

Xerox 4213 Laser Printer User Guide

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European EME regulations

The Xerox 4213 laser printer meets the requirements of EN55022 Class B.

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

This product will produce ozone during normal operation. The ozone produced is dependent on copy volume and is heavier than air. Providing the proper environmental parameters as specified in Xerox installation procedures will ensure that concentration levels meet safe limits.

The 4213 has an ozone filter built into the print cartridge.

Laser safety

The following note is to meet the local requirements of Finland and Sweden.

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

VAROITUS:
LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAÄ ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1. YLITTÄVÄLLE LASERSÄTEILYLLE.

WARNING:
OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANSVISNING SPECIFICERADE, KAN ANVÄNDAREN UTSÄTTAS FÖR O SYNLIÄ LASERSTRÄLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

Operational safety

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

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

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

Never use a multi-plug adaptor to plug multiple power plugs into the same outlet.

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

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

If you need any additional safety information concerning the equipment or Xerox supplied materials, call your RX sales representative.

Notice

Specifications described in this publication are subject to change without notice. Use of some features may be limited by your hardware or software configuration. Consult your sales representative for details.

Related publications

Title

Xerox 4213 Laser Printer Programmer Reference

Xerox 4213 Laser Printer Quick Reference Guide

Xerox Coax/Twinax Option (XCTO) Programmer Reference

Helpful Facts About Paper

Xerox 4213 XES Quick Reference Card

PostScript Language Reference Manual, 1985, Adobe Systems Incorporated, Addison-Wesley Publishing Company, Inc., Sixth printing April, 1987

PostScript Language Design, 1988, Adobe Systems Incorporated, Glenn C. Reid, Addison-Wesley Publishing Company, Inc., Sixth printing April, 1988

PostScript Language Tutorial and Cookbook, 1985, Adobe Systems Incorporated, Addison-Wesley Publishing Company, Inc., Fifth printing March, 1987

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The *4213 Laser Printer User Guide* identifies the requirements for installation and discusses printing preparations and procedures, with examples for those procedures. It provides information on configuring your printer to suit your individual environment.

Conventions used in this guide

Conventions used in this guide are as follows:

- **WARNING:** Warnings are associated with the safety of people.
- **Caution:** Cautions are associated with equipment safety.
- **Note** designates important information that should be noted before performing an operation or procedure.
- Keys pressed on the keyboard are shown by the applicable symbol:
 - A Menu
 - B Test
 - C Last Page
 - D Select
 - H Online
 - G Reset buttons.
- Names of display screens and menus are shown in initial capitals (for example, Main Menu).
- The terms 4213, printer, and 4213 laser printer are interchangeable.
- The message display items are shown in all uppercase letters.
- Titles of books and related publications are italicised.

- The symbol points to actions and options that do not have numbers available within the Main Menu and submenu maps.
- In the index, the use of the lowercase "i" denotes an illustration, the lowercase "f" means a figure and the lowercase "t" refers to a table.

Variations

The following differences exist between the 4213 and 4045 Model 150 laser printers:

- Pages may break differently on the two printers.
- To match rotation on the 4213, the 4045 must have an XGRAPH cartridge installed.
- Set the page buffer to "FULL" to correctly print complex pages.
- In XES mode, the underline character prints at the baseline on the 4045; on the 4213, this prints under the character descender.

This chapter identifies the requirements for installation. The following material is discussed:

- Installation requirements
- Checklist for contents
- Installation procedures
- Power up.

Installation planning

To help you determine the best possible location for your new 4213 laser printer, this section contains information on the following topics:

- Environmental conditions
- Space requirements
- Power requirements.

Environmental conditions

Your printer has certain environmental requirements you must accommodate. These requirements, as well as environmental conditions you should avoid, are listed in this section.

Operating environment

Consider the required operating environment listed below when planning the location of your printer. Your printer operates more efficiently when the following environmental conditions are maintained:

Temperature	10°C to 32°C (50°F to 90°F)
Humidity	15 to 85% relative humidity
Altitude	Up to 6,560 feet above sea level (2000 metres).

Environmental conditions to avoid

You should avoid the following environmental conditions as you plan the location of your printer:

- Direct sunlight
- Rapid temperature changes
- Direct air flow
- Heat-emitting devices
- High temperature or humidity
- Dust dirt, or poor ventilation
- Volatile gas or liquids

General cautions

- Do not put anything on the printer, such as: a flower vase, or a filled cup or glass. Water inside the printer unit not only results in malfunction, but also causes damage to the printer.
- Do not drop paper clips or staples inside the printer unit. This can cause a short-circuit or malfunction.
- Do not apply mechanical shocks to the printer.
- Do not use flammable aerosol products near the printer.
- Do not disassemble or modify the printer
- Never open covers which you are not intended to open.
- Make sure the area is well ventilated, if the location of the printer is in a closed or crowded room.
- Turn off the power and unplug the power cable immediately in you perceive smoke or an abnormal sound or odour.

Cautions while printing

- While printing, do not turn off the power or open the top cover or any of the doors. A paper jam or malfunction will occur.

Cautions for maintenance and inspection

For your personal safety, you should always keep the following cautions and directions in mind when you perform normal printer maintenance:

- There are high voltage areas and high temperature areas inside the printer.
- See chapter 5, "Care and maintenance," for paper jam clearance, maintenance and inspection of the printer, and replacement of consumable supplies.
- Do not perform any operation other than those stated in this manual. Any modification to the printer can cause a malfunction or damage.

Cautions for the power cord

For your personal safety, you should always keep in mind the following cautions and directions when handling the power cord:

- Before you plug in or unplug the cord, turn off the printer power.
- To plug in or unplug the cord, hold the plug instead of the cord.

WARNING: Do not touch the plug, connector, or cord with wet hands.

- Periodically check that the following situations are stable:
 - The power cord is plugged firmly into the AC outlet and the AC inlet on the printer.
 - The power cord generates no abnormal heat.
 - The power cord has no worn places.

Space requirements

Allow enough open space around the printer to make operation, supply replacement, and maintenance possible.

Printer dimensions

Printer dimensions with paper trays:

Height: 48.45 cm (19.5 inches)

Width: 52 cm (20.8 inches)

Depth: 49.25 cm (19.7 inches).

Printer weight Approximately 84.7 pounds (38.12 kg), with customer replaceable unit (CRU) cartridges and empty paper trays.

Floor space requirements Figure 1-1 shows the minimum floor space requirements for the printer with the bypass tray.

Figure 1-1. **Space requirements around printer**

The dimensions of the printer with the bypass tray are:

- A = 48.25 cm (19.3 inches)
- B = 10 cm (04.0 inches)
- C = 40 cm (16.0 inches)
- D = 61 cm (24.4 inches)
- E = 133.25 cm (53.3 inches)
- F = 120.25 cm (48.1 inches)

Power requirements

Keep the following points in mind as you secure the power supply for your printer:

- Use only the AC power cord supplied with the machine.
- Avoid the use of a multi-plug adaptor to plug multiple power plugs into the same outlet.
- Make sure that the total electrical current does not exceed the required safety standards, if equipment other than the printer is plugged into the same outlet.

Table 1-1. Power requirements

Voltage (Frequency)	Multinational (50/60 Hz)	US/Canada (50/60 Hz)
Minimum	198	108
Normal	220 - 240	115
Maximum	264	132

Installation procedure

This section contains step by step instructions for the following tasks relating to the installation of your 4213 laser printer:

- Unpack and confirm the parts.
- Place the printer in its permanent location.
- Install the developer (C) and the toner cartridges (B).
- Connect the 4213 laser printer to the host.
Note: You must provide your own interface cable.
- Connect the power cord. (May be in a separate container)
- Install the paper trays.
- Print a configuration sheet.

Unpack and confirm the parts

The Xerox 4213 package includes the following:

- One 4213 Laser Printer
- Two paper trays
- One developer cartridge and one toner cartridge (packaged together)
- Installation instructions
- The power cord and User Documentation are supplied in a separate container.

Follow these steps when unpacking the printer:

1. Open the carton.
2. Remove the two spacers located at the front and rear of the 4213 laser printer.

3. Remove the printer and components from the box. The print cartridge and the fuser wick are installed at the factory.

Note: Refer to step 4 for handling the printer.

The contents of the box are as follows:

- A = Printer
 - B = Rear spacer
 - C = Power cord (supplied in a separate container)
 - D = Paper trays
 - E = Front spacer
 - F = Toner and Developer cartridges.
4. Take the printer out of the carton with the help of another person, and place it on a firm, flat surface while you confirm receipt of all parts.

WARNING: Due to the weight of the printer (approximately 35 kg or 77 lbs), it should be lifted by two people.

5. Make sure you have all the parts shown.

- Save the carton and other packing materials in case you need to transport the printer. Power cord may be included.
- Call your sales representative if any part is missing.

6. Move the printer to its permanent location at this time. Place the printer in the location chosen according to the conditions described in the "Installation planning" section of this chapter. Again, ensure that two people lift the printer.

Install the developer and toner cartridges

1. Remove the developer cartridge (C) and toner cartridge (B) from the box.

2. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the shiny, blue surface of the print cartridge (A).

3. Remove and discard the packaging tape which holds the print cartridge in position.

4. Remove the developer cartridge (C) from the package.

5. Hold the developer cartridge over a piece of paper in the event any residual toner is present, and gently remove the protective strip sealing the cartridge.

Caution: Failure to remove the protective strip before inserting the developer cartridge will damage the printer.

Caution: Avoid touching the roller of the developer cartridge. Damage to the roller surface can cause print defects.

6. Align the developer cartridge with the slot in the top cover of the printer so that the tongue along the slot fits into the groove along the edge of the cartridge. Push the cartridge slightly into the slot.
7. Slide the cartridge into the cavity to make sure that it is fully seated.

8. Remove the protective wrap from the toner cartridge (B).

9. Hold the toner cartridge horizontally and shake it sideways and backwards vigorously to loosen and distribute the toner.

10. Hold the toner cartridge horizontal and level with the slot of the developer cartridge in the top cover.

11. Slide the cartridge into the slot, while at the same time, carefully removing the protective strip sealing the cartridge. Make sure the cartridge is partially in before you break the seal.

Make sure the toner cartridge is fully seated in the cartridge slot.

WARNING: Be careful when you pull the protective strip to prevent spilling the toner. Pull slowly and avoid jerking the cartridge. Do not break the seal if the cartridge is completely pulled out from the printer.

12. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

Connect the printer to the host

The 4213 laser printer is configured for parallel interface when it is shipped.

Note: If you want to change the printer configuration to serial interface, refer to the "Main Menu," section in the "Using the 4213 Menus" chapter.

1. Connect a computer interface cable (purchased separately) to the appropriate connector, either serial (RS232C) or parallel (Centronics) on your computer. Attach the other end of the cable to the appropriate serial or parallel connector on the printer.

Connect the power cord

Make sure the AC power from the outlet meets the conditions in the "Power requirements" section of this chapter.

1. Remove the power cord from the package.

2. Make sure the power switch (located at the back of the printer) is set to the off (O) position.

3. Connect the power cord to the AC outlet, at the back of the printer.

4. Push the cord up under the tabs to secure it along the back of the printer. The power cord is the disconnect device for this equipment. Ensure that installation is near the outlet and is easily accessible.

5. Plug the power cord into a proper AC wall outlet.

6. Switch the printer power on by pressing the power switch to the on (I) position. READY XES appears on the control panel message display after diagnostics are run (approximately 75 seconds).

Note: The yellow Warning light is lit and remains lit until the two paper trays are installed, and paper is loaded, at least, in the upper paper tray.

Install the paper trays

1. Remove the two paper trays from the packages.

Note: Perform steps 2 to 6 for each paper tray.

2. Flip back the paper tray cover.

Note: Cover cannot be removed from the paper tray.

6. Place the filled paper tray all the way into the empty tray slot. Make sure the end of the paper tray with the snubbers go in first. Push it gently into position until it clicks into place.

Note: Make sure that the paper tray is correctly seated. When the paper tray is not completely and correctly inserted, the configuration sheet may display an incorrect tray code which can cause a problem in your print job.

Print a configuration sheet

The yellow Warning indicator light is no longer lit after the paper trays are installed. The message display shows that the printer is online and ready to accept data sent from your computer. The green online indicator light is lit. The Xerox Escape Sequences (XES) printer command is the default printer emulation at power up.

Note: Refer to the "Using the 4213 Menus" chapter if your applications require a different default printer emulation.

To review the configuration settings in place for the printer and the XES emulation, you should print a Configuration Sheet.

To print the Configuration Sheet, press and release the following buttons in the sequence shown:

- H 1. Online takes the printer off line (the green online indicator light is not lit).
- B 2. Test accesses the Test Menu.
- D 3. Select prints the Configuration Sheet.
- H 4. Online puts the printer back online (the green online indicator light is lit).

5. The Configuration Sheet exits into the output tray.

The information on the Configuration Sheet is explained in the "Reading the Configuration Sheet" section of the "Printing with the 4213" chapter.

Installation of your 4213 laser printer is now complete.

The 4213 prints high-quality documents and is compatible with most software packages available for use with MS DOS computers.

This chapter provides an overview of the following:

- Features
- Options
- Components.

Features

The features of the Xerox 4213 laser printer are listed below:

- Prints up to 13 1-sided pages per minute.
- Prints up to 11 2-sided images per minute in 2-sided mode
- Has 0.5 megabytes (MB) of memory, expandable to 10.5 MB.
- Prints 300 x 300 spots per inch (dpi).
- Output tray holds up to 500 sheets of 80-gsm paper.
- Has serial and parallel computer interfaces.
- Has a menu-driven set up.
- Has two slots for additional font cartridges.
- Has two resident emulations:
 - Hewlett-Packard LaserJet series IID (LJ2D)
 - Xerox 4045/4046 with additional commands (XES)
- Has four resident fonts for XES.
- Has 42 resident fonts for LJ2D.

- Prints on the following materials:
 - 60 to 90 gsm (16-lb to 24-lb) paper
 - Standard and nonstandard sized paper
 - 80-gsm (20-lb) preprinted business forms
 - Envelopes
 - Transparencies
 - Labels
 - Letterheads
 - Drilled paper.

Options

The following options are available to further enhance the capabilities of your 4213 laser printer. For detailed information regarding these options, refer to chapter 7, "Supplies: ordering information."

Downloadable fonts

The LJ2D and XES resident emulations support downloadable fonts which are stored on floppy disks. These fonts can be copied to the printer from your computer.

Font cartridges

Font cartridges increase the number of typefaces and sizes the 4213 laser printer can print. Font cartridges are small plug-in modules that contain a range of fonts. An extensive font library and customised fonts are available through your local Rank Xerox representative.

Host interface options

The 4213 laser printer can be modified to allow the Xerox Coax or Twinax host interface customer installable board to extend the communications capabilities of the printer to attach to IBM compatible mini computers and mainframes and provide emulations of common IBM printers.

PostScript options

The 4213 printer can be equipped with the PostScript page description language. Contact your Rank Xerox representative for further information.

Additional paper trays

Additional paper trays are available in the following sizes:

- Letter: European, 216 by 279 mm (U.S., 8.5 by 11 inches)
- A4: European, 210 by 297 mm (U.S., 8.27 by 11.69 inches)
- Legal: European, 216 by 356 mm (U.S., 8.5 by 14 inches)
- Adjustable: European, 182 to 216 mm wide, 254 to 356 mm long (U.S., 7.25 to 8.5 inches wide, 10 to 14 inches long).

High capacity feeder

An optional high capacity feeder (HCF) is available. The HCF feeds through the manual bypass slot and (when the HCF is installed, a single sheet can be fed) holds up to 1,500 sheets of either A4 or letter size paper. The manual bypass remains available with the HCF installed.

Multi Media Feeder

A Multi Media Feeder can be purchased as an accessory for your 4213 printer.

The MMF can act as a feed source for the following media:

- Up to 75 envelopes
- 170 sheets of 90 gsm or 80 sheets 160 gsm A4 size
- Up to 75 sheets of label stock
- Media size ranges are: width, 100 to 216 mm; length, 190 to 297 mm.

Printer components

The following section identifies the major components of the printer.

Figure 2-1. **Front and left side view of the 4213**

1. **Control panel:** Consists of a printer mimic display, four indicator lights, six buttons and a message display. Refer to figure 2-5.
2. **Top cover access handle:** Allows access to the toner, print, or developer cartridge, and paper jammed in the main paper path.
3. **Top cover or output tray:** Pages are delivered, in sequence to the output tray with the printed side down.
4. **Top cover:** Raises when replacing the toner, print, or developer cartridge, and when removing paper jammed in the main paper path.
5. **Paper trays:** Two input paper trays, each holding up to 250 sheets of 80-gsm or 20-lb paper.

6. **Left cover access handle:** Allows access to paper jammed in the fuser area.
7. **Left cover:** The left cover, located above the paper trays, is lowered to remove paper jammed in the fuser area.
8. **Re-feed baffle:** The refeed baffle, located inside the printer in front of the fuser area, is raised to free paper jammed in the fuser area. The refeed baffle must be manually lowered before closing the left cover.

Figure 2-2. **Front and right side view of the 4213**

1. **Bypass slot:** Allows the feeding of nonstandard sized paper, heavy stock, labels, envelopes, and transparencies into the printer.
2. **Bypass tray:** Lowers for manual feed. The feed guide, located on the left of the tray, positions the paper being fed.
3. **Right cover:** Allows you to clear paper jammed in the paper tray areas.
4. **Font cartridge slots:** Accepts additional 4213 font and emulation cartridges.
5. **Output tray or sensor:** Pages exit the printer onto the output tray from this area. It senses when the output tray is full.

Figure 2-3. **Rear and left side view of the 4213**

1. **Left cover access handle:** Allows access to paper jammed in the fuser area.
2. **Left cover:** The left cover, located above the paper trays, is lowered to access the refeed baffle in order to remove paper jammed in the fuser area.
3. **Power switch:** Turns the printer on and off.
4. **Power cord receptacle:** Connects the power cord to the printer.
5. **Power cord holding hooks:** Secures the power cord along the back of the printer.
6. **Parallel and serial ports:** When connecting your host computer to the printer, either the parallel (Centronics) port or the serial (RS232C) port is used to connect the interface cable.
7. **Exhaust fan vent:** Provides ventilation for the exhaust fan.

Figure 2-4. **Internal view (top cover is raised)**

1. **Top cover:** Raises when replacing the toner, print, or developer cartridge, and when removing paper jammed in the main paper path.
2. **Serial number:** Is the unique identification number for this printer. The serial number is located inside the top cover.
3. **Print cartridge:** Contains a photosensitive "print drum" or "photoreceptor" used in the printing process. This cartridge is a customer replaceable unit (CRU).
4. **Toner cartridge:** Contains the toner supply for the printer. This cartridge is a CRU.
5. **Developer cartridge:** Contains the magnetic roll which puts the toner onto the photoreceptor. The developer cartridge has a slot which holds the toner cartridge. This cartridge is a CRU.
6. **Transfer corotron assembly:** Charges the photoreceptor to produce images in the printing process.
7. **Print density control knob:** Adjusts the print quality. Turn the control knob clockwise for darker printing, and counterclockwise for lighter printing.

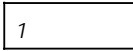

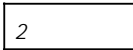




Control panel

Figure 2-5 shows the control panel. The control panel consists of a printer mimic, message display area, six buttons and four indicator lights.

Figure 2-5. **Control panel**

1. **Printer mimic:** Assists in fault location
2. **Message display:** The two sixteen-character lines of the message display report error messages, printer status codes, and menu options. Using this display and the buttons on the control panel allow you to set and select printing features and functions.
3. **Indicator lights:** Table 2-1 identifies and explains the meaning of the indicator lights above the buttons on the control panel.
4. **Buttons:** Table 2-2 identifies and explains the meaning of the six buttons on the control panel.

Table 2-1. Indicator lights

Indicator	Meaning	Action
Last Page 	The yellow last page indicator blinks when a print job is processing. Remains steady when there is data present in the print buffer.	No action is necessary unless this light remains on after the printer has stopped printing. In this case, the last page of the job is still in the buffer and must be printed manually. Press the Last Page  button to print the remaining page.
Warning 	The yellow warning indicator is lit when operator attention is needed	Press the Select  button to access the Consumables Menu. The status message in the display defines the operator action required. For example: REORDER CARTRIDGE-A 0901
Fault 	The orange fault indicator is lit when operator attention is required before the printer will resume operation.	The status message in the message display defines the operator action required. For example: CLEAR PAPER PATH 0830
Online 	The green online indicator is lit when the printer is online and ready to accept data. Light is off when the printer is off line. In off line mode, you can access the set up menu, test menu, or reset menu. Green online light may blink when it is in the transitional state.	Use the Online  button to toggle between online and off line status.

Printer control panel buttons

The 6 printer control panel buttons perform several functions, depending upon the printer mode. The printer can be in either online, off line or in menu mode.

The following is an explanation of the printer modes:

- Online or print mode (ready-to-accept data)
- Off line mode (not communicating with the host computer)
- Menu mode (the configuration menu and other menus have been entered).

The online indicator is lit when the printer is online or in the print mode. The online indicator light is not lit when the printer is off line or in the menu mode. The buttons may function differently, depending on which mode the printer is in.

When the printer is online it is ready to accept print instructions from your computer.

When the printer is off line, it is not in communication with your computer. Buttons are used in the off line mode to check the status of the printer and to choose, reset, or clear temporary data.

Buttons are used in the menu mode to step through the configuration menu and to select options.

Table 2-2 is an overview of the buttons on the control panel and their functions.

Table 2-2. Control panel buttons

Button name	Printer modes		
	Online	Off line	Menu
Online H	The Online button toggles the printer status between online (ready-to-accept-data) and off line.		The Online button exits from menu mode and returns the printer to online status.
Reset G	Has no function in the online mode.	Pressing the Reset button in the off line mode accesses the Reset Menu.	Has no function in the menu mode.
Last Page C	Pressing the Last Page button prints any data remaining in the printer when the Last Page indicator light remains on and LAST PAGE appears in the message display.	Has no function in the off line mode.	Last Page causes the menu to move to the right to display the next option on the same menu level. When the last option on the same menu level is displayed, pressing this key again causes the menu to wrap around back to the first option on the menu level.
Select D	When the Warning indicator light is lit, pressing the Select button accesses the Consumables Menu. This menu reports those consumables that are low and will soon need replacement, and other warning conditions. Low paper may also cause this light to appear.	Has no function in off line mode.	The Select button acts as an Enter button and is used to select the displayed menu option.

Table 2-2. Control panel buttons (continued)

Button name	Printer modes		
	Online	Off line	Menu
Menu A	Has no function in online mode.	When the Menu button is pressed and released, the top level of the Main Menu is displayed.	The Menu button causes the menu to move up to display the next higher menu level or go to off line from the top level of main menu.
Test B	Has no function in online mode.	Pressing the Test button in the off line mode accesses the Test Menu. The Test Menu contains the options to print a configuration sheet and a font status sheet, and to start and stop data monitor mode.	The Test button causes the menu to move down to display the next lower menu level.

Note: Pressing and holding the Last Page C button and the Reset G button while you power on the printer, displays the customer accessible codes. These codes allow you to display the total print count and review and modify certain printer configurations.

3. Using the 4213 menus

This chapter provides the following information:

- Menu maps of the 4213 menus
- Control panel buttons
- Main Menu map
- Printer configuration at the Main Menu
- Printer configuration examples
- The XES submenu map
- Emulation configuration
- The LJ2D submenu map

Menu maps of the 4213

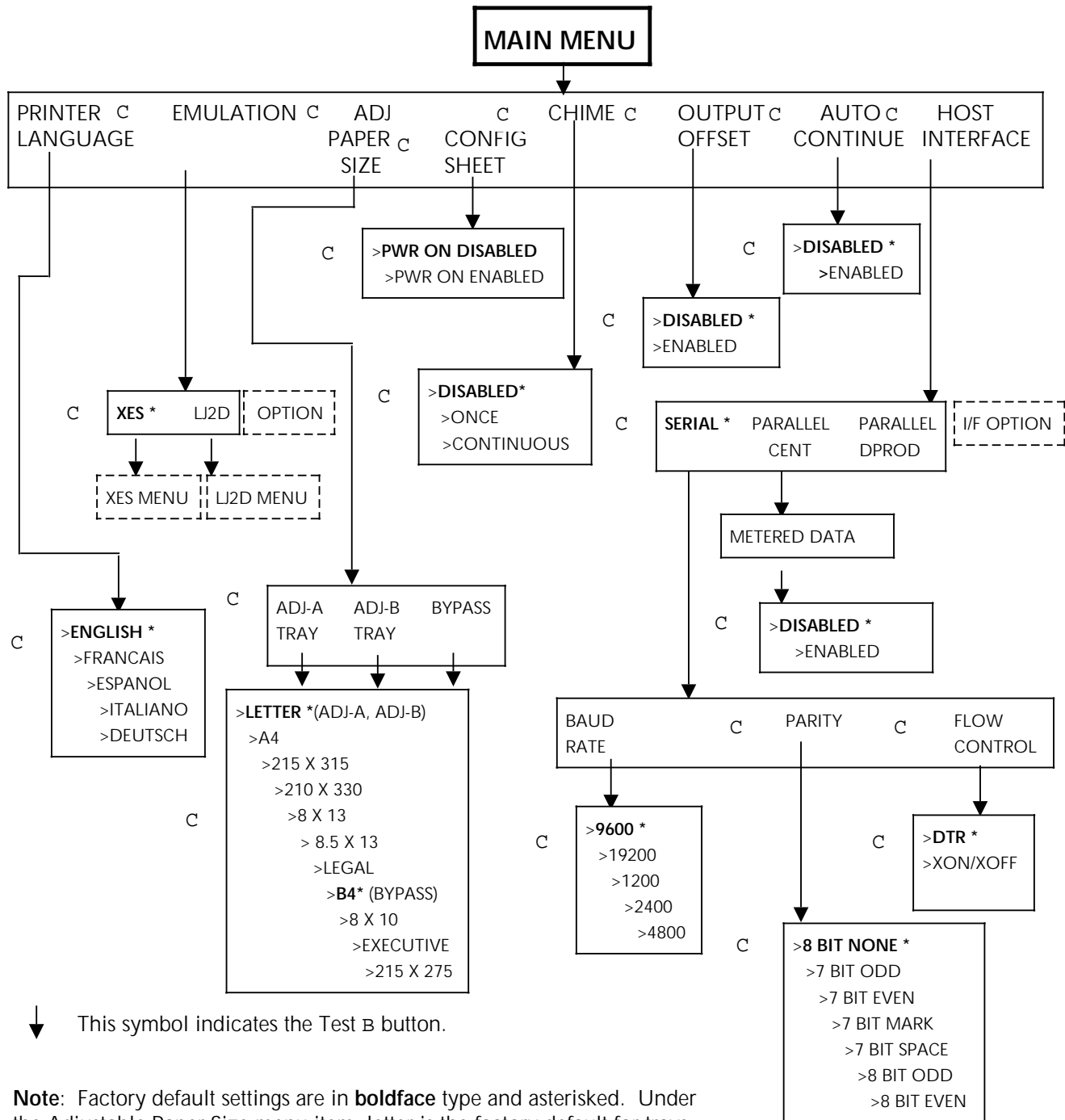
The 4213 has four menus which you can access from the control panel:

- The Main Menu (which includes the following submenus)
 - XES (Xerox Escape Sequences) emulation submenu
 - LJ2D (Hewlett-Packard LaserJet series IID) emulation submenu
- The Test Menu
- The Reset Menu
- The Consumables Menu.

The maps are included as an overview of the menus and to illustrate the different options within each menu.

Main Menu map

- A When the printer is off line, pressing the Menu button displays the 4213 Main Menu. The Main Menu is made up of top level menu headings and up to three of the lower and associated level menu headings and options.



Printer configuration at the Main Menu

Once the physical components of the printer are connected, the printer software may be set up, or configured, to meet the needs of your office. The printer configuration options affect the whole system and are set through the Main Menu.

Note: Your machine is pre-configured with User Defaults which provide parallel interface at power up. If this does not meet your requirements, you can change the printer configuration to your own user defaults.

Accessing the Main Menu

Use the following buttons at the printer control panel:

- H 1. Press the Online button to take the printer off line. (The green Online indicator light is not lit.)
- A 2. Immediately press and release the Menu button to display the first Main Menu heading in the top level menu.

The display reads:

```
MAIN MENU
PRINTER LANGUAGE
```

By configuring your printer, you are establishing your own default settings. There are two types of changes to the system configuration:

- Permanent settings which remain unchanged even through a power off and on cycle
- Temporary settings remain current until a software command to change the setting is received, or the printer is switched off.

Saving the printer configuration as defaults

You must exit the Main Menu and access the Reset Menu to save your selections as the default configuration for the printer.

1. There are two ways to exit the Main Menu:
 - A • Press the Menu button until OFF LINE appears in the message display.
or
 - H • Press the Online button. The printer is online. (The green online indicator light is lit.)
 - H Press the Online button again to take the printer off line. (The green online indicator light is not lit.)

Use the following buttons to save your selections as the printer default configuration:

2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
3. Press the Last Page button until the display reads:
RESET MENU
SAVE DEFAULTS
4. Press the Select button to save the printer configuration as the default configuration.
5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Note: The changes made to the printer configuration are not in effect until you place the printer online. You must use the SAVE DEFAULTS option to save any changes made to the printer configuration settings, if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the system configuration returns to the configuration that was previously saved.

Resetting the printer configuration to factory defaults

To reset the system configuration options back to the factory defaults, access the Reset Menu and use the following buttons:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
RECALL FACTORY DEFAULTS
- D 4. Press the Select button to reset the configuration to the factory defaults.
- H 5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Some of the printer configuration options deal with the print functions. They are:

- Printer language
- Emulation
 - Xerox Escape Sequences (XES)
 - HP LaserJet series IID (LJ2D)
- Adjustable paper size settings for trays and bypass
- Automatic printing of the Configuration Sheet
- Chime
- Output offset
- Automatic continue.

Other system configuration options configure the type of interface between your host computer and printer. Your options are either parallel (Centronics or Data Products) computer interface, serial computer interface, or an interface option (such as, Xerox Coax/Twinax).

The options available for serial interface are:

- Serial baud rate
- Serial parity
- Flow control.

The option available for parallel Centronics interface is metered data.

Note: While in the Main Menu and the LED indicator tells you of an error or fault message, you may have the option to continue with the menu in use and wait until going off line to look at the display message.

Main Menu items

The Main Menu items are described in detail on the following pages.

Note: Below each menu item description is an example of the message display with the factory default for the item written in **boldface** type followed by an asterisk. The options for each menu item are listed in parentheses following the example of the message display. In the following example, disabled is the factory default for Auto Continue:

AUTO CONTINUE
DISABLED* (DISABLED or ENABLED)

Printer language

The language item selection determines which of the five languages available will be used for the message display and the Configuration Sheet.

The options for the language menu item are listed below, as they appear in the message display:

PRINTER LANGUAGE
ENGLISH* (ENGLISH, FRANCAIS, ESPANOL, ITALIANO or DEUTSCH)

Emulation

The Emulation menu item selects which emulation is to be used as the current emulation. Selecting a new emulation here effects an immediate switch to the chosen emulation.

You must save your selection at the Reset Menu if you want to keep the current default emulation in effect at the time you switch on the 4213 laser printer.

The Emulation menu item options are listed below as they appear in the message display:

```
EMULATION
XES* (XES, LJ2D or "Option")
```

- Notes**
- Any additional emulations installed through a board appear as option selections on the menu.
 - Each of the printer emulations can be configured to meet specific printing needs and system requirements. Changes are made through the emulation submenu. The emulation defaults you set at the menu are in effect each time the selected emulation is used. Emulation configurations are discussed in the section "Emulation configuration" later in this chapter.

Adjustable Paper Size

The Adjustable Paper Size menu item allows you to identify the paper size being fed through the manual bypass slot or placed in the optional adjustable paper tray. Appendix A, "Options for the 4213," contains more information on setting the paper size for the optional adjustable tray.

The options in the Adjustable Paper Size menu are listed below as they appear in the message display:

```
ADJ. PAPER SIZE
ADJUSTABLE A, ADJUSTABLE B or BYPASS
```

The lower level paper size selections for the bypass slot and the adjustable tray are listed below as they appear in the message display:

ADJUSTABLE A

LETTER* (8 X 10, EXECUTIVE, 215 X 275, LETTER, A4, 215 X 315, 210 X 330, 8 X 13, 8.5 X 13 or LEGAL)

ADJUSTABLE B

LETTER* (8 X 10, EXECUTIVE, 215 X 275, LETTER, A4, 215 X 315, 210 X 330, 8 X 13, 8.5 X 13 or LEGAL)

BYPASS

B4* (8 X 10, EXECUTIVE, 215 X 275, LETTER, A4, 215 X 315, 210 X 330, 8 X 13, 8.5 X 13, LEGAL or B4)

Configuration Sheet

The Configuration Sheet lists all the system and default emulation configuration variables. This menu item allows you to choose whether or not you automatically receive the Configuration Sheet each time the printer is switched on, and whether you want to enable the Power Saver Mode.

