8	Various with 96, 128, and 188 characters
6262 (T12, T14)	Band printer	1,400 lpm	10	3, 4, 6, 8	Depends on band mounted: 48 to 192 characters

*The 4028 supports IPDS data stream only.

Optional features

Optional printer features include:

- Memory upgrades to 12 and 20 MB total.

Printer components

Figure 1-1 shows the front and left side exterior view of the printer. The printer components are identified in the text below the figure. Each component is identified by a number in the figure.

Figure 1-1. **Printer components—front view**

1 Top cover/output tray
2 Front cover
3 Roller cover
4 Face-up Output tray
5 Paper trays
6 Power switch
7 Power cord connector
8 Power cord cover
9 Control panel
10 Top cover release latch

Figure 1-2 shows the rear view of the printer. The printer components are identified in the text below the figure. Each component is identified by a number in the figure.

Figure 1-2. **Printer components—rear view**

1 Manual feed tray
2 Rear paper access covers
3 Parallel port connector
4 Serial port connector
5 Paper support wire
6 Blank covers for printer interface connectors
7 Connector for future expansion

2. Installation planning tasks

Successful installation depends upon you and Xerox. This chapter outlines responsibilities for the various Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers installation tasks.

Xerox responsibilities

Your Xerox sales representative, analyst and service representative help you with the installation of your printer. This section lists the responsibilities for Xerox representative.

Xerox sales representative or analyst

The following is a list of responsibilities for your Xerox sales representative or analyst, prior to, during, and after installation:

- Assists in printer site selection.
- Orders the proper configuration based on your requirements.
- Orders the 5.25" diskette (for twinax) or the 9-track reel-to-reel tape (for coax) if you require them instead of the standard media shipped with the printer for the Xerox Configuration and Resource Utility.
- Identifies the necessary third-party connectivity hardware to support your operating environment.
- Assists in determining the proper communication interface for your host computer system.
- Assists in completing the default selection checklists contained in this guide.
- Monitors the progress of your installation tasks to ensure a successful installation.
- Arranges with Xerox administration to schedule a delivery date for the printer.
- Assists in placing the initial order of supplies and accessories.

Xerox service representative

The following is a list of responsibilities for your Xerox service representative, during and after installation:

- Installs the printer and performs initial system configuration.
- Performs maintenance on the printer which is not part of routine operator maintenance.

Your responsibilities

Work with your Xerox sales representative or analyst to plan and schedule the following installation activities:

- Establish a compatible operating environment for your host computer system and printer:
  - — Ensure that all electrical and space requirements are met.
  - — Ensure that the correct interface cable is available.
  - — Order the necessary third-party connectivity hardware to support your operating environment.
- Plan and schedule installation activities:
  - — Order paper, supplies, and accessories.
  - — Select, order, and load any optional fonts.
  - — Complete the preinstallation checklists, located in the "Checklists" appendix, prior to printer installation. Your Xerox service representative uses the checklists to configure the printer to your operating environment.
  - — Arrange with Xerox administration to schedule a delivery date for the printer.

The appropriate representative of your company also needs to complete the following activities:

- Designate one or more persons in your organization as your printer operator. Printer operators are trained by your Xerox sales representative or analyst, and are responsible for the care and maintenance of your printer.
- Designate one or more persons in your organization to maintain printer supplies. This person may also be the printer operator.
- Install and maintain the host operating system. Refer to the *Xerox Twinax Command Reference* or the *Xerox Coax Command Reference* (as appropriate) for information on installation and operation procedures for the 4219/MRP or 4215/MRP within a twinaxial or coaxial environment.

Installation countdown log

To help you in planning for the installation of your printer, an installation countdown log is provided. Refer to table 2-1 which summarizes the tasks that must be performed, and when they should occur in the four-week time period prior to installation day.

Use the log as a guide to ensure a successful installation. If you have any questions, please contact your Xerox sales representative.

Table 2-1 follows the conventions listed below:

- The **Week prior to installation** column shows the approximate time an activity should occur in relation to the installation date. For example, "– 4" is four weeks prior to installation.
- The **Responsibility** column identifies who should complete the task.
- **Date completed** is the date the task was completed.

N **Note:** Indicated time frames are intended to serve as guidelines only. Please consult your suppliers to determine exact lead times.

Table 2-1. **Installation countdown log**

Week prior to instal-lation	Tasks	Responsibility	Date completed
– 4	Request 4219/MRP 4215/MRP font samples if required.	Customer	_____
	Schedule the printer delivery date.	Xerox	_____
	Order custom fonts and any modifications to existing fonts if required. Depending on lead times, custom fonts may take up to 6 weeks for delivery.	Customer	_____
– 3	Select the site.	Customer/Xerox	_____
	Prepare the site:	Customer	
	• Space requirements		_____
	• Electrical requirements		_____
	• Environmental requirements		_____
	Order interface accessories, cables, other media for utilities (if applicable):	Customer/Xerox	
	• Gender changer		_____
	• Third-party network cables (such as twinaxial, coaxial, parallel or serial interface cables)		_____
	• Special order media if required for Xerox Resource Utilities		_____
	Order the *Xerox Customer Documentation Catalog*	Customer	_____
	Order licensed fonts	Customer	_____
– 2	Order consumable supplies:	Customer/Xerox	
	• Paper		_____
	• Toner cartridges		_____
	Select operator	Customer	_____
	Order additional accessories and options	Customer	_____
– 1	Complete applicable checklists found in the “Checklists” appendix	Customer/Xerox	_____
– 0	Configure twinaxial or coaxial operating system to connect the printer.	Customer	_____

3. Preinstallation

Although the Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers have interfaces that are not customer installable, the following specifications help you plan for or change the location of the printer.

Use the information in this chapter to complete *Checklist 1: Site preparation* and *Checklist 2: Twinax and Coax interface configuration* located in the "Checklists" appendix.

Delivery requirements

As you consider where to place the printer, do not forget to plan for its delivery. Answer the questions listed below, and notify your Xerox sales representative of any potential delivery problems.

- Is the printer going to be upstairs?
- Is there an elevator large enough to accommodate the printer?
- Do you have a loading dock or a specific door to which the printer should be delivered?

4219/MRP 4215/MRP dimensions

The dimensions for the printer are shown in figure 3-1 to help you plan for delivery and placement of the 4219/MRP or 4215/MRP.

You can also use figures 1-1 and 1-2 in the "Overview" chapter, which show tray positions and cabling, as an additional visual aid as you plan the placement of the printer.

Be sure the printer is placed on a level surface. A fully configured printer weighs 83 pounds (40kg); therefore, you need to place it on a surface that can support this weight.

Space requirements

The following space requirements should be considered when planning a location for the printer.

Figure 3-1 is a top view of the printer. These are the minimum space requirements needed for operation and maintenance. Front and right area must provide standing room access to allow for clearance of paper jams and servicing of the printer.

The height requirement from the floor to the nearest overhead obstruction within the specified space is a minimum of 78 inches (198 cm).

Figure 3-1. **Space requirements for operation (top view)**

Electrical requirements

Table 3-1. **Electrical requirments**

Location category	Voltage	Current/power
U.S. and Canada	115, 60Hz	8 Amps
International	220/240, 50Hz	4 Amps

Voltage to the printer should not vary by more than 10 percent.

N **Note:** Momentary loss of power causes loss of downloaded fonts in random access memory (RAM) and places the printer in standby mode.

Operating environment

Table 3-1. **Operating environment**

Temperature	Humidity	Altitude
10° to 32° C 50° to 90° F	15 to 85%	Up to 10,000 feet or 3,000 meters above sea level

If your site altitude differs from the requirements stated above, your printer may need special adjustment by your Xerox service representative. Contact your sales representative or analyst to schedule any required adjustments.

Noise level

Continuous printing: 53 dB

Standby: 40 dB

Special configurations

A Xerox service representative can configure your printer for the following features on installation day:

- Twinax emulation
- Twinax address
- Twinax/coax default page size
- Twinax printer language

Use the descriptions in the following sections to complete *Checklist 2: Twinax and Coax interface configuration* which is included in the "Checklists" appendix.

Coax interface configurations

Use the information in this section to complete the "Coax interface default settings" section of *Checklist 2: Twinax and Coax interface configuration*.