The Configuration Sheet menu item options are listed below as they appear in the message display:

CONFIG SHEET

PWR ON DISABLED* (PWR ON DISABLED or PWR ON ENABLED)

The 4213 enters into the power saver mode if this feature is enabled (PWR ON ENABLED), and the 4213 has been inactive for a length of time equal to or greater than 2 hours and 8 minutes. The following message then appears in the message display:

POWER SAVER ON

The 4213 leaves the Power Saver mode for any 1 of the following:

- a page is ready to be printed
- an emulation switch command has been received via the data stream, or
- a door on the printer has been opened and closed.

When any of the conditions above occur, the following message appears in the message display for a short time.

PLEASE WAIT

Soon, the message

READY

appears, and the 4213 is ready to print.

- Notes**
- 2 hours and 8 minutes is the maximum amount of time (and the factory preset default) for the 4213 to be inactive before entering the Power Saver mode (if this feature is enabled).
 - Only a qualified service representative can change this factory preset default.

Chime

The Chime menu item determines whether the audible tone will sound. If enabled, the chime is heard one time or repeats continuously any time an internal **fault** requiring operator intervention occurs in the printer.

If a **warning** condition exists, the 4213 may sound only one long beep. The chime options apply only to fault conditions.

The Chime menu item options are listed below as they appear in the message display:

CHIME

ONCE* (DISABLED, CONTINUOUS or ONCE)

Output Offset

The Output Offset menu item determines whether or not offsetting in the output tray is allowed. When Output Offset is disabled, no offsetting is allowed, even if the job asks for it. Emulation commands to offset the output are ignored. Disabling output offset allows more sheets to be stacked in the output tray.

If this item is enabled and when the job asks for it, the individual job is offset from the previous job in the output tray. This function is regulated by the offset commands for the emulation.

The options in the Output Offset menu are listed below as they appear in the message display:

OUTPUT OFFSET
DISABLED* (DISABLED or ENABLED)

Auto Continue

The Auto Continue menu item allows you to choose whether the printer continues printing automatically when a communication error occurs.

If the Auto Continue option is disabled, the printer pauses and does not resume printing when an error occurs.

If the Auto Continue option is enabled, the printer logs the errors and then automatically continues printing.

If the printer is shared by many users, you may not want the inconvenience of a paused print job.

The Auto Continue menu item options are listed below as they appear in the message display:

AUTO CONTINUE
DISABLED* (DISABLED or ENABLED)

Host Interface

Through the Host Interface menu, select serial (RS232C) or parallel (Centronics or DataProducts) interface when communicating with your host computer.

Serial and parallel Centronics communication uses special communication parameters. Refer to your host computer software manuals for details and make sure your computer and the 4213 laser printer are using identical settings for each of the serial and parallel Centronics parameters.

The optional interface connection, Xerox Coax/Twinax, is available for the 4213 laser printer. Refer to appendix A, "Options for the 4213," for more information on this interface option.

The Host Interface menu item options are listed below as they appear in the message display:

HOST INTERFACE
SERIAL* (SERIAL, PARALLEL CENT, PARALLEL DPROD)

Baud Rate

The Baud Rate is the rate at which the information is sent from the host computer to the printer. Baud rate is measured in bits per second (bps).

The transmission rate must always match the setting specified in your host computer user manual.

The Baud Rate menu item options are listed below as they appear in the message display:

BAUD RATE
9600* (1200, 2400, 4800, 9600 or 19200) manual for your host computer to see if seven-bit or eight-bit data is used, and select the same number of data bits.

Parity

The parity on the printer must match the setting recommended in the user manual for your host computer.

The options in the Serial Parity menu are listed below as they appear in the message display:

PARITY
8 BIT NONE* (7 BIT ODD, 7 BIT EVEN, 7 BIT MARK, 7 BIT SPACE, 8 BIT ODD, 8 BIT EVEN or 8 BIT NONE)

Flow Control

The Flow Control menu item regulates the flow of data to the printer for the serial connection. The communication protocols chosen must be compatible with your host computer.

The Flow Control menu item options are listed below as they appear in the message display:

FLOW CONTROL
DTR* (XON/XOFF or DTR)

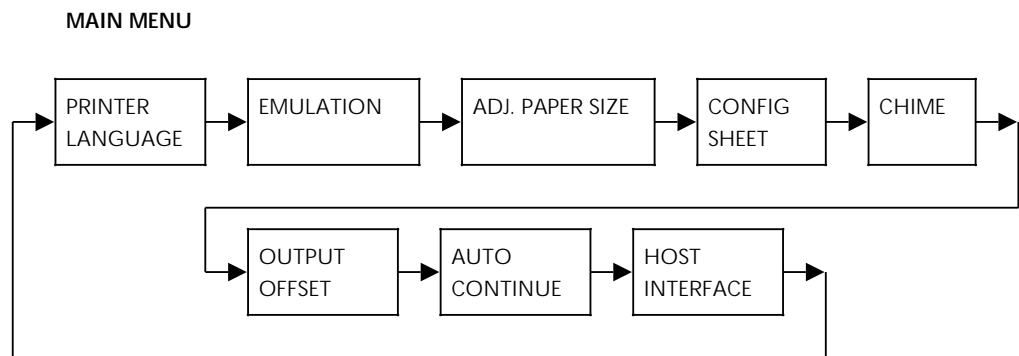
Metered Data (Parallel Centronics)

The Metered Data menu item applies to parallel Centronics interface only. When using metered data with a personal computer, printer time out messages do not appear on the screen; therefore, this mode should be used if the host cannot wait indefinitely for a response.

The options in the Metered Data menu are listed below as they appear in the message display:

METERED DATA
DISABLED* (DISABLED or ENABLED)

Main Menu map (level 1 headings)



Procedure: Online plus Menu accesses level 1.

Legend: → [Right Arrow] moves right on the same level.

For the menu choices available with each of the level 1 headings, refer to the Main Menu Map at the beginning of this chapter.

Printer configuration examples

The examples provided in this section illustrate the step by step procedures for changing the system configuration. Examples include:

- A. Changing the default printer emulation
- B. Changing the host interface setting

Note: In each of the following examples only one setting is changed in order to demonstrate the procedures for changing a specific default setting. When you are making printer configuration changes using the Main Menu, you can make one or many changes to the default settings before exiting the menu and saving the configuration.

A. Changing the default printer emulation

This example shows you how to change the default printer emulation from XES to LJ2D.

- H Press the Online button to take the printer off line.
- A Press the Menu button to access the Main Menu.
- C Press the Last Page button until the display reads EMULATION.
- B Press the Test button to display the available emulation headings. The display reads XES.
- C Press the Last Page button until the display reads LJ2D.
- D Press the Select button to select LJ2D as the current emulation. An asterisk appears next to your selection.
- A Press the Menu button until OFF LINE appears in the message display.
To save LJ2D as the default emulation:
- G Press the Reset button to access the Reset Menu.
- C Press the Last Page button until the display reads SAVE DEFAULTS.
- D Press the Select button to select the option.
- H Press the Online button to put the printer back online. LJ2D is the default emulation, in place immediately and each time the printer is switched on.

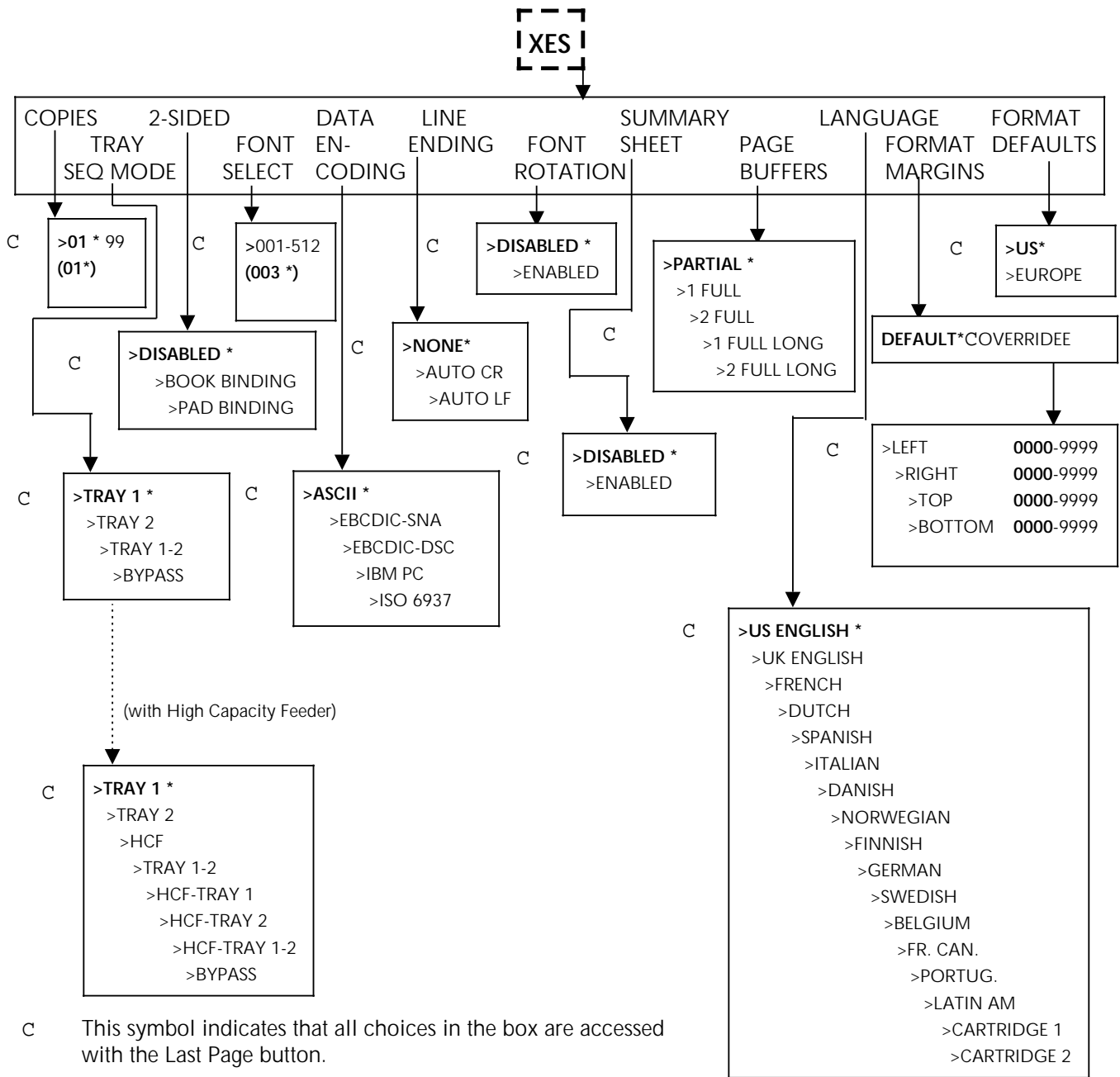
B. Changing the host interface setting

This example shows you how to change the host interface setting from serial interface to parallel Centronics.

- H Press the Online button to take the printer off line.
 - A Press the Menu button to access the Main Menu.
 - C Press the Last Page button until the display reads HOST INTERFACE.
 - B Press the Test button to display the host interface options. The display reads SERIAL.
 - C Press the Last Page button until the display reads PARALLEL CENT.
 - D Press the Select button to select PARALLEL CENT. An asterisk appears next to your selection.
 - A Press the Menu button until OFF LINE appears in the message display.
- To save parallel Centronics as the default interface:**
- G Press the Reset button to access the Reset Menu.
 - C Press the Last Page button until the display reads SAVE DEFAULTS.
 - D Press the Select button to select the option.
 - H Press the Online button to put the printer back online. Parallel Centronics is the default interface, in place each time the printer is switched on.

The XES submenu map

- C B This XES submenu is accessed from the Main Menu. Press the Last Page button to scroll to XES emulation menu. Press the Test button at the EMULATION heading to display this submenu. The XES submenu is made up of top level menu headings and up to two of the associated lower level menu headings and options. Refer to "Control panel buttons" section in this chapter to help you move through the different menu levels.



Note: Factory default settings are in **boldface** type and asterisked.

Emulation configuration

The 4213 laser printer emulates the Xerox Escape Sequence mode and the HP Laserjet series IID (LJ2D) printers. Optional emulations are available for the 4213 laser printer. Refer to appendix A, "Options for the 4213," for information on configuring the optional emulations.

The emulation submenus allow you to change options in each emulation.

There are two types of emulation configuration changes which can be done:

- Permanent settings remain unchanged even through a power off/on cycle.
- Temporary settings remain current until the setting is changed at this submenu, a software command is received, or the printer is switched off.

- Notes**
- Any additional emulations installed appear as option emulations at the Main Menu.
 - The options you select as defaults apply to the selected emulation only. To change the options for an emulation, first display the emulation heading at the Main Menu, step through the options and select the options you want as the defaults for the emulation. Then save the emulation configuration at the Reset Menu.
 - Each printer is shipped with factory default emulation configurations. Factory defaults refer to the emulation configurations in place when you receive your printer. You have the choice, however, to set your own user defaults in order to configure each emulation to operate within your unique office environment. If your software sends MCK commands to the printer for you, you can leave the emulation settings at their factory defaults. Your software overrides the menu configurations you set.

Changing the XES emulation configuration at the Main Menu

The submenus in the emulation list configuration options for the resident emulations. All of the printer emulations may be selected through the Main Menu and then set up individually to conform to your printing needs.

This section shows which buttons on the control panel are used for accessing the Main Menu, advancing to display the emulation, and, if applicable, selecting emulation configuration options.

If necessary, refer to "Control panel," in chapter 2, "Overview," for a diagram showing the location of the control panel buttons.

Accessing the Main Menu and selecting XES

Use the following buttons at the printer control panel:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- A 2. Immediately press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:
MAIN MENU
PRINTER LANGUAGE
- C 3. Press the Last Page button. The display reads:
MAIN MENU
EMULATION
- B 4. Press the Test button. The display reads:
EMULATION
XES*
- C D 5. If XES is not the currently selected emulation, first press the Last Page button until XES is displayed; then, press the Select button to select it. An asterisk appears next to your selection.

Selecting the XES emulation configuration options

- 6. After selecting XES as the current emulation, use the following buttons on the control panel to move through the different menu levels:
 - B • Use the Test button to move to the next lower menu level.
 - C • Use the Last Page button to move the display to the right to show the menu options/headings at the same level. When you display the last heading/option available for the menu item, pressing this button again will wrap around to show the first heading/option in the list.

- D • Use the Select button *before* you initiate changes to numeric entries, such as, COPIES, FONT SELECT, and OVERRIDE FORMAT MARGINS.
 - A • Use the Menu button to move to the next higher menu level. (If pressed continuously, you exit the Main Menu and the printer is in the off line mode.)
 - D • Use the Select button to select a displayed option. When an option is selected, an asterisk (*) appears next to the option in the display.
 - D **Note:** The asterisk does not appear when Select is pressed to select numeric entries, such as, COPIES, FONT SELECT, and OVERRIDE FORMAT MARGINS.
7. Use either one of the following buttons to exit the menu:
- A • Use the Menu button repeatedly, until you exit the Main Menu. The printer is in the off line mode. The online indicator light is not lit.
 - H • Use the Online button to exit the menu. The printer is in the online mode. The online indicator light is lit.

Note: You must access the Reset Menu to save your selected options if you want to keep the current default setting and emulation each time the printer is switched on.

Saving the XES emulation configuration

You must exit the Main Menu and access the Reset Menu to save your selections as the default configuration for the XES emulation.

1. There are two ways to exit the Main Menu:
- A • Press the Menu button until OFF LINE appears in the message display.
or
 - H • Press the Online button. The printer is online. (The green online indicator light is lit.)
 - H Press the Online button again to take the printer off line. (The green online indicator light is not lit.)

Use the following buttons to save your selections as the XES default configuration:

- G 2. Press the Reset button to access the Reset Menu. The display reads:
- RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
- RESET MENU
SAVE DEFAULTS
- D 4. Press the Select button to save the emulation configuration as the default configuration.
- H 5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Note: Changes to the emulation configuration are not in effect until you place the printer online. You must use the SAVE DEFAULTS option to save any changes made to the emulation configuration settings, if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the system configuration returns to the configuration that was previously saved.

Emulation settings for XES

The following items in the XES emulation menu may be set permanently or temporarily:

- Number of copies
- Tray sequence mode
- 2-sided print mode
- Font number selection
- Data encoding
- Automatic line feed
- Font rotation
- Summary sheet
- Page buffers
- Language translation table
- Margins
- Format defaults.

XES emulation items

The following section describes the XES emulation menu items and their corresponding options.

Note: Below each description of the emulation submenu item is an example of the message display with the factory default for the item written in **boldface** type followed by an asterisk. The options for each menu item are listed in parentheses following the example of the message display. In the following example, disabled is the factory default for 2-sided print mode:

2-SIDED
DISABLED* (DISABLED, BOOK BINDING, or PAD BINDING)

An asterisk does not appear for numeric entries, such as, the COPIES, FONT SELECT, or OVERRIDE FORMAT MARGINS.

Number of Copies

The Number of Copies menu item selects the number of copies for each page printed. When you want more than one copy printed, use this menu to select the number of copies required. This would normally be a temporary change, and not saved to memory.

Note: The printer does not collate the copies.

The Number of Copies menu item options are listed below as they appear on the message display:

COPIES 01 (01 to 99)

Note: Most application software automatically sends a reset printer command before the start of each job. Resetting the printer clears the memory of the printer and makes sure that the number of copies is set to the previously saved default, usually one.

Tray Sequence

The Tray Sequence menu item allows you to switch automatically to another tray when the active tray is empty. The Tray Sequence menu item selects the order in which trays are used as the paper source. For example:

- Single tray selection: Paper is fed from one tray only.

- Two-tray sequence selection: Paper is fed from the first tray. When the first tray is empty, paper is fed from the second tray. Paper is fed from the second tray only until the first tray is refilled or replaced, then it feeds again from the first tray.
- Three-tray sequence selection: Paper is fed from the first tray. When the first tray is empty, paper is fed from the second tray. The second tray is the feed tray until the first tray is refilled or replaced. The third tray is the feed tray only if the first and second trays are empty or out of the printer.

If you select a multiple tray sequence, you should have the same paper size trays and the same paper size and type installed in the selected paper trays. The printer will switch to the other paper tray when the first tray is empty.

The options in the Tray Sequence menu are listed below as they appear on the message display:

TRAY SEQ

TRAY 1* (TRAY 1, TRAY 2, HCF, TRAY 1-2, HCF-TRAY 1, HCF-TRAY 2, HCF-TRAY 1-2 or BYPASS)

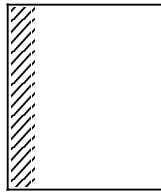
Note: HCF refers to the optional High Capacity Feeder. Under Tray Sequence mode, HCF, HCF-Tray 1, HCF-Tray 2, and HCF-Tray 1-2 are not displayed if HCF is not installed as an option.

2-sided Print Mode

The 2-Sided Print Mode menu item, when enabled, allows you to select the page format for 2-sided printing.

The guidelines governing book binding are:

- Portrait orientation, with space provided on the left side, long edge of page 1 and the right side, long edge of page 2 (front and back of the same page) to allow for binding.
- Landscape orientation, with space provided on the left side, short edge of page 1 and the right side, short edge of page 2 (front and back of the same page) to allow for binding.



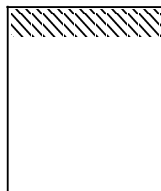
Portrait



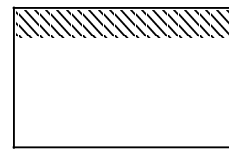
Landscape

The guidelines governing pad binding are:

- Portrait orientation, with space provided on the top, short edge of page 1 and the bottom, short edge of page 2 (front and back of the same page) to allow for binding.
- Landscape orientation, with space provided on the top, long edge of page 1 and the bottom, long edge of page 2 (front and back of the same page) to allow for binding.



Portrait



Landscape

The first printable data on a page determines page orientation.

The 2-Sided Print Mode menu item options are listed below as they appear on the message display:

2-SIDED

DISABLED* (DISABLED, BOOK BINDING or PAD BINDING)

Note: If you are sending 2-sided commands from the data stream, you must set this to DISABLED.

Font Number Selection

The menu item in the Font Number Selection allows you to select any font on the XES font status sheet.

The font number is part of the font code listed on the font status sheet for the current emulation. The font numbers listed on the status sheet are assigned by the printer.

These font numbers may change each time:

- A different font cartridge is installed
- Downloaded fonts are loaded or deleted

Note: Font assignment numbers on downloaded fonts may or may not be consecutive. The numbers are only meant to be identifiers and a gap does not imply anything is missing.

The options in the Font Number Selection menu are listed below as they appear on the message display:

FONT SELECT 003 (001 to 512)

Data Encoding

The Data Encoding menu item selects the XES data set to match the character codes generated by your host computer.

If you have no downloaded fonts, (fonts would be lost with this procedure) follow these steps:

1. Change the encoding menu item.
- 2.. Save the defaults (stay off line).
3. Power the printer off then back on again.

If you have downloaded fonts, follow these steps:

1. Change the encoding menu item.
2. Save the defaults (stay off line).
3. Recall the user defaults.
4. Go on line, then go off line.
5. Go to the XES emulation and enter it.
6. Go on-line.

Data encoding becomes effective when the power is turned Off/On, when the next Reset command ($\text{E}+\text{X}$) is received, or automatically if there is no data in the machine.

If any information remains in the printer when the Data Encoding change is made (the Last Page indicator is lit), nonsense characters will be printed, and your printer could lock-up.

The options in the Data Encoding menu are listed below as they appear on the message display:

DATA ENCODING
ASCII* (ISO 6937, ASCII, EBCDIC-SNA, EBCDIC-DSC or IBM PC)

Line Ending

The Line Ending menu item, if enabled, does the following:

- **AUTO CR** - automatically adds a carriage return (CR) character when it receives a line feed (LF) character.

Check the user manual for your host computer or application software to see if a carriage return is sent automatically at the end of each line.

Note: If the characters are being printed on top of one another at the far right of the page, your host computer is probably not sending an automatic carriage return. In this case, select **AUTO CR** and the printer will insert a carriage return.

- **AUTO LF** - automatically adds a line feed (LF) character when it receives a carriage return (CR) character.

Check the user manual for your application software to see if a line feed is sent automatically at the end of each line.

Note: If lines are being printed on top of one another, your host computer is probably not sending automatic line feeds. In this case, select **AUTO LF** and the printer will insert a line feed.

The Line Ending menu item options are listed below as they appear on the message display:

LINE ENDING
NONE* (AUTO CR, AUTO LF or NONE)

Font Rotation

The Font Rotation menu item rotates a font 90 degrees. This feature changes the orientation of a downloaded font from portrait to landscape or landscape to portrait. (This is useful for downloadable fonts in 2700 II format).

The options in the Font Rotation menu are listed below as they appear in the message display:

FONT ROTATION
DISABLED* (DISABLED or ENABLED)

Summary Sheet

The Summary Sheet menu item designates whether or not an XES information sheet prints at the end of each job, when a job error occurs. Refer to the *Xerox 4213 Laser Printer Programmer Reference* for a list of the error codes that may appear on the summary sheet.

The options in the Summary Sheet menu are listed below as they appear in the message display:

SUMMARY SHEET
DISABLED* (DISABLED or ENABLED)

Page Buffers

The following items in the Page Buffer menu determine if partial or full buffers are used for page assembly:

- PARTIAL - Band buffers used in 2 pieces or bands of 32 scan lines alternately built and imaged during page imaging. Partial buffer requires less memory and produces the fastest output. Partial buffer is the most efficient mode for most print jobs and requires no added or optional memory.
- 1 FULL - One full page buffer guarantees imaging for 1-sided printing because complete assembly of the image in memory is done before imaging and printing begins. This mode reduces the possibility of complex errors and have some impact on the speed performance of the printer. A full buffer requires 1.1 MB of memory. Page sizes involve:
 - 8 x 10
 - Executive
 - 215 x 275
 - Letter
 - A4

- 2 FULL - Two full page buffers guarantee imaging for 2-sided printing because complete assembly of the image in memory is done before imaging and printing begins. Two full buffers require 2.2 MB of memory. Page sizes involve (2 pages each):
 - 8 x 10
 - Executive
 - 215 x 275
 - Letter
 - A4
- 1 FULL LONG - One full long page buffer guarantees imaging for 1-sided printing because complete assembly of the image in memory is done before imaging and printing begins. This mode reduces the risk of complexity errors at the possible cost in speed of printing. A full long buffer requires 1.4 MB of memory. Page sizes involve:
 - 215 x 315
 - 210 x 330
 - 8 x 13
 - 8.5 x 13
 - Legal
- 2 FULL LONG - Two full long page buffers guarantee imaging for 2-sided printing because complete assembly of the image in memory is done before imaging and printing begins. Two full long buffers require 2.8 MB of memory. Page sizes involve (2 pages each):
 - 215 x 315
 - 210 x 330
 - 8 x 13
 - 8.5 x 13
 - Legal

The options in the Page Buffers menu are listed below as they appear on the message display:

PAGE BUFFERS

PARTIAL* (PARTIAL, 1 FULL, 2 FULL, 1 FULL LONG or 2 FULL LONG)

Note: Buffer overflow in the XES or LJ2D emulation may result in overprinting if the 4213 is not configured correctly. When this happens, the next page printed contains unexpected material.

Language

The Language menu item determines which language is used in the printed output. The language translation table selection ensures the correct national character mappings are in use.

The Language menu item options are listed below as they appear on the message display:

LANGUAGE

U.S. ENGLISH* (U.S. ENGLISH, U.K. ENGLISH, FRENCH, DUTCH, SPANISH, ITALIAN, DANISH, NORWEGIAN, FINNISH, GERMAN, SWEDISH, BELGIUM, FRENCH CANADIAN, PORTUGUESE, LATIN AMERICAN, CARTRIDGE 1 (translate table within cartridge 1, U.S. English if no cartridge or table in cartridge) or CARTRIDGE 2 (translate table within cartridge 1, U.S. English if no cartridge or table in cartridge))

Format Margins

When in the XES emulation, this menu item allows you to select whether or not the emulation will use default margins, or not to have any margins at all. If this item is set to **DEFAULT**, the previously defined default margins for the paper size in the paper trays are in place. Refer to *Xerox 4213 Laser Printer Escape Sequences Reference* for detailed information on margins.

If this item is set to **OVERRIDE**, the top, bottom and left margin are set to 0; the right margin is set to the width of the paper. Text prints to the four edges of the paper. The horizontal and vertical tabs start from the paper edge. New margin values for page formatting can be set through the **OVERRIDE** option. Values are entered in pixels (1/300 inch) based upon page origin (0,0) at the upper left corner.

The options in the Format Margins menu are listed below as they appear on the message display:

FORMAT MARGINS

DEFAULT* (DEFAULT or OVERRIDE)

The lower level Override Margins selections are listed below as they appear on the message display:

LEFT 0 (0000-9999)
RIGHT 0 (0000-9999)
TOP 0 (0000-9999)
BOTTOM 0 (0000-9999)

Format Defaults

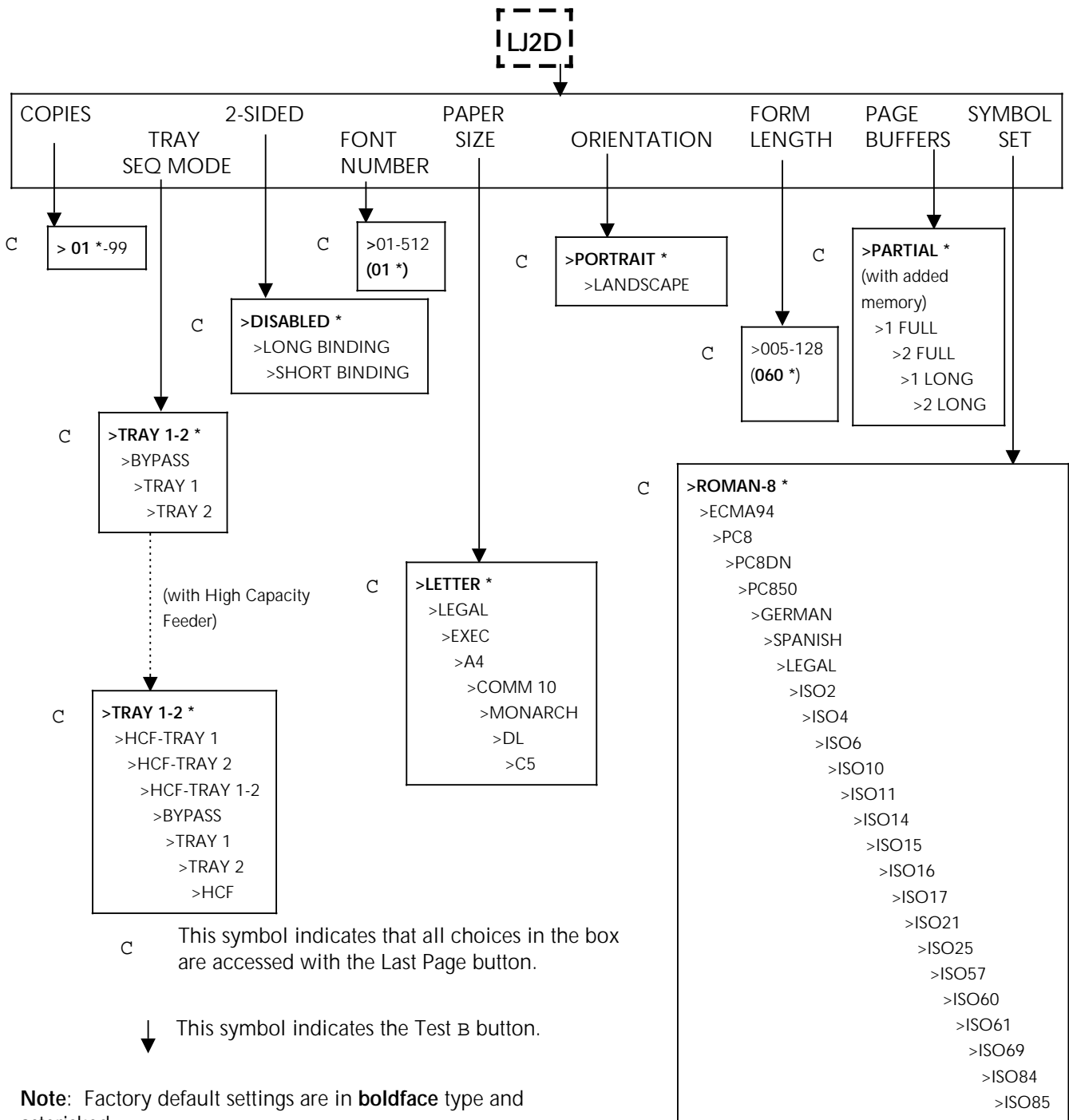
When in the XES emulation, this menu item allows you to determine the built-in defaults, based on either U. S. or European values (such as, letter versus A4).

The XES emulation has four built-in fonts:

- Titan10iso-P
- Titan12iso-P (The default font for Europe is Titan12iso-P.)
- XCP12.5iso-L
- XCP14iso-L (The default font for U.S. is XCP14iso-L.)

The LJ2D submenu map

- B C This LJ2D submenu is accessed from the Main Menu. Press the Test button at the EMULATION heading. Press the Last Page button to move you to LJ2D emulation or until this submenu is displayed. The LJ2D submenu is made up of top level menu headings and up to three associated but lower level menu headings and options. Refer to "Control panel buttons" section in this chapter to help you move through the different menu levels.



Changing the LJ2D emulation configuration at the Main Menu

The emulation submenus list configuration options for the resident emulations. All of the printer emulations may be selected through the Main Menu and then set up individually to conform to your printing needs.

This section shows which buttons on the control panel are used for accessing the Main Menu, advancing to display the emulation, and, if applicable, selecting emulation configuration options.

If necessary, refer to "Control panel," in chapter 2, "Overview," for a diagram showing the location of the control panel buttons.

Accessing the Main Menu and selecting LJ2D

Use the following buttons at the printer control panel:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- A 2. Immediately press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:
MAIN MENU
PRINTER LANGUAGE
- C 3. Press the Last Page button. The display reads:
MAIN MENU
EMULATION
- B 4. Press the Test button. The display reads:
EMULATION
XES*
- C 5. Press the Last Page button to display LJ2D.
- D 6. Press the Select button to select LJ2D. An asterisk appears next to your selection.

Selecting the LJ2D emulation configuration options

7. After selecting LJ2D as the current emulation, use the following buttons on the control panel to move through the different menu levels:
 - B
 - Use the Test button to move to the next lower menu level.
 - C
 - Use the Last Page button to move the display to the right to show the menu options/headings at the same level. When you display the last heading/option available for the menu item, pressing this button again will wrap around to show the first heading/option in the list.
 - D
 - Use the Select button *before* you initiate changes to numeric entries, such as, COPIES, FONT NUMBER and FORM LENGTH.
 - A
 - Use the Menu button to move to the next higher menu level.
 - D
 - Use the Select button to select a displayed option. When an option is selected, an asterisk (*) appears next to the option in the display.

Note: The asterisk does not appear when the Select button is used to select a numeric entry, such as, COPIES, FONT NUMBER and FORM LENGTH.

8. Use either of the following buttons to exit the menu:
 - A
 - Use the Menu button repeatedly, until you exit the Main Menu. The printer is in the off line mode. The online indicator light is not lit.
 - H
 - Use the Online button to exit the menu. The printer is in the online mode. The online indicator light is lit.

Note: You must access the Reset Menu to save your selected options as the default setting to be in place each time the printer is switched on.

Saving the LJ2D emulation configuration

You must exit the Main Menu and access the Reset Menu to save your selections as the default configuration for the LJ2D emulation.

1. There are two ways to exit the Main Menu:
 - A • Press the Menu button until OFF LINE appears in the message display.
 - or
 - H • Press the Online button. The printer is online. (The green online indicator light is lit.)
 - H Press the Online button again to take the printer off line. (The green online indicator light is not lit.)

Use the following buttons to save your selections as the LJ2D default configuration:

- G 2. Press the Reset button to access the Reset Menu. The display reads:

RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:

RESET MENU
SAVE DEFAULTS
- D 4. Press the Select button to save the emulation configuration as the default configuration.
- H 5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Note: Changes to the emulation configuration are not in effect until you place the printer online. You must use the SAVE DEFAULTS option to save any changes made to the emulation configuration settings, if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the system configuration returns to the configuration that was previously saved.

Resetting the LJ2D emulation configuration

Resetting the printer clears the memory of the printer and ensures that the emulation configuration defaults last saved are in place at the beginning of each job.

Note: Most application software automatically sends a reset printer command before the start of each job.

To reset the emulation configuration back to the previously saved default settings, access the Reset Menu and use the following buttons:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- D 3. Press the Select button to reset the emulation configuration to the previously saved defaults.
- H 4. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Emulation settings for LJ2D

The following items in the LJ2D emulation menu may be set permanently or temporarily:

- Number of copies
- Tray sequence mode
- 2-Sided print mode
- Font number selection
- Paper size
- Page orientation
- Form length (lines per vertical inch)
- Symbol set.

Note: Emulation Reset on the 4213 and the HPIID are the same, with one exception. The HPIID deletes any text or data still in the buffer when it resets itself. The 4213 adds a Form Feed and prints any remaining text or data.

LJ2D emulation items

The following section describes the LJ2D emulation menu items and their corresponding options.

Note: Below each description of the emulation submenu item is an example of the message display with the factory default for the item written in **boldface** type followed by an asterisk. The options for each menu item are listed in parentheses following the example of the message display. In the following example, disabled is the factory default for 2-sided print mode:

2-SIDED
DISABLED* (DISABLED, LONG BINDING, or SHORT BINDING)

An asterisk does not appear for numeric entries, such as the COPIES, FONT NUMBER, or FORM LENGTH.

Number of Copies

The Number of Copies menu item selects the number of copies of each page printed. When you want more than one copy printed, use this menu to select the number of copies required. This would normally be a temporary change, not saved to memory.

Note: The printer does not collate the copies.

The Number of Copies menu item options are listed below as they appear on the message display:

COPIES 01 (01 to 99)

Note: Most application software automatically sends a reset printer command before the start of each job. Resetting the printer clears the memory of the printer and makes sure that the number of copies is set to the previously saved default, usually one.

Tray Sequence

The Tray Sequence menu item allows you to switch automatically to another tray when the active tray is empty. The Tray Sequence menu item selects the order in which trays are used as the paper source. For example:

- Single tray selection: Paper is fed from one tray only.
- Two-tray sequence selection: Paper is fed from the first tray. When the first tray is empty, paper is fed from the second tray. Paper is fed from the second tray only until the first tray is refilled or replaced, then it feeds again from the first tray.

- Three-tray sequence selection: Paper is fed from the first tray. When the first tray is empty, paper is fed from the second tray. The second tray is the feed tray until the first tray is refilled or replaced. The third tray is the feed tray only if the first and second trays are empty or out of the printer.

If you select a multiple tray sequence, you should have the same paper tray size and the same paper size and type installed in the selected paper trays. The printer will switch to the other paper tray when the first tray is empty.

The Tray Sequence menu item options are listed below as they appear on the message display:

TRAY SEQ MODE

TRAY 1-2* (TRAY 1, TRAY 2, HCF, TRAY 1-2, HCF-TRAY 1, HCF-TRAY 2, HCF-TRAY 1-2 or BYPASS)

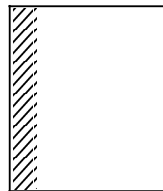
Note: HCF refers to the optional High Capacity Feeder. Under Tray Sequence Mode, HCF, HCF-Tray 1, HCF-Tray 2, and HCF-Tray 1-2 are not displayed if HCF is not installed as an option.

2-Sided Print Mode

The 2-Sided Print Mode menu item, when enabled, allows you to select the page format for 2-sided printing.

The guidelines governing long binding are:

- Portrait orientation, with space provided on the left side, long edge of page 1 and the right side, long edge of page 2 (front and back of the same page) to allow for binding.
- Landscape orientation, with space provided on the top, long edge of page 1 and the bottom, long edge of page 2 (front and back of the same page) to allow for binding.



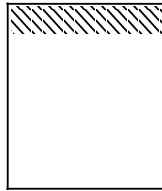
Portrait



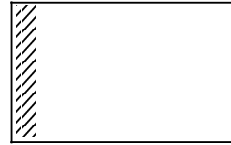
Landscape

The guidelines governing short binding are:

- Portrait orientation, with space provided on the top, short edge of page 1 and the bottom, short edge of page 2 (front and back of the same page) to allow for binding.
- Landscape orientation, with space provided on the left side, short edge of page 1 and the right side, short edge of page 2 (front and back of the same page) to allow for binding.



Portrait



Landscape

Note: The first printable data placed on the page determines the page orientation.

The 2-Sided Print Mode menu item options are listed below as they appear on the message display:

2-SIDED

DISABLED* (DISABLED, LONG BINDING, or SHORT BINDING)

Font Number Selection

The Font Number Selection allows you to select any font on the LJ2D font status sheet.

The font number is part of the font code listed on the font status sheet for the current emulation. The font numbers listed on the status sheet are assigned by the printer.

These font numbers may change:

- Each time a different font cartridge is installed.
- Downloaded fonts are loaded.

Note: Font assignment numbers on downloaded fonts may or may not be consecutive. The numbers are only meant to be identifiers and a gap does not imply anything is missing.

The Font Number Selection menu item options are listed below as they appear on the message display:

FONT NUMBER 001 (001 to 512)

Paper Size

The image sent to the printer is placed on the page, according to the size of the paper being fed.

You can change the paper size to another standard paper or envelope size in one of three ways:

- If your application software allows you to select one of the standard page or envelope sizes listed in table 3-1, the selected paper size command is automatically sent to the printer and the image is placed in the correct location on the page.
- If your application software does not allow you to automatically select the standard paper or envelope size, you can send a paper size printer command to let the printer know what paper size to expect. Refer to the *4213 Laser Printer Programmer Reference* for information on the LJ2D paper size printer command.
- If your application software does not allow you to automatically select one of the standard paper or envelope size, you can select one of the sizes listed in table 3-1 at this menu.

The Paper Size menu item options are listed below as they appear on the message display:

PAPER SIZE
LETTER* (LETTER, LEGAL, EXEC, A4, COMM 10, MONARCH,
DL or C5)

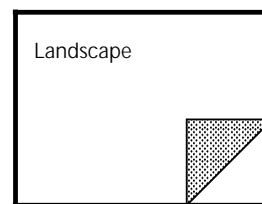
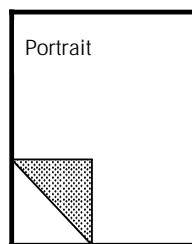
Table 3-1 shows acceptable paper and envelope sizes.

Table 3-1. Paper and envelope size requests

Paper name	Envelope name	Size
Letter		(216 x 279 mm) 8.5" x 11"
Legal		(216 x 356 mm) 8.5" x 14"
Executive		(184 x 267 mm) 7.25 "x 10.5"
A4		(210 x 297 mm) 8.27" x 11.69"
	Business (Comm 10)	(105 x 241 mm) 4.13" x 9.5"
	Monarch	(99 x 191 mm) 3.88" x 7.5"
	International DL	(110 x 220 mm) 4.33" x 8.66"
	International C5	162 x 229 mm) (6.38" x 9.02"

Orientation

The Orientation menu item allows you to print lines in portrait (vertical) or landscape (horizontal) orientation on the page.



The Orientation menu item options are listed below as they appear on the message display:

ORIENTATION
PORTRAIT* (PORTRAIT or LANDSCAPE)

Form Length

The Form Length menu item sets the number of text lines you want to print on your page. The number of lines you set affects the vertical (portrait) or horizontal (landscape) spacing of the text lines.

The Form Length menu item options are listed below as they appear on the message display:

: FORM LENGTH **060*** (005, 006,...060,...128)

Page Buffers

The options in the Page Buffers menu are listed below as they appear on the message display:

PAGE BUFFERS
PARTIAL* (PARTIAL, 1 FULL, 2 FULL, 1 FULL LONG or 2 FULL LONG)

Note: Buffer overflow in the LJ2D or XES emulation may result in overprinting if the 4213 is not configured correctly. When this happens, the next page printed contains unexpected material.

Symbol Set

When you select a symbol set for the LJ2D emulation, you are selecting an unique subgrouping of all the available characters in a font.

The options in the Symbol Set menu are listed below as they appear in the message display:

SYMBOL SET
ROMAN-8* (Refer to table 3-2.)

Table 3-2. LJ2D resident symbol sets

Message display	Symbol set	Message display	Symbol set
ROMAN-8	HP Roman-8	ISO14	ISO 14: JIS ASCII
ECMA94	ISO 100: ECMA-94 Latin 1	ISO15	ISO 15: Italian
PC8	PC-8	ISO16	ISO 16: Portuguese
PC8DN	PC-8 (D/N)	ISO17	ISO 17: Spanish
PC850	PC-850	ISO21	ISO 21: German
GERMAN	HP German	ISO25	ISO 25: French
SPANISH	HP Spanish	ISO57	ISO 57: Chinese
LEGAL	Legal	ISO60	ISO 60: Norwegian v1
ISO2	ISO 2 IRV	ISO61	ISO 61: Norwegian v2
ISO4	ISO 4 United Kingdom	ISO69	ISO 69: French
ISO6	ISO 6 ASCII	ISO84	ISO 84: Portuguese
ISO10	ISO 10: Swedish/Finnish	ISO85	ISO 85: Spanish
ISO11	ISO 11: Swedish: Names		

Emulation configuration examples

The examples provided in this section illustrate step by step procedures for changing the emulation configuration. Examples include the following:

- A. Changing the current emulation from XES to LJ2D
- B. Temporarily placing the printer in the 2-sided mode for XES
- C. Changing the tray sequencing mode for XES and LJ2D.

Note: In each of the following examples only one setting is changed in order to demonstrate the procedures for changing a specific default setting. When you are making emulation configuration changes using the Main Menu, you can make one or many changes to the default settings before exiting the menu and saving the configuration.

A. Changing the current emulation from XES to LJ2D

This example shows how to change the current printer emulation from the default XES to LJ2D.

- H Press the Online button to take the printer off line.
 - A Press the Menu button to access the Main Menu.
 - C Press the Last Page button until the display reads EMULATION.
 - B Press the Test button to display the available emulation headings. The display reads XES*.
 - C Press the Last Page button until the display reads LJ2D.
 - D Press the Select button to select LJ2D as the current emulation. An asterisk appears next to your selection.
 - H Press the Online button to put the printer back online. LJ2D* is the current emulation, in place until a command to change emulations is received, the emulation is changed using this menu, the printer is reset, or the printer is switched off.
- To reset XES as the current emulation:**
- H Press the Online button to take the printer off line.
 - G Press the Reset button to access the Reset Menu. The display reads EMULATION RESET.
 - C Press the Last Page button until the display reads RECALL USER DFT..
 - D Press the Select button to select the option.
 - H Press the Online button to put the printer back online.

B. Temporarily placing the printer in 2-sided printing mode for XES

This example shows you how to change the printing mode to 2-sided (book binding for XES).

- H Press the Online button to take the printer off line.
 - A Press the Menu button to access the Main Menu.
 - C Press the Last Page button until the display reads EMULATION.
 - B Press the Test button to display the available emulation headings. The display reads XES*.
 - B Press the Test button to display the XES emulation configuration options. The display reads COPIES 01.
 - C Press the Last Page button until the display reads 2-SIDED.
 - B Press the Test button to display the options for 2-sided printing. The display reads DISABLED*.
 - C Press the Last Page button until the display reads BOOK BINDING.
 - D Press the Select button to select 2-sided printing in the book binding orientation.
 - H Press the Online button to put the printer back online. 2-sided copies are received until a command to change emulations is received, the emulation is changed using this menu, the emulation is reset, or the printer is switched off.
- To reset (disable) the 2-sided printing mode and set the print mode to 1-sided printing for XES:**
- H Press the Online button to take the printer off line.
 - G Press the Reset button to access the Reset Menu. The display reads EMULATION RESET.
 - C Press the Last button until the display reads RECALL USER DFT.
 - D Press the Select button to select the option.
 - H Press the Online button to put the printer back online.

C. Changing the tray sequencing mode for XES and LJ2D

This example shows you how to change the tray sequencing mode default settings from tray 1 to tray 1-2 for XES, and tray 1-2 to HCF-tray 1 for LJ2D.

To change the tray sequencing mode for XES:

- H Press the Online button to take the printer off line.
- A Press the Menu button to access the Main Menu.
- C Press the Last Page button until the display reads EMULATION.
- B Press the Test button to display the available emulation headings. The display reads XES*.
- B Press the Test button to display the XES configuration headings. The display reads COPIES 01.
- C Press the Last Page button one time. The display reads TRAY SEQ MODE.
- B Press the Test button to display the tray sequencing options. The display reads TRAY 1.
- C Press the Last Page button until the display reads TRAY 1-2.
- D Press the Select button to select the option.

To change the tray sequencing mode for LJ2D:

- A Press the Menu button two times. The display reads EMULATION.
- C Press the Last Page button until the display reads LJ2D.
- B Press the Test button to display the LJ2D configuration headings. The display reads COPIES 01.
- C Press the Last Page button one time. The display reads TRAY SEQ MODE.
- B Press the Test button to display the tray sequencing options. The display reads TRAY 1.
- C Press the Last Page button until the display reads OPTIONAL.
- D Press the Select button to select the option.
- A Press the Menu button until OFF LINE appears in the message display.

Continue next page for procedures to save these tray sequencing settings.

Test Menu

The Test Menu is used to manually print the following:

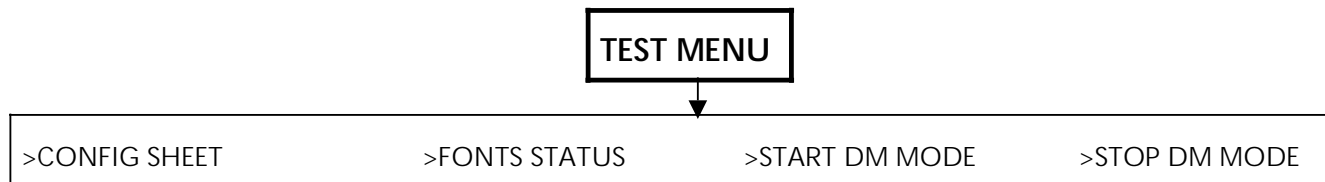
- Configuration Sheet
- Font Status Sheet.

The Test Menu is also used to start and stop data monitor mode.

Note: The Test Menu allows you to print a Configuration Sheet or Font Status Sheet. Unlike the Main Menu or the Reset Menu, a selection of a function from Test Menu can cause paper to start moving. In the event of printing in the Test Menu, a fault such as open door, tray empty, tray missing, and so forth, causes an exit from the Test Menu into Off line mode. This allows the error messages to be displayed. Also the mimic and alarm becomes active. The LED indicator, however, tells you of the machine status while in all menus.

Test Menu map

- B When the printer is off line, immediately pressing the Test button displays the 4213 Test Menu. This menu has two options which cause either a configuration sheet or a font status sheet to print. The last two options start and stop the data monitor mode.



Making selections at the Test Menu

This section shows which buttons on the control panel are used for accessing the Test Menu, advancing through the menu items, and, if applicable, selecting options.

If necessary, refer to "Control panel," in chapter 2, "Overview," for a diagram showing the location of the control panel buttons.

Accessing the Test Menu

Use the following buttons at the printer control panel:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- B 2. Immediately press and release the Test button to display the first Test Menu item. The display reads:

TEST MENU
CONFIG SHEET

Selecting Test Menu options

- 3. Use the following buttons at the printer control panel to move through the different menu items:
 - C • Use the Last Page button to move the display to the right to display the menu options.
 - A • Use the Menu button to move to the next higher menu level.
 - D • Use the Select button to print the Configuration or Font Status sheet.
 - D • Use the Select button to start or stop the data monitor mode.
 - H • Use the Online button to exit the menu. The online indicator light is lit.

Note: When the configuration sheet operation is invoked from the Test Menu with the required tray source empty or missing, the Test Menu is exited (Off line) in order to display the missing or empty tray source message (for instance, "INSERT TRAY 1 0705). The configuration sheet prints after filling or inserting the requested tray. When the configuration sheet is delivered to the output tray, the printer remains in the Off line mode. If the error condition was an open cover or door, the process works in the same way.

Test Menu items

The Test Menu items are described in detail on the following pages.

Configuration sheet

The Configuration Sheet lists all the configuration variables in place for the printer and the current emulation (except fonts). Refer to chapter 4, "Printing with the 4213," for a detailed explanation of the items on the Configuration Sheet.

- D To print the Configuration Sheet, press the Select button when the message display reads:

TEST MENU
CONFIG SHEET

Font Status Sheet

The Font Status Sheet lists all the available fonts for the current emulation. Refer to chapter 4, "Printing with the 4213," for a detailed explanation of the items on the Font Status Sheet.

- D To print the Font Status Sheet, press the Select button when the message display reads:

TEST MENU
FONT STATUS

Start Data Monitor Mode

Data Monitor is a data analysis tool which diagnoses application software related problems.

If the data monitor mode is enabled at this menu and you submit a print job (*XES emulation only*), the printer automatically prints the data received prior to any formatting or manipulations conducted by the printer. The printout contains the hex and ASCII or EBCDIC representations of each character or function received by the printer. If the Last Page indicator light remains on after printing stops, press the Online Ξ button to take the printer off line and then press the Last Page \mathcal{C} button to print the remaining page of data.

The printout always uses a landscape page with the 16.66 pitch XCP14iso-L font with the ASCII or EBCDIC symbol set. Any control characters from Hex 00 to Hex 20 will print the abbreviated ASCII or EBCDIC meaning. If a character in the printable Hex 20 to FF is undefined, the "Happy Face" character (Hex 01) from the IBM US symbol set is printed in the ASCII area of the data monitor printout. Refer to appendix B for a sample data monitor printout.

- D To begin data monitor mode, press the Select button when the message display reads:

TEST MENU
START DM MODE

Stop Data Monitor Mode

- D To disable data monitor mode, press the Select button when the message display reads:

TEST MENU
STOP DM MODE

Reset Menu

The most convenient way to reset the printer is to access the Reset Menu. The reset functions available at the Reset Menu are:

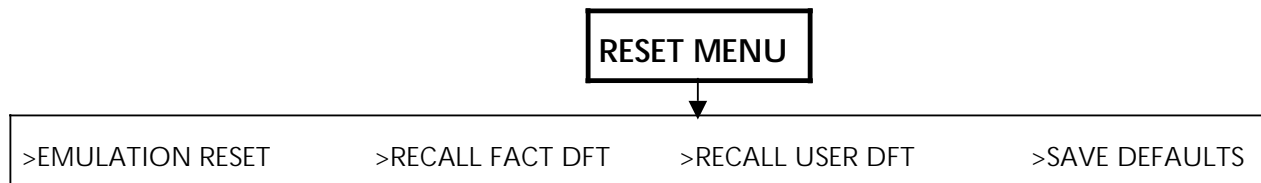
- Emulation reset
- Recall factory defaults
- Recall user defaults
- Save defaults.

The Reset Menu is also used to save printer and emulation configurations set at the Main Menu.

Note: While in the Reset Menu and the LED indicator tells you of an error or fault message, you may have the option to continue with the menu in use and wait until going off line to look at the display message.

Reset Menu map

- G When the printer is off line, immediately pressing the Reset button displays the 4213 Reset Menu. This menu has four options which, when selected, determine which configuration settings are in place.



Making selections at the Reset Menu

This section shows which buttons on the control panel are used for accessing the Reset Menu, advancing through the menu items, and, if applicable, selecting options.

If necessary, refer to "Control panel," in chapter 2, "Overview," for a diagram showing the location of the control panel buttons.

Accessing the Reset Menu

Follow these steps to access the Reset Menu:

- H 1. Press the Online button to take the printer off line. The online indicator light is not lit.
- G 2. Immediately press and release the Reset button to display the Reset Menu options. The display reads:

RESET MENU
EMULATION RESET

Selecting the Reset Menu options

- 3. Use the following button at the printer control panel to move through the different menu items:
 - C • Use the Last Page button to move the display to the right to show the menu items.
 - A • Use the Menu button to move to the next higher menu level.
 - D • Use the Select button to select the option. An asterisk (*) appears next to the heading when the option is selected.
 - H • Use the Online button to exit the menu. The online indicator light is lit.

Reset Menu items

The Reset Menu items are described in detail on the following pages.

Emulation Reset (LJ2D and XES)

The Emulation Reset clears the memory of the printer and makes sure that the LJ2D and XES emulation configuration defaults last entered are in place at the beginning of each job. For example, if you have specified more than one copy to be printed in the LJ2D mode, resetting the LJ2D emulation clears the memory of printer and ensures that the number of copies is set to the last save default, normally one.

Note: Emulation Reset on the 4213 and the HPIID are the same, with one exception, The HPIID deletes any text or data still in the buffer when it resets itself. The 4213 adds a Form Feed and prints any remaining text or data.

- D To reset the LJ2D or XES emulations, press the Select button when the message display reads:

RESET MENU
EMULATION RESET

Recall Factory Defaults

Selecting this setting returns all configuration settings to the original factory defaults, which were in place when the printer was shipped.

- D To recall factory defaults, press the Select button when the message display reads:

RESET MENU
RECALL FACT DFT

Recall User Defaults

Selecting this setting returns all configuration settings to the most current default settings.

- D To recall user defaults, press the Select button when the message display reads:

RESET MENU
RECALL USER DFT

Note: Recall User Defaults has no function in the PostScript emulation.

Save Defaults

Selecting this setting saves the most current settings as defaults to be in place each time the printer is switched on.

- D To save defaults, press the Select button when the message display reads:

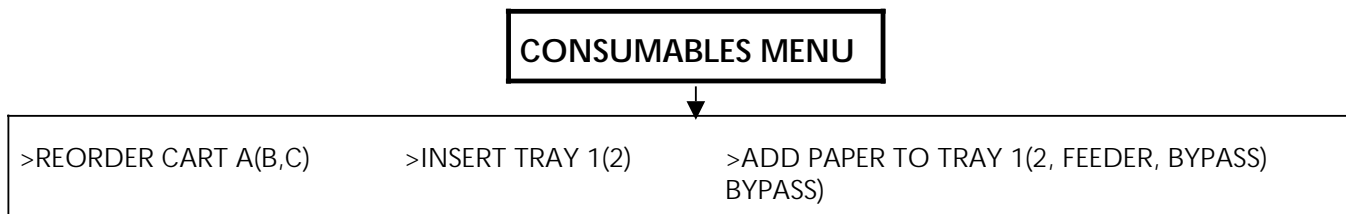
RESET MENU
SAVE DEFAULTS

Consumables Menu

When the yellow Warning indicator light is lit, you are alerted that an operator action is required soon. Displaying the Consumables Menu informs you of an operator action required, although no immediate operator intervention is necessary since the printer will continue printing.

Consumables Menu map

- D When the printer is online and the yellow warning indicator light is lit, pressing the Select button displays the 4213 Consumables Menu. This menu displays a message indicating what operator action is required.



Accessing and displaying the Consumables Menu

The Consumables Menu can only be accessed when the yellow warning indicator light is lit and the printer is online. The printer is online when the green online indicator light is lit.

Follow these steps to access the Consumables Menu:

- D 1. Press and release the Select button to display the Consumable Menu.
- C 2. Press the Last Page button. The consumables that are low are reported as you scroll through the menu.
- C 3. Press the Last Page button again after the last item is displayed to return to the READY status.

Consumables Menu items

The following status messages are displayed at the Consumables Menu.

Reorder Cartridges (A, B, or C)

When this message is displayed, one of the consumable cartridges is nearing the end of its service life. The cartridges are as follows:

- Cartridge A: Print cartridge
- Cartridge B: Toner cartridge
- Cartridge C: Developer cartridge.

The message display reads:

```
CONSUMABLES MENU  
REORDER CART A (B, C)
```

Insert Tray (1 or 2)

When this message is displayed, the currently selected feed tray is not in the proper tray slot. The following trays are :

- Tray 1: Upper paper tray
- Tray 2: Lower paper tray.

The message display reads:

```
CONSUMABLES MENU  
INSERT TRAY 1 (2)
```

Add Paper to Tray (1, 2 or feeder)

When this message is displayed, the currently selected feeder tray or attachment is out of paper. The following feeder trays are:

- Tray 1: Upper paper tray
- Tray 2: Lower paper tray
- Feeder: High Capacity Feeder (optional)
- **Bypass: Manual Bypass Feeder**

The message display reads:

CONSUMABLES MENU
ADD PAPER TO TRAY 1 (2, FEEDER, **BYPASS**)

This chapter discusses printing preparations and procedures. The following information is focused upon:

- Printing a configuration sheet
- Printing a font status sheet
- Selecting fonts
- Sending a simplex (1-sided) print job
- Sending a 2-sided print job
- Printing on envelopes, transparencies, and labels.

Printing a configuration sheet

The configuration sheet contains information on the current printer environment. When you first power on your printer, you should print a configuration sheet. A configuration sheet can be printed from tray 1, tray 2, or the HCF (High capacity feeder), but not from the bypass or the MMF (Multi-media feeder). The successful printing of a configuration sheet indicates the printer is properly installed.

After changing and saving a configuration setting at the Main Menu, print a configuration sheet.

Note: It is not possible to print a configuration sheet in the PostScript emulation mode.

A configuration sheet contains:

- The amount of memory in your printer
- How the 4213 is set up or configured
- Which emulations (either resident, cartridge, or Page Description Language (PDL) board) are available.

A change made at the control panel will not appear on the configuration sheet until you take the printer on-line after making the change then off line to print to configuration sheet.

Printing a configuration sheet manually

- H 1. Press the Online button to take the printer offline. (The green online indicator light is not lit.)
- B 2. Immediately press the Test button to access the Test Menu. The display reads:
TEST MENU
CONFIG SHEET
- D 3. Press the Select button to print the configuration sheet.
- H 4. After the page is printed, press the Online button to put the printer back online. (The online indicator light is lit.)

Figure 4-1 is an example of a printer configuration sheet showing the setting for the XES emulation. Figure 4-2 is an example of a printer configuration sheet showing the setting for the LJ2D emulation.

Figure 4-1. **Printer configuration sheet for XES emulation**

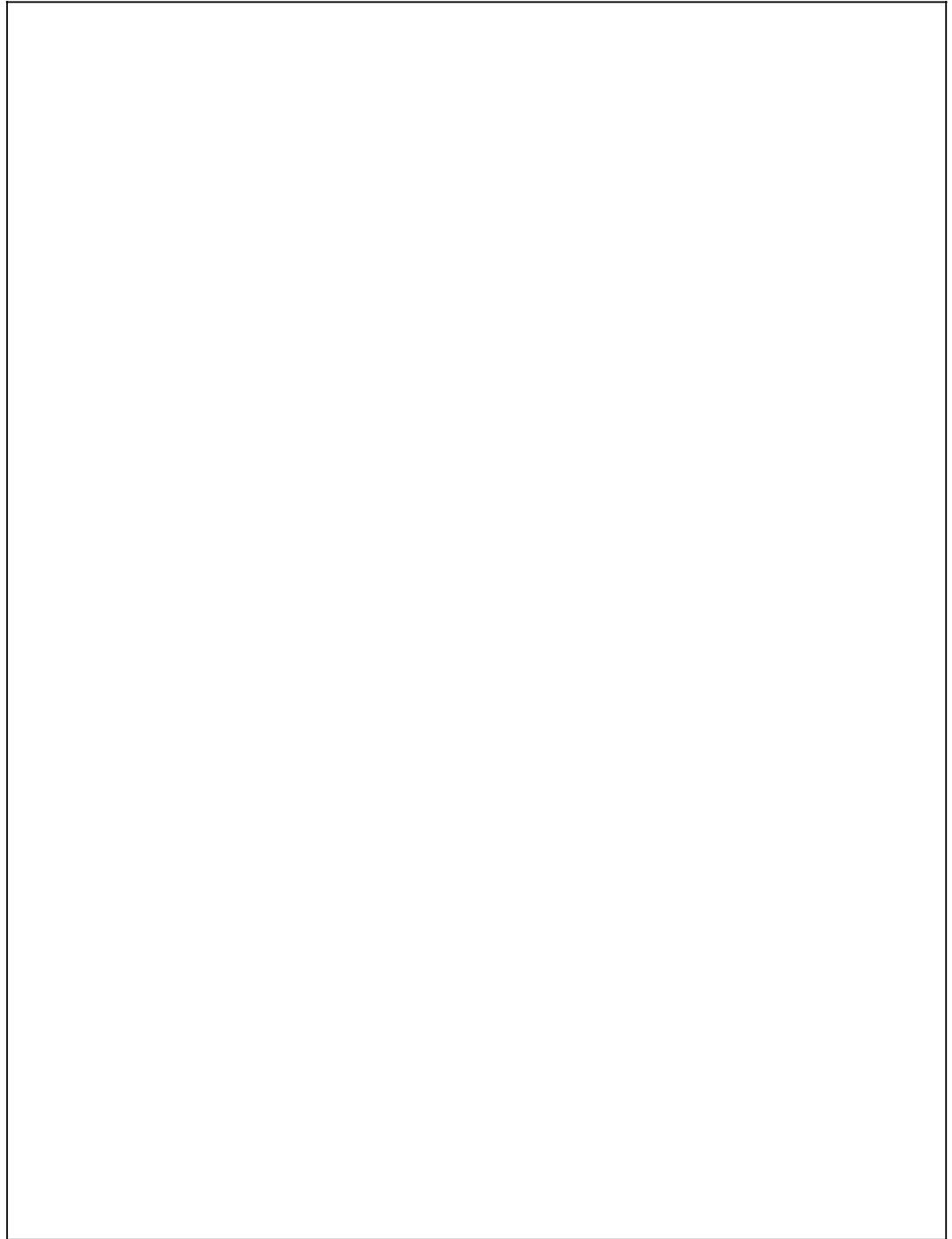
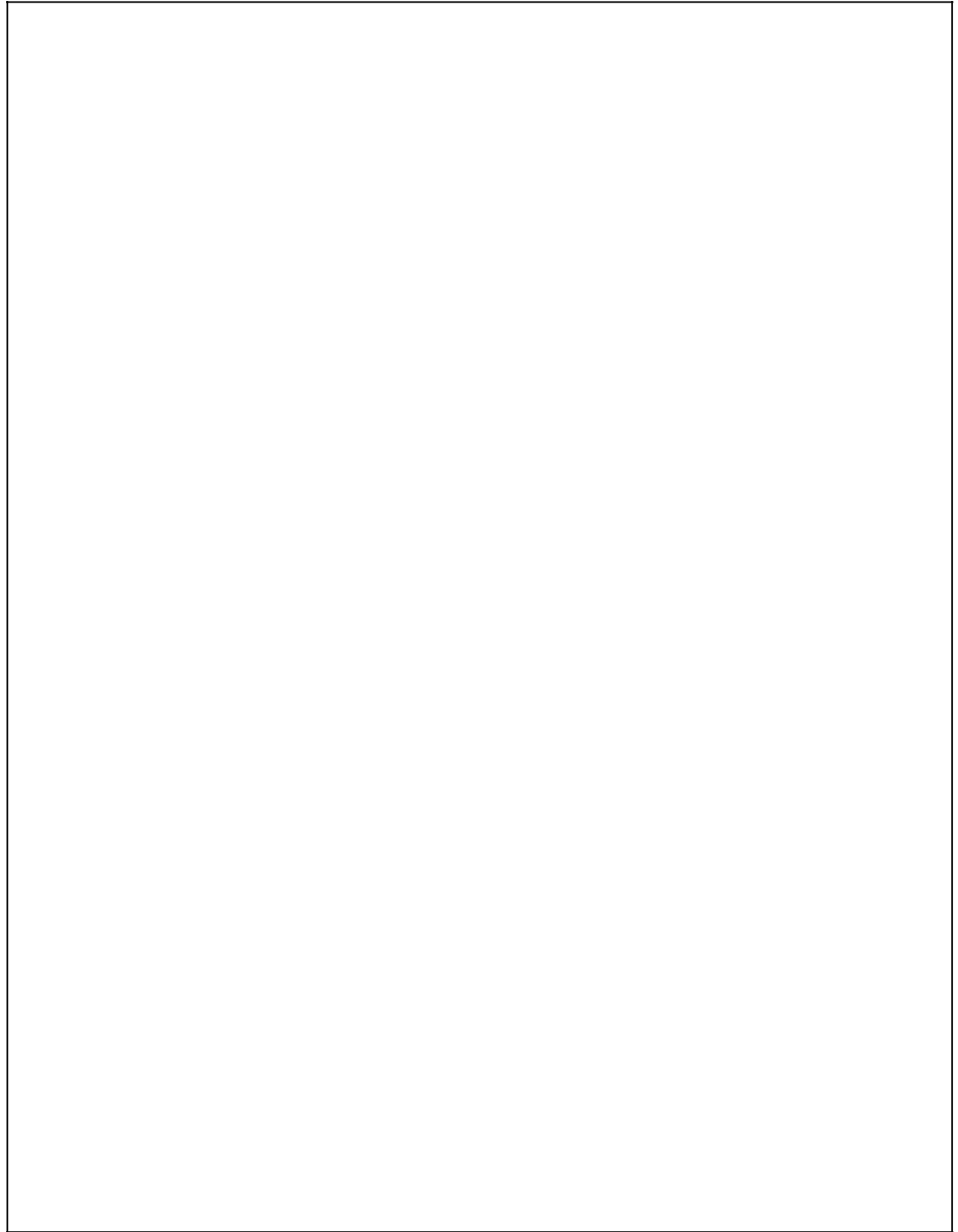


Figure 4-2. **Printer configuration sheet for LJ2D emulation**



Reading the configuration sheet

1. The configuration sheet first reports the status of Cartridges A, B, and C. It also gives the following information:
 - **Total Prints:** Total number of prints made.
 - **Total System Memory:** Reports the total system memory.
 - **Available System Memory:** Indicates the number of Kbytes available for storing downloaded fonts, logos, text and graphics data, HP macros and future downloaded emulations.
2. **Current Emulation Configuration:** Shows the printing functions specific to the emulation that the 4213 laser printer is currently running.