Do not attempt to change the printer's interface hardware configuration after installation.

Unlike the twinax environment, the coaxial default printer language and default printer emulation can only be set through the Function Selection via Line (FSL) commands. Refer to the *Xerox Coax Command Reference* for further information on FSL commands.

Page size

The default page size is set by your Xerox service representative. Your choices are:

- U.S. (8.5x11 inches)
- A4 (8.27x11.69 inches).

Twinax interface configurations

The twinax interface card requires four default configuration settings:

- Printer emulation
- Printer language
- Page size
- Device address.

Each of these settings is described below.

Use the information in this section to complete the "Twinax 4219/MRP 4215/MRP interface default settings" section of *Checklist 2: Twinax and Coax interface configuration* in the "Checklists" appendix.

N **Note:** The printer emulation, printer language, and page size settings described in this section can also be set through FSL commands. Refer to the *Twinax Command Reference* for further information.

Printer emulation setting

The printer's interface card device address switch is used in conjunction with the test button to set the required printer emulation. The device address switch and test button are located on the twinax interface card. Tables 3-1 and 3-2 list the options for the twinax and twinax IPDS printer emulations, respectively.

Table 3-1. **Twinax printer emulation settings**

Address	Printer emulation
0*	3812/5219/3816 SCS printers
1	5224 SCS printer
2	5225 SCS printer
3	5256 SCS printer
4	4234 SCS printer
5	3812/5219/3816 SCS printers
6	4245/6262 SCS printer

* Default setting

Table 3-2. **Twinax IPDS printer emulation settings**

Address	Printer emulation
0*	3812/5219/3816 SCS printers
1	5224 SCS printer
2	5225 SCS printer
3	5256 SCS printer
4	4234 SCS printer
5	IPDS printer
6	4245/6262 SCS printer

* Default setting

You can change the printer emulation setting at any time. Refer to the "Configuring the interface card" chapter in the *Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers Operator Guide* for further information.

Printer language switch setting

The default language is set on the twinax interface board. The twinax interface board can only be configured by your Xerox service representative. The following twinax language options are available for the twinax printer:

- Belgium
- Brazil
- Canada/France
- Denmark/Norway
- Finland/Sweden
- France
- Germany/Austria
- Great Britain
- Iceland
- International
- Italy
- Japan (English)
- Portugal
- Spain
- Spanish speaking
- United States/Canada.

DO NOT attempt to change the printer language switch after installation.

Page size

The default page size is set by your Xerox service representative when the printer language is set. Your choices are:

- U. S. (8.5x11)
- European A4 (8.27x11.69)

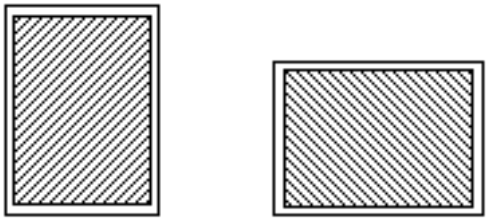
Printer device address

The device address switch sets the printer device address. Your Xerox service representative needs to know what device address has been assigned to the printer within your operating environment. Available options are device addresses 0 through 6.

The printer device address can be changed at any time after installation. Refer to the "Configuring the interface card" chapter in the *Xerox 4219/MRP 4215/MRP Mid Range Systems Printer Operator Guide* for further information.

Non-printable area

A border area on the outside edges of the paper is unavailable for printing. This space is approximately .17 inch (4.2 mm) on each side. Refer to the diagram below. The shaded area shows the image area.



4. Connectivity

The Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers can be connected in several different environments, including the following:

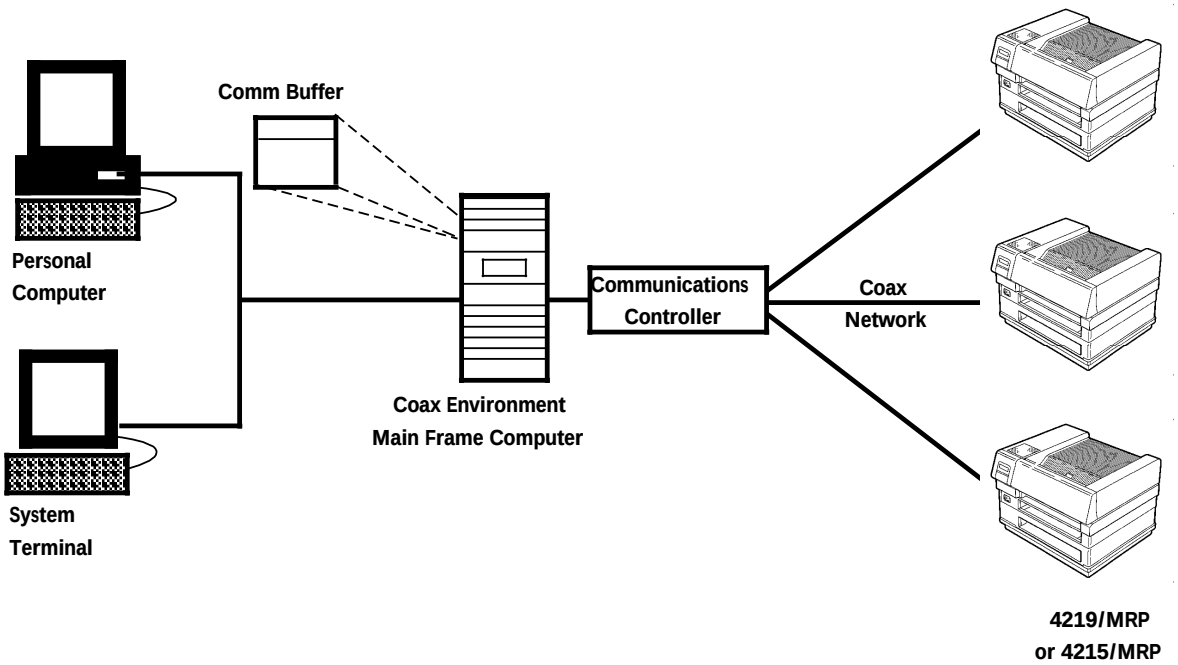
- Coaxial
- Twinaxial
- PC direct connect.

This chapter provides a visual overview of a typical configuration within each of these environments.

Coax environment

Figure 4-1 represents 4219/MRP 4215/MRP connectivity in a typical coax environment. Refer to the "Coax interface features" section of the "Overview" chapter for a complete listing of IBM printers that the printer can emulate with the coax interface.

Figure 4-1. **Coax connectivity**



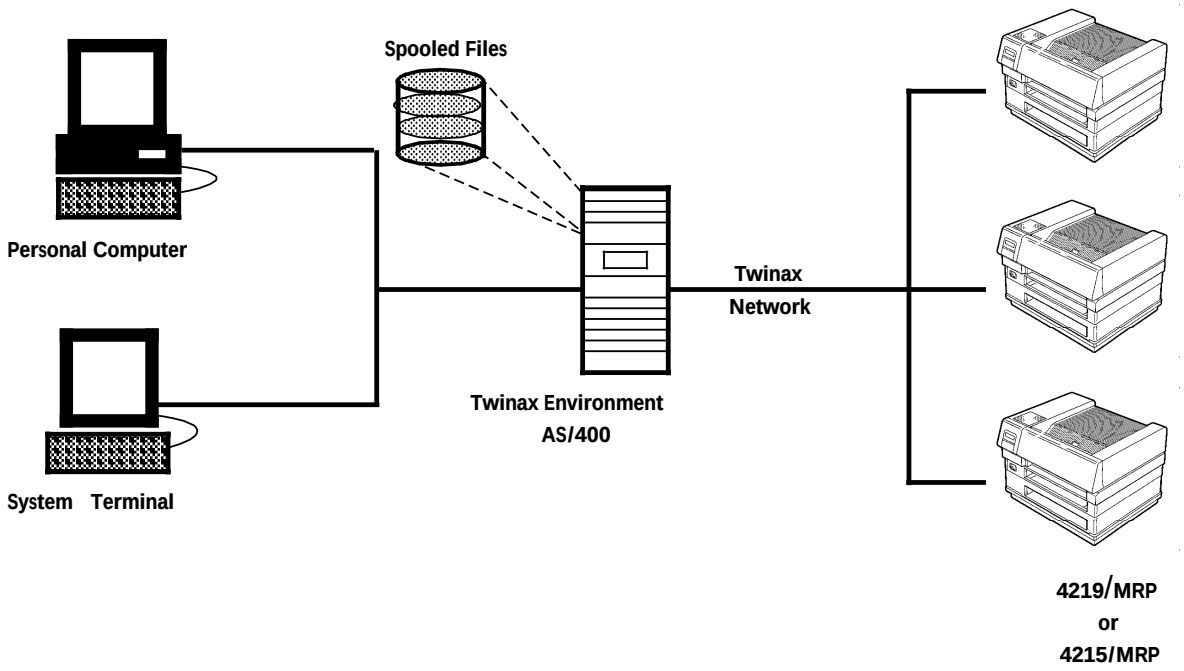
Make sure the following items are available at the time of installation:

- 4219/MRP or 4215/MRP
- Coax cables.

Twinax environment

Figure 4-2 represents 4219/MRP 4215/MRP connectivity in a typical twinax environment. Refer to the "Twinax interface features" section of the "Overview" chapter for a complete listing of IBM printers that the twinax printer can emulate.

Figure 4-2. **Twinax connectivity**



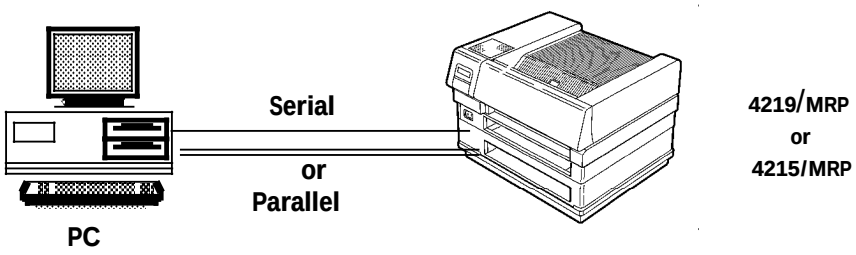
Make sure the following items are available at the time of installation:

- 4219/MRP or 4215/MRP
- AS/400 twinax cables
- T-cable connector provided with the twinax interface.

PC direct connect environment

Figure 4-4 represents the 4219/MRP and 4215/MRP in a PC direct connect environment.

Figure 4-4. **PC direct connectivity**

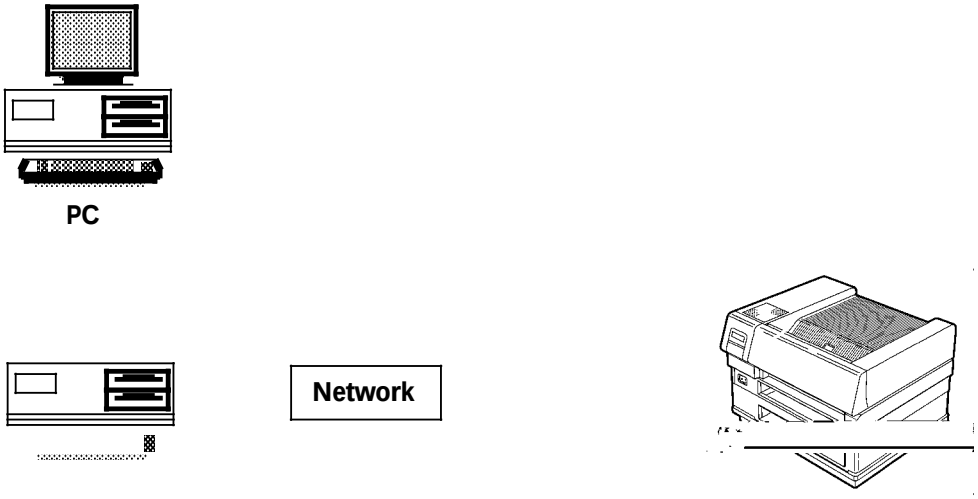


Make sure the following items are available at the time of installation:

- 4219/MRP or 4215/MRP
- Parallel or serial cable.

It is also possible to connect the 4219/MRP or 4215/MRP to a PC network with an external interface controller.

Figure 4-5. **PC network connectivity**



5. Preparing the installation checklists

This chapter explains the printing parameter options listed on the installation checklists numbered 3 through 6 in the "Checklists" appendix. Use this information as you complete the installation checklists. Your Xerox sales representative will assist you as needed. On installation day your Xerox service representative uses the checklists to configure your 4215/MRP and 4219/MRP Mid Range Systems Printers.

This chapter does not provide information on Checklists 1, 2, or 7. Refer to the "Preinstallation" chapter for information required to complete Checklists 1 and 2, and the "Ordering fonts, options, and supplies" chapter for information on checklist 7.

The printer options described in this chapter are configured through the 4219/MRP and 4215/MRP control panel and interface cards. Follow the procedures in the *Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers Operator Guide* to change initial printer settings, if necessary, at a later date.

To prepare the installation checklists, follow the steps below. Your Xerox sales representative will assist you.

1. Match the checklist title to the sections within this chapter.
2. Use the descriptions provided in this chapter as guidelines while you complete each checklist.

Completing Checklist 3: General setup

The printer setup options listed below allow you to define the User Interface display language and the input and output features of the 4219/MRP and 4215/MRP on *Checklist 3: General setup*.

Display Language Select one of the languages listed below as the default for the user interface:

- English (default)
- Francais (French)
- Español (Spanish)
- Italiano (Italian)
- Deutsch (German).

Tray select Allows you to select the default input paper tray:

- Upper (default)
- Middle (4219 only)
- Lower.

Automatic tray switching Allows you to enable or disable the automatic tray switching feature. When the primary tray is empty, the printer switches to another tray with the same size paper.

N **Note:** If the face up tray is installed all printer output will be directed to that tray.

Completing Checklist 4: Setup Printer—PCL 5 Setup

Orientation Allows you to select the default page orientation.

Portrait (default)
Landscape

Lines per page This is the maximum number of lines of data that the 4219/MRP and 4215/MRP will print on a page before moving to the top of a new page. Most applications will override this value.

Line Wrap This parameter determines if the printer should wrap lines of data which extend beyond the right margin.

Symbol set A symbol set is a unique subgrouping of all the available characters in a font. Each symbol set is designed with a specific application in mind. The default symbol set for PCL is Roman-8.

Font Allows you to select a default font for the HP LaserJet emulation. The available fonts are:

- Courier
- LinePrinter
- Times
- Universe.

Courier—If you select Courier as your default font, you can select from among these pitch, point size, and style combinations:

- 10 Pitch, 12 Point, Medium(default)
- 10 Pitch, 12 Point, Bold
- 10 Pitch, 12 Point, Italic
- 12 Pitch, 10 Point, Medium
- 12 Pitch, 10 Point, Bold
- 12 Pitch, 10 Point, Italic
- 12 Pitch, 10 Point, Italic

LinePrinter—If you select LinePrinter as your default font it will be 16.67 Pitch, 8.5 Point, Medium.

Times and Univers—If you select Times or Univers as your default fonts you can select one style (Medium, Bold, Italic, or Bold Italic) and a font size. The point size is entered from the keypad, within a range of 4.00 to 999.75 in increments of 0.25. (The default for Times and Univers is 12 point medium.)

Completing Checklist 5: Setup Printer—PostScript Resolution, Print Enhancement, Communications Priority, Panel Security

PostScript Resolution

The 4219/MRP and 4215/MRP can print PostScript at one of three resolutions. The available resolutions are:

- 800 x 400 dpi
- 400 x 400 dpi
- 300 x 600 dpi

Printing at a higher resolution will product sharper output but the printer will print somewhat slower. Printing at 800 x 400 resolution will usually take 20 to 30% longer that the same output at 300 x 300 resolution.

The PostScript Resolution setting has no effect on SCS, IPDS or PCL printing, which is always set to 300 x 300 dpi.

Print enhancement

Allows you to select smoothing (enhancement) of edges. Print enhancement will affect output in any printer emulation. The available options are:

- Dark
- Medium (default)
- Light
- Off.

Start-up page printing

Allows you to enable or disable the printing of the Start-up page at power up. This setting will not affect the printing of the Twinax or Coax configuration page. The Configuration pages will always be printed at power up until disabled using FSL 120.