XES items

The following configuration items are listed for XES emulation:

- **copies:** Sets the number of copies for each page printed.
- **tray sequence mode:** When printing a job, the printer can select from all three paper trays, two of the three trays, or one tray only. You control which of the paper trays will be used and the order in which they will feed paper by choosing a tray sequence.
- **duplex:** When enabled, sets the print mode to 2-sided.
- **font select:** Identifies the default font currently in use. The font number is assigned by the printer.
- **data encoding:** Selects the XES symbol set to match the character codes generated by your host computer.
- **line ending:** Determines if a line feed or carriage return code is automatically sent to the printer. If your application software package sends these codes to the printer, this setting is NONE.

AUTO CR automatically adds a carriage return control code (ASCII 10, ODH) when the printer receives a line feed. AUTO LF automatically adds a line feed control code (ASCII 13, ODH) when the printer receives a carriage return code.

- **font rotation:** Rotates a font 90 degrees. This feature, when enabled, changes the orientation of a downloaded font from portrait to landscape or landscape to portrait.
- **summary sheet:** Determines whether a XES information sheet is printed at the end of each job when a job error occurs.
- **page buffers:** Determines the amount of memory to be allocated for printing. PARTIAL bitmap type reserves portions of RAM as print buffers. This is the most efficient and fastest setting for most print jobs. A slower setting is used for complex jobs or pages formatted longer than 11 inches.

Note: Buffer overflow in the XES or LJ2D emulation may result in overprinting if the 4213 is not configured correctly. When this happens, the next page printed contains unexpected material.

- **language:** Provides a translation table for the country listed.
- **format margins:** Allows a choice of default or user selected margins.
- **format default:** Allows a choice of European or U.S. XES formatter defaults such as letter size, and margins.

LJ2D items

The following configuration items are listed for LJ2D emulation:

- **copies:** Sets the number of copies for each page printed.
- **tray sequence mode:** Sets the order in which paper is fed from the paper trays.
- **duplex:** When enabled, sets the print mode to 2-sided.
- **font number:** Identifies the number of the default font in place for the LJ2D emulation.
- **paper size:** Shows the default paper size.
- **orientation:** Sets the page orientation to portrait or landscape.
- **forms length:** Sets the vertical spacing for the form length.
- **page buffers:** Determines the amount of memory to be allocated for printing. PARTIAL bitmap type reserves portions of RAM as print buffers. This is the most efficient and fastest setting for most print jobs. A slower setting is used for complex jobs or pages formatted longer than 11 inches.

- **symbol set:** Identifies by name the set of characters in place for the LJ2D emulation.
3. **Printer Configuration:** The Main Menu settings which affect the overall operation of the 4213 regardless of the current emulation are:
- **printer language:** Determines the language used for the message display and the configuration sheet is either English, French, Spanish, Italian, or German.
 - **paper size:** Indicates the paper size associated with the feed trays (TRAY 1, TRAY 2, BYPASS).
 - **configuration sheet power-on:** When enabled, this setting causes the configuration sheet to print automatically each time the printer is switched on.
 - **chime:** Identifies the chime setting as either one beep, continuous or disabled. You will hear one long beep for a Warning condition and hear a continuous chime for an internal fault condition.
 - **output offset:** When enabled, if the emulation calls for it, each individual print job is staggered (offset from the last job) as it is stacked in the output tray. This feature separates the individual print jobs in the output tray. If disabled, output is not offset, even when the emulation calls for it.
 - **autocontinue:** When enabled, this setting causes the 4213 laser printer to continue printing after a ten-second pause when certain error conditions occur.
4. The next configuration sheet item reports the computer interface setting:
- **baud:** Determines the speed at which the data travels from the host computer to the printer. The options are 1200, 2400, 4800, 9600, and 19,200 bits per second.
 - **parity:** Is an error-checking technique for verifying the integrity of data sent from the host computer to the printer. The default setting is no parity.
 - **flw ctrl:** Regulates the flow of information between the host computer and the 4213 laser printer. One of the following communications protocols is in effect:
 - XON/XOFF
 - Data Terminal Ready (DTR).

- **autoconnect:** Serial interface - in the auto disconnect mode, the interface is disconnected from the host when:
 - The communication line is inactive for more than 30 seconds.
 - The modem connected to the printer cancels a Data Set Ready (DSR) it previously set.

Parallel interface (Metered Data) - When used with a personal computer, printer timeout messages do not appear on the screen; therefore, this mode should be enabled if the host requires an immediate report on the state of the printer.

5. **Available Emulations:** Lists the other resident, cartridge, and PDL board emulations currently residing on the 4213 laser printer. It reports the version levels of the installed printer software.

Review the information listed on the configuration sheet to determine if the current settings are satisfactory.

Printing a font status sheet

The font status sheet gives a listing of all the available fonts for a selected emulation. There is a minimum of eight sheets of font list printed but a single sheet sample is shown in figure 4-3.

Note: The font status sheet, unlike the configuration sheet, can be printed from the bypass. The font status sheet is printed only in simplex. The LaserJet IID, however, can print the font status sheet in duplex.

Printing an XES font status sheet

Make sure the display reads EMULATION/XES*, then use the display buttons to select your desired language translation table. Press the Online \mathbb{H} button to put the printer online (so your choice will take effect), then press the button again to take the 4213 off line. Next press the Test \mathbb{B} button to access the Test Menu. Press the Last Page \mathbb{C} button to display TEST MENU/FONT STATUS. Now press the Select \mathbb{D} button to print the font status sheet. After the pages are printed, press the Online \mathbb{H} button to put the printer online again.

Reading the XES font status sheet

The XES Font Status Sheet lists all the fonts that are currently loaded and available for use with the emulation:

- The font number is assigned by the printer to each font set. A font is selected through the menu by its unique font number. The numbers 1 through 4 are assigned to the four resident font sets:

1: Titan10iso-P
 2: Titan12iso-P
 3: XCP14iso-L
 4: XCP125iso-L

- The font name identifies the font set. An example of a font name is as follows:

Titan12iso-P: Resident font number 2

Titan	Represents the typeface
12	Represents the characters per inch
iso	Represents the International Standards Organisation (ISO encoding scheme)
-P	Represents print orientation (-P=Portrait, -L=Landscape).

Note: Printer commands are case-sensitive. Upper-case and lower-case letters must be exact. Enter the entire printer command when selecting a font.

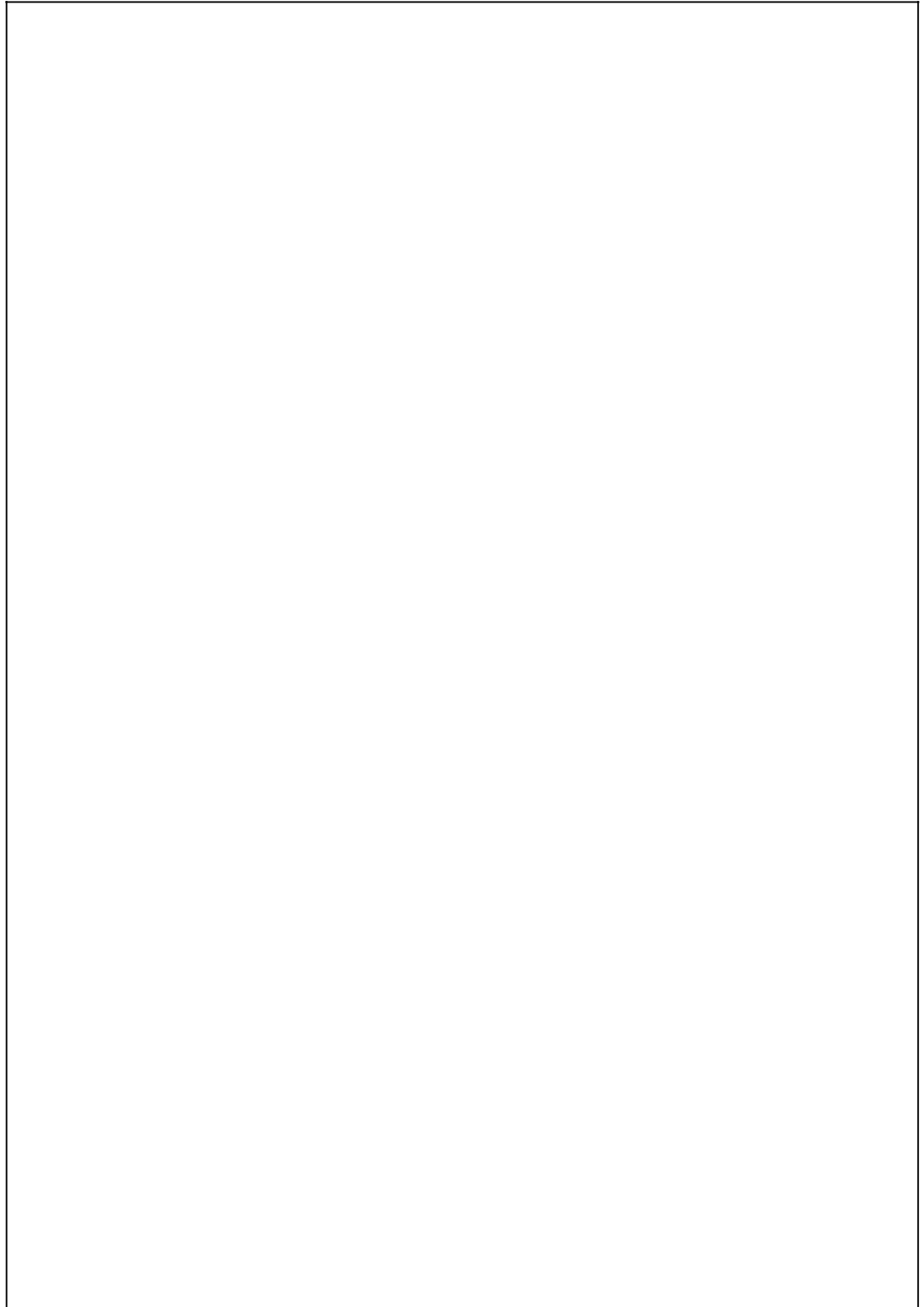
Additional fonts can be purchased in cartridge or downloadable form.

- Fonts are grouped on the status sheet according to their font source. Fonts are listed in the following order:

- Resident fonts
- Left or Right Cartridge fonts, if present
- Downloaded fonts, if present.

Note: Downloaded fonts are removed from the memory of the printer if you switch the printer off and when you change emulations. When downloaded fonts are deleted, the default font is the active font for the printer.

Figure 4-3. **XES Font Status Sheet**



Printing the LJ2D font status sheet

Make sure the display reads EMULATION/LJ2D*, then use the display to select your desired language translation table. Press the Online button to put the printer online (so your table choice will take effect), then press the button again to take the 4213 off line. Next press the Test/[Down Arrow] button to access the Test Menu. Press the Last Page/[Right Arrow] button to display TEST MENU/FONT STATUS. Now press the Select/[*] button to print the font status sheet. After the pages are printed, press the Online button to put the printer online again.

Reading the LJ2D font status sheet

The LJ2D Font Status Sheet (refer to figure 4-4) lists all the fonts that are currently loaded and available for use with the emulation:

- The font number is assigned by the printer to each font set. A font is selected through the menu by its unique font number.
- Fonts are grouped on the status sheet according to their font source. Fonts are listed in the following order:
 - Permanent soft fonts, if present
 - Left or Right Cartridge fonts, if present
 - Internal fonts.

Note: You will not erase permanent soft fonts from memory by configuring LJ2D settings. Generally, permanent soft fonts remain in the memory until the printer is turned off.

The status sheet reports the following information for each font listed:

- The font number: Assigned by the printer to each font set. A font is selected through the menu by its unique font number.
- The symbol set: Table 4-2 lists the possible symbol sets.
- Pitch: Denotes the number of characters per inch. Fixed spacing is designated by **F**. Proportional spacing is designated by **P**.

- Point size: Refers to character height in points.
- Style: Choose between upright or Italic.
- Stroke weight: Choose among light, medium and bold.
- Name of typeface: Refer to table 4-1 for a list of typeface names.
- Default orientation: Port means portrait; Land refers to landscape.
- Print Sample and Escape Sequence: A row of characters is printed as a sample for each font listed on the status sheet.

Figure 4-4. **LJ2D Font Status Sheet**

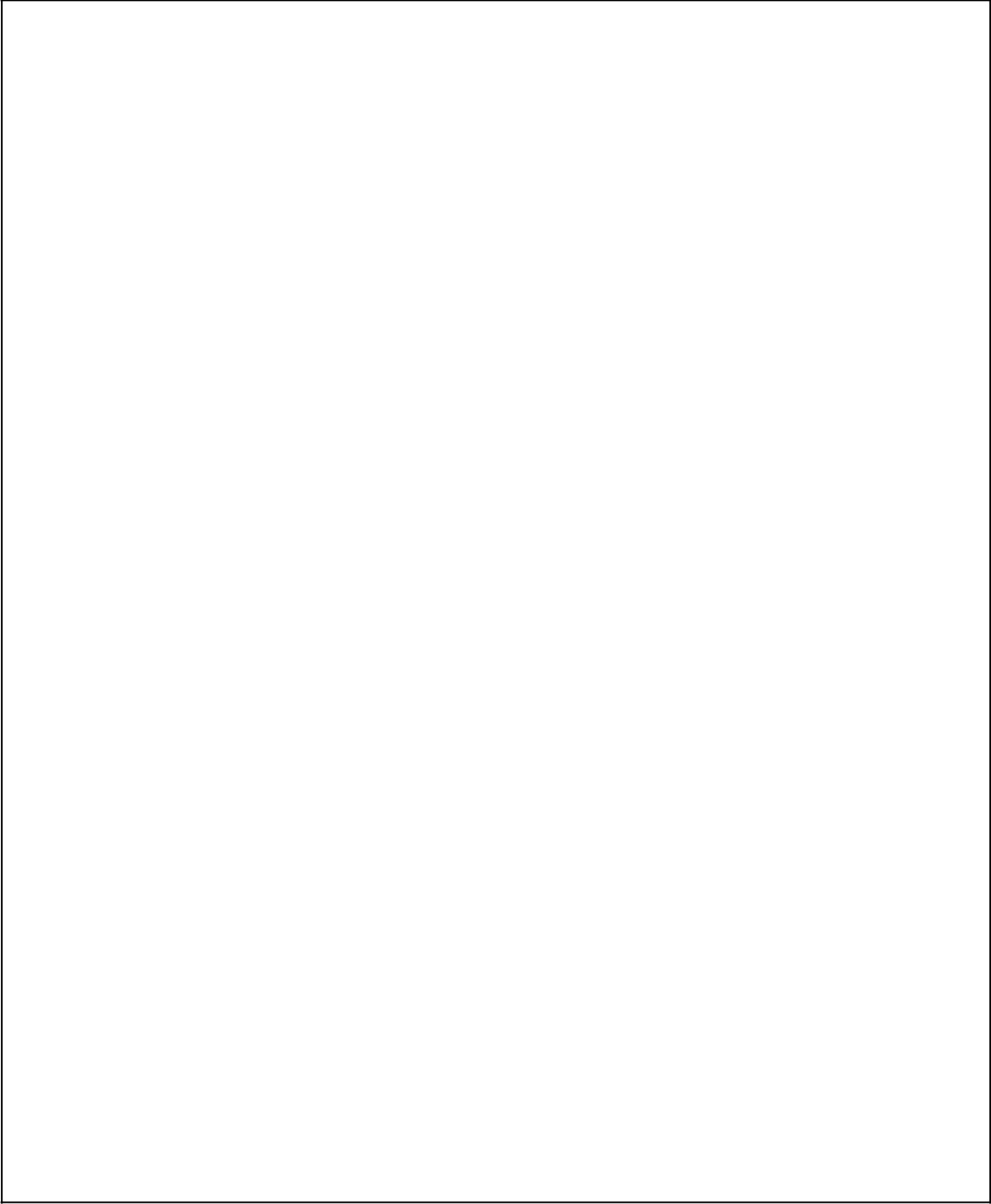


Table 4-1. **Typeface names**

Typeface	Typeface	Typeface
Courier	Coronet Bold	Cooper Black
Line Printer	Swiss	Broadway
Prestige Elite	Dutch	Bauer Bodini
OCR A	Letter Gothic	University Roman
OCR B	Line Draw/Tax LDraw	Modern
Pica	Bar 3 of 9	EAN/UPC
Script	Elite	Century Schoolbook
Presentations	Orator	Helios
Garamond	Optima/Humanist	Math

Table 4-2. Symbol set names

Symbol set	Symbol set	Symbol set
Math-7	Math-8	ISO 84: Portuguese
Tax Linedraw	ISO 100: ECMA-94 Latin 1	ISO 85: Spanish
ISO 60: Norwegian v 1	OCR A	Line Draw
ISO 61: Norwegian v 2	OCR B	ISO 6: ASCII
Roman Extension	Math-8A	Legal
ISO 4: United Kingdom	Math-8B	ISO 2: International Reference Version
ISO 25: French	Pi Font A	OEM-1
ISO 69: French	OCR-B Extended	Roman-8
HP German	ECMA-94	PC-8
ISO 21: German	ISO 11: Swedish: Names	PC-8 (D/N)
Greek-8	HP Spanish	PC-850
ISO 15: Italian	ISO 17: Spanish	Pi Font
ISO 14: JIS ASCII	ISO 10: Swedish/Finnish	Bar Code 39
ISO 57: Chinese	ISO 16: Portuguese	EAN/UPC
Technical-7		

Selecting fonts

Access the Main Menu to select a default font. The default font you select is used unless you select a different font through your application software or by sending a printer command.

A preset default font has been established for each printer emulation. If you do not select a different default font, the preset default is the one in use.

In XES the default font has the following characteristics:

- Landscape
- XCP
- ISO (International Standards Organisation encoding scheme)
- 14-pitch
- Upright
- Medium weight.

In LJ2D the preset default font has the following characteristics:

- Portrait
- Roman-8 (symbol set)
- 10-pitch
- Upright
- Medium weight.

Note: The font characteristics are explained later in this chapter.

Some font cartridges contain a default font. When the font cartridge is installed, its default font is used unless it is changed at the Main Menu or by printer commands.

Note: If no tabs have been set for a job using a portrait font, the 4213 automatically uses the default portrait tabs. If no tabs have been set for a job using a landscape font, the 4213 automatically uses the default landscape tabs.

The default font is automatically assigned using the following priority:

- Use default font on the left font cartridge if one is defined.
- Use default font on the right font cartridge if one is defined.
- Use default font from the resident fonts.

If a downloaded font is selected as the default then the default font returns to the first internal font when the printer is powered on again. If a cartridge font is selected as the default font then it is still the default when the printer is powered on again if the same cartridge is present. If the cartridge has been removed then the default returns to the first internal font.

Note: This information applies *when your default font is a cartridge font*:

- Removing cartridges while the printer is turned on may cause the printer to lock up and may cause the printer to return to the factory default font (if the default font was contained in the cartridge).

- If the default font was selected at the Main Menu, you may turn the printer off and remove the cartridge for storage. If you install the *same* cartridge *before turning the printer back on* the selected default is still in place.
- Do not remove or insert cartridges while the printer is switched on.

Selecting a default font

The font status sheet shows every font available for use as a default font for the current emulation. Sample font status sheets are shown on figures 4-3 and 4-4. The status sheet can include a listing from all of the internal fonts, from installed font cartridges, and any downloaded fonts.

Note: The LJ2D font status sheet identifies the font as either a proportional or fixed-pitch (width) font. When printing in the LJ2D mode, select a font width that matches the type of spacing (fixed or proportional) that your application programme supports.

Use the Font Status Sheet to identify the number of the font you wish to select as the default font.

Note: The font numbers are assigned by the printer. These font numbers may change each time a different font cartridge is installed, fonts are downloaded, or a different symbol set is selected.

Choosing a new default font

To choose a new default font, make sure the display reads EMULATION/XES* OR EMULATION/LJ2D*. Press the Test **B** button to display the choices for the current emulation, e.g. XES/COPIES. Now press the Last Page **C** button until XES/FONT SELECT 003 or LJ2D/FONT NUMBER 001 appears. Next press the Select **D** button before you begin the font entry number. The display reads, e.g. LJ2D/FONT NUMBER **001**. The highlighted number represents the first position of the 3-digit number allowed for font identification. When the number is highlighted, its value can be changed..

- Use the Menu **A** button to increase the value of the highlighted number by one.
- Use the Test **B** button to decrease the value of the highlighted number by one.

- Use the Last Page **C** button to move the cursor to highlight the next position in the number sequence.

When the displayed font number matches the number of the font you wish to set as the default font, press the Select **D** button, then press the Online **H** button to put the 4213 back online.

Saving your font selection as the default font

After choosing a new default font as shown above, press the Online **H** button to take the printer off line, then immediately press the Reset **G** button to display RESET MENU/EMULATION RESET. Press the Last Page **C** button until SAVE DEFAULTS is displayed. Now press the Select **D** button then press the Online **H** button to return the printer online. The font selection for the emulation is saved as the default font, in place each time the emulation is currently in use.

Font characteristics

Fonts are made up of the following eight characteristics:

Orientation Orientation refers to the direction of print on a page. The 4213 can print in either portrait or landscape orientation. Printing across the width of the page is called portrait orientation. Printing across the length of the page is called landscape orientation. This guide is printed in portrait orientation.

Symbol set A symbol set is a unique sub-grouping of all the available characters in a font. For example, Roman-8 and IBM-PC, ECMA-94, ISO 25 are the symbol sets available with the LJ2D emulation. Each symbol set is designed with a specific application in mind.

Note: Additionally, if you change to a new symbol set, the control panel font selection returns to the factory default setting. You must re-select your font using the printing menu. Print a Font Status sheet to check the font ID number.

- Spacing** All fonts are designed with either fixed or proportional spacing. If the font spacing is set for fixed, all character cells are the same width regardless of the size of the character being printed. If the font spacing is set for proportional, character cell width depends on the character size. For example, a "W" is a wider character than an "l." If spacing is fixed, the characters (W and l) would be given the same sized character cell and equal space on the printed line. If spacing is proportional, the wider character (W) is contained in a wider character cell and given more space on the printed line than the narrower character (l).
- Pitch** Pitch refers to the number of characters that can be placed in a horizontal inch of text. All fixed pitch fonts use a specific pitch size. For example, a font with a pitch setting of 10 prints 10 characters for every horizontal inch of the page. Fonts with proportional spacing do not specify pitch.
- Point size** Points are units of measurement used to determine character height. For example, the text in this user guide is printed in 10 point size; whereas, this text is printed in 12 point size.
- Style** The 4213 laser printer can print using either upright or *italic* character style.
- Stroke weight** Stroke weight refers to the thickness of print. Light, medium and **bold** stroke weights are printed.
Note: Fonts used in the 4213 are filled fonts and have no difference in appearance from stroked fonts except for the Courier font. Using the Courier font may cause the stroke weight to appear bolder on the 4213 output document.
- Typeface** Typeface refers to the printed design of characters.
Note: If you delete and replace characters in a font, the results are unpredictable. The last replaced font will be used.

Sending a print job

Before you begin to print with the 4213 laser printer make sure that the interface cable (parallel or serial) between the host computer and the printer is properly connected. If you need help refer to chapter 1, "Installation."

The printer formats the data sent from your host computer according to which printer is selected as the default emulation. When your application software requests that you select a printer, choose the one listed as the default emulation on the configuration sheet.

Note: Some software packages take advantage of the random access memory (RAM) expansion capabilities of the LaserJet series of printers. When a software package asks how much RAM is installed, select the option closest to the amount of RAM installed in the 4213 laser printer. The configuration sheet lists the amount of system memory available.

To print in another emulation, refer to chapter 3, "Using the 4213 menus."

Send a job from your host computer to be printed. Refer to the manual provided with your application software or host operating system for specific instructions on printing.

The Last Page indicator light starts blinking at the printer control panel when the printer receives a print job. The symbol remains displayed and blinking until printing is completed.

Last Page

Yellow

Printing a full page of graphics

To print a full page (up to 216 by 279 mm or 8.5 by 14 inches) of graphics at 300 dots per inch, the 4213 laser printer requires a minimum of 4.5 megabytes of RAM. This requires the purchasing of a memory expansion option for an additional 4-megabytes. For a letter size full page of graphics, one 2-megabyte update is required. Refer to chapter 7, "Supplies: ordering information," for more details on memory upgrades.

Last page is not ejected

- If the Last Page indicator light is still lit after the printer activity has stopped and no more pages are ejected, you must manually eject the remaining page of the document. Simply press the Last Page button to print and eject the last page of data.
- C Press the Last Page button to print and eject the last page of data.
 - H Press the Online button to put the printer back online. (The green online indicator light is lit.)

2-sided printing

The 4213 offers 2-sided capability as a standard feature. It is capable of producing printed images from standard fixed size paper trays extending to the full width and length of the paper size except for a 3-mm border provided at the lead edge where data is not printed.

The printer is configured for 1-sided printing. To print 2-sided pages, make sure the display reads EMULATION/XES* OR EMULATION/LJ2D*. Press the Test B button to display the emulation options, then press the Last Page C button until XES /DUPLEX or LJ2D/DUPLEX appears. Next press the Test B button till DUPLEX/DISABLED* appears. Now press the Last Page C button to display the two sided printing mode you wish to use.. Press the Select D button to make you choice. Press the Online H button to put the printer back online, then submit your job.

Note: The use of 60-gsm (16-lb) paper is not recommended for 2-sided printing. 2-sided printing should not be done on 203 by 254 mm (8 by 10 inch) paper.

To return to the 1-sided printing mode

To return to 1-sided (simplex) printing, press the Online H button to take the printer off line, then immediately press the Reset G button. Press the Last Page C button until RECALL USER DFT is displayed. Now press the Select D button and the printer will automatically return to online status with the 2-sided feature disabled.

Printing from the bypass tray

The bypass tray is used for manual feeding of special papers such as labels, envelopes, and transparencies. 2-sided printing is not available with the bypass tray.

To print on odd-sized or nonstandard weight (60- to 120-gsm or 16- to 32-lb) papers or special materials, such as labels or transparencies, you must use the bypass tray to manually insert one sheet at a time.

Handling special papers in the bypass slot

The following paper requires special handling:

- **Predrilled paper** is loaded with the holes next to the left feed guide.
- **Labels** are loaded right side up with the top of the label inserted first.
- **Letterhead and preprinted paper** are loaded face up with the top of the preprinted page inserted first.
- **Nonstandard sized paper** must be fed into the manual feed slot.
- **Envelopes** are fed right side up (flap side down):
 - If the envelope flap is on the long edge of the envelope, place the closed folded flap against the left feed guide.
 - If the envelope flap is on the short edge of the envelope, place the closed folded flap against the feed rolls, to be fed in first. Refer to figure 4-4.

How to use the bypass tray

To use the bypass tray, it is necessary to either:

- Send a command from your host computer to the printer requesting manual feed.
- Select BYPASS at the printer control panel, by accessing the Main Menu.

Selecting the bypass tray at the printer

If your application software does not provide the manual feed option, you can select the bypass tray for manual feed at the Main Menu.

Before submitting your print job, use the following buttons on the control panel to access the Main Menu and to select BYPASS as the current feed tray. First, make sure the display reads EMULATION/XES* OR EMULATION/LJ2D*. Press the Test **B** button to display emulation selections, then press the Last Page/[Right Arrow] button until you see XES or LJ2D/TRAY SEQ MODE. Next press the Test **B** button once then the Last Page **C** until the display reads TRAY SEQ MODE/BYPASS. Press the Select **D** button to select BYPASS as the feed tray you wish to use.

Setting the bypass tray paper size at the Main Menu

The menu item called ADJ PAPER SIZE found in the Main Menu allows you to select one of the standard paper sizes listed in table 4-3. The selected paper size command is automatically sent to the printer and the image is placed in the correct location on the page.

Table 4-3. **Bypass paper sizes**

Paper name	Paper size
203 x 254	203 x 254 mm (8"x 10")
Executive	184 x 267 mm (7.25" x 10.5")
215 x 275	215 x 275 mm (8.46" x 10.83")
Letter	216 x 279 mm (8.5" x 11")
A4	210 x 297 mm (8.27" x 11.69")
215 x 315	215 x 315 mm (8.46" x 12.4")
210 x 330	210 x 330 mm (8.27" x 12.99")
203 x 330	203 x 330 mm (8" x 13")
216 x 330	216 x 330 mm (8.5" x 13")
Legal	216 x 356 mm (8.5" x 14")
B4	257 x 364 mm (10.12" x 14.33")

To set the bypass tray paper size at the Main Menu, make sure the 4213 is off line and the MAIN MENU is displayed. Press the Last Page **C** button until MAIN MENU/ADJ PAPER SIZE is displayed. Next press the Test **B** button once then press the Last Page **C** button until ADJ PAPER SIZE/BYPASS appears. Press the Test **B** button to display the bypass options, then press the Last Page **C** button until the paper size you want is displayed. Press the Select **D** button, then press the Online **H** button to put the 4213 back online.

Using the bypass tray

When you send a job to the printer and bypass has been selected as the paper source, the chime (if enabled) is heard and the following message is displayed:

ADD PAPER
TO BYPASS

Note: A paper jam can occur if paper or an envelope is fed into the bypass slot before this message appears. Paper jams and other errors are accompanied with a chime sound.

Feeding paper through the bypass slot

Follow these instructions when feeding a single sheet of paper through the bypass slot:

1. Lower the bypass tray to its down (horizontal) position.

2. Align a single sheet of paper, label stock, transparency, and so forth, towards the arrow and against the feed guide at the left edge of the bypass tray.

3. Insert the sheet of paper until it meets resistance. Keep the paper straight (aligned and flush with the left feed guide) to avoid a skewed print. (Skewed print appears on the sheet out of alignment or slanted at an angle.) *Maintain pressure against the paper until it moves, then release it.* The paper is automatically drawn into the printer when it is ready to print.

If your manual feed print job is completed, continue with step 5.

Follow these instructions when feeding subsequent sheets of paper through the bypass slot:

4. Watch for the add paper message and listen for the chime. The message and chime tone indicate that the printer is ready to accept the next sheet of paper.

Note: The previous sheet should have fallen into the output tray.

When the manual print job is finished

5. Return the bypass tray to its original position.
6. If you used the Main Menu to select bypass and/or a paper size, you need to use the control panel to reset the current tray and paper size settings back to their original settings.

7. Reset the printer to user defaults.

Preventing manual feed problems

It is important to carefully follow the manual feeding procedures to reduce the risk of paper handling problems, such as paper jams and skewed images.

Paper jams are usually the result of early feeds. Early feeds occur when the sheet is fed before the chime sounds and the preceding sheet has not cleared the paper path by dropping onto the output tray.

Note: If paper jams do occur, refer to the "Clearing a paper jam and resuming the job," section in chapter 5, "Care and maintenance," for the correct way to clear the jammed paper.

A skewed image is usually the result of:

- The sheet not being flush against the left feed guide when it is inserted into the bypass slot
- The sheet not being held in place at the bypass slot entrance when it began to move through the bypass slot.

Note: The maximum size of paper which can be manually fed is 216 by 279 mm (8.5 by 14 inches). The minimum size is 99 by 191 mm (3.88 by 7.5 inches). Do not try to 2-sided anything other than A4 or legal size paper while using manual feed or a paper jam could occur.