Communications Priority

When two or more interfaces are active, the Interface priority feature selects the method the printer uses when checking the communications interfaces for incoming jobs.

Sequential
If enabled, no priority is assigned to any interface. Each printer interface (Serial, Parallel, and Other I/O {Twinax or Coax} is polled in turn).

Priority
If enabled, a particular active interface has priority over the other active interfaces when the system is checking for incoming jobs. When Priority is selected one interface is selected as the priority interface. This interface will get serviced first when two or more interfaces are active.

Sequential Lock and Priority Lock
These options are similar to Sequential and Priority except that upon completion of a print job the printer waits for seven seconds for an additional job to appear on the last active port before polling the other printer ports.

Panel Security

You can lock the printer control panel so changes to the printer settings are disallowed unless the printer is unlocked. Scrolling through the selections and printing reports and menu maps is still available.

You can access the lock feature from the printer keypad. The printer is locked or unlocked by pressing the Up and Down arrow keys in the following sequence:

An asterisk '*' appears each time you press an arrow key. Press Enter after the sequence.

You can restore the factory defaults to unlock the printer; however, all other original settings are also restored. Use this option only if you want to restore all factory defaults.

To restore factory defaults, press and hold Online and Help while turning on the printer.

Completing Checklist 6: Set Interface—Parallel, Serial, Other I/O

Parallel Interface

Enable interface Allows you to enable or disable the parallel interface. When disabled no jobs will be processed from the parallel interface.

Printer type Allows you to select the following settings:

- PS/PCL sensing (default)
- PostScript mode (Standard)
- HP LaserJet emulation mode
- PostScript mode (Binary)
- Hexadecimal dump mode
- PostScript mode (Tagged binary).

Serial asynchronous interface

Enable interface Allows you to enable or disable the serial interface. When disabled no jobs will be processed from the serial interface.

Printer type Allows you to select the one of the following Print Languages:

- PS/PCL Sensing (default)
- PostScript mode (Standard)
- HP LaserJet emulation mode
- PostScript mode (Binary)
- Hexadecimal dump mode
- PostScript mode (Tagged binary).

Flow control Allows you to set the communication protocol to one of the following:

- XON/XOFF (default communication protocol)
- Robust XON/XOFF
- DTR

For Robust XON/XOFF the printer will send an XON every second while waiting for data. Robust XON/XOFF is available only when the printer interface is set for PostScript mode.

Baud rate Allows you to select the baud rate for the serial interface.

Data width Allows you to set the word length to one of the following:

- 7-bit
- 8-bit (default).

Parity Allows you to set the parity at to one of the following:

- None (default)
- Odd
- Even.

DTR Polarity If DTR is selected for flow control the DTR polarity can be set either high or low.

Other I/O (Twinax or Coax) interface

Interface enablement Allows you to enable or disable the Twinax or Coax interface. When it is disabled no jobs will be processed from the Twinax or Coax interface.

Print language selection Allows you to select the following settings:

- PS/PCL Sensing (default)
- PostScript mode (Standard)
- HP LaserJet emulation mode
- PostScript mode (Binary)
- Hexadecimal dump mode
- PostScript mode (Tagged binary).

N **Note:** For 4215/MRP and 4219/MRP the Other I/O interface must be enabled and set for PS/PCL sensing.

A. Ordering fonts, options, and supplies

This appendix contains information relevant to ordering fonts, options, and supplies for your Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers in the United States and in other countries.

Ordering fonts

Numerous licensed fonts are available from Xerox. If you plan to use a font that is not a 4219/MRP or 4215/MRP system font, place your order so that the font diskettes arrive before your printer is installed. Fonts can be ordered on magnetic tape or diskette for downloading from your host computer system to the 4219/MRP and 4215/MRP

Magnetic tape fonts

The host computer system may transmit font data or digitized graphic images to the 4219/MRP and 4215/MRP. This data is stored in font data memory and invoked by job control commands inserted in the data stream.

Fonts provided by Xerox Font Services for downloading from your host computer system are contained on a standard 9-track, 1600 bits-per-inch, magnetic tape. One tape may contain several fonts. Individual font files are separated by tape marks. The last file on a tape is followed by a double tape mark.

Each tape package is accompanied by:

- Data sheets that list font names, record lengths, and the actual byte count of each file
- Character code assignment sheets
- Character width specifications.

Font diskettes

Fonts stored on diskettes can be downloaded from your PC to the 4219/MRP or 4215/MRP. A font diskette may contain more than one font.

Custom fonts

Xerox Font Services can create custom typefaces, special characters for existing fonts, and digitized artwork such as signatures and company logos.

These custom graphic images are available on magnetic tape or diskettes.

Ordering fonts in the United States

Call Xerox Font Services at **1-800-445-FONT (3668)** to place an order. The Xerox Font Services representative assists you in completing the necessary forms. The representative also answers your questions regarding literature, order status, or custom font specifications.

When calling Xerox Font Services, be prepared to give your customer order number (provided by your Xerox sales representative).

Xerox customer order number:_____

Write to the following address to order fonts or to request information:

Xerox Corporation
Font Services ESCP-126
701 South Aviation Boulevard
El Segundo, California 90245

The following chart shows the approximate time it takes to receive your order. A Xerox Font Services representative can give you a more precise delivery schedule.

Table A-1. **Time to place orders before installation day**

Time	Fonts
6 weeks	Custom fonts and alterations of existing fonts (thinning, scaling, etc.)
5 business days	Logos, signatures
3 business days	Licensed standard fonts

Ordering fonts in other countries

Contact your local Xerox sales representative to place an order. The Xerox representative assists you in completing the necessary forms. The representative also answers your questions regarding literature, order status, or custom font specifications.

Xerox Font Technical Support

In the United States, call the Xerox Font Technical Support Hotline at **1-800-445-FONT (3668)** to inquire about any technical font difficulties you may be experiencing. Business hours are 5:00 a.m. to 5:00 p.m. (PST).

RAM upgrades

The 4215/MRP and 4219/MRP are equipped with 4MB of base memory and one memory option of 4, 8, or 16MB. This brings the as-configured memory of a 4215/MRP or 4219/MRP to 8, 12, or 20MB.

The minimum supported memory size for operation of the 4215/MRP and 4219/MRP is 8MB. Additional memory will allow more space for the storage of resources such as fonts and forms.

Ordering Xerox supplies

The 4215/MRP and 4219/MRP use the following supplies:

- Paper
- Toner cartridge (also called a print cartridge)

The toner cartridge lasts 14,000 prints. The toner cartridge kit contains a print corotron and fuser wick that are replaced at the same time as the toner cartridge.

Use the part numbers listed in this appendix to complete *Checklist 7: Supplies*.

To order Xerox supplies and accessories, call the appropriate number from those listed in table A-2.

Table A-2. **Ordering Xerox supplies**

U.S.	**Canada**
1-800-822-2200	Toronto 416-733-9400 English-National 1-800-668-0199 French-National 1-800-668-0133 Fax 416-733-3086
Monday through Friday 8:15 a.m. to 5:00 p.m. (PST)	Monday through Friday 8:30 a.m. to 5:00 p.m. (local time)

Be prepared to give your customer order number (provided by your Xerox sales representative).

Xerox customer order number: _____

Supplies part number list

Table A-3. **Supplies part number list**

Item	Description	Part number
Paper (inches)	10 reams (5,000 sheets) per carton unless noted below.	
8.5 x 11	Image Series Dual Purpose Paper	3R2950
8.5 x 14	Image Series Dual Purpose Paper	3R2954
8.5 x 11	Image Series Dual Purpose Paper—3 hole	3R3016
8.5 x 11	Image Series Smooth Paper	3R54
8.5 x 14	Image Series Smooth Paper	3R83
8.5 x 11	4024 Dual Purpose Paper	3R721
8.27 x 11.69	4024 Dual Purpose Paper (A4)	3R2594
8.5 x 13	4024 Dual Purpose Paper	3R725
8.5x 14	4024 Dual Purpose Paper	3R727
8.5 x 11	4024 Dual Purpose Paper—3 hole	3R2193
8.5 x 11	4024 Dual Purpose Paper—4 hole	3R3008
8.5 x 11	4024 Dual Purpose Paper—7 hole	3R3010
8.5 x 11	4024 Dual Purpose Paper, 24-lb.	3R2531
8.5 x 11	4024 Smooth Paper	3R2675
8.5 x 14	4024 Smooth Paper	3R2677
8.5 x 11	Antique Parchment Paper—white (4000 sheets per carton)	3R2316
8.5 x 11	Antique Parchment Paper—gold (4000 sheets per carton)	3R790
8.5 x 11	Dual Purpose Colors—Blue	3R3052
8.5 x 11	Dual Purpose Colors—Blue, 3 hole	3R3068
8.5 x 14	Dual Purpose Colors—Blue	3R3084
8.5 x 11	Dual Purpose Colors—Green	3R3056
8.5 x 11	Dual Purpose Colors—Green, 3 hole	3R3072
8.5 x 14	Dual Purpose Colors—Green	3R3088
8.5 x 11	Dual Purpose Colors—Pink	3R3058
8.5 x 11	Dual Purpose Colors—Pink, 3 hole	3R3074
8.5 x 14	Dual Purpose Colors—Pink	3R3090
8.5 x 11	Dual Purpose Colors—Yellow	3R3054
8.5 x 11	Dual Purpose Colors—Yellow, 3 hole	3R3070

Table A-3. **Supplies part number list** (continued)

Item	Description	Part number
Paper (inches)		
8.5 x 14	Dual Purpose Colors—Yellow	3R3086
8.5 x 11	Dual Purpose Colors—Buff	3R3060
8.5 x 11	Dual Purpose Colors—Buff, 3 hole	3R3076
8.5 x 14	Dual Purpose Colors—Buff	3R3092
8.5 x 11	Dual Purpose Colors—Goldenrod	3R3062
8.5 x 11	Dual Purpose Colors—Goldenrod, 3 hole	3R3078
8.5 x 14	Dual Purpose Colors—Goldenrod	3R3094
8.5 x 11	Dual Purpose Colors—Ivory	3R3064
8.5 x 11	Dual Purpose Colors—Ivory, 3 hole	3R3080
8.5 x 14	Dual Purpose Colors—Ivory	3R3096
8.5 x 11	Dual Purpose Colors—Gray	3R3066
8.5 x 11	Dual Purpose Colors—Gray, 3 hole	3R3082
8.5 x 14	Dual Purpose Colors—Gray	3R3098
8.5 x 11	Dual Purpose Colors—Rainbow Pack * (3,500 Sheets per carton)	3R3107
8.5 x 11	Ring Tuff 3 hole Reinforced Binder Paper (3,000 sheets per carton)	3R4299
8.5 x 11	Never-tear Paper (100 sheets per box)	3R3118
8.5 x 11	Never-tear Paper, 3 hole (100 sheets per box)	3R3109
8.5 x 11	Image Series Elite	3R1950
8.5 x 14	Image Series Elite	3R1952
11 x 17	4024 Dual Purpose Paper (2,500 Sheets per carton)	3R729
210 mm x 297 mm	4024 Dual Purpose Paper (A4)	3R2594
5.5 x 8.5	Statement Paper	3R2072
8.5 x 11	Recycled Business Papers	3R3704 or 3R4535
8.5 x 11	Recycled Business Papers—3 hole	3R3706 or 3R4537
8.5 x 14	Recycled Business Papers	3R3708 or 3R4539

* Rainbow pack contains 750 sheets of 8.5" x 11" blue and yellow, 500 sheets each of green, and pink, and 250 sheets each of buff, goldenrod, gray, and ivory.

Table A-3. **Supplies part number list** (continued)

Item	Description	Part number
Paper (inches)		
8.5 x 11	65 lb. Cover Stock—White	3R3041
8.5 x 11	65 lb. Cover Stock—Blue	3R3044
8.5 x 11	65 lb. Cover Stock—Yellow	3R3045
8.5 x 11	65 lb. Cover Stock—Green	3R3046
8.5 x 11	65 lb. Cover Stock—Gray	3R3042
8.5 x 11	65 lb. Cover Stock—Ivory	3R3043
8.5 x 11	90 lb. Index—White	3R3004
Transparencies	Xerox transparencies are packaged 100 to a box. All transparencies are 8.5 x 11.	
Paper backed		
	Clear	3R3028
	Blue	3R3112
	Rainbow	3R3115
Duplicator transparencies		
	Clear with white edge stripe	3R2780
	Completely clear (with no stripe or backing)	3R3117
	Removable paper stripe	3R3108
	Removable paper stripe—blue	3R3515
	Removable paper stripe—clear	3R3516
Labels, (self-adhesive)	All labels are on 8.5 x 11 sheets, 100 sheets to a box.	
Standard		
	33 labels per sheet	3R4469
	24 labels per sheet	3R4471
	8 labels per sheet	3R4472
	Nonperforated sheet	3R4473
High speed		
	33 labels per sheet	3R3139
	6 labels per sheet	3R3146

4219/MRP and 4215/MRP options supplies list

Table A-4. **Options supplies list**

Item	Description	Part number
Toner Cartridge Kit	Contains Toner Cartridge (Also referred to as a Print cartridge), Corotron, and Fuser wick.	106R53*
Cables-Serial	All RS232 serial cables are male to male, 25 pins at each end.	
RS232: 10-feet (3-meters)	For connecting to an IBM PC	9R80970
RS232: 15-feet (4.5-meters)	For connecting to an IBM PC	9R80252
RS232: 25-feet (7.5-meters)	For connecting to an IBM PC	9R80254
Cables-Parallel		
Centronics: 10-feet (3-meters)	Parallel cable for PC environments	9R89336
Memory options		
4MB Memory kit	Expands the total printer memory to 8MB	97K13130
8MB Memory kit	Expands the total printer memory to 12MB	97K13140
16MB Memory kit	Expands the total printer memory to 20MB	97K13150

* 106R53 will be available May,1994. 106R55 will be shipped as an alternate until then.

Table A-5. **Installation/Documentation Kits**

Item	Description	Part number
Xerox 42XX/MRP Twinax Interface Installation Kit	AS/400 Resource Utility (3.5“ DS-HD) AS/400 Font Set (3.5“ DS-HD) Twinax Command Reference (Standard supplied with your order)	673S00005
Xerox 42XX/MRP Twinax Utility Option Kit - 5.25“ HD (1.2MB) Diskette	AS/400 Resource Utility (5.25“ DS-HD) AS/400 Font Set (5.25“ DS-HD) (Alternate by special order)*	673S00005A
Xerox 42XX/MRP Twinax Utility option Kit - 6150 1/4“ data cartridge	AS/400 Resource Utility and Font Set (6150 1/4“ data cartridge) (Alternate by special order)*	673S00005B
Xerox 42XX/MRP Coax Interface Installation Kit	Host Resource Utility and Font Set (3480 1/2“ tape cartridge) Coax Command Reference (Standard supplied with your order)	673S00006
Xerox 42XX/MRP Coax Utility Option Kit - 9 track computer tape on reel	Host Resource Utility and Font Set (9 track computer tape on reel) (Alternate by special order)*	673S00006A

*See Checklist 1: Site Preparation

B. Interface support

The Xerox 4219/MRP and 4215/MRP Mid Range Systems Printers are delivered standard with the following interfaces:

- IBM coax or twinax
- RS232C serial
- Centronics parallel.

The 4219/MRP or 4215/MRP supports simultaneous communication; that is, the printer can receive data on all interfaces simultaneously.

You must supply the interface cable to connect the printer to your host computer system. Shielded signal cables must be used with this equipment to maintain compliance with FCC regulations.

Coax interface

If you select a coaxial interface, the coax interface card is plugged in to the printer motherboard. The card is configured to your specifications by your Xerox service representative when the printer is installed. The side panel of the coax network interface card includes a coaxial connector, a parallel port, a CU LED, and a test button. Also located on the network interface card is a connector for the installation of an optional IPDS (Intelligent Printer Data Stream) module. Figure B-1 illustrates the rear view of the coax card.

Figure B-1. **Coax interface card—rear view**

1 Test button
2 CU LED
3 Parallel share port (Reserved for Xerox use)
4 Coax connector

You should never attempt to remove the card from the printer motherboard. The coax interface card also includes jumpers that your Xerox service representative will use to set the default page size and printer language you select.