Printing on envelopes

Addresses are formatted to print on standard sized envelopes. In the LJ2D emulation, you can select one of the standard envelopes listed in table 4-5 using the PAPER SIZE menu item. In the other emulations, you must format your pages for the envelopes you are using before you submit your print job. Envelopes are printed in the landscape orientation.

The address is placed on the envelope, according to the size of the envelope being fed. Envelopes are printed using the bypass tray. Refer to "Selecting the bypass tray at the printer," section shown earlier in this chapter for information on how to select the bypass tray at the Main Menu.

You can set the envelope size in one of three ways:

- If your application software allows you to select the envelope size, the selected paper size command is automatically sent to the printer and the image is placed in the correct location on the envelope.
- You can access the LJ2D emulation configuration in the Main Menu and select one of the standard sizes listed in table 4-5 from the LJ2D paper size options. Refer to the next section, "Setting the envelope size at the LJ2D sub-menu."
- You can send a printer command, or an escape sequence, to let the printer know the envelope size you are using. Refer to the LJ2D or XES section in the *Rank Xerox 4213 Laser Printer Programmer Reference* for information on page formatting commands.

Table 4-5. Envelope size requests

Envelope name	Envelope size
Monarch	99 x 191 mm (3.88" x 7.5")
Comm 10 (Business)	108 x 241 mm (4.13" x 9.5")
International DL	110 x 220 mm (4.33" x 8.66")
International C5	162 x 229 mm (6.38" x 9.02")

Note: The printing quality on envelopes may not be as good as when printing on regular paper because envelopes are composed of multiple layers of paper, and a higher incidence of paper jam may occur. To determine and isolate problems related to the printer itself or the variable thickness of the specific envelope, try printing on a single sheet of paper.

Setting the envelope size at the LJ2D submenu

If your application software does not allow you to designate the envelope size, follow these procedures to select the envelope size and landscape print orientation at the LJ2D menu.

1. select envelope size.
2. Select landscape orientation.

If you need to select a landscape font, refer to the next section.

3. Send the print job from your host computer to the printer.

Selecting a landscape font for LJ2D

Make sure the display reads EMULATION/LJ2D*, and you have selected landscape as the print orientation. Press the Test **B** button to display the emulation choices, then press the Last Page **C** button until LJ2D/FONT NUMBER 001 displays. Press the Select **D** button before you begin your font number entry. The display now reads LJ2D FONT NUMBER 001. The highlighted number represents the first position of the 3-digit number allowed for font identification. When the number is highlighted, its value can be changed.

- Use the Menu **A** button to increase the value of the highlighted number by one.
- Use the Test **B** button to decrease the value of the highlighted number by one.
- Use the Last Page **C** button to move the cursor to highlight the next position in the number sequence.

When the displayed font number matches the number of the landscape font you wish to use, press the Select **D** button, then press the Online **H** button to put the printer back online.

Using the bypass tray for envelopes

Standard envelopes are printed one at a time, using the bypass tray.

When you send an address to the printer and BYPASS has been selected as the paper source, the chime (if enabled) is heard and the following message is displayed:

ADD PAPER
TO BYPASS

Note: A paper jam can occur if an envelope is fed into the bypass slot before this message appears. Paper jams and other errors are accompanied with a chime sound.

Feeding a single envelope through the bypass slot

Follow these instructions when feeding a single envelope through the bypass slot:

1. Lower the bypass tray.

2. Align a single envelope, towards the arrow and against the feed guide at the left edge of the bypass tray.

Envelopes are fed address side up.

- If the envelope flap is on the long edge of the envelope, place the closed fold against the left feed guide.
- If the envelope flap is on the short edge of the envelope, place the closed fold against the feed rolls, to be fed in first.

Refer to figure 4-5 for a diagram showing envelope alignment.

Figure 4-5. **Envelope orientation diagram**

Envelope flap on short edge, toward the feed rolls

Printing is placed on this side.



Envelope flap on long edge, against the bypass feed guide

Note: Flaps should be closed and on the bottom.

3. Insert the envelope until it meets resistance. Keep the envelope straight (aligned and flush with the left feed guide) to avoid a skewed print. *Maintain pressure against the paper until it moves, then release it.* The paper or envelope is automatically drawn into the printer when it is ready to print.

If your envelope print job is completed, continue with step 6.

Feeding multiple envelopes through the bypass slot

Follow these instructions when feeding subsequent envelopes through the bypass slot:

4. Watch for the add paper message and listen for the chime. The message and chime tone indicate that the printer is ready to accept the next envelope.

Note: The previous envelope should have fallen into the output tray.

5. Align and insert the next envelope properly. Maintain pressure on the sheet or envelope until it moves and then release it.

Continue with steps 4 and 5 until you complete the envelope print job.

Note: You should not print envelopes on two sides. You must print all envelopes in landscape orientation to format envelopes correctly.

When the envelope print job is finished

6. Return the bypass tray to its original position.
7. If you used the adjustable paper size option at the Main Menu to select manual feed, landscape orientation and/or an envelope size, you must use the control panel to reset the current settings back to the user defaults.

Printing with transparencies

Only paper backed, top-bonded transparencies should be used with the 4213 printer. Refer to chapter 7, "Supplies: ordering information" for the order number.

Best performance results when the transparencies are fed from the upper (tray 1) feed position. Before loading transparencies into the tray, place at least one sheet of normal paper in the tray. Load no more than 80 transparencies at one time.

5.

Care and maintenance

This chapter provides the information you need to care for and maintain your 4213 laser printer to assure optimum performance and print quality.

- Paper: Important information
- Clearing a paper jam and resuming the job
- Paper jam error codes
- Print cartridge replacement procedures
- Replacing the toner cartridge
- Replacing the developer cartridge
- Adjusting the print density
- Cleaning the printer.

Paper: Important information

Paper is a critical item. Select, store and load paper correctly to avoid paper jams and poor print quality.

The 4213 laser printer uses plain paper in weights of 60 to 90 gsm international, (16 to 24 pounds). The 80-gsm (20-pound) paper is recommended for optimum printer performance.

Other special papers supported are:

- Coloured paper
- Predrilled paper
- Letterhead and preprinted paper
- Preprinted forms.
- Non-standard size papers. (i.e. executive, 203 by 254 mm, 203 by 330 mm, or 8 by 10 inches, 8 by 13 inches)

Papers used in the 4213 laser printer should always be grain long. Grain long means most of the paper fibres run parallel to the long edge of the paper. Using grain short papers may increase jams.

Note: Special papers should be fanned prior to loading in the paper tray. It is especially important to fan predrilled paper to avoid getting the perforated (waste) holes into the printer and causing paper jams.

The 4213 laser printer also prints on the following:

- Labels (refer to figure 5-1)
- Transparencies
- Non-standard sized paper (example: Envelopes).

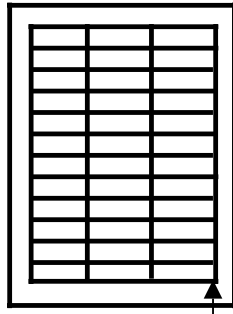
Note: Labels, transparencies, and non-standard sized paper must be fed into the printer using the bypass tray slot. Refer to the "Printing from the bypass tray" section in chapter 4.

Label restrictions

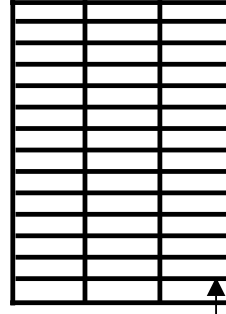
Labels must be arranged on the backing material with no spaces between the individual labels. The backing is covered completely with the label material (backing may frame the label material). Refer to chapter 7, "Supplies: ordering information," for labels that are available from Xerox for your 4213 laser printer.

For best printer performance, it is important to use quality label stock. Avoid label stock which contains small paper debris or dust.

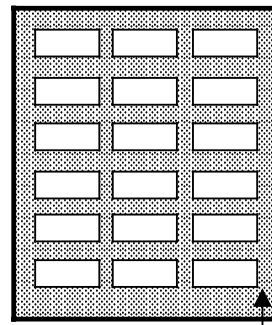
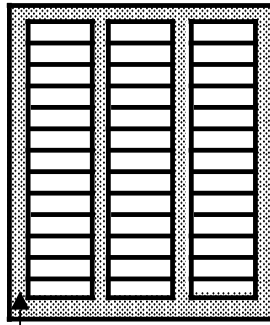
Figure 5-1. Label arrangements

Acceptable label arrangements

Labels that cover the entire backing sheet



Labels that cover the entire backing sheet

Unacceptable label arrangements

Backing sheet exposed

Improper paper types

Some types of paper may not perform well or may damage your 4213 laser printer. The following paper types should not be used:

- Paper which does not meet the weight specifications given in the previous section
- Extremely smooth, shiny, or highly-textured paper
- Coated paper

- Letterhead or preprinted paper using low temperature dyes or thermography. These materials may transfer onto the fuser roller and cause damage. Any preprinted paper should use inks compatible with 200° C for 0.1 seconds.
- Damaged or wrinkled paper, or paper with irregularities such as tabs, staples, and so forth
- Multiple forms or carbonless paper.

Paper curl in paper loading

All paper has a curl which is created in the manufacturing process. During the process, paper is stored on large rolls before being cut into sheets. Once cut and packaged, it retains some of the curl from the large storage rolls.

Xerox brand papers have an arrow printed on the end of the ream wrapper. This arrow points in the *opposite* direction of the curl. For example, in the 4213 laser printer (which requires the curl side *up*), you load the paper so the arrow points *down* if the wrapper were still on the ream.

Note: When you load paper in the paper tray, the curl must be up. Otherwise, misfeeds or jams can occur.

On brands of paper other than Xerox, an arrow (if present) may have a different significance. It is always safest and more accurate to use the following curl test to determine the direction of the curl.

Finding the paper curl

1. Pick up about one quarter of the paper stack and hold it by one of the short edges.
2. Let the paper hang with the long edge parallel to your body.

Figure 5-2. Finding the paper curl

3. Look at the lower edge of the paper. It is curling slightly upward. This is the curl side of the paper.
4. Place the paper in the tray with the curl side up.

Paper loading

Each paper tray holds up to 250 sheets of 80-gsm (20-lb) paper.

Paper may be loaded into any input tray when the printer is not in use. When the printer is in use, only the inactive paper tray may be loaded.

Paper may be loaded or changed when the 4213 laser printer is not printing or when a Tray Empty message displays.

The tray size and the paper size must match. Refer to table 5-1.

Table 5-1. Tray and paper sizes

Tray name	Paper size
Letter	216 x 279 mm (8.5 x 11 inches)
Legal 14"	216 x 356 mm (8.5 x 14 inches)
A4	210 x 297 mm (8.27 x 11.69 inches)
Adjustable	182—216 mm (7.17—8.5 inches) wide 254—356 mm (10—14 inches) long

Note: You can use other sizes of paper by selecting the manual feed mode of operation, provided the paper sizes have a width of between 100 to 216 mm (3.9 to 8.5 inches) and a length of between 190 to 316 mm (7.5 to 14 inches).

Changing or adding paper procedure

When either paper tray is out of paper the Fault Indicator Light is lit and one of the following messages is displayed when the Consumables Menu is accessed:

ADD PAPER
TO TRAY 1 0701

ADD PAPER
TO TRAY 2 0702

The following steps are instructions you take to load paper.

Caution: Avoid loading the following paper in the tray:

- Paper of different sizes
- Folded or creased paper
- Curled paper.

1. Lift slightly and remove the paper tray by pulling it toward you with one hand while placing your other hand underneath the tray to support it.

Note: Although the inactive paper tray may be loaded while the 4213 is printing, removing the active paper tray can cause a paper jam.

2. Flip back the paper tray cover.

3. Push down on the metal plate until it clicks into place.

4. Gently tap the stack of paper on a firm surface to align the edges of the sheets. Up to 250 sheets of 80-gsm or 20-lb paper may be loaded at one time.

5. Load paper into the tray, curl side up for best performance.
 - Do not load paper above the MAX line on the inside of the paper tray.
 - Make sure that the paper stack is below the paper snubbers.

Close the tray cover over the paper tray.

6. Place the filled paper tray all the way into the tray slot. *Make sure the end of the paper tray with the snubbers go in first.* Push it gently into position until it clicks into place.

Note: Make sure to press the Last Page/[Right Arrow] button to return to the READY status.

Handling special papers in paper trays

The following materials require special handling when loaded into paper trays 1 and 2:

- **Predrilled paper** is loaded into the paper tray with the holes to the right of the paper tray as it is inserted into the tray slot.

- **Letterhead and preprinted paper** are loaded into the paper tray face down with the top of the preprinted page on the leading edge of the tray as it is inserted into the tray slot.

Note: The position of self-loading material in the paper trays is usually the reverse of manually loaded material.

Handling special papers in the bypass tray slot

In general, media fed through the bypass tray slot should be inserted short edge first for optimum performance. However; the configuration of your printer, or printer control commands within your document may require inserting media long edge first.

The following papers require some special handling when feeding them through the bypass tray slot:

- **Predrilled paper** is loaded into the feed slot with the holes next to the left side of the tray as it is inserted.
- **Labels** are loaded into the feed slot face up with the top of the labels inserted first into the feed slot.
- **Letterhead and preprinted paper** are loaded into the bypass tray slot face up with the top of the preprinted page inserted first into the feed slot.
- **Nonstandard sized paper** (portrait orientation) is fed face up, with the top (short edge) of the paper inserted first.
- **Envelopes** are fed face up.
 - If the envelope flap is on the long edge of the envelope, place the closed fold against the left feed guide.
 - If the envelope flap is on the short edge of the envelope, place the closed fold against the feed rolls, to be fed in first.

Paper storage

Another important aspect of care and maintenance is paper storage. Here are some suggestions:

- Store the paper in its own wrapper; do not leave it unwrapped or in a place where it can be affected by dampness or heat.
- Store the paper on a horizontal (level) surface.
- Store the paper in a closed cabinet.
- Always store the paper in a cool, dry place.
- Do not store paper on the floor.
- Always store envelopes so they stay flat.
- Store partially used packages of envelopes in a sealed plastic bag. Failure to do so may cause excessive print quality and jam problems.

Note: To reduce the effects of moisture on the paper in areas of high humidity, it is suggested that any partially used reams of paper be stored in plastic bags. Partially used packages of envelopes should be stored in a sealed plastic bag. Failure to do so may cause excessive print quality and jam problems.

Clearing a paper jam and resuming the job

Although the subsequent pages provide you with specific areas to check to clear paper jams, you should check and clear all areas where possible paper jams could occur because sometimes small pieces of paper are not visible readily.

The 4213 laser printer provides error codes and the corresponding messages for paper jams. Locations of paper jams and how to clear them to resume your printing job are discussed below.

Note: If you are experiencing excessive paper feed problems (that is, paper not feeding, skewing, jams) the feed rolls may require cleaning. There is a feed roll cleaning tool you can purchase to clean the rolls yourself. Call your Rank Xerox service representative or sales person for ordering information. Operating instructions for the tool are available with the tool.

Paper jam error codes

When a paper jam occurs, the Fault Indicator Light is lit and the printer stops printing.

CLEAR PAPER PATH-0820

Table 5-2 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-2. **Paper jam error code and location diagram**

Message	Location
CLEAR PAPER PATH 0820	Between the bypass slot and the right cover area.

Remove any jammed paper in the machine by following the steps below:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the shiny, blue surface of the print cartridge.

2. Remove any paper jammed in the printer by pulling it gently upwards and towards the rear of the printer, opposite the paper flow.

Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

4. If you cannot remove the jammed paper in step 2, remove any paper protruding from the manual feed slot by pulling it gently out from the back of the printer.

CLEAR PAPER PATH-0821

Table 5-3 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-3. **Paper jam error code and location diagram**

Message	Location
CLEAR PAPER PATH 0821	Between the upper paper tray and the right cover area

Remove any jammed paper in the machine by following the steps below:

1. Lift slightly and remove the upper paper tray. Make sure that the paper is seated correctly in the tray under the paper snubbers and below the MAX line on the side of the tray.

2. Remove any paper left in the upper paper tray slot by pulling it gently out of the printer from the side.

3. Replace the upper paper tray in the printer.

4. Lift the access handle and pull down the right cover.

5. Remove any paper visible in the right cover area by gently pulling it out in the direction of the arrow.

6. Close the right cover.

CLEAR PAPER PATH-0822

Table 5-4 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-4. Paper jam error code and location diagram

Message	Location
CLEAR PAPER PATH 0822	Between the lower paper tray and the right cover area

Remove any jammed paper in the machine by following the steps below:

1. Lift slightly and remove the lower paper tray. Make sure that the paper is seated correctly in the tray under the paper snubbers and below the MAX line on the side of the tray.

2. Remove any paper left in the lower paper tray slot by pulling it gently out of the printer from the side.

3. Replace the lower paper tray in the printer.

4. Lift the access handle and pull down the right cover.

5. Remove any paper visible in the right cover area by gently pulling it out in the direction of the arrow.

6. Close the right cover.

CLEAR PAPER PATH-0823

Refer to table 5-2 to correct this paper jam error code. Error code 0823 does not occur unless you have the optional high capacity feeder (HCF) installed.

CLEAR PAPER PATH-0824

Table 5-5 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-5. **Paper jam error code and location diagram**

Message	Location
CLEAR PAPER PATH 0824	Upper paper tray

Remove any jammed paper in the machine by following the steps below:

1. Lift slightly and remove the upper paper tray. Make sure that the paper is seated correctly in the tray under the paper snubbers and below the MAX line on the side of the tray.

-
2. Remove any paper left in the upper paper tray slot by pulling it gently out of the printer from the side. Also, open the right access door and remove any paper found in that area.

-
-
3. Replace the upper paper tray in the printer.

CLEAR PAPER PATH-0826 and 0827

Table 5-6 lists the paper jam error codes which appear in the message display and a diagram showing where the jam is located.

Table 5-6. **Paper jam error codes and location diagram**

Message	Location
CLEAR PAPER PATH 0826	Between the left cover area and the upper paper tray.
CLEAR PAPER PATH 0827	

Remove any jammed paper in the machine by following the steps below:

1. Lift slightly and remove the upper paper tray. Make sure that the paper is seated correctly in the tray under the paper snubbers and below the MAX line on the side of the tray.

-
2. Remove any paper left in the upper paper tray slot by pulling it gently out of the printer from the side.

-
-
3. Replace the upper paper tray in the printer.

-
-
-
4. Lift the access handle to lower the left cover.

Note: Be careful when removing the paper from this area because loose toner can contaminate the fuser. If this happens, spots will appear on subsequent prints.

5. Grasp the re-feed baffle by its handle and raise it.

6. Remove any paper jammed in the printer by gently pulling it out from the front.

WARNING: Do not touch the high temperature areas in the left cover area. If paper is caught or wrapped around the heat roller, do not try to remove it. Call for service.

7. Lower the refeed baffle.

Caution: Failing to lower the re-feed baffle before closing the left cover will cause a paper jam.

8. Close the left cover.

CLEAR PAPER PATH-0830

Table 5-7 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-7. **Paper jam error code and location diagram**

Message	Location
CLEAR PAPER PATH 0830	Between the bypass slot and the fuser area.

Remove any jammed paper in the machine by following these steps:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the shiny, blue surface of the print cartridge.

2. Remove any paper jammed in the printer by pulling it gently upwards and towards the rear of the printer, opposite the paper flow.


Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

CLEAR PAPER PATH-0831

Table 5-8 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-8. **Paper jam error code and location diagram**

Message	Location
CLEAR PAPER PATH 0831	Between the upper paper tray and the fuser area. 

Remove any jammed paper in the machine by following the steps below:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the shiny, blue surface of the print cartridge.

2. Remove any paper jammed in the printer by pulling it gently upwards and towards the rear of the printer, opposite the paper flow.

Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

4. Lift slightly and remove the upper paper tray. Make sure that the paper is seated correctly in the tray under the paper snubbers and below the MAX line on the side of the tray.

5. Remove any paper left in the upper paper tray slot by pulling it gently out of the printer from the side.

6. Replace the upper paper tray in the printer.

7. Lift the access handle and pull down the right cover.

8. Remove any paper visible in the right cover area by gently pulling it out in the direction of the arrow.

9. Close the right cover.

CLEAR PAPER PATH-0832

Table 5-9 lists the paper jam error code which appears in the message display and a diagram showing where the jam is located.

Table 5-9. **Paper jam error code and location diagram**

Message	Location
CLEAR PAPER PATH 0832	Between the lower paper tray and the fuser area.

Remove any jammed paper in the machine by following the steps below:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the shiny, blue surface of the print cartridge.

2. Remove any paper jammed in the printer by pulling it gently upwards and towards the rear of the printer, opposite the paper flow.

Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

4. Lift slightly and remove the lower paper tray. Make sure that the paper is seated correctly in the tray under the paper snubbers and below the MAX line on the side of the tray.

5. Remove any paper left in the lower paper tray slot by pulling it gently out of the printer from the side.

6. Replace the lower paper tray in the printer.

7. Lift the access handle and pull down the right cover.

8. Remove any paper visible in the right cover area by gently pulling it out in the direction of the arrow.

9. Close the right cover.

CLEAR PAPER PATH-0833

Refer to table 5-7 to correct this paper jam error code. Error code 0833 does not occur unless you have the optional high capacity feeder (HCF) installed.

CLEAR PAPER PATH-0834

Refer to table 5-8 to correct this paper jam error code.

CLEAR PAPER PATH-1020, 1021, 1022, 1023, and 1024

Table 5-10 lists the paper jam error codes which appear in the message display and a diagram showing where the jam is located.

Table 5-10. **Paper jam error codes and location diagram**

Message	Location
CLEAR PAPER PATH 1020	Between the fuser area and the left cover area.
CLEAR PAPER PATH 1021	
CLEAR PAPER PATH 1022	
CLEAR PAPER PATH 1023	
CLEAR PAPER PATH 1024	

Remove any jammed paper in the machine by following the steps below:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the shiny, blue surface of the print cartridge.

2. Remove any paper jammed in the printer by pulling it gently upwards and towards the rear of the printer, opposite the paper flow.

Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

4. Lift the access handle to lower the left cover.

Note: Be careful when removing the paper from this area because loose toner can contaminate the fuser. If this happens, spots will appear on subsequent prints.

5. Grasp the handle of the re-feed baffle and raise it.

6. Remove any paper jammed in the printer by gently pulling it out from the side.

WARNING: Do not touch the high temperature areas in the left cover area. If paper is caught or wrapped around the heat roller, do not try to remove it. Call for service.

7. Lower the refeed baffle.

Caution: Failure to lower the re-feed baffle before closing the left cover will cause a paper jam.

8. Close the left cover.

CLEAR PAPER PATH-1025 and 1026

Table 5-11 lists the paper jam error codes which appear in the message display and a diagram showing where the jam is located.

Table 5-11. **Paper jam error codes and location diagram**

Message	Location
CLEAR PAPER PATH 1025	Between the left cover area and the output sensor area.
CLEAR PAPER PATH 1026	

Remove any jammed paper in the machine by following these steps:

1. Lift the access handle to lower the left cover.

Note: Be careful when removing the paper from this area because loose toner can contaminate the fuser. If this happens, spots will appear on subsequent prints.

2. Grasp the handle of the re-feed baffle and raise it.

3. Remove any paper jammed in the printer by gently pulling it out from the side.

WARNING: Do not touch the high temperature areas in the exit area. If paper is caught or wrapped around the heat roller, do not try to remove it. Call for service.

4. Lower the re-feed baffle.

Caution: Failure to lower the refeed baffle before closing the left cover will cause a paper jam.

5. Close the left cover.

Note: The top cover of the 4213 must be opened and then closed to clear the PAPER JAM message.

Print cartridge replacement procedures

When the print cartridge is nearing the end of its service life, the warning indicator light is lit and the following message is displayed when the Consumables Menu is accessed:

```
REORDER  
CARTRIDGE-A0901
```

You can make up to 2000 more prints after you receive this message.

Note: Keep a spare print cartridge in stock so you are prepared when the present print cartridge reaches the end of its service life and needs replacement.

Note: Downloaded fonts are lost when the 4213 is turned off, so cartridge replacements should be planned with this in mind.

Table 5-12 lists the cartridge replacement message which appears in the message display and shows the location of the print cartridge in the printer. You must replace the print cartridge before the printer will resume operation.

When the fault indicator light is lit and the message is displayed, the following tasks must be completed every time you change the print cartridge:

- Clean the corotron wire and saw groove.
- Replace the print cartridge.
- Replace the fuser wick.

Instructions for corotron cleaning, print cartridge replacement, and fuser wick replacement are in this section.

Note: The packaging box which contains the new print cartridge also contains a new fuser wick and the corotron cleaning kit. Remove all these items from the package.

Caution: Do not remove the outer silver wrapping from the print cartridge until instructed to do so. If the print cartridge is exposed to light for longer than ten minutes, the cartridge is damaged.

Table 5-12. Cartridge replacement message and cartridge location

Message	Location
REPLACE CARTRIDGE-A 0902	

Task 1. Cleaning the corotron

Perform the following general procedure for cleaning the corotron before you replace the print cartridge.

The replacement print cartridge box contains a corotron cleaning kit. This kit consists of a small brush and a cotton swab. Use the swab to clean the corotron wire and the brush to clean the saw groove.

Clean the corotron wire and saw groove by following these steps:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the print cartridge.

2. Grasp both green ends of the corotron assembly.

3. Lift it up and away from the printer.

4. Close the top cover by pushing it down until it latches into place.

5. Remove the cotton swab from the corotron cleaning kit.

6. Use the cotton swab to gently clean the corotron wire. Make one or two passes with the swab over the wire, moving around the diagonally wrapped wires as you proceed along the corotron wire. This slender wire, which is recessed slightly, runs parallel to the length of the corotron assembly.

Caution: Be careful not to break the corotron wire. Do not leave cotton fragments on the wire.

7. Hold the corotron assembly vertically. Use the brush found in the cleaning kit to clean the entire saw in the groove.

Holding the corotron vertically allows for more effective cleaning.

8. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the print cartridge.

9. Hold the corotron assembly with the lightning bolt symbol on the left and lower it with both hands into the printer so the two white cylinders on the left of the assembly fit into the round receptacles in the printer.

10. Apply slight pressure to both ends of the corotron. If seated correctly, it moves up and down with the pressure. If this motion does not occur, lift up the corotron, and reseal it correctly.

11. Close the top cover by pushing it down until it latches into place.

This completes the corotron cleaning procedures. The next task is to install a new print cartridge.

Task 2. Replacing the print cartridge

Replace the print cartridge by following the steps below:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the print cartridge.

2. Grasp the green handle of the old print cartridge and slide it out about one-third of the way. Hold it with both hands and remove it from the printer.

Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Put the used print cartridge in the box which held the new print cartridge and recycle or dispose of according to local regulations.

Caution: Do not burn the old print cartridge.

4. Take the new print cartridge out of the box and remove it from the packaging. Take particular care not to touch the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

5. Remove the protective sheet and drier.

Caution: Be careful not to get fingerprints or scratches on the surface of the blue print drum.

6. Line up the new print cartridge with the cavity in the top cover. Make sure the green handle is at the top and facing you.

7. Slide the cartridge into the cavity. Make sure it is fully seated and it clicks into place.

8. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

This completes the print cartridge replacement procedure. Next you will change the fuser wick.

Task 3. Replacing the fuser wick

A new fuser wick must be installed every time you change the print cartridge. The new fuser wick is included in the same box as the print cartridge.

Replace the fuser wick by following the steps below:

1. Lift the access handle to lower the left cover.
2. Grasp the old fuser wick by its handle. Pull firmly by the handle and remove the fuser wick.

WARNING: The fuser wick area can be very hot.

3. Discard the used fuser wick.

4. Unpack the new fuser wick.

Caution: Do not touch the felt area on the underside of the fuser wick.

5. Grasp the new fuser wick by its handle. Hold the fuser wick, plastic face up, with the arrows pointing towards the printer.

6. Install the fuser wick. Align the holes in the fuser wick with the tabs in the printer. The fuser wick should snap firmly into place.

7. Close the left cover.

You have now completed all the tasks for the print cartridge replacement procedure.

Replacing the toner cartridge

When the toner cartridge is nearing the end of its service life, the warning indicator light is lit and the following message is displayed in the message display area when the Consumables Menu is accessed:

REORDER
CARTRIDGE-B0921

You can make up to 2100 more prints after you receive this message, depending on area coverage. If print area coverage exceeds approximately 5%, you may experience light images or loss of image before you reach the additional 2100 prints.

Note: Keep a spare toner cartridge in stock so you are prepared when the present toner cartridge needs replacement.

Toner cartridge replacement procedure

Table 5-13 lists the cartridge replacement message which appears in the message display and shows the location of the toner cartridge in the printer. When the fault indicator light is lit and the message is displayed, the toner cartridge must be replaced before the printer will resume operation.

Table 5-13. Cartridge replacement message and cartridge location

Message	Location
REPLACE CARTRIDGE-B 0922	

The steps for replacing the toner cartridge are shown below:

1. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the print cartridge.

2. Take the new toner cartridge (cartridge B) from the box and remove the protective bag. Save this bag.

3. The protective bag from the toner cartridge has an adhesive strip attached. Remove the covering from this strip.

4. Attach the protective bag to the printer beneath the developer cartridge (cartridge C).

5. Squeeze the latch below the "B", slide out the old toner cartridge and place it in the protective disposal bag.

6. Place the wrapped, used, toner cartridge in the box which held the new cartridge. Dispose of in accordance with federal, state and local regulations.

Caution: Incinerate only in a closed container.

Note: The shelf life of an opened toner cartridge is approximately 6 months. Do not remove the toner cartridge from its packaging until you are ready to use it.

7. Hold the new toner cartridge horizontally and shake it sideways and backwards vigorously to loosen and distribute the toner.

8. Hold the new toner cartridge horizontal with the slot of the developer cartridge in the top cover.

9. Slide the cartridge into the slot, and at the same time, carefully remove the protective strip sealing the cartridge. Make sure that the cartridge is fully seated.

Caution: Failure to remove the protective strip will damage the printer.

10. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

Replacing the developer cartridge

When the developer cartridge is nearing the end of its service life, the warning indicator light is lit and the following message is displayed when the Consumables Menu is accessed:

REORDER
CARTRIDGE-C0911

You can still make up to 3000 prints after you receive this message.

Note: Keep a spare developer cartridge in stock so you are prepared when the present developer cartridge no longer makes prints.

Developer cartridge replacement procedures

When the orange fault indicator light is lit and the message below is displayed at the Consumables Menu, the developer cartridge must be replaced before the printer will resume operation. Table 5-14 lists the cartridge replacement message which appears in the message display and shows the location of the developer cartridge in the printer.

Table 5-14. **Cartridge replacement message and cartridge location**

Message	Location
REPLACE CARTRIDGE-C 0912	

Note: A new toner cartridge is included in the box with the developer cartridge. You must replace the developer and the toner cartridges when this message displays.

Replace the developer cartridge by following the steps below:

1. Take the new developer cartridge-C and toner cartridge-B from the box.

2. Remove the protective wrap from the developer cartridge.

3. Gently remove the protective strip sealing the cartridge.

Caution: Failure to remove the protective strip before inserting the developer cartridge will damage the printer.

Caution: Avoid touching the roller of the developer cartridge. Damage to the roller surface can cause print defects.

4. Open the top cover by lifting the top cover access handle.

Caution: Do not leave the top cover open for more than ten minutes or the light will damage the print cartridge.

5. Squeeze the latch and gently slide the old developer cartridge out about one-third of the way.

6. Hold the cartridge with both hands and remove it from the printer.

7. Put the used developer cartridge in the box which held the new developer cartridge, and recycle or dispose of according to local regulations.

Caution: Do not burn the old developer cartridge.

8. Line up the new developer cartridge with the cavity in the top cover so that the tongue along the cavity fits into the groove along the edge of the cartridge. Slide the cartridge into the cavity. Make sure that it is fully seated.

12. Slide the cartridge into the slot, and at the same time, carefully remove the protective strip sealing the cartridge. Make sure the cartridge is fully seated.

Caution: Failure to remove the protective strip will result in blank prints and may damage the printer.

13. Close the top cover by pushing it down firmly until it latches into place and is flush with the cover.

Adjusting the print density

The print density has been adjusted to the proper level at the factory and normally does not require any adjustment. From time to time, however, it may be necessary to adjust the print density for darker or lighter prints for one or more of the following reasons:

- The print density may need to be increased or decreased when a different paper is used
- The print density may need to be increased or decreased when temperature and/or humidity have changed dramatically.

The print density may be made darker or lighter by performing the following procedure:

1. Open the top cover by lifting the top cover access handle.

2. Turn the print density control knob to the right (clockwise) for darker printing, or to the left (counterclockwise) for lighter printing.

Note: Even if you turn the knob all the way to the right or left, the print density changes only slightly.

Caution: Avoid touching the shiny, blue surface of the print cartridge. Damage to the blue surface can cause print defects.

3. Close the top cover by pushing it down until it latches into place and is flush with the cover.

Cleaning the printer

When the printer exterior becomes dirty, clean it, and keep the following points in mind:

WARNING: The power to the printer should be off before cleaning the printer. The power switch should be in the "O" position.