Twinax interface

If you select a twinaxial interface, the twinax network interface card is plugged in to the motherboard of the printer. The card is configured to your specifications by your Xerox service representative when the printer is installed. The side panel of the twinax network interface card includes a twinaxial connector, a parallel port, a SYNC LED, a seven-position address selection switch, and a test button. Figure B-2 illustrates the rear view of the twinax network interface card. The twinax connector on the side panel of the card is smaller than conventional connectors. An autoterminated T cable included with the printer connects the card to conventional twinaxial cables. Also located on the network interface card is a connector for the installation of an optional IPDS (Intelligent Printer Data Stream) module.

Figure B-2. **Twinax interface card—rear view**

1 Test button
2 SYNC LED
3 Parallel share port—reserved for Xerox use
4 Device address switch
5 Twinax connector

You should never attempt to remove the interface card from the printer motherboard. Your Xerox service representative will configure the 4219/MRP or 4215/MRP interface card according to your specifications, including switch settings for the default page size, print language, and printer address. The address switch setting on the panel of the network interface card determines the printer emulation. Refer to the “Configuring the interface card” section of the *Xerox 4219/MRP 4215/MRP Mid Range Systems Printer Operator Guide* for a list of printer emulations and corresponding addresses.

Ordering other media

If you select a coax interface, the Xerox Host Resource Utility and Font Set are shipped with the printer on a cartridge tape. If you prefer a 9-track reel-to-reel tape, your Xerox sales representative can order it for you.

If you select a twinax interface, the Xerox AS/400 Resource Utility and Font Set are shipped with the printer on 3.5" diskette. If you prefer a 5.25" diskette, your Xerox sales representative can order it for you.

Parallel interface

The parallel interface is a Centronics compatible interface capable of running at speeds up to 150 kbytes per second with burst speeds of up to 200 KB per second.

Parallel interface connector

The Centronics parallel interface uses a standard 36-pin female Centronics cable connector as shown in figure B-3. Xerox recommends that you use the Xerox Centronics 10-foot parallel cable, part number 9R89336, or the cable recommended by your personal computer manufacturer.

Figure B-3. **Centronics interface connector**

Parallel interface connector pin assignments

The parallel interface signals and functions are listed in table B-1.

Table B-1. **Parallel interface connector pin assignments**

Pin	Signal name	Source	Function
1	STROBE*	Host	Causes PD 0—7 to be loaded into the printer
2	PD 0	Host	Parallel Data Bit 0
3	PD 1	Host	Parallel Data Bit 1
4	PD 2	Host	Parallel Data Bit 2
5	PD 3	Host	Parallel Data Bit 3
6	PD 4	Host	Parallel Data Bit 4
7	PD 5	Host	Parallel Data Bit 5
8	PD 6	Host	Parallel Data Bit 6
9	PD 7	Host	Parallel Data Bit 7
10	ACK*	Printer	Acknowledgement of data received by printer
11	BUSY	Printer	Indicates printer not ready to receive data
12	PE	Printer	Indicates paper error
13	SLCT	Printer	Indicates printer is selected and online
14	AUTOFD*	Host	Instructs printer to auto feed 1 line of paper after a Carriage Return
15	No connection		
16	GND		Signal Ground
17	Frame		Frame Ground
18	No connection		
19—30	GND		Signal Grounds
31	INIT*	Host	Initializes printer and clears print buffer
32	ERROR*	Printer	Indicates a printer error condition
33	No connection		
34	No connection		
35	No connection		
36	SLCTIN*	Host	Selects printer or host and enables to accept data

* Signal is active low

Parallel interface timing diagram

Figure B-4 illustrates the parallel interface timing. Refer to Table B-2 for timing requirements.

Figure B-4. **Parallel interface timing diagram**

Table B-2. **Timing requirements**

	Parameter	Value	
		Min	Max
1	Data Setup Time before STROBE* True	1.0 µs	
2	Data Hold Time after STROBE False	1.0 µs	
3	STROBE* True pulse width	1.0 µs	500 µs
4	STROBE* True to BUSY True	0	1.5 µs
5	BUSY True duration when receiving data	2.6 µs	5.1 µs
6	ACKNOWLEDGE* False to BUSY False	0	10 µs
7	ACKNOWLEDGE* True pulse width	2.5 µs	5.0 µs
8	BUSY False to start of next cycle	0	
9	BUSY True before: ERROR* set True SELECT set False PAPER ERROR set True	1.0 µs	
10	ACKNOWLEDGE True after: ERROR set False SELECT set True PAPER ERROR set False	1.0 µs	

* Signal is active low

Serial interface

Serial interface connector

The serial interface uses a standard female B-type 25-pin connector as shown in figure B-5. Xerox recommends that you use the Xerox RS232 25-foot serial cable, part number 9R80254.

Figure B-5. **RS232C serial interface connector**

Serial interface connector pin assignments

The serial interface signals and functions are listed in table B-3.

Table B-3. **Serial interface connector pin assignments**

Pin	Signal name	Function
1	Frame GND	Frame Ground
2	TXD	Transmitted Data
3	RXD	Received Data
4	RTS	Request to Send
5	CTS	Clear to Send
6	DSR	Data Set Ready
7	GND	Signal Ground
8—19	No connection	
20	DTR	Data Terminal Ready
21—25	No connection	

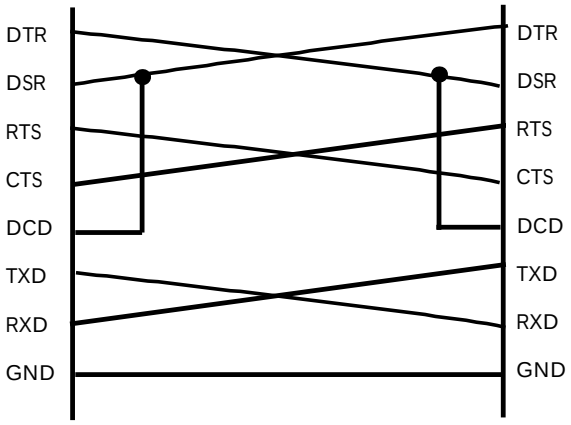
Null modem

Since both computers and printers are Data Terminal Equipment (DTE) devices, you need a special cable or adapter called a null modem to connect them together.

A null modem is a modem eliminator in which all of the control signals are cross-wired so that the device on each side of the interface “thinks” that it is receiving signals from a modem.

Figure B-6 shows how the null modem cable switches several signals.

Figure B-6. **Null modem serial cable wiring**



C. Checklists

This appendix contains perforated checklists that help you plan for the installation of your Xerox 4215/MRP or 4219/MRP Mid Range Systems Printer.

Use the information in the following chapters and appendices to complete the checklists as noted:

- "Preinstallation"—assists in the completion of checklists 1 and 2.
- "Preparing the installation checklists"—assists in the completion of checklists 3 through 6.
- "Ordering fonts, options, and supplies"—assists in the completion of checklist 7.

Your Xerox sales representative will help you as needed to complete the checklists. Each checklist shows the 4215/MRP and 4219/MRP default settings in bold typeface.

On installation day, give the completed checklists to your Xerox service representative so your printer can be configured to your specifications.

Checklist 1 "Site preparation" helps you physically prepare the installation site by helping you figure out your environment, space and access requirements, electrical supply, and interface devices.

Checklist 2 "Twinax and Coax interface configuration" lists the possible options that can be set for the 4215/MRP and 4219/MRP Twinax and Coax interface cards.

Checklist 3 "General Setup" helps you decide on the input and output features of the printer.

Checklist 4 "Setup printer—PCL 5 Setup" helps you establish the default parameters for printing PCL jobs.

Checklist 5 "Setup Printer—PostScript Resolution, Print Enhancement, Communications Priority, Panel Security" lists other options for setting the print behavior of the 4215/MRP and 4219/MRP.

Checklist 6 "Setup Interface—Parallel, Serial, Other I/O" lists the default parameters for the standard 4215/MRP and 4219/MRP interfaces.

Checklist 7 "Supplies" provides a record form to record the dates to order the supplies required for your installation site.