- Use a soft dry cloth to remove dust and dirt on the outer surface of the printer. If dirt is hard to wipe off with a dry cloth, clean it with a cloth slightly moistened with water. Ensure the cloth is not dripping wet.
- Be careful not to get water inside the printer.
- Never use alcohol or thinner.

Introduction

This chapter lists problems you might encounter while using the 4213 laser printer and provides possible solutions to these problems.

If a problem occurs, locate the type of problem in this section and try the possible solutions. If your problem cannot be solved, call your local Rank Xerox service representative.

Types of problems

The problems and possible solutions covered in this chapter are grouped into the following categories:

- Deterioration in print quality
- Paper transport problems
- Printer operation problems.

Deterioration in print quality

Table 6-1 shows, in detail, the problems of deterioration in print quality and provides the possible solutions to these problems.

Note: When attempting to find a solution to a problem you are having with the print quality of your output, ensure to go through each of the check points listed for the table entry.

Incomplete graphic data

When the printer receives graphic data that is incomplete, for instance, the data has fewer bytes than the window size, the next Form Feed command may be ignored, causing unpredictable results.

Table 6-1. Deterioration in print quality problems and possible solutions

Problem	Check point	Possible solution
Print is light or faint.	Is paper damp?	Yes? Run several prints to see if the problem can be resolved. Or, use paper from a new package.
	Is paper in the paper tray creased or wrinkled?	Yes? Remove the creased or wrinkled paper, or use paper from a new package.
	Is the print density correctly adjusted?	No? Adjust the print density with the green exposure adjustment knob. Yes? Call your local Rank Xerox service representative.
Blank prints	Is the amount of the remaining toner sufficient?	No? Replace the toner cartridge. Yes? Call your local Rank Xerox service representative.
	Was the Developer Cartridge replaced recently?	Yes? Partially remove the Developer Cartridge-C. Check that seal was removed. No? Call your local Rank Xerox service representative.
	Was the Toner Cartridge replaced recently?	Yes? Partially remove Toner Cartridge-B. Check that the seal was removed. No? Call your local Rank Xerox service representative.
	Was the Corotron cleaned recently?	Yes? Check that the corotron was replaced correctly. No? Call your local Rank Xerox service representative.

Table 6-1. **Deterioration in print quality problems and possible solutions** (continued)

Problem	Check point	Possible solution
Black dots are printed.	Is there damage to the print cartridge?	Yes? Replace the print cartridge. No? Call your local Rank Xerox service representative.
Contaminated first prints	Are the first prints after a CRU or Fuser Wick change contaminated?	Yes? Run ten prints to remove contamination from the paper path.
Solid image area is light or has light areas.	Is paper damp?	Use paper from a new package.
Image loss on either side of print, when using edge-to-edge printing	Are you losing image at left or right edges of a 1-sided print? Are you losing image at left or right edges of a 2-sided print?	Yes? If image loss is no more than 2.5 mm on either side of a 1-sided print, the printer is working correctly. Yes? If image loss is no more than 4.0 mm on either side of a 2-sided print, the printer is working correctly.
Lead edge distortion on output prints.	Are you getting image loss on 1-sided prints?	Yes? The allowable image loss from lead edge is up to 3 mm. The allowable image degradation from the lead edge is up to 4 mm.
	Are you getting image loss on 2-sided prints?	Yes? The allowable image loss from lead edge is up to 3 mm. The allowable image degradation from the lead edge is up to 5 mm.
Print is wiped off easily.	Is the paper damp?	Yes? Use paper from a new package.

Table 6-1. **Deterioration in print quality problems and possible solutions** (continued)

Problem	Check point	Possible solution
	Are you using special coated paper?	Yes? Avoid using special coated paper. No? Call your local Rank Xerox service representative.
Deletions • Print is missing or faint in lines.	Was the Toner Cartridge replaced recently?	Yes? Partially remove Toner Cartridge-B. Check that the seal was removed.
	Go to the Consumer Menu. Does the REORDER CARTRIDGE B APPEAR?	Yes? Replace the toner cartridge. No? Call your local Rank Xerox service representative.
• An area of the print has a missing or an extremely light image.	Is the paper damp, dusty, dirty, or damaged?	Yes? Use paper from a new package. (Always use high-quality paper).
	Is paper in the tray creased or wrinkled?	Yes? Remove the creased or wrinkled paper, or use paper from a new package. No? Call your local Rank Xerox service representative.
• Print is missing or faint in strips (perpendicular to the paper transport direction).	Is paper damp?	Yes? Use paper from a new package. No? Call your local Rank Xerox service representative.
Residual image • The previous print is printed along with the current print.	Are the environmental conditions appropriate?	No? Improve the environmental conditions (refer to the "Installation planning" section of chapter 1). Yes? Replace the fuser wick and the print cartridge.
	Does problem persist?	Yes? Call your local Rank Xerox service representative.

Table 6-1. **Deterioration in print quality problems and possible solutions** (continued)

Problem	Check point	Possible solution
Skewed image <ul style="list-style-type: none"> Print is slanted. 	Is the paper tray correctly installed?	No? Install the paper tray correctly.
	Is the paper correctly loaded in the paper tray? Curl side up.	No? Correct the paper position in the paper tray.
<ul style="list-style-type: none"> When feeding from the adjustable cassette and making 2-sided prints one side do not have the image correctly located on the page 	Is the paper correctly loaded in the HCF (curl side down)	No? Correct the paper position in the HCF.
	Does the loaded paper size match the menu selection?	No? Match the paper size and the menu selection.
	Does the cassette type position of the magnet match the menu selection?	No? Match the type magnet position and the menu selection.

Character line limit

You may lose text if you exceed 300 characters or character-like functions (such as backspace or overstrike). This loss occurs at the end of a portrait line or at the beginning of a landscape line. This applies to full page and partial imaging.

You may either lose data or break the page early if you place more than 300 graphics, rules, or characters into a very narrow horizontal band across the page. The page complexity determines if the recovery after the page break is complete. This applies only to partial imaging.

You may also break the page early due to real time imaging problems if thousands of characters are present on a page. You can avoid this by not having thousands of small size type (6 point) characters filling a page. This applies only to partial imaging.

Paper transport problems

Table 6-2 details the problems and possible solutions when there is a problem with the paper transport.

Note: When attempting to find a solution to a paper transport problem, ensure to go through each of the check points listed for the table entry.

Table 6-2. Paper transport problems and solutions

Problem	Check point	Possible solution
Frequent paper jams	Is paper damp?	Yes? Use paper from a new package.
	Is paper in paper tray creased or wrinkled?	Yes? Remove creased or wrinkled paper or use paper from a new package.
	Is paper tray correctly installed?	No? Install the paper tray correctly.
	Are paper fragments or foreign objects left inside printer?	Yes? Open the top cover and doors; remove fragments or foreign objects.
	Is paper in paper tray of the specified type?	No? Use paper of the specified type. Yes? Call your local Rank Xerox service representative.
Paper jam occurs too often.	Is paper installed correctly in paper tray?	No? Remove the paper trays and make sure that the paper is under the paper snubbers. Yes? Call your local Rank Xerox service representative.
Prints are creased or wrinkled too often.	Is paper damp?	Yes? Use paper from a new package.
	Is paper in the paper tray creased or wrinkled or damaged in any way?	Yes? Remove the creased or wrinkled paper, or use paper from a new package.

Table 6-2. Paper transport problems and solutions
(continued)

Problem	Check point	Possible solution
	Is the paper tray correctly installed?	No? Install the paper tray correctly. Yes? Call your local Rank Xerox service representative.
Prints exit with dogears.	Is the paper damp?	Yes? Remove the affected paper, or use paper from a new package.
Paper jam occurs after paper is loaded in paper trays.	Is paper under the snubber in the paper trays?	No? Clear all jammed paper. Remove paper trays and make sure that the paper is under the paper snubbers.
	Is paper in the tray above the black max fill line?	Yes? Remove excess paper.
In 2-sided mode, paper stacks poorly and has excessive paper curl.	Is the paper 60-gsm (16-lbs) or less?	No? Use paper of the specified weight. Do not use 60-gsm (16-lb) paper.
Paper stacks poorly in the exit tray.	Is the paper damp?	Yes? Remove the affected paper, or use paper from a new package.
	Is the paper in the paper tray the specified type?	No? Use paper of the specified type.
	Is paper loaded correctly?	No? Remove the paper, then reload the paper correctly. Yes? <ol style="list-style-type: none"> 1. Turn or flip the paper in the paper tray. 2. Remove old paper. Add new paper per package instructions.

Table 6-2. Paper transport problems and solutions
(continued)

Problem	Check point	Possible solution
Repeated jams after clearing a paper jam.	If one of the following jam codes recurs: 0820, 0821, 0822, 0823 (HCF), 1020, 1021, 1022, 1023, 1024	Yes? Check and clear all paper under the following areas: • Top cover of the printer • Refeed baffle. Also make sure the refeed baffle is lowered, and seated correctly. Close the HCF elevator door completely.
	Have you removed all prints from the top cover output tray?	No? Clear all jammed paper. DO NOT put prints removed from output tray back into tray.
	Did one of the following jam codes recur: 0821, 0822, 0831, 0832, 1021, 1022, 1026	Yes? Remove paper trays and check for paper clips and/or staples attached to the small square brown magnets on the side of the trays.
Repeated jams occur when the adjustable cassette is installed.	Is the adjustable cassette in the tray 1 position?	Yes? Move the adjustable cassette to the tray 2 position.
	Are the paper guides of the cassette against the paper stack?	No? Correctly position the guides against the stack.
	Does the loaded paper size match the menu selection?	No? Match the paper size and the menu selection.
	Does the cassette type magnet's position match the menu selection?	No? Match the type magnet position and the menu selection.

Table 6-2. Paper transport problems and solutions (continued)

Problem	Check point	Possible solution
Repeated or multiple jams caused by a fragment of a piece of paper.	If one of the following jam codes (such as: 1020,1021, 1022, 1023 or 1024) appears and clearing the jam in the normal manner does not stop the problem.	<p>Yes? Carefully check and remove all paper under the following areas:</p> <ul style="list-style-type: none"> • Top cover of the printer • Refeed baffle. <p>Make sure the entire piece of paper is intact. If fragments are missing, attempt to locate and remove them.</p>

Printer operation problems

Table 6-3 shows, in detail, the problems and possible solutions when there are problems with the operation of the printer.

Note: When attempting to find a solution to a problem with the operation of the printer, ensure to go through each of the check points listed for the table entry.

Table 6-3. Printer operation problems and solutions

Problem	Check point	Possible solution
The power is not supplied even if you turn the power switch to the On position.	Is the power cord correctly plugged into the AC outlet?	No? Plug the power cord into the AC outlet.
	Is the power cord correctly connected to the AC inlet of the printer?	<p>No? Connect the power cord to the AC inlet on the printer.</p> <p>Yes? Call your local Rank Xerox service representative.</p>
The printer does not print.	Is the power cord correctly plugged into the AC outlet?	No? Plug the power cord into the AC outlet.

Table 6-3. Printer operation problems and solutions (continued)

Problem	Check point	Possible solution
	Is the power cord correctly connected to the AC inlet of the printer?	No? Connect the power cord to the AC inlet on the printer.
	Is the interface cable connected?	No? Connect the interface cable.
	Is the top cover or any door open?	Yes? Close the top cover and doors. No? Call your local Rank Xerox service representative.
The printer stops printing.	Is the printer out of paper?	Yes? Put more paper in the paper tray.
	Is the paper jammed in the machine?	Yes? Remove jammed paper. No? Call your local Rank Xerox service representative.
	Is the power cord correctly plugged into the AC outlet?	No? Connect the power cord to the AC outlet on the printer.
	Is the top cover or any door open?	Yes? Close the top cover and doors. No? Call your local Rank Xerox service representative.
The printer prints an incorrect tray information.	Is the paper tray completely and correctly inserted?	No? Make sure the paper tray is seated correctly. Yes? Call your local Rank Xerox service representative.
Top cover would not close.	Did you check cartridge and corotron placement?	No? Make sure that cartridges are inserted fully. Reseat the corotron correctly.
Warning light comes on.	Are the paper trays installed correctly?	No? Make sure the paper trays are seated firmly.

Table 6-3. **Printer operation problems and solutions**
(continued)

Problem	Check point	Possible solution
Unable to generate prints from the host computer.	Are you receiving prints from the host?	No? Check steps 1 to 7. 1. If Last Page LED/Indicator is on, but not flashing and message area states "LAST PAGE", press Last Page c button.
	Is the problem corrected?	No? Go to steps 2 and 3. 2. Print a configuration sheet. If sheet will not print, power off printer for 10 seconds, then power back on. 3. Print a configuration sheet.
	Can you print a configuration sheet?	No? Go to step 7. Yes? Go to step 4. 4. Review the configuration sheet. Make sure the system configuration and the emulations are correctly set.
	Is the configuration sheet correct?	Yes? Go to step 5. 5. Make sure interface cable is securely connected, and attached to the correct ports on the computer and the printer. Send the document again.
	Is the problem corrected?	No? Go to step 6. 6. Review the host and the applications manuals for potential problems; then send the document again.
	Is the problem corrected?	No? Go to step 7. 7. Call your local Rank Xerox service representative.

Please note: Error messages are on the following pages.

Error Number	Display Code	Description
1	0103	Top cover open.
2	0104	Exit door open.
3	0105	Vertical transport (pre-reg) cover open.
4	0300	MCU RAM test fails.
5	0301	MCU ROM Checksum fails.
6	0302	MCU/microprocessor fails.
7	0305	MCU/ESS interface fails.
8	0312	MCU NVRam test fails.
9	0313	MCU flash prom checksum fails.
10	0401	Main motor fails.
11	0600	Start of scan late.
12	0601	Start of scan fails.
13	0700	No paper in bypass transport.
14	0701	No paper in tray 1.
15	0702	No paper in tray 2.
16	0703	No paper in HCF.
17	0705	Tray 1 missing.
18	0706	Tray 2 missing.
19	0707	HCF missing.
20	0820	Bypass pre-reg jam
21	0821	Tray 1 pre-reg jam
22	0822	Tray 2 pre-reg jam
23	0823	HCF pre-reg jam
24	0824	2-sided return pre-reg jam
25	0826	2-sided return lead edge jam
26	0827	2-sided return trail edge jam

Error Number	Display Code	Description
27	0830	Bypass trail edge shingle jam
28	0831	Tray 1 trail edge shingle jam
29	0832	Tray 2 trail edge shingle jam
30	0833	HCF trail edge shingle jam
31	0834	2-sided return trail edge shingle jam
32	0901	Photoreceptor CRU warning
33	0902	Photoreceptor CRU end of life
34	0903	Photoreceptor CRU wrong type
35	0904	Photoreceptor CRU missing or write fail
36	0911	Developer CRU warning
37	0912	Developer CRU end of life
38	0913	Developer CRU wrong type
39	0914	Developer CRU missing or write fail
40	0921	Toner CRU warning
41	0922	Toner CRU end of life
42	0923	Toner CRU wrong type
43	0924	Toner CRU missing or write fail
44	1001	Fuser fails
45	1002	Thermistor disconnect
46	1003	Fuser temperature low
47	1004	Fuser temperature high
48	1005	Fuser on too long
49	1020	Bypass pre-feedout/fuser jam
50	1021	Tray 1 pre-feedout/fuser jam
51	1022	Tray 2 pre-feedout/fuser jam
52	1023	HCF pre-feedout/fuser jam
53	1024	2-sided return pre-feedout fuser jam
54	1025	Exit lead edge jam

Error Number	Display Code	Description
55	1026	Exit trail edge jam
56	1111	Output tray full 1-sided, 2-sided, offset
57	1120	Offset malfunction
58	1401	Unknown communication error
59	1402	Framing error
60	1403	Receive buffer overrun
61	1404	Transmit or timeout error
62	1405	Parity error
63	1406	CTS not true when RTS went true
64	1407	DSR not true when DTR went true
65	1408	Unable to establish host connection
115	1459	Option comms error # 50
116	1500	Replace cart # 1/# 2
117	1502	Replace mem board
118	1503	Replace mem board
119	1508	Bad co-processor
120	1509	Replace NVM
121	1511	Replace comm board
122	1519	Comm board non terminal failure
123	1520	IG ASIC failure
124	1521	Not enough memory for PDL
125	1523	Replace PDL
126	1526	8052 FIFO test fails
127	1531	SIMM # 1 failure
128	1532	SIMM # 2 failure
130	1533	SIMM # 3 failure
131	1534	SIMM # 4 failure
Checksum	1535	SIMM # 5 failure

7.

Supplies: ordering information

The 4213 laser printer can be upgraded in a number of ways to expand its performance capabilities. These upgrades come in many forms:

- Font cartridges that physically plug into the 4213 laser printer
- Soft fonts (available from Rank Xerox and other suppliers and stored on diskettes) downloaded from your host computer to the 4213 laser printer
- PostScript option
- Memory upgrade kits
- Additional paper tray
- Adjustable paper tray
- High capacity feeder
- Multi-media feeder
- Coax/Twinax option

Downloadable fonts

The 4213, the LJ2D, and the XES resident emulations support downloadable fonts which are stored on diskettes or tapes, and can be copied to the printer from your host computer. These fonts are not permanent. When you switch the printer off, or change emulations, you must download the fonts again because the memory used to store them is erased.

- Notes**
- Downloaded fonts are not interchangeable between different emulations.
 - Downloaded fonts are lost when you switch emulations through the printer control panel, Mode Change Key (MCK) commands. Refer to the *Rank Xerox 4213 Laser Printer Programmer Reference* for information on the printer commands used to switch emulations.
 - Downloaded fonts are removed from the memory of the printer if you switch the printer off. When downloaded fonts are deleted, the default font is the active font for the printer.
 - A limited amount of memory is available in the printer. You need to leave enough memory for printing your jobs. If too many fonts are downloaded at the same time, the printer deletes some downloaded fonts in order to continue printing.
 - If after downloading fonts you switch to another emulation other than LJ2D or XES and print a font status sheet, the downloaded fonts are not listed on the status sheet.

Downloading fonts

1. Make sure the correct emulation is selected.
2. Download fonts using the utility supplied with the fonts, or applications programme.
3. If required, use the printer menus to print a font status sheet and confirm that fonts are correctly downloaded.

Font cartridges

Font cartridges are another way of increasing the number of typefaces and sizes the printer can output. Font cartridges are small plug-in modules that contain a range of fonts.

An extensive font library and customised fonts are available. Contact your local Rank Xerox representative to order additional fonts.

Note: When a font cartridge is installed in the LJ2D emulation and the manufacturer has defined a default font on the cartridge, then this default overrides any default font that is selected on the printer.

Installing the font cartridges

Font cartridges must be installed while the 4213 is powered off. Font cartridges installed while the printer is on are not recognised and may lock up the printer

Insert the font cartridge, label upwards, into one of the two slots located at the base of the printer. When you feel resistance, there is approximately another 6.35 mm or 1/4 inch to push to make sure the cartridge is fully seated.

Caution: Do not use excessive force when inserting the font cartridge into the printer, or you may damage the font cartridge or the printer connector.

To confirm proper installation follow these steps:

1. Power on the printer.
- H 2. Press the Online button to take the printer off line (The online indicator light is not lit.)
- B 3. Press and release the Test button on the printer control panel to access the Test Menu.
- C 4. Press the Last Page button until FONTS STATUS is displayed.
- D 5. Press the Select button to print a font status sheet. All available fonts, including the fonts that you installed, are listed on the status sheet. Cartridge fonts are identified by either Left Cartridge or Right Cartridge on the status sheet.
- H 6. Press the Online button to put the printer back online. (The online indicator light is lit.)

Note: Do not insert or remove the font cartridge while the printer is online.

Memory upgrades

The standard 4213 printer is supplied with 1 MB of random access memory (RAM), but only 0.5 MB usable. You will need to upgrade the memory capacity if you plan to use the following page buffers:

- One full frame which requires 1.1 MB of RAM
- Two full frames which require 2.2 MB of RAM
- One full long frame which requires 1.4 MB of RAM
- Two full long frames which require 2.8 MB of RAM (two 2 MB memory upgrades).

Additional memory may be required if you wish to use a large variety of downloadable fonts at the same time. Adding memory also increases the processing speed of the printer.

Note: Printing of full-page graphics may be limited by the ability of the host computer to send the full graphic. The 13-page-per-minute rate of speed for 1-sided printing may be affected if your host computer cannot send data in the allotted time of 5.45 seconds. If this is the case, you will notice a slower printing time.

A message is displayed if you have exceeded the memory capacity of the 4213 laser printer.

Memory upgrades for the 4213 printer are available in one size: 2 MB. The part number for ordering is 2H5.

To purchase a memory upgrade, contact your printer supplier, or your sales representative.

Note: If you intend to purchase the PostScript emulation, you should note that this PDL board requires the printer to have 2 Single Inline Memory Module (SIMMS) upgrade, at least 4.5 MB of RAM.

Paper tray ordering information

Additional paper trays may be purchased in the following sizes:

Table 7-1. **Paper trays**

Paper trays	Description	Part number
Letter	8.5 x 11 inches	9R01057
Legal	8.5 x 14 inches	9R01058
A4	210 x 297 mm	9R01059
Adjustable width range	182 to 254 mm	9R1062
length range	216 to 356 mm	

Options

For more information on the options listed below, contact your local Rank Xerox representative.

Table 7-4. **Options list**

Item	Part number
High capacity feeder for A4	97K10040
Multi-media feeder	97K10340
Coax/Twinax option (XCTO)	97K10840
PDL kit complete (1 PDL board, 1 coprocessor, 3 SIMMS)	97K14220
2 Mbyte SIMM	97K08670
Twinax Cable	97K10940

Supplies

To ensure you have supplies on hand when you need them:

- Check your supplies regularly.
- Order supplies before you run out.

The following pages list Rank Xerox supplies for the 4213 laser printer. Be certain that the supplies ordered for and used in the 4213 laser printer are manufactured for it.

Table 7-3. **Supplies list**

Item	Part number
Toner cartridge	6R342
Developer cartridge	6R339
Print cartridge	13R49
Transparencies (paper back short edge bonded)	3R91334

A.

Options for the 4213

The following optional accessories can be purchased for use with the 4213 laser printer:

- An adjustable paper tray
- A high capacity feeder
- A Xerox Coax interface kit
- A Xerox Twinax interface kit
- A PostScript emulation with coprocessor
- A SIMM kit
- A Multi media feeder

This appendix explains the functionality of these options and how they are used.

Options chosen at the control panel take effect when the printer is put online. You should go online, then off line, to get a configuration sheet.

For detailed ordering information, refer to chapter 7, "Supplies: ordering information."

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Replace this sheet with the following tab:

“Adjustable tray”

To use the adjustable paper tray, you need to understand how to perform the following tasks:

- Position the type magnet
- Load paper
- Use the control panel to identify the paper size.

Adjustable tray

The adjustable paper tray is available as an option for use with the 4213 laser printer. The adjustable tray can hold up to 220 sheets of 80-gsm paper or 20-lb paper, and must be installed in the lower tray slot for optimal performance.

Figure A1-1. **Adjustable tray**

Using the adjustable paper tray

The optional adjustable tray has two sliding paper guides on the inside of the tray and a magnetic (type magnet) identifier on the outside wall of the tray. The tray may be used with ten different paper sizes. The size used is selected via the Main Menu. In order to simplify repetitive changes of size, the type magnet on the tray is used to identify the tray as the A tray or B tray. The A tray and B tray settings may each be configured to a special paper size with the menu, enabling you to switch between the two sizes without using the the menu each time.

- Notes**
- There is a clear guide on the pop-up bottom of the adjustable paper tray. Do not remove this guide.
 - It is strongly recommended you set the correct paper size in the adjustable tray menu and then insert the adjustable tray while you are still off line. Failure to do so may cause paper jams and a recurring query on the user interface asking for paper size.

Loading paper in the adjustable tray

This section provides information on how to load the paper and how to position the type magnet before inserting the paper tray.

- Notes**
- Although the inactive paper tray may be loaded while the 4213 laser printer is printing, removing the active paper tray can cause a paper jam. Tray 1 cannot be removed while 2-sided printing is in progress.

3. Push down on the metal plate until it clicks into place.

4. Special papers should be fanned prior to loading in the adjustable paper tray. Up to 220 sheets of 20-lb or 80-gsm paper may be loaded at one time. Special papers should be fanned prior to loading
5. Load paper into the tray, curl side up to help prevent jamming.
 - Do not load paper above the black MAX line on the inside of the adjustable side guide.

- Make sure that the paper stack is under the fixed paper snubber.
-
6. Squeeze the two release latches. One is located at the outside edge of the adjustable side guide and the other is located on the inside floor of the the tray. Slide both guides until they come in contact with the paper. Marks of paper length and width are on the inside floor of the tray. Your guide settings should match the paper size you are using.

Close the tray cover.

Note: The stack of paper should be under both paper snubbers at the lead edge of the stack.

7. Slide the type magnet (top) either to the right (A) or left (B) position. The type magnet is located at the back of the left outside wall of the paper tray. The control panel is used to assign a particular paper size with either the A Tray or the B Tray. Moving the type magnet to the A or B position tells the printer what paper size to expect.

Note: The A or B magnet setting can be convenient to use when you frequently load two sizes of paper in the adjustable cassette or need to load two cassettes at the same time. You can avoid using UI keystrokes by designating A as one size of paper or cassette and B referring to another paper size or cassette. You can make your selection by either moving the magnet position thus avoiding UI keystrokes or by selecting the different cassettes using the UI.

8. Place the filled adjustable paper tray all the way into the lower (tray 2) tray slot. Make sure the end of the paper tray with the snubbers goes in first. Push it gently into position until it clicks into place.
9. If you have changed the paper size, you must use the control panel to identify the paper size of the adjustable tray.
10. Send your print job from the host computer designating tray 2 as the current feed tray.

Using the control panel to identify the paper size of an adjustable tray

The image sent to the printer is placed on the page according to the size of the paper being fed.

You can identify the adjustable tray as a type A Tray or a type B Tray. (Refer to step 7 in "Loading paper in the adjustable tray.") Once identified, use the control panel to select the paper size of the identified tray. The printer can then place the image in the correct location on the paper.

Before submitting your print job, use the following buttons on the control panel to access the Main Menu and to specify the page size or sizes for your adjustable tray.

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- A 2. Press the Menu button to access the Main Menu. The display reads:

MAIN MENU
PRINTER LANGUAGE
- C 3. Press the Last Page button until the display reads:

MAIN MENU
ADJ PAPER SIZE
- B 4. Press the Test button to display the adjusted paper size headings. The display reads:

ADJ PAPER SIZE
ADJUSTABLE A
- C **Note:** If you wish to use an adjustable tray which is identified as type B Tray, press the Last Page button to display ADJUSTABLE B.
- B 5. Press the Test button to display the lower level adjustable tray page size options. The display reads the current size selected, such as:

ADJUSTABLE A
8 X 10

or

ADJUSTABLE B
8 X 10

- C 6. Press the Last Page button until the page size you want to use is displayed in the message display. Refer to table A1-1 for a listing of the possible page sizes which can be selected for use with the adjustable tray.

Note: If the page size you want to use is not listed in table A1-1, select a page size which is longer than the paper you have placed in the tray.

- D 7. When the page size you wish to use is displayed, press the Select button to select that size. An asterisk appears next to your selection.
- H 8. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Table A1-1. **Page size requests**

Page name	Page size
8 x 10	203 x 254 mm (8" x 10")
Executive	184 x 267 mm (7.25" x 10.5")
215 x 275	215 x 275 mm (8.46" x 10.83")
Letter	216 x 279 mm (8.5" x 11")
A4	210 x 297 mm (8.27" x 11.69")
215 x 315	215 x 315 mm (8.46" x 12.4")
210 x 330	210 x 330 mm (8.27" x 12.99")
8 x 13	203 x 330 mm (8" x 13")
8.5 x 13	216 x 330 mm (8.5" x 13")
Legal	216 x 356 mm (8.5" x 14")

Note: 2 sided printing on 8X10 paper is not available on the 4213

Saving the page size setting for the adjustable tray

Use the following buttons at the control panel to save your page size selections for the adjustable tray as defaults, to be in place each time the printer is switched on.

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
SAVE DEFAULTS
- D 4. Press the Select button to save the selected page size as the default for the adjustable tray.
- H 5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Replace this sheet with the following tab:

“High capacity feeder”

To use the High Capacity Feeder (HCF), you need to understand how to perform the following tasks:

- Install the feeder.
- Load paper.
- Use the control panel to select the high capacity feeder as a paper source.

High Capacity Feeder (HCF)

A High Capacity Feeder (HCF) may be purchased as an accessory for your 4213 laser printer. The HCF addresses the need for an increased paper supply without requiring additional software or printer cable modifications. The HCF is available in A4 (210 by 297 mm) paper size.

The HCF has the following capabilities:

- Supplies a 1,500 sheet feed source of A4 paper.
- Paper weight range of 60 gsm—90 gsm (16 lb—24 lb)
- Feeds into the manual bypass slot.
- Retains the single sheet bypass function for special papers.
- Capable of being the feed source for 2-sided printing.

Figure A2-1. **High Capacity Feeder**

Check your box contents

Prior to installation, check that the following items have been included in your HCF kit:

- Mounting bracket (attached to the HCF)
- Screwdriver
- 4213 HCF Installation Card.

With these items, and this User Guide, you are now prepared to install your HCF.

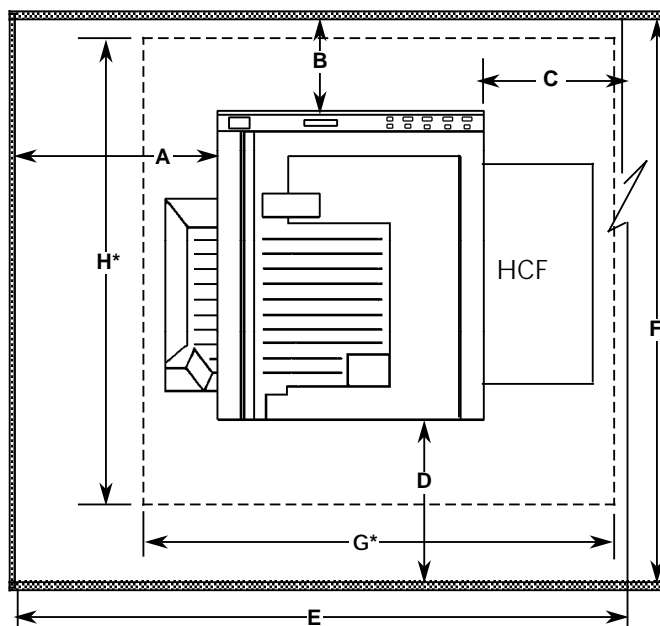
Note: The HCF must be installed on a flat, stable surface at the same level as the printer.

Space requirements

Figure A2-2 is a top view of the printer with the optional HCF. These are the minimum space requirements needed for operation and maintenance.

- The height requirements from the floor to the bottom of the printer are:
 - 46 cm (18 inches) minimum
 - 91 cm (36 inches) maximum.
- The height requirement from the floor to the nearest overhead obstruction within the specified floor space is 198 cm (78 inches) minimum.
- The minimum table top dimensions are:
 - 86 cm (34 inches) wide
 - 58 cm (23 inches) deep.

Figure A2-2. **Space requirements with HCF**



A	19.3 in.	49.0 cm
B	4.0 in.	10.2 cm
C	30.3 in.	76.9 cm
D	24.4 in.	61.9 cm
E	67.6 in.	171.7 cm
F	48.1 in.	122.2 cm
G*	36.0 in.	91.4 cm
H*	26.0 in.	66.0 cm

*These are the minimum table top dimensions.

5. The mounting bracket on the HCF is held in place by two rubber bands. Remove the rubber bands and lower the mounting bracket to remove it from the HCF.
6. Secure the mounting bracket to the printer (pin side up) using the two screws just removed from the printer.

7. Lift the HCF and align the holes on the mounting bracket on the HCF with the pins on the mounting bracket attached to the printer. Lower the HCF into place, the bracket holes slipping over the bracket pins.

8. Remove the tape which holds the elevator door in place. Lower the elevator door.

9. Remove the wooden shipping block inside the elevator door.

10. Discard the shipping block.

11. Raise the elevator door.

12. Plug the interface cable into the printer.

13. Switch the printer on. The power switch is in the "I" position.

Note: If fault code 707 is displayed, check that the interface cable is fully seated in the printer connector.

14. The elevator automatically descends. Wait until it stops before you lower the elevator door to load the HCF with paper.

Loading the HCF with paper

Follow the instructions below to load the HCF with A4 or 8.5- by 11- inch paper.

1. Lower the elevator door.
2. Gently tap the stack of paper on a firm surface to align the edges of the sheets. Up to 1500 sheets of 80-gsm (20-lb) paper may be loaded at one time.
3. Load paper into the HCF. Paper should be loaded curl side down. This is opposite from the way paper is loaded in the paper trays. Paper fed from the tray is inverted before printing, whereas paper fed from the HCF is not. Refer to chapter 5, "Care and maintenance," for information on how to find the curl side of the paper. Do not load paper above the MAX line on the inside wall of the HCF.

Note: Although the inactive HCF may be loaded while the 4213 is printing from a paper tray, loading paper into the active HCF can cause a paper jam.

4. Repeat steps 2 and 3 until the desired amount of paper is loaded. Make sure paper is fully forward in the tray and lead edge corners are below the paper snubbers.
5. Raise the elevator door. Failure to completely close the elevator door will cause a paper jam (code 0823 will appear on the user interface panel).

The elevator door descends automatically when the HCF is out of paper. The fault indicator light is lit and the display reads, ADD PAPER TO HCF 0703. Repeat steps 2 through 7.

8. If you are loading different paper (replacing what is already there) or replenishing the existing paper, it is necessary to press the button on the top of the HCF to lower the elevator. Wait until the elevator stops before you lower the elevator door. Repeat steps 2 through 7.

Note: Refer to the next section, "Handling of special papers in the high capacity feeder," for how to load predrilled, letterhead, and preprinted paper.

Handling of special papers in the high capacity feeder

The following paper requires special handling:

- **Predrilled paper** is loaded with the holes next to the left wall of the HCF (opposite the wall with the MAX fill mark).
- **Letterhead and preprinted paper** are loaded face up with the top of the preprinted page inserted first.

How to select the high capacity feeder as the primary paper source

The optional HCF can be selected as the primary paper source or as the primary paper source as part of a tray selection sequence.

- Notes**
- If the HCF is part of a tray selection sequence, the paper tray (1 or 2) must have the same paper size.
 - In order for the HCF to appear on the User Interface, the 4213 must have been powered ON *after* installation of the HCF.

Selecting HCF as the paper source

Before submitting your print job, use the following buttons on the control panel to access the Main Menu and to select the HCF as the paper source for the current emulation.

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- A 2. Press the Menu button to access the Main Menu. The display reads:
MAIN MENU
PRINTER LANGUAGE
- C 3. Press the Last Page button until the display reads:
MAIN MENU
EMULATION
- B 4. Press the Test button to display the available emulation headings. The display reads:
EMULATION
XES*
- C **Note:** If XES is not the emulation you wish to use, press the Last Page button to display the LJ2D emulation.
- B 5. Press the Test button to display the lower level emulation options. The display reads:
XES or LJ2D
COPIES 01
- C 6. Press the Last Page button until the display reads:
XES or LJ2D
TRAY SEQ MODE

- B 7. Press the Test button to display the available tray sequence mode options. The display reads:

TRAY SEQ MODE
TRAY 1*

Note: If the current emulation is LJ2D, TRAY 1-2* is the default tray sequence.

- C 8. Press the Last Page button until the tray sequence you want to use for the HCF is displayed in the message display. Possible choices are:

- HCF
- HCF-TRAY 1
- HCF-TRAY 2
- HCF-TRAY 1-2.

- D 9. Press the Select button to select the tray sequence you wish to use. An asterisk appears next to your selection.

Note: To set a tray sequence for another emulation:

- A
- Press the Menu button to return to the emulation menu heading. The display reads:

EMULATION
XES*/(other available emulation)

- C
- Press the Last Page button to display a new emulation heading.
 - Follow steps 5 to 9 above to select the tray sequence to be associated with this emulation.

- H 10. Press the Online button to put the printer back online. (The green online indicator light is lit.) Unless otherwise directed through your application software or through a printer command, the HCF is the primary source for your print job.

Saving the tray sequence setting for the HCF

Use the following buttons at the control panel to save your tray sequence for the emulation as defaults, to be in place each time the printer is switched on.

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
SAVE DEFAULTS
- D 4. Press the Select button to select the option.
- H 5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Replace this sheet with the following tab:

“IBM Coax/Twinax option”

A3. Xerox Coax/Twinax option

To use the Xerox Coax/Twinax option (XCTO) you need to understand how to perform the following tasks:

- Install the interface kit.
- Select and configure the interface at the control panel so that the 4213 laser printer can communicate with IBM mini and mainframe computers.

Coax/Twinax interface kit

The optional Coax/Twinax (IBM mini/mainframe) printer interface kit provides a low cost mechanism for attaching the 4213 laser printer to the IBM environment. This interface kit is comprised of the following components:

- IBM mini/mainframe Printed Wiring Board Assembly (PWBA)
- Code cartridge which stores the software necessary for converting incoming IBM printer commands to Xerox Escape Sequences (XES). The cartridge also contains the fonts required to support the printer emulations.
- Optional Twinax cable assembly which enables the connection of the PWBA to an IBM communications cable.

Hosts supported

When the XCTO kit is installed on the 4213 laser printer, it will accept commands and data from an IBM Coax or Twinax host.

The following systems are typical of IBM Coax hosts:

- IBM 9370
- IBM 4381.

The following systems are typical of IBM Twinax hosts:

- IBM System 36
- IBM System 38
- IBM AS400.

Emulated printers

The 4213 laser printer equipped with the XCTO provides emulations of several IBM printers, providing support for the vast majority of data processing and office automation applications running on IBM mini and mainframe computers.

You can configure between Coax and Twinax at the Main Menu, which is accessed from the control panel.

The XCTO emulations

This section identifies the other various IBM printers that the XCTO can emulate.

Table A3-1 shows six IBM Coax printers and the Xerox 4045 Model 20, along with the description of each printer, that the XCTO can emulate.

Table A3-1. Xerox Coax emulations

PRINTER (Model)	TYPE	SPEED	CPI	LPI	CHARACTER SETS
3287 (1,2)	Dot-matrix	Up to 120 cps	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)	Laser (240 psi)	Up to 12/24 ppm	10, 12, 15, 17	3, 4, 6, 8	User selectable with 61 standard fonts
4245 (D12, D20)	Band printer	Up to 2000 lpm	10	3, 4, 6, 8	Depends on band mounted: 48-142 characters
6262 (D12, D14)	Band printer	Up to 1400 lpm	10	3, 4, 6, 8	Depends on band mounted: 48-192 characters
4045 (Model 20)	Laser; 300 psi	Up to 11 ppm	10	3, 4, 6, 8	User selectable with 2 standard fonts

In the Coax environment, the following functions are not supported by the XCTO:

- BEL and chime poll. (Accepted but no alarm sounds.)
- Colour
- Full IBM APL character set.
- Function Management Headers

- Intelligent Printer Data Stream (IPDS)
- Katakana character set
- Programmed Symbols
- Queries from the host

Table A3-2 shows eight IBM Twinax printers, along with the description of each printer, that the XCTO can emulate.

Table A3-2. **Xerox Twinax emulations**

PRINTER (Model)	TYPE	SPEED	CPI	LPI	CHARACTER SETS
5219 (D01, D02)	Daisywheel	24-38 cps	10, 12, 15 proportional	4, 5.33, 6, 8, 9.6, 12	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	Up to 120 cps	10	6, 8	Various with 96, 128, and 188 characters
3812/16 (in 5219 mode)	Laser (240 psi)	Up to 12/24 ppm	10, 12, 15 proportional	4, 5.33, 6, 8, 9.6, 12	User selectable with 62 fonts
4245 (T12,T20)	Band printer	Up to 2000 lpm	10	6, 8	Depends on band mounted: 48-142 characters
5262 (1)	Band printer	Up to 650 ppm	10	6, 8	Depends on band mounted: 48-188 characters
6262 (T12,T14)	Band printer	Up to 1400 lpm	10	3, 4, 6, 8	Depends on band mounted: 48-192 characters

In the Twinax environment, the following functions are not supported by the XCTO:

- BEL (Accepted but no alarm sounds.)
- Colour
- Intelligent Printer Data Stream (IPDS)
- Katakana character set
- Load Alternate Character.

Contents of the Coax kit

The kit contains a Printed Wiring Board Assembly (PWBA), a code cartridge and a screwdriver. (Refer to figure A3-1.)

Note: In these instructions, a PWBA is referred to as a board (for example, system controller board, Coax/Twinax board, and so forth).

Figure A3-1. **Contents of Coax kit**

1. Coax/Twinax board
2. Code cartridge
3. Screwdriver

Contents of the Twinax kit

The Twinax kit comes in two parts: one package contains a Printed Wiring Board Assembly (PWBA), a code cartridge and a screwdriver. The other package contains an adapter cable which is required for a Twinax installation. (Refer to figure A3-2.)

Note: In these instructions, a PWBA is referred to as a board (for example, system controller board, Coax/Twinax board, and so forth).

Figure A3-2. **Contents of Twinax kit**

1. Coax/Twinax board
2. Code cartridge
3. Screwdriver
4. Adapter cable

Before you begin

If you do not wish to install the Coax/Twinax board yourself, call your service representative, and for a nominal charge, a representative will be sent to perform the installation for you.

If you choose to install this option yourself, refer to the following instructions.

Perform the following steps before beginning the Coax/Twinax board installation procedures. Refer to figure A3-3.

1. Power off the printer.
2. Remove any font cartridge from the printer.

Figure A3-3. **Front and back views of the 4213 laser printer**

1. Cartridge slots
2. Thumbscrews
3. Power switch

Installation procedures

The following steps guide you through the removal of the system controller board, installation of the Coax/Twinax board, and reinstallation of the system controller board.

System controller board removal

1. Locate the two thumb screws on the system controller access cover plate. (Refer to figure A3-4 for location of this plate.)

For steps 2 to 6, refer to figure A3-4.

Figure A3-4. **System controller board**

1. Connector J6 for Coax/Twinax board
 2. OPTIONAL I-O plate
 3. Thumbscrews
 4. System controller access cover plate
 5. Cable connector J7
 6. Cable connector J2
-
2. Turn the thumb screws counterclockwise until they are loose and turn freely.
Note: The screws cannot be removed from the bracket.
 3. Pull the system controller board out approximately 102 mm (4 inches) along the receiving rails.
 4. Depress the clip to disconnect the cable connector from the system controller board at J7.
 5. Disconnect the cable connector from the system controller board at J2.
Note: If the connection is very tight, snug, or stuck, a gentle back-and-forth and side-to-side rocking motion will help to loosen it.
 6. Lift slightly and pull to remove the system controller board from printer, and place it on a firm, flat surface.
 7. Using the screwdriver provided, remove the screws and the OPTIONAL I-O plate from the system controller access cover plate. (Refer to figure A3-5.)

Note: Keep the screws for later use.

Figure A3-5. **Remove the OPTIONAL I-O plate**

1. Screws removed with screwdriver
2. OPTIONAL I-O plate

Refer to figure A3-6 for steps 8 and 9. For steps 10 and 11, refer to figure A3-7.

Coax/Twinax board installation

Figure A3-6. Coax/Twinax board

1. Connector
2. Coax/Twinax board
8. Remove the Coax/Twinax board from its packaging, if you have not already done so.
9. Locate the connector on the Coax/Twinax board.

Figure A3-7. **Install the Coax/Twinax board**

1. Connector on the system controller board at J6
 2. Coax/Twinax board
10. Align the connector of the Coax/Twinax board with the connector on the system controller board at J6.
 11. Press down on the Coax/Twinax board at the corners on either side of the connector until the board is fully seated.
- For step 12, refer to figure A3-8.

Figure A3-8. **Reinstall the screws**

1. Coax/Twinax board
 2. Screws replaced with screwdriver
 3. Front plate of Coax/Twinax board
12. Reinstall the screws (saved from step 7) to attach the Coax/Twinax board to the system controller access cover plate.

Note: After the installation of the Coax/Twinax board, the OPTIONAL I-O plate can be discarded, since it is replaced by the front plate of the Coax/Twinax board.

Code cartridge installation

13. Insert the code cartridge into the right-hand cartridge slot, as shown in figure A3-9.

Figure A3-9. **Insert the code cartridge**

1. Code cartridge
2. Right-hand cartridge slot

Install additional options

If you purchased additional options for your printer, you can install them at this time while the system controller board is out of the printer. If there are no additional options to be installed, continue with step 14.

Reinstalling the system controller board

14. Place the system controller board into the receiving rails of the printer.
15. For reinstallation of the system controller board, reverse the removal process in steps 1 to 6.

Caution: Cable connectors may interfere with reinstallation of the system controller board; therefore, route them carefully.

Installation of adapter cable (Twinax only)

16. Remove the Twinax adapter cable from the package, if you have not already done so.
17. Connect the adapter cable to the D-shell connector, as shown in figure A3-10.

Figure A3-10. **Connect the Twinax adapter cable**

1. Adapter cable
2. D-shell connector.

Termination switch position

18. The termination switch is found on the front plate of the Coax/Twinax board. Refer to figure A3-11. Put it in one of the following positions:

- Up - Terminate line
- Down - Non-terminate line

Note: If you are working in the Coax environment, it is recommended that you leave the termination switch in the up (or terminate line) position.

Figure A3-11. **Termination switch position**

The termination switch should be in the up position if there are no other Twinax devices to be connected after it.

Maps of the 4213 Main Menu and the IBM Main Menus

The 4213 menus which are accessed from the control panel are:

- The Main Menu
—I/F Option
- The IBM Main Menu
—IBM Coax
—IBM Twinax

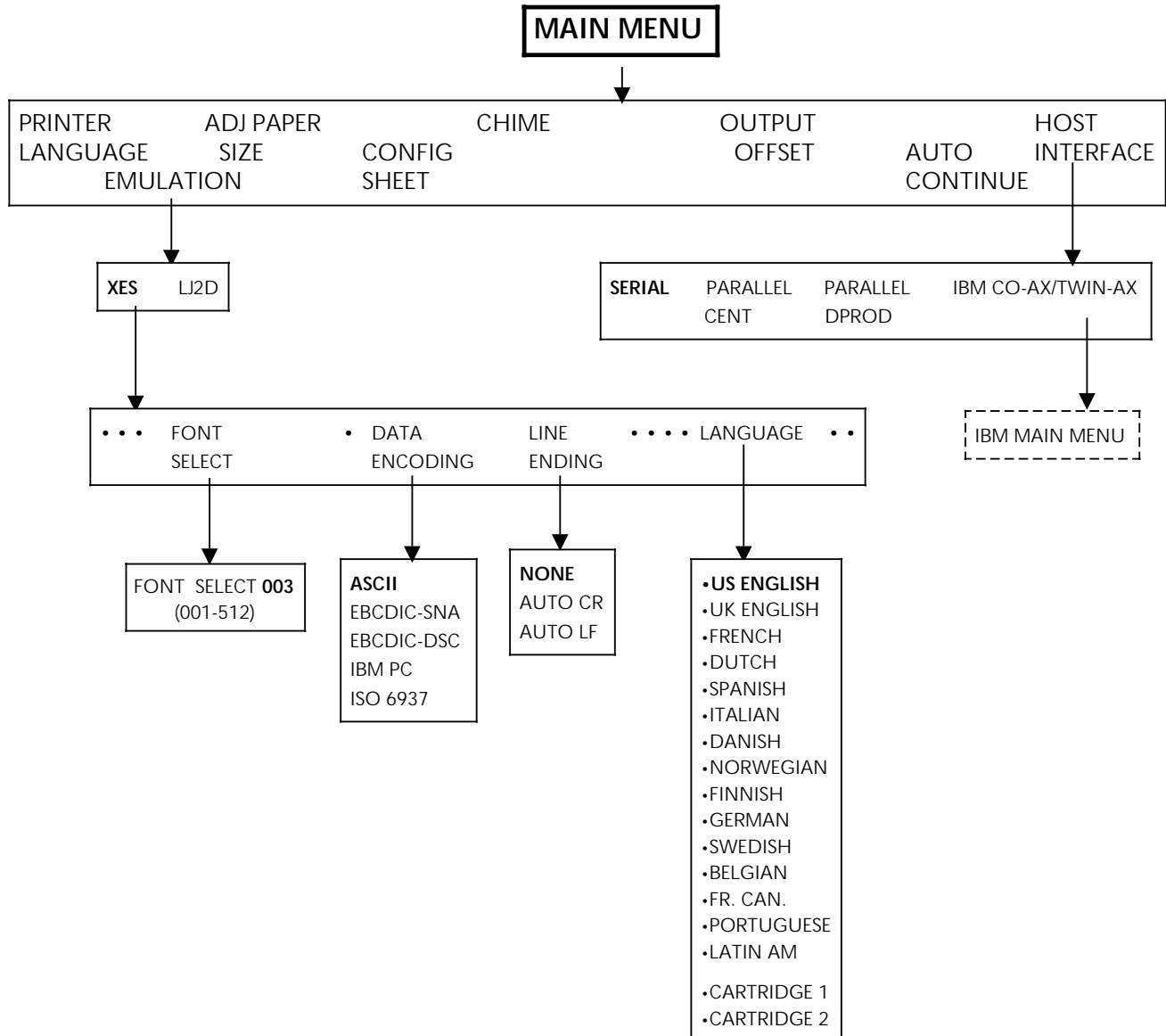
The following maps are included as an overview of the menus and to illustrate the different options within each menu. Refer to "The Main Menu map" section, and figure A3-1 for the "IBM Main Menu map for Coax". For Twinax environment, refer to figure A3-2 for the "IBM Main Menu map for Twinax".

You use the following buttons at the control panel to move through the different menu levels:

- B** • Use the Test button to move to the next lower menu level.
This move is illustrated on the maps by a down arrow.
- C** • Use the Last Page button to move the display to the right to display the menu options/headings at the same level.
This move to the right to headings/options on the same menu level, is illustrated by listing headings/options across the map on the same level, horizontally; or, when necessary due to space limitations, listing them diagonally on the page.
- A** • Use the Menu button to move to the next higher menu level.
This move is in the opposite direction of the down arrow on the map.
- H** • Use the Online button to exit the menu.
Note: When switching into or out of the coax/twinax option, you may sometimes get one or two pages of nonsense characters.

The Main Menu Map

A When the printer is off line, pressing the Menu button displays the 4213 Main Menu. The Main Menu is made up of top level menu headings and up to three lower but associated levels of menu headings and options.



Note: If you have previously exited the IBM menus by pressing the Online H button, the IBM MAIN MENU will be displayed the next time the 4213 is taken off line.

Coax/Twinax option modes of operation

There are two modes of operation for the Coax/Twinax option interface. These modes are as follows:

- ISO 6937
- EBCDIC-SNA or EBCDIC-DSC

The ISO6937 mode

This mode converts EBCDIC encoded input data into ISO6937 encoded data before passing the data onto the 4213. To operate in this mode, ISO6937 must be selected at the control panel.

Note: The language table selection, required to make sure that the correct national character mapping is used, must be made from within the IBM menus and not from the XES emulation menus.

The EBCDIC-SNA and EBCDIC-DSC modes

These modes pass EBCDIC encoded data to the 4213 without carrying out any translation. To operate in these modes, the EBCDIC-SNA or EBCDIC-DSC encoding must be selected from the printer control panel.

If the 4213 is expected to operate as a SNA Character String (SCS) printer, then EBCDIC-SNA encoding must be selected.

- Notes**
- The language table selection, required to make sure that the correct national character mapping is used, must be made from within the XES emulation menus and not the IBM related menus.
 - If the 4213 is expected to operate as a Data Stream Compatibility (DSC)/Data Stream Emulation (DSE) printer, then EBCDIC-DSC encoding must be selected.
 - The EBCDIC-DSC encoding scheme is not language dependent, therefore, character mapping language selections will have no effect on the 4213 output.

4045 model 20 compatibility

The functionality offered by each of these modes is very similar. However, in order to guarantee compatibility with the 4045 model 20 and host mainframe packages, which expect the 4213 to be operating in the EBCDIC mode, the appropriate EBCDIC setting must be used.

Setting XES parameters for XCTO

You must set up certain XES parameters prior to using the XCTO. These parameters are as follows:

- Emulation
- Font Select (4045 model 20 emulation only)
- Data encoding
- Line ending
- Language.

Follow these detailed steps to set up the 4213 for XES emulation:

1. Switch on the 4213.
 - If the 4213 has previously been switched on, the alphanumeric display panel will display the message:
READY XES
 - If this is the first time the 4213 has been switched on after the installation of the Coax/Twinax option, the message display will be:
ERROR 1424

- D —Press the Select button to continue, if ERROR 1424 is displayed.
 —Wait until the display reads: READY.
- H 2. Press the Online button to take the printer off line. The online indicator light is not lit.
- A 3. Press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:
 MAIN MENU
 PRINTER LANGUAGE

Setting emulation parameter

- C 4. Press the Last Page button until the display reads:
 MAIN MENU
 EMULATION
- B 5. Press the Test button to display the available emulation headings. The display reads:
 EMULATION
 YES
- D 6. Press the Select button to select the YES emulation. An asterisk appears next to your selection.
- B 7. Press the Test button to display the available YES emulation menu options. The display reads:
 YES
 COPIES 01

Setting font select parameter

If the 4045 Model 20 emulation is *not being used*, proceed to the "Setting data encoding parameter" section. Otherwise, if the 4045 Model 20 emulation is being used, follow the steps given below to select the default XES font:

- C 8. Press the Last Page button until the display reads:
 YES *
 FONT SELECT 003

- D 9. Press the Select button to begin the font selection process.
- 10. Use the following buttons to enter the appropriate font selection:
 - A • Menu increases the value of the displayed number or the highlighted position.
 - B • Test decreases the value of the displayed number or the highlighted position.
 - C • Last Page moves to the next numeric position in the three-digit font index.
- D 11. Press the Select button to select the desired font index.

Setting data encoding parameter

- C 12. Press the Last Page button until the display reads:
 - XES
 - DATA ENCODING
- B 13. Press the Test button to display the currently selected data encoding option. The display reads:
 - DATA ENCODING
 - ASCII*
- C 14. For normal operation of IBM Coax/Twinax interface, press the Last Page button until the display reads:
 - DATA ENCODING
 - ISO6937
- C In the particular circumstance where it is desired to operate the XCTO in EBCDIC-SNA data encoding mode, press the Last Page button until the display reads:
 - DATA ENCODING
 - EBCDIC-SNA
- C In the particular circumstance where it is desired to operate the XCTO in EBCDIC-DSC data encoding mode, press the Last Page button until the display reads:
 - DATA ENCODING
 - EBCDIC-DSC

- D 15. Press the Select button to select the desired encoding. An asterisk appears next to your selection.
- A 16. Press and release the Menu button to re-display the XES emulation menu options again, the display reads:
XES
DATA ENCODING

Setting line ending parameter

- C 17. Press the Last Page button until the display reads:
XES
LINE ENDING
- B 18. Press the Test button to display the currently selected line ending option. The display reads:
LINE ENDING
NONE *
- C If the display does not read as indicated in procedural step number 18, press the Last Page button until the display reads:
LINE ENDING
NONE
- D 19. Press the Select button to select line ending option. An asterisk appears next to your selection.
- A 20. Press and release the Menu button to re-display the XES emulation menu options again, the display reads:
XES
LINE ENDING

Setting language parameter

If data encoding is set to EBCDIC-SNA mode, continue with step 21. Otherwise, if data encoding is set to ISO6937 or EBCDIC-DSC modes, jump to step 25 and continue:

- C 21. Press the Last Page button until the display reads:
XES
LANGUAGE

- B 22. Press the Test button to display the currently selected language option. The display reads:

LANGUAGE
US ENGLISH

If the display does not read the required language, press the Last Page button until it does.

Note: Refer to the Main Menu map for the XES language options available to you.

- D 23. Press the Select button to select the language. An asterisk appears next to your selection.

- A 24. Press and release the Menu button to display the XES emulation menu option. The display reads:

XES
LANGUAGE

- A 25. Press and release the Menu button to display the emulation option. The display reads:

EMULATION
XES

- A 26. Press and release the Menu button to display the Main Menu option. The display reads:

MAIN MENU
EMULATION

- H 27. Press the Online button to place the printer online. The online indicator light is lit.

Note: At this point it may be wise to use the SAVE DEFAULTS option to save any changes made to the printer configuration settings. By doing this, when your system is switched off and then on again, the configuration returns to that which you had previously saved. Refer to "Saving User Defaults" section in this guide.

Coax versus Twinax

If the 4213 is used in the Coax environment, refer to "Using the IBM Coax interface" section.

Refer to "Using the IBM Twinax interface" section if the 4213 is used in the Twinax environment.

Using the IBM Coax interface

This section describes the Coax option available at the control panel and how you may set them.

IBM Main Menu Coax option

Once the physical components of the interface are connected and the XES emulation has been set up, the XCTO may need to be set up, or configured to meet the needs of your office. The configuration options are set through the IBM Main Menu.

Note: The factory defaults refer to those defaults in place when the interface is first installed. You can change the factory defaults to meet your particular needs. Defaults are the settings in effect each time the system is switched on.

The menu is accessed from the printer control panel.

By configuring the interface, you are establishing your own default settings. There are two types of changes to the interface configuration.

- Permanent settings which remain unchanged even through a power off/on cycle.
- Temporary settings which remain current until a software command to change the setting is received, or the printer is switched off.

The options available for IBM Coax interface are:

- IBM buttons
- Coax configuration
 - Page configuration
 - Data Stream Compatibility (DSC) configuration
 - Language
 - Special features

- IBM utilities
 - Print configuration
 - Print table
 - Data monitor
- IBM communications
 - Coax
 - Twinax.

The IBM Main Menu map for Coax

The IBM Main Menu is made up of top level menu headings and up to three lower but associated levels of menu headings and options. Refer to figure A3-12 for a detailed IBM Main Menu map for Coax.

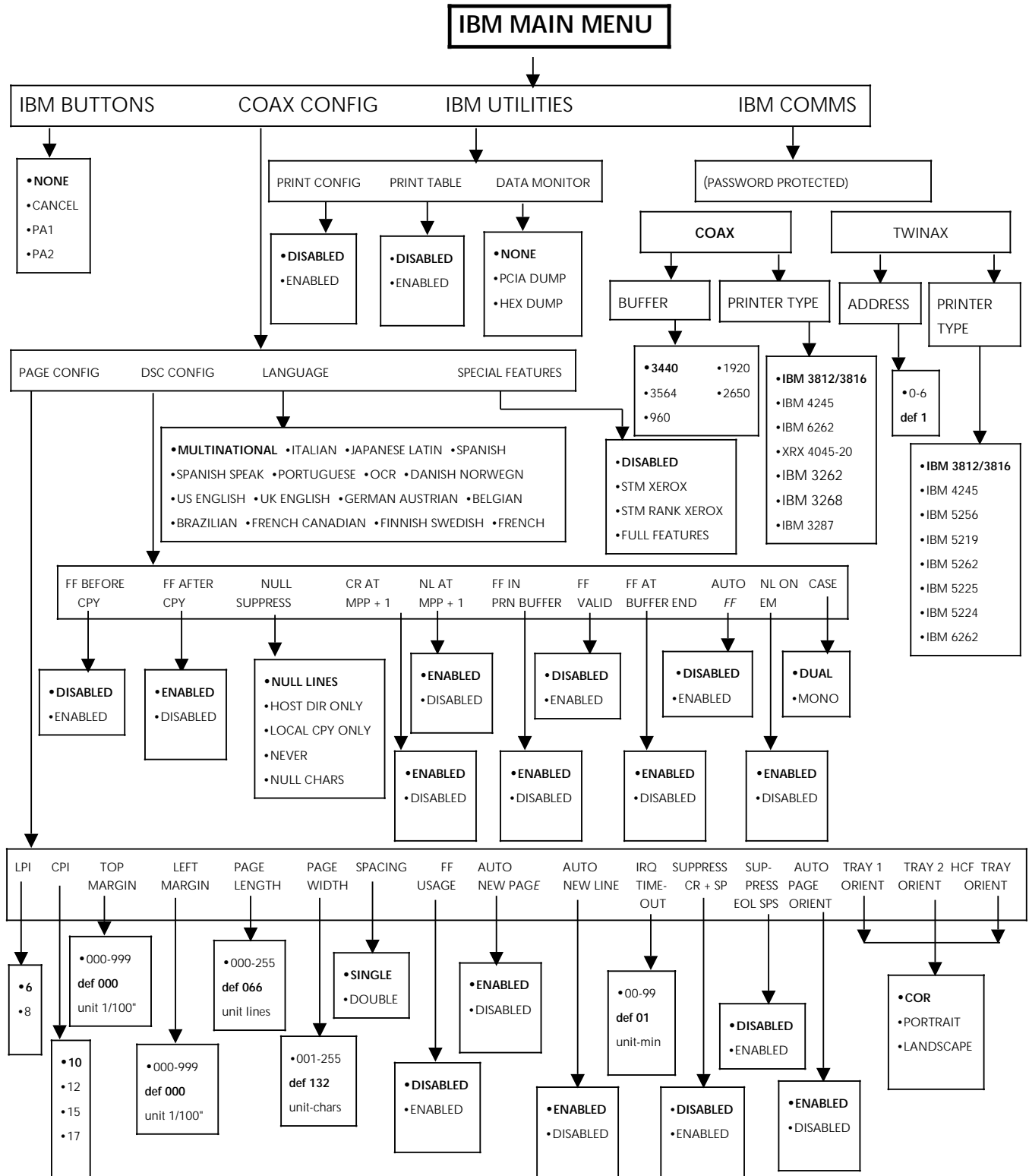
Notes: When using the Xerox 4045 model 20 emulation or sending files with XES commands, it is recommended that AUTO NEW PAGE and AUTO NEW LINE be set to disabled and SUPPRESS CR + SP be set to enabled.

The options typed in *italic* letters are not available when using the Xerox 4045 model 20 emulation.

COR refers to Computer Output Reduction. This feature allows documents which are formatted for 13-inch fan-fold paper to be printed on A4 cut sheet paper.

Factory default settings are in **boldface**.

Figure A3-12. IBM Main Menu map for Coax



IBM Coax Main Menu items

The IBM Main Menu items for Coax interface are described in detail on the following pages.

Note: Below each description of the menu item is an example of the message display with the factory default for the item

written in **boldface** type followed by an asterisk. The options for each menu item are listed in parentheses following the example of the message display. In the following example, disabled is the factory default for print configuration:

```
PRINT CONFIG
DISABLED* (DISABLED or ENABLED)
```

IBM buttons

You may need to provide responses to the 4213 which would have the same effect as pressing buttons on the front panel of an IBM printer. The menu provides you with a selection of responses that equal these buttons.

```
IBM BUTTONS
NONE* (NONE, CANCEL, PA1, or PA2)
```

Coax Configuration menu items

The Coax Configuration menu options let you make page configuration choices as well as configuration choices unique to DSC operation. With this menu you can also select the printer default language and choose one of the available IBM emulations.

Page Configuration

The Page Configuration menu items let you make a number of page formatting decisions. These include page length and width, form feed usage, and top and left margins. All the page configuration menu options are described below and are shown as they appear in the message display.

Lines Per Inch:

This menu option selects a default value for the number of lines per inch at power up.

LPI
6* (6 or 8)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

Character Per Inch:

This menu option selects the default number of characters per inch at power up.

CPI
10* (10, 12, 15, or 17)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

Top Binding Margin:

This menu option determines how far from the the top of the page the first line of print is placed. This distance is measured in units of 1/100 inch.

TOP MARGIN
000* (000-999)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

Left Binding Margin:

This menu option determines how far from the left edge of the page the first print column is placed. This distance is measured in units of 1/100 inch.

LEFT MARGIN
000* (000-999)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

Page Length:

This menu option selects the power up default for Maximum Page Length (MPL) in units of single lines. If this option is set to zero, no form feeds will be inserted by XCTO.

PAGE LENGTH
066* (000-255)

Page Width (Maximum Print Position):

This menu option selects the default horizontal position on the page where the last character is printed. The Maximum Print Position is measured from the left margin and not from the page edge.

PAGE WIDTH
132* (001-255)

Line Spacing:

This menu option selects the default value for the number of spaces between lines.

SPACING
SINGLE* (SINGLE or DOUBLE)

Form Feed Usage:

This menu option allows Form Feeds from the host to be passed to the printer when disabled. When enabled, host Form Feeds will be converted into the number of line feeds required to reach the end of the page. Therefore, page length will be used to calculate the number of line feeds required. Page length is set at the control panel, but can be overridden by the IBM Set Vertical Format command when operating in the SCS mode.

FF USAGE
DISABLED* (DISABLED or ENABLED)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

Automatic New Page:

This menu option lets you decide whether or not the Last Line Feed on a page can act as a Form Feed. When enabled, the number of lines on the page will be counted. When the line count equals the page length, a form feed will be generated. When disabled, no additional Form Feeds will be inserted. Again calculations will be based upon the page length which can be set at the control panel and overridden by the appropriate IBM command when operating in the SCS mode.

This menu option should be set to disabled when XES is in use. Otherwise, the new line commands required to terminate some XES commands may cause unwanted form feeds.

AUTO NEW PAGE
ENABLED* (ENABLED or DISABLED)

Note: When this option is disabled and the 4045 model 20 emulation is active, horizontal tabs will not be converted to spaces, in the usual manner, but will be passed to the XES emulation for processing.

Automatic New Line:

This menu option lets you select the autowrap function. When autowrap is enabled, a New Line occurs automatically if any text is found beyond the Maximum Print Position. When the option is disabled, text beyond the Maximum Print Position is lost.

AUTO NEW LINE
ENABLED* (ENABLED or DISABLED)

Intervention Request Timeout (IRQ):

This menu option determines how much time passes between an event that requires operator intervention before an IRQ timeout response is sent to the host. The time is measured in minutes. When this option is set to zero, no IRQ response will be sent to the host.