Checklist 1: Site preparation

Site requirements:	
Environmental	Temperature meets 50° to 95° F (10° to 35° C) requirement Humidity meets 15 to 85% requirement Altitude meets sea level to 10,000 feet requirement
Space and access	Meets requirements for operation
Electrical	Voltage (110-120 VAC, 60Hz or 220-240 VAC, 50Hz) Ampere circuit (8 amp for 110-120 VAC, 4 amp for 220-240 VAC) Distance from power outlet (not more than 10 feet or 3 meters)
Communications requirements:	
Interface device	Twinax or Coax connection Twinax or Coax cables available
Utility software media requirements:	
Twinax interface	Part number 673S00005 (Standard installation kit supplied with your order) AS/400 Resource Utility (3.5“ DS-HD) AS/400 Font Set (3.5“ DS-HD) Twinax Command Reference Note: PC support/400 and SAA RPG/400 programs are required for installation of the AS/400 Configuration and Resource Utility and the Font Set from diskette media (3.5“ DS-HD and 5.25“ DS-HD). If you do not have these programs, and do not plan to purchase them, you must order the Utility software on 6150 1/4“ tape cartridge, part number 673S00005B.
Twinax interface	Part number 673S00005A (Alternate media requiring special order from the Software Library) AS/400 Resource Utility (5.25“ DS-HD) AS/400 Font Set (5.25“ DS-HD) Note: PC support/400 and SAA RPG/400 programs are required for installation of the AS/400 Configuration and Resource Utility and the Font Set from diskette media (3.5“ DS-HD and 5.25“ DS-HD). If you do not have these programs, and do not plan to purchase them, you must order the Utility software on 6150 1/4“ tape cartridge, part number 673S00005B.
Twinax interface	Part number 673S00005B (Alternate media requiring special order from the Software Library) AS/400 Resource Utility and Font Set (6150 1/4“ data cartridge)
Coax interface	Part number 673S00006 (Standard installation kit supplied with your order) Host Resource Utility and Font Set (3480 1/2“ tape cartridge) Coax Command Reference
Coax interface	Part number 673S00006A (Alternate media requiring special order from the Software Library) Host Resource Utility and Font Set (9 track computer tape on reel)

Checklist 2: Twinax and Coax interface configuration

Coax 4215/MRP and 4219/MRP interface default settings:		
Page size	U. S. 8.5" x 11"	European (A4: 8.27" x 11.69")
Printer emulation	Must be set through FSL commands.	
Printer language	Must be set through FSL commands.	
Twinax 4215/MRP and 4219/MRP interface default settings:		
Page size	U. S. (8.5" x 11")	European (A4: 8.27" x 11.69")
Device address	0 2 4 6	1 3 5
Printer emulation (non-IPDS)	**0** (3812/5219/3816 SCS) 2 (5225 SCS printer) 4 (4234 SCS printer) 6 (4245/6262 SCS printer)	1 (5224 SCS printer) 3 (5256 SCS printer) 5 (3812/5219/3816 SCS)
Printer emulation (IPDS)	**0** (3812/5219/3816 SCS) 2 (5225 SCS printer) 4 (4234 SCS printer) 6 (4245/6262 SCS printer)	1 (5224 SCS printer) 3 (5256 SCS printer) 5 (IPDS printer)
Printer language	Austria/Germany Belgium Brazil Canada/France Denmark/Norway Finland/Sweden France Great Britain	Iceland International (5219 Emulation default) Italy Japan (English) Portugal Spain Spanish speaking United States/Canada

Default settings are shown in bold typeface.

Checklist 3: General setup

Display language	**English** Francais Español Italiano Deutsch	
Tray select	**Upper** Middle *(4219/MRP only)* Lower	
Manual feed *(If used as primary input source)*	7.25 x 10.5 (Executive) 8.5 x 13 (Folio) 11 x 17 (Ledger) A5 A4 Envelope Commercial 10 Envelope C5	8.5 x 11 (Letter) 8.5 x 14 (Legal) B5 B4 Envelope DL
Automatic tray swapping	**Enable**	Disable

Default settings are shown in bold typeface.

Checklist 4: Setup Printer—PCL 5 Setup

PCL 5 Setup			
Orientation	**Portrait**	Landscape	
Lines Per Page	____ Enter a number between 5-128 If *portrait*, default is 60; if *landscape*, default is 45		
Line Wrap	**Off**	On	
Symbol set	**Roman-8 (ASCII and Roman)** PC-8 PC-8 Danish/Norwegian PC-850 Legal		Math-8 Microsoft Publishing Windows Desk Top Pi Font
	ISO: 8859 (ECMA-94 Latin1) 2 International Reference Version 4 United Kingdom 6 ASCII 10 Swedish/Finnish 11 Swedish: names 14 JIS ASCII 15 Italian 16 Portuguese		17 Spanish 21 German 25 French 57 Chinese 60 Norwegian 61 Norwegian2 69 French 84 Portuguese 85 Spanish
	Ventura: Math	International	US
	PS: Math	Text	
Font	**Courier**	**10cpi/12pt** 10cpi/12pt Italic 10cpi/12pt Bold	12cpi/12pt 12cpi/12pt Italic 12cpi/12pt Bold
	Line Printer		
	Times Universe	Medium Bold Italic Bold Italic	___ Point Size

Default settings are shown in bold typeface.

Checklist 5: Setup Printer—PostScript Resolution, Print Enhancement, Communications Priority, Panel Security

PostScript Resolution		
PS Resolution	**800 x 400** 400 x 400 300 x 300	
Print Enhancement		
Print Enhancement	Dark **Medium** Light Off	
Options		
Start-up page printing	**Enable**	Disable
Communications Priority	**Sequential** Priority* Sequential Lock Priority Lock*	* If priority, select primary interface: Parallel Serial Other I/O
Panel Security		
Enter Code	_ _ _ _ **Security Code (if desired)**	

Default settings are shown in bold typeface.

Checklist 6: Setup Interface—Parallel, Serial, Other I/O

Parallel Centronics				
Enable Interface	**On**	Off		
Print language selection	**PS/PCL Sensing** STD PostScript PCL5 BCP PostScript Hex Dump Mode TBCP PS			
Serial/asynchronous				
Enable Interface	**On**	Off		
Printer type	**PS/PCL Sensing** STD PostScript PCL 5 BCP PostScript Hex Dump Mode TBCP PS			
Flow Control	**XON/XOFF** Robust XON/XOFF DTR			
Baud rate	300 4800	600 **9600**	1200 19200	2400 38400
Data bits	7-bit	**8-bit**		
Parity	Odd	Even	**None**	
DTR Polarity	High	Low		
Other I/O (Twinax/Coax interface)				
Enable interface	**Enable (mandatory setting)**			
Printer type	**PS/PCL Sensing (mandatory setting)**			

Default settings are shown in bold typeface.

Checklist 7: Supplies

Use this checklist to record the supplies you require, the quantity, the date the order should be placed, and the actual date of the order.

Item	Description	Quantity	Date to order	Date ordered
Paper				
Transparencies				
Labels				
Toner Cartridge				
Cables				
Other				

Glossary

access To find area of memory or auxiliary storage for retrieving or storing information; ability or permission to use printer menus.

AppleTalk Refers to the Apple Macintosh standard communication protocol.

application A software program or group of programs for solving common business tasks.

asynchronous Having a variable or random time interval between successive characters, or events. Transmission in which each character, work, or small block, is individually synchronized (timed), usually by the use of start and stop bits. It is referred to as character framed transmission.

baud Speed at which information is transferred, indicated by changes in line condition. Baud is equivalent to bits per second (BPS), which is the number of information (or data) bits that can be sent through a channel in a second.

baud rate The data transfer rate between the computer and the printer set only if the serial interace is used. The computer and the printer must be configured at the same baud rate. The rate can be set from between 300 and 38,400 baud depending on the type of computer used.

binary Base 2 number system written with the digits "0" or "1." See *bit*.

binding margin The margin along which a page is to be bound. See long-edge binding and short-edge binding.

bit An acronym for binary digit. The bit is the most fundamental unit of information that a computer can accept. It has two states called "1" (one) and "0" (zero), or "on" and "off," and can be used to represent a yes/no type statement. Groups of bits are used to represent more complex statements such as a character. The most common grouping of bits is called a byte, consisting of eight bits.

bitmapped fonts Bitmapped fonts have predefined sizes (fixed point size and pitch attributes).

byte The name given to a group of eight bits. In ASCII, each character is represented by one byte of data.

A kilobyte is equal to 1,024 bytes; a megabyte, to 1,024 kilobytes or 1,048,576 (1024 x 1024) bytes.

character set Collection of characters contained in a font. Each character set is designed for a special purpose. Some sets include all printable characters found on most standard computer keyboards, while others are composed of special characters for such applications as math, foreign language typesetting, and law.

coaxial cable PVC or teflon shielded RG62 cable.

configuration The process of selecting or changing certain printer settings to allow your computer to communicate with the printer. The printer is configured using one of the configuration menus that are accessed from the printer control panel.

control panel A pressure-sensitive panel on the front of the printer used to place the printer on and offline, access and change configuration setup, reset the printer, manage the printer, and perform diagnostics.

default A preset value programmed into a printer that is used unless changed with the control panel or with print language commands. **Factory defaults** are those values set at the factory prior to shipping. **Power-up defaults** are those values that are in effect when the printer is powered up.

diagnostics Software designed to verify the operation of the system hardware and to identify failures.

document One or more recorded or printed pages forming a logical whole.

dot The smallest printable unit.

downloaded fonts Fonts loaded from the host system into the dynamic memory of the printer. Downloaded fonts must be reloaded each time the system is powered up.

dpi Dots per inch. A measure of the resolution of a printed image.

dry ink Dry ink is a fine powdered substance used in the printing process. The dry ink supply for the system is contained inside the toner cartridge.

duplex printing Double-sided printing in which a printed image is placed on both surfaces of a sheet of paper. See *simplex printing*.

EBCDIC Extended Binary Coded Decimal Interchange Code — an 8-bit code, standard for many IBM systems, providing 256 possible combinations of characters.

emulation The state of a device when it is set up to behave like a different device.

face-up output tray A special receptacle on the printer that receives the paper as it exits the printer, printed side facing up. The face-up tray is useful for printing on heavy stock or envelopes, since it is a straight paper path from the manual feed tray to the face-up output tray.

facsimile terminal (FAX) A telecommunication system that transmits and receives data over analog telephone lines.

factory defaults The settings that are programmed into the printer before it is shipped. These settings are in use unless you override them using the printer control panel or by sending printer commands.

font A collection of characters with a consistent size and style. Different fonts can be selected for printing. Fonts can refer to the printer's internal fonts or to fonts stored in optional diskettes and downloaded to the printer.

fuser A device in the printer that is used to bond dry ink to the page.

grams per square meter (GSM) Universally accepted unit that expresses the weight in grams of one square meter of paper.

host computer A computer that can be used to send data to a printer or other peripheral devices, also called simply a host,

image The representation on the printed page of the data sent to the printer. An image is composed of closely placed dots of dry ink which are placed on the page electrostatically and then fused to the paper.

input tray There are three on the 4219/MRP and two on the 4215/MRP. Each tray can hold a range of paper sizes.

interface The connection between two devices. Interfaces are meant to carry electronic impulses from one place to another. Hardware interfaces, for instance, link a host computer to a printer.

interface cable A special cable used to connect the printer to the computer so they can communicate.

IPDS Intelligent Printer Data Stream. All points addressable data system that allows users to position text, images, and graphics at any defined point on a printed page.

ISO International Standards Organization.

job A set of data, including programs, files, and instructions to a computer.

KB Kilobyte**.** Unit of 1,024 bytes

landscape A page orientation in which output is printed parallel to the longer edge of the page.

long-edge binding In this style of binding, the binding margin is along the long edge of the page, regardless of the orientation of the printed image. *See* binding margin.

MB Megabyte. Unit of 1,048,576 bytes.

memory The part of a computer system that stores data, either temporarily or permanently. See *non-volatile memory*.

menu A list of related configuration submenus or options. On the 4219/MRP and the 4215/MRP, all user-selectable configuration options are organized into menus. These menus are accessible through the user interface on the front of the printer.

mode One of several alternative conditions or states of a device, such as print mode and configuration mode on the 4219/MRP and 4215/MRP.

modem Device that converts digital information into an analog signal suitable for sending over analog phone lines. Derived from the lengthier term modulator/demodulator.

moisture content A physical property of paper. High moisture content causes curl, jams, and poor fusing; low moisture content causes static problems, leading to increased jams and misfeeds.

network A series of points connected by communication channels. A private network is a group of communications channels confined to the use of one customer.

non-volatile memory That portion of memory in a device that remains unchanged when the device is powered off, also called NVRAM.

offline When the printer is offline, it does not print pages. The printer is taken offline by pressing the Online key when the printer is in print mode.

online When the printer is online and in print mode, it is able to print pages.

option One of the user-selectable printer features listed in a configuration menu. Each controls a different printer default condition.

output tray The principle paper output tray is located on the top of the printer and is the place where printed material is delivered face down. There is also a face-up output tray that can be installed on the front of the printer.

page orientation The relationship of the printed data to the long or short edge of the page. See *landscape* and *portrait*.

page set up How text is positioned on the page. Page set up variables include the size of the paper to be printed, what margins are used, and how many lines are printed per inch.

paper jam A condition where paper gets stuck somewhere along the paper path in the printer.

parallel interface A type of interface in which data is transmitted and received in bytes rather than bits. Used for local printing over short distances (10 meters or less).

parallel/serial ports The printer comes with two interface connectors, serial and parallel, located on the lower part of the back panel. The cable that attaches your computer to your printer is connected here.

PCL HewLett-Packard's Printer Control Language.

pitch The number of characters to the inch. (10 pitch is 10 characters per inch; 12 pitch, 12 characters per inch, and so forth.)

point size A typographical term describing the height of a character set from the top of its capitals to the bottom of its descenders in points. One point is equal to 1/72 inch. 12 point type is roughly equal in size to 10 pitch characters.

port A communications connection from a computer to the printer, suitable for attaching a single line.

portrait Page orientation in which the output is printed parallel to the shorter edge of the page.

power-up defaults Values that are in effect when the printer is powered up.

print To produce a paper document using data received from a host.

printer commands Printer commands are sent to the printer through application software programs and are used to change printing variables such as page orientation, margins and fonts.

RAM Random Access Memory. An area where data is stored temporarily and can be altered.

ROM Read Only Memory. Permanent storage for data that cannot be altered usually reserved for standard instructions for basic activities.

resident fonts Fonts stored in the printer when it is shipped. The printer's resident fonts are also called internal fonts.

RS232 Designation for the industry-standard interface for serial devices. The RS232 ensures (1) that voltage and signal levels will be compatible, (2) that interface connectors may be mated together with identical pin wiring and corresponding pin connectors, and (3) that certain control information supplied by one device must be understood by the other device. See *serial interface*.

scalable font A font scaled within the printer to any point size.

serial interface A type of interface in which data is transmitted and received one bit at a time over a communication line. It can function over great distances.

short-edge binding In this style of binding, the binding margin is along the short edge of the page, regardless of the orientation of the printed image.

simplex printing Single-sided printing in which a printed image is placed only on one surface of a sheet of paper. See *duplex printing*.

status message Control panel display messages that keep you informed of the printer's current operating condition.

symbol set The collection of characters usable at one time in a font. Each symbol set has been designed for a special purpose. Some sets include all printable characters found on most standard computer keyboards, while others are comprised of special characters intended for such applications as math, foreign language typesetting, and law.

toner cartridge A device inside the printer that contains a photosensitive "print drum" used in the printing process.

troubleshooting The process of pin-pointing the cause of a printer problem. The method used here is to step through a list of symptoms and suggested remedies until the solution is found.

twinax cable A special type of communications cable used to connect to IBM AS400 systems.

typeface 1. All type of a single design. 2. Set of characters with design features that make them similar to one another. Also referred to as font.

utility pages Any page not generated from the data sent through an I/O port, including Start-Up pages, printer configuration reports, font reports, and error pages.

workstation Input/output equipment at which an operator works; you can send data to or receive data from a computer workstation for the purpose of printing a job.

XON/XOFF Transmitter on/transmitter off. A flow control method. A communications protocol for use with the serial interface, in which DC1 and DC3 codes are sent to the host to signal the readiness or nonreadiness of the printer to receive data.

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