IRQ TIMEOUT
01* (00-99)

Suppress Carriage Return/Space:

This menu option determines whether or not to suppress Carriage Return and Space commands, which if acted upon would cause no net carriage movement. If this option is disabled, the net carriage movement allowed may break up XES commands and corrupt proportional-spaced printing. This option is especially useful for DSC systems where a buffer ends with a carriage return, and the following buffer begins with enough spaces to return to the same horizontal position.

This is especially useful for DSC systems where a buffer ends with a carriage return, and the following buffer begins with enough spaces to return to the same horizontal position. The carriage return and spaces may break up XES or corrupt proportional-spaced printing.

SUPPRESS CR + SP
DISABLED* (DISABLED or ENABLED)

Suppress end of line spaces:

This menu option determines whether space characters between the last character and the end of the line will be printed or not. Under certain conditions, End of Line Spaces may corrupt XES formatted documents.

This menu option is useful for right justification.

SUPPRESS EOL SPS
DISABLED* (DISABLED or ENABLED)

Auto Page orientation:

This menu option lets you choose between automatic tray orientation based on host commands for all trays or default orientation based on the default orientation setting of each tray. The automatic tray orientation tray algorithm is similar to that used by the IBM 3812/3816.

AUTO PAGE ORIENT
ENABLED* (ENABLED or DISABLED)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

Tray 1 orientation:

This menu option lets you define the default page orientation for tray 1.

TRAY 1 ORIENT
COR* (COR, PORTRAIT, or LANDSCAPE)

Note: COR refers to Computer Output Reduction. This feature allows documents which are formatted for 13-inch fanfold paper to be printed on A4 cut sheet paper. This option is not available when the 4045 model 20 printer emulation is selected.

Tray 2 orientation:

This menu option lets you define the default page orientation for tray 2.

TRAY 2 ORIENT
COR* (COR, PORTRAIT, or LANDSCAPE)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

High Capacity Feeder orientation:

This menu option lets you define the default page orientation for the high capacity feeder orientation.

HCF TRAY ORIENT
COR* (COR, PORTRAIT, or LANDSCAPE)

Note: This option is not available when the 4045 model 20 printer emulation is selected.

DSC Configuration

The DSC menu options allow you to configure your printer for DSC operation.

Note: For more details of the DSC configuration options, refer to "DSC-DSE options" section in the "Special Features" chapter of the *Xerox Coax/Twinax (XCTO) Reference Manual*.

Form Feed before local copy:

This menu option determines the print position before an Operator Initiated Local Copy (print screen function). If this option is disabled, no Form Feed occurs. If this option is enabled, the printer performs an automatic Form Feed (unless a Form Feed was the last command). The new print position is position 1 of the first line on the next page.

FF BEFORE LOCAL COPY
DISABLED* (DISABLED or ENABLED)

Form Feed after local copy:

This menu option determines the print position after an Operator Initiated Local Copy (print screen function). If this option is enabled, the printer performs an automatic Form Feed unless a Form Feed was the last command. The new print position is position 1 of the first line on the next page. If this option is disabled, the printer defaults to Form Feed at the end of the print buffer setting.

FF AFTER LOCAL COPY
ENABLED* (ENABLED or DISABLED)

Note: It is recommended that this option remains enabled for the 4045 model 20 emulation.

Null Suppression:

The Null Suppression option lets you choose one of several ways to handle Null lines or characters. The choices available for Null lines are: To always suppress Null lines, suppress them only in the Host Directed Copy mode or the Local Copy Mode, or to never suppress them. The control panel also allows suppression of Null characters.

NULL SUPPRESS

NULL LINES* (NULL LINES, HOST DIR ONLY, LOCAL CPY ONLY, NEVER, or NULL CHARS)

Carriage Return at Maximum Print Position +1:

This option determines what happens when the printer receives a Carriage Return command at maximum print position + 1. If the option is enabled, the print position moves to the first print position but does not move down a line. If this option is disabled, an additional new line command is executed. The new print position starts one line down at the first print position.

CR AT MPP+1

ENABLED* (ENABLED or DISABLED)

New Line at Maximum Print Position +1:

This option determines how far down the page the print position moves when a New Line command is received at maximum print position + 1. If this option is enabled, a New Line command will cause the print position to move to print position 1 and down one line. If this option is disabled, an additional New Line command will be executed. The new print position moves to print position 1 and down the page 2 lines.

NL AT MPP+1

ENABLED* (ENABLED or DISABLED)

Form Feed within the print buffer:

This option determines the effect of a Form Feed command on the print position. If the option is disabled, the new print position is position 2 on the first line of the next page. If the option is enabled, the new print position is position 1 on the first line of the next page.

FF IN PRN BUFFER

DISABLED* (DISABLED or ENABLED)

Form Feed valid:

This menu option determines how the position of a Form Feed command affects the printer. If the option is disabled, the 4213 performs a Form Feed only if the command occurs at the first print position or the Maximum Print Position +1. A Form Feed command at any other position produces a space. If the option is enabled, the 4213 performs a Form Feed each time the command is received and puts the new print position at position 1 of the next page.

FF VALID

DISABLED* (DISABLED or ENABLED)**Form Feed at end of print buffer:**

This menu option determines the print line position when a Form Feed command is the last code found in the print buffer or is immediately followed by an End Of Message code. When it is enabled, only a Form Feed command is executed and the printer is set to print at position 1 of the first print line on the next page. When it is disabled, it automatically adds a New Line function to a Form Feed command at the end of the print data. In this case the new print position is position 1 on the second line of the next page.

FF AT BUFFER END

ENABLED* (ENABLED or DISABLED)

Note: This option is ignored if either Form Feed after local copy option or Automatic Form Feed at end of buffer option is enabled.

Automatic Form Feed at end of print buffer:

This menu option determines the next print position when the print buffer is completed or an End of Message code is received. If disabled, it performs an automatic New Line after completing a print buffer unless the last command was a Form Feed, the last

print position is at position 1 or the Generate New Line on receipt of EM option is disabled. The new print position is position 1 of the next line. If enabled, it performs an automatic Form Feed after completing a print buffer unless a Form Feed was the last command in the buffer.

AUTO FF

DISABLED* (DISABLED or ENABLED)

Note: This option is ignored if Form Feed after local copy option is enabled.

Generate New Line on receipt of EM:

This menu option determines what the printer does when it receives an End Of Message command. If this option is enabled, the print position is moved to print position 1 of the next line. (This is providing the current print position is not already at position 1.) If this option is disabled, the print position remains unchanged.

NL ON EM
DISABLED* (ENABLED or DISABLED)

Case:

This menu option selects mono or dual case as the power up default. Dual case produces upper and lower case characters. Mono case converts all characters to upper case.

CASE
DUAL* (DUAL or MONO)

Note: This option is not available when 4045 model 20 printer emulation is selected.

Language

This menu option lets you use the control panel to select the default language of the printed output provided the XES emulation is set up for ISO6937 data encoding.

LANGUAGE
MULTINATIONAL* (MULTINATIONAL, ITALIAN, JAPANESE LATIN, SPANISH, SPANISH SPEAK, PORTUGUESE, OCR, DANISH NORWEGN, US ENGLISH, UK ENGLISH, GERMAN AUSTRIAN, BELGIAN, BRAZILIAN, FRENCH CANADIAN, FINNISH SWEDISH, or FRENCH)

Note: Refer to *Xerox Coax/Twinax (XCTO) Reference Manual* for details of these character sets.

Special Features

This menu option lets you select the level of Special Features you wish the XCTO to support.

SPECIAL FEATURES
DISABLED* (DISABLED, STM XEROX, STM RANK XEROX, or FULL FEATURES)

Note: STM means Special Transparent Mode. Refer to the *Xerox Coax/Twinax (XCTO) Reference Manual* for information on Special Features.

IBM Utilities

The IBM Utilities menu has three options. They are the Print Configuration, Print Table and Data Monitor.

Print Configuration

The Print Configuration menu option enables you to print the configuration sheet for Coax. The default is disabled. When this option is enabled, it automatically becomes disabled once the configuration sheet has been printed.

PRINT CONFIG
DISABLED* (DISABLED or ENABLED)

Print Table

The Print Table menu option allows you to print the currently selected custom translation tables (currently active EBCDIC-ISO tables) that are set using the Special Features function. This menu option also prints default tables. When this option is enabled, it automatically becomes disabled once the translate tables have been printed.

PRINT TABLE
DISABLED* (DISABLED or ENABLED)

Data Monitor

The Data Monitor menu option provides a diagnostic tool which allows you to print your job in hexadecimal or print the Printer Control Input Area (PCIA) associated with your job.

DATA MONITOR
NONE* (NONE, PCIA DUMP, or HEX DUMP)

IBM Communications

The IBM communication option lets you choose between Coax or Twinax. This function is password protected by a four-digit access code. (The password is 1776.)

IBM COMMS
COax* (COax, TWINax)

Buffer Size:

This new option lets you select the Buffer Size needed to print the content of the terminal screen in DSC, DSE, or in SCS modes. The control unit connected to the printer determines the screen size requirements. For consistent operation, the buffer size of the 4213 must be matched to that required by the host.

BUFFER SIZE
3440* (3440, 3564, 960, 1920, or 2650)

Printer type:

This menu option lets you select the printer types available that you need to emulate.

PRINTER TYPE
IBM 3812/3816* (IBM 3812/3816, IBM 4245, IBM 6262, XRX
4045-20, IBM 3262, IBM 3268, or IBM 3287)

Note: Changes to IBM COMMS options will be automatically saved as user defaults.

Caution: If you put the 4213 back online at this point, you will lose all new option settings except those associated with the IBM COMMS.

Accessing the IBM Coax option configuration at the IBM Main Menu

This section shows which buttons on the control panel are used for accessing the IBM Main Menu, advancing through the menu items, and if applicable, selecting configuration options. Refer to "Control panel" section in the "Overview" chapter of this guide for a diagram showing the location of the control panel buttons.

Make sure that the relevant XES parameters have been correctly set. Remember that you must use the XES emulation with the Coax option. Refer to "Setting XES parameters for XCTO" section.

Setting the Coax option as host interface

Use the following buttons at the printer control panel to set the Coax option as the host interface:

- H 1. Press the Online button to take the printer off line. The green online indicator light is not lit.
- A 2. Immediately press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:
MAIN MENU
PRINTER LANGUAGE
- C 3. Press the Last Page button until the display reads:
MAIN MENU
HOST INTERFACE
- B 4. Press the Test button to display the available host interface headings. The display reads:
HOST INTERFACE
SERIAL*
- C 5. Press the Last Page button until the display reads:
HOST INTERFACE
IBM COAX/TWINAX*
- D 6. Press the Select button to select the Coax option interface. An asterisk appears next to your selection.

Setting the Coax option

- B 7. Press the Test button to display the IBM Main Menu heading. The display reads:
- IBM MAIN MENU
IBM BUTTONS
- C 8. Press the Last Page button until the display reads:
- IBM MAIN MENU
IBM COMMS
- B 9. Press the Test button. The display reads:
- 0000**
A four-digit access code is required (password is 1776). The highlighted **number** represents the first position of the Coax password.
10. Use the following buttons to enter the password:
- A • Menu increases the displayed number.
- B • Test decreases the displayed number.
- C • Last Page moves to the next numeric position in the four-digit password.
- D 11. When the password entry is completed, press the Select button. The display should read:
- IBM COMMS
COAX*
- C 12. If the display does not read as indicated in procedural step number 11, press the Last Page. The display reads:
- IBM COMMS
COAX
- D 13. Press the Select button to select the Coax communications option.
- You may immediately use the IBM Coax interface by following the final step below.
- H 14. Press the Online button to take the printer online. This step is necessary to initialise the Coax option. The green online indicator light is lit and the 4213 is ready and the IBM Coax interface is in place.

Note: Initialising the Coax option by pressing the online button to put the 4213 back online will restart the host communication and reload the configuration option with Coax configuration defaults.

Setting different options under the IBM Main Menu for Coax

To change the IBM Coax interface configuration, follow steps 1 to 7 in the previous section to access the heading IBM Main Menu.

1. When the IBM Main Menu is displayed, the following buttons on the control panel are used to move through the different menu levels:

- B • Use the Test button to move to the next lower menu level.
- C • Use the Last Page button to move the display to the right to display the menu headings/options at the same level. When you display the last heading/option available for the menu item, pressing this button again will wrap around to display the first heading/option in the list.
- D • Use the Select button *before* you initiate changes to numeric entries, such as, TOP MARGIN, LEFT MARGIN, PAGE LENGTH, PAGE WIDTH, and IRQ TIMEOUT.
- A • Use the Menu button to move to the next higher menu level.
- D • Use the Select button to select a displayed option. When an option is selected, an asterisk (*) appears next to the option in the display.

Notes: The asterisk does not appear when Select is pressed to select numeric entries, such as, TOP MARGIN, LEFT MARGIN, PAGE LENGTH, PAGE WIDTH, and IRQ TIMEOUT.

The control panel will allow you to select values beyond the acceptable range for certain options. If you select out of range parameters, they will be ignored. The maximum allowed value for that parameter will be used instead.

2. Use either of the following buttons to exit the Main Menu:
 - A
 - Use the Menu button until OFF LINE appears in the message display. The printer is off line. The online indicator light is not lit.
 - H
 - Use the Online button. The printer is online (ready-to-accept-data) and any configuration changes made using this menu are in effect. The online indicator light is lit.
- Notes**
- Care must be taken when exiting to the Main Menu after changing option settings for the IBM Comms menu. This is because if you put the 4213 back online, you will lose all new option settings not associated with the IBM Comms, unless you have previously saved them using the "Saving user defaults" option.
 - Again, you must use the SAVE DEFAULTS option to save any changes made to the printer configuration settings if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the configuration returns to the configuration that was previously saved. Refer to "Saving User Defaults" section in this guide.

Using IBM Coax Utility Menus

This section shows how to use the IBM utilities and provides samples of the expected printed outputs.

Printing a Coax configuration sheet

Use the following buttons at the printer control panel to print a Coax configuration sheet:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)

- A 2. Press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:

MAIN MENU
PRINTER LANGUAGE

Note: If the display reads:

IBM MAIN MENU
IBM BUTTONS

Go to procedural step number 7.

- C 3. Press the Last Page button until the display reads:

MAIN MENU
HOST INTERFACE

- B 4. Press the Test button to display the available interface headings. The display reads:

HOST INTERFACE
IBM COAX/TWINAX*

- D 5. Press the Select button to select the option Coax/Twinax.

- B 6. Press the Test button to display the IBM Main Menu headings. The display reads:

IBM MAIN MENU
IBM BUTTONS

- C 7. Press the Last Page button until the display reads:

IBM MAIN MENU
IBM UTILITIES

- B 8. Press the Test button to display the available interface headings. The display reads:

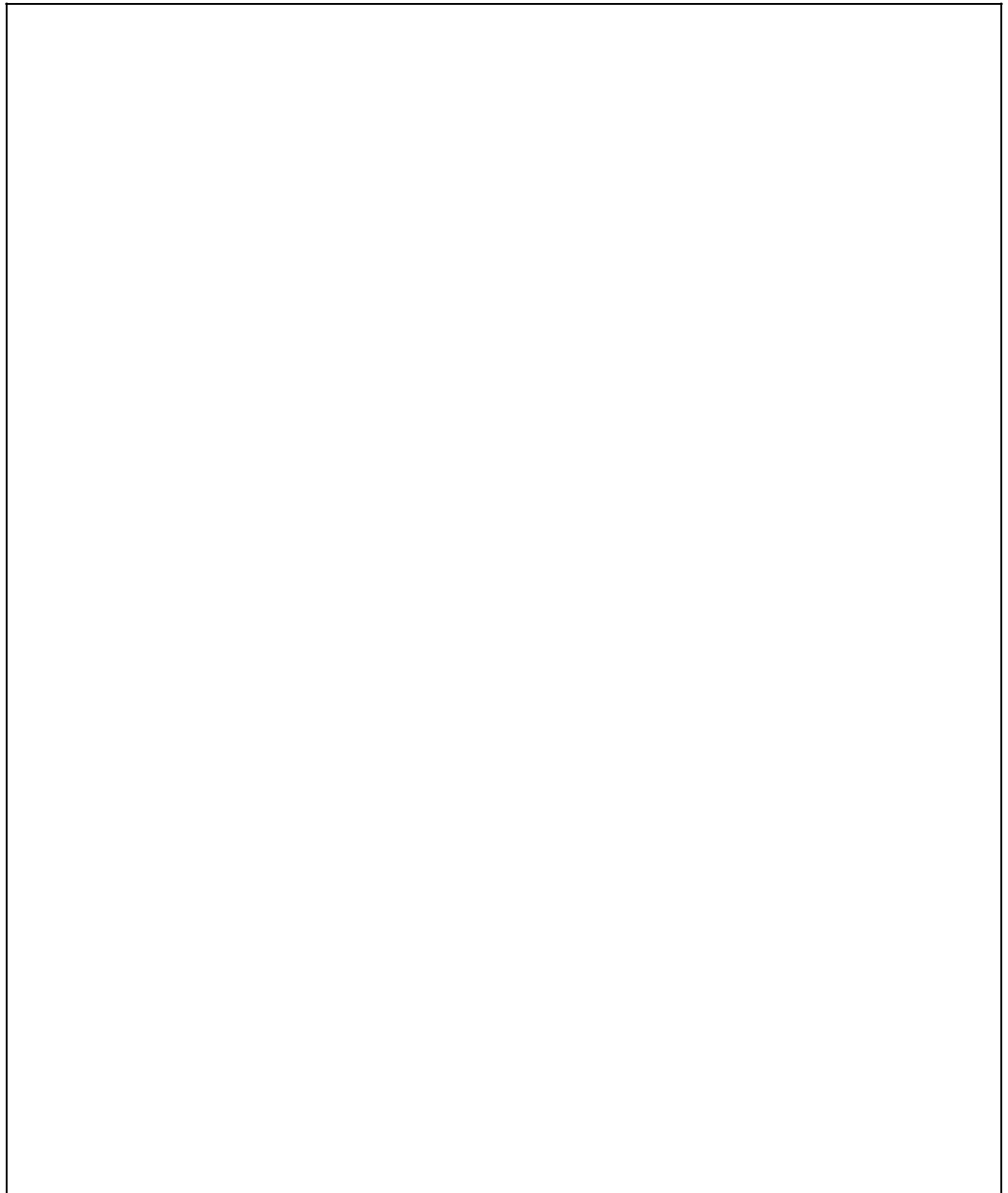
IBM UTILITIES
PRINT CONFIG

- B 9. Press the Test button to display the available interface headings. The display reads:

PRINT CONFIG
DISABLED*

- C 10. Press the Last Page button until the display reads:
PRINT CONFIG
ENABLED
- D 11. Press the Select button to enable printing of the configuration sheet.
- H 12. Press the Online button to put the printer back online. (The green online indicator light is lit.). A Coax configuration sheet will be printed (refer to figure A3-13).

Figure A3-13. **Coax configuration sheet**



Reading the Coax configuration sheet

1. The configuration sheet first reports the version levels of the XCTO software.
2. The next configuration sheet item, the test message, shows the type of cluster controller the printer is connected to. If the test message is zero, it means that the printer is not communicating with the cluster controller.
3. General Configuration shows the communications related options, the language and the special features selections.
4. Page Configuration shows how the options defining the default page format are set.
5. DSC Configuration shows how the DSC specific options are set.
6. Font information shows how the IBM Global Font Identification (GFID) numbers relate to Xerox font names. The default font selected by the GFID algorithm is **bolded**.

Review the information listed on the configuration sheet to determine if the current settings are satisfactory.

Notes

- The font information does not tell you what fonts are available in the 4213 itself.
- To check the fonts available in the 4213 you will need to print an XES Font Status Sheet.
- Font information will not be given when the 4045 model 20 emulation is selected as it is not applicable to this particular printer emulation.
- The other options which are not also applicable when 4045 model 20 emulation is selected will have the words "N/A" (not applicable) shown in the configuration sheet.
- The language option on the configuration sheet will be shown also as "N/A" (not applicable) when the XCTO is operating in its EBCDIC mode. If ISO6937 data encoding is selected, then the language option will show the correct language selected.

Printing the currently selected translate tables

Follow steps 1 to 8 for "Printing a Coax configuration sheet" and proceed from here:

The display reads:

IBM UTILITIES
PRINT CONFIG

- C 9. Press the Last Page button until the display reads:

IBM UTILITIES
PRINT TABLE

- B 10. Press the Test button to display the available print table options. The display reads:

PRINT TABLE
DISABLED*

- C 11. Press the Last Page button. The display reads:

PRINT TABLE
ENABLED

- D 12. Press the Select button to enable printing of the translate tables.

- H 13. Press the Online button to put the printer back online and the currently selected tables will be printed.

Refer to figures 3A-14 to 3A-16 for samples of Coax Translate Tables

Figure A3-14. Coax ISO Translate Table

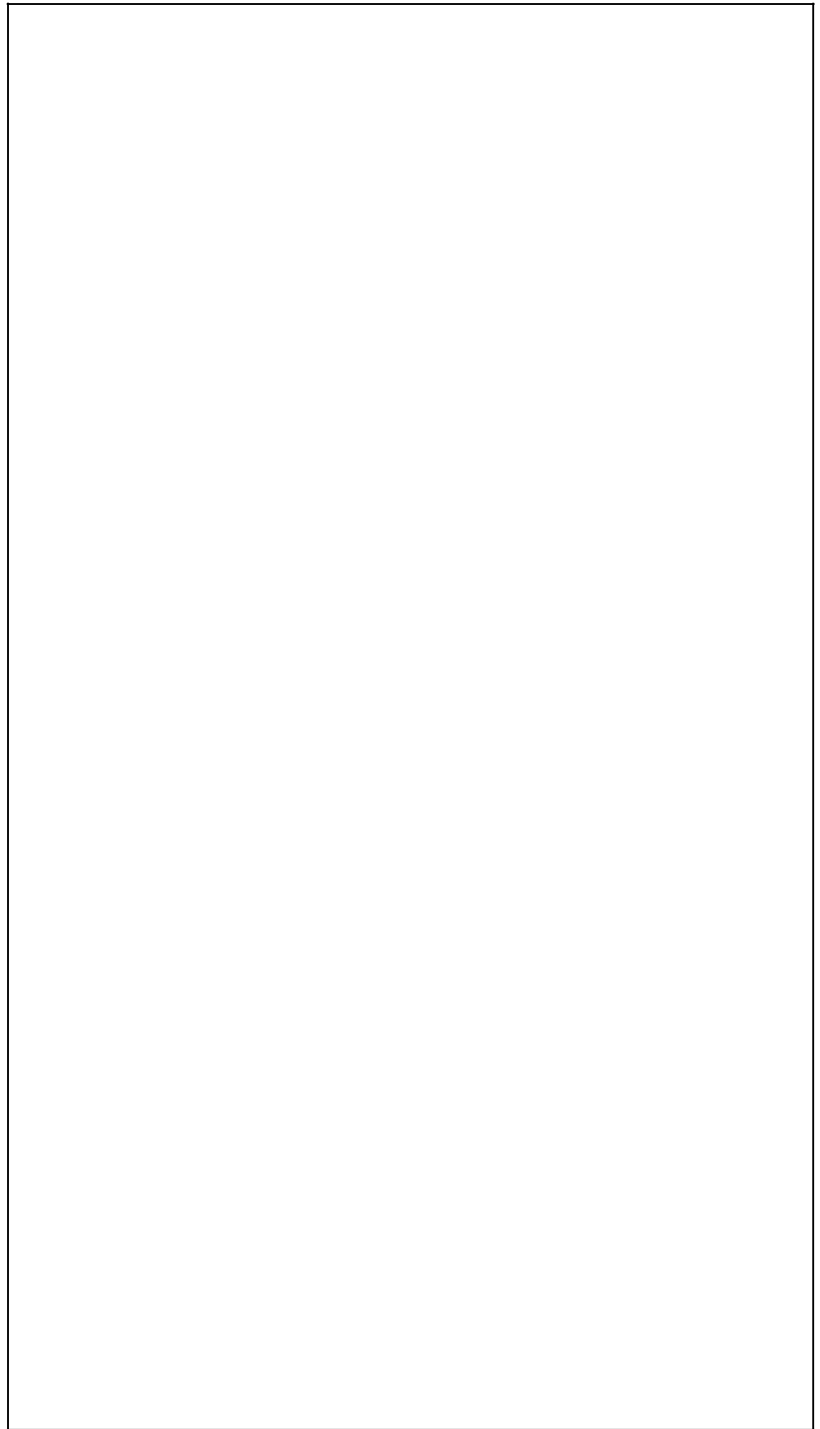
The image shows a large, empty rectangular box with a thin black border. This box is intended to contain the Coax ISO Translate Table, but the table's content is not visible in this image.

Figure A3-15. **Coax APL Translate Table**

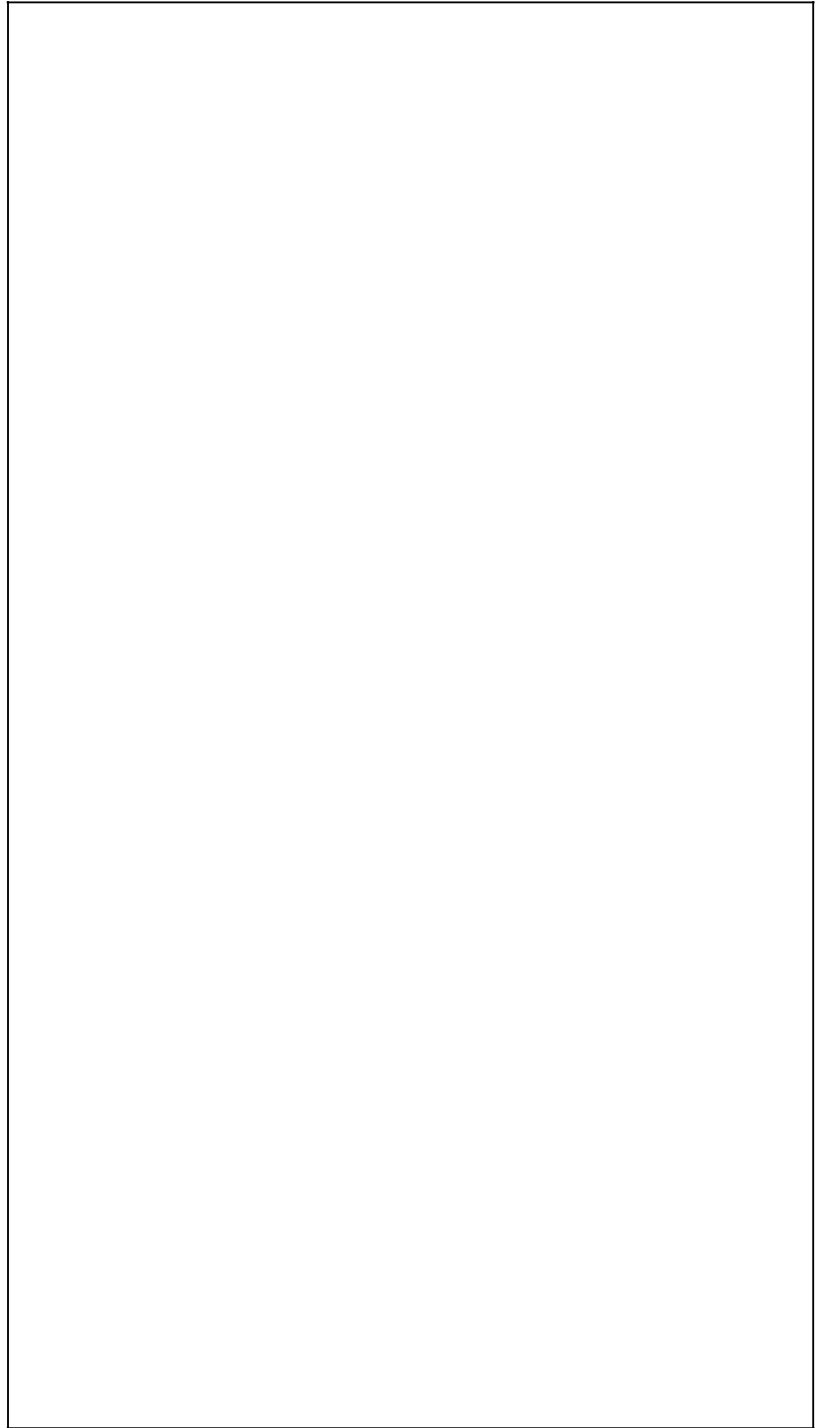
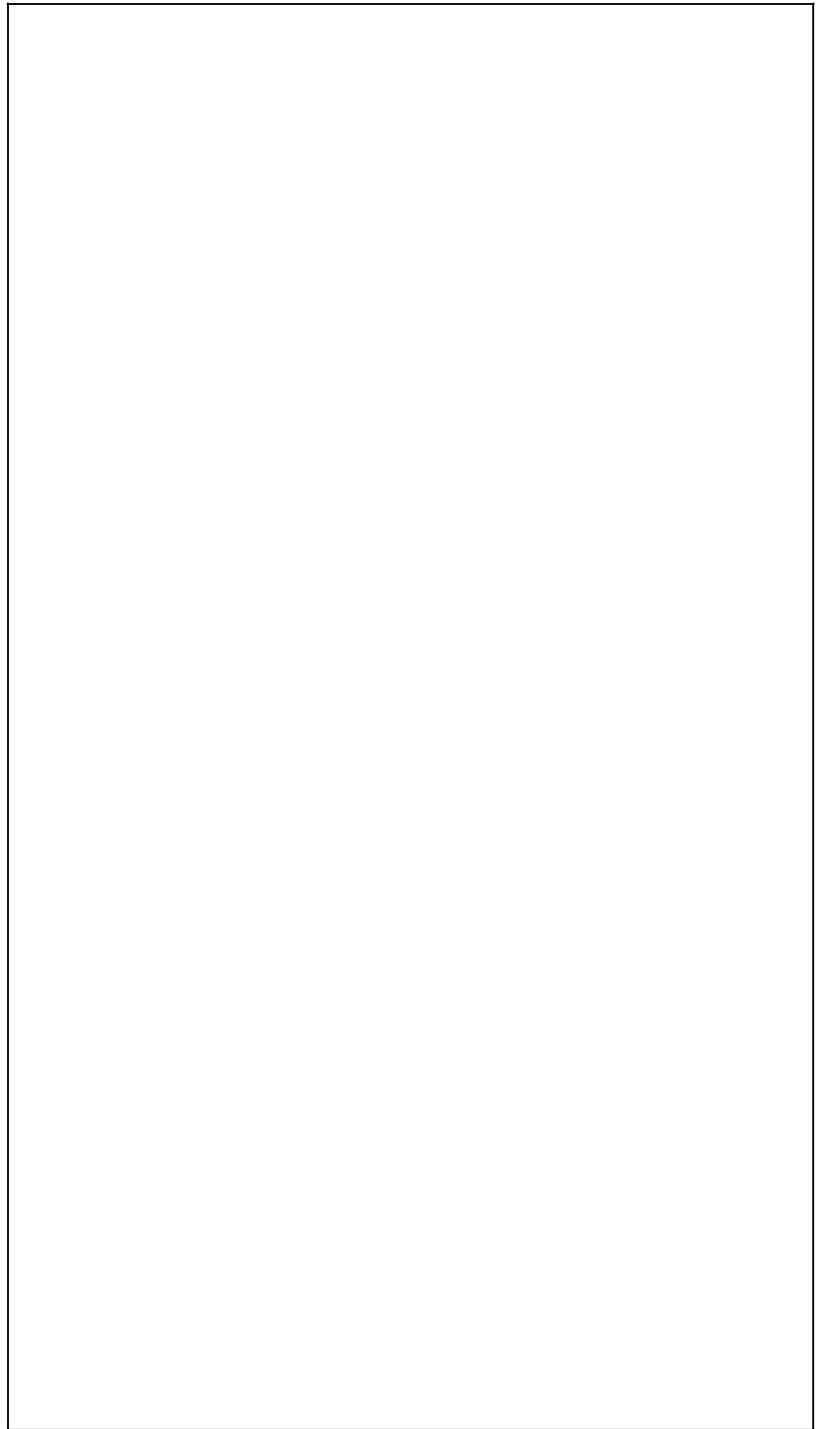


Figure A3-16. Coax OCR Translate Table

The image shows a large, empty rectangular box with a thin black border. This box is intended to contain the Coax OCR Translate Table, but it is currently blank.

Reading the Coax translate tables

The printed translate tables show how EBCDIC character codes are translated into ISO/ASCII characters before being sent to the 4213. Therefore, these tables are not relevant when the XCTO is operating in its EBCDIC mode.

Each translate table printed out will have three columns. Each column consists of a sequence of characters similar to those shown below:

CFh : C4 6F

ō

The characters to the left of the colon represent a hexadecimal EBCDIC code point. In the above example, the EBCDIC code point is X'CF' which corresponds to the boxed character shown in the left margin. The characters to the right of the colon represent the hexadecimal code points which constitute the required character in ISO/ASCII.

Certain special features available on the XCTO will allow you to customise this translation process, if required. For further information, refer to the *Xerox Coax/Twinax (XCTO) Reference Manual*.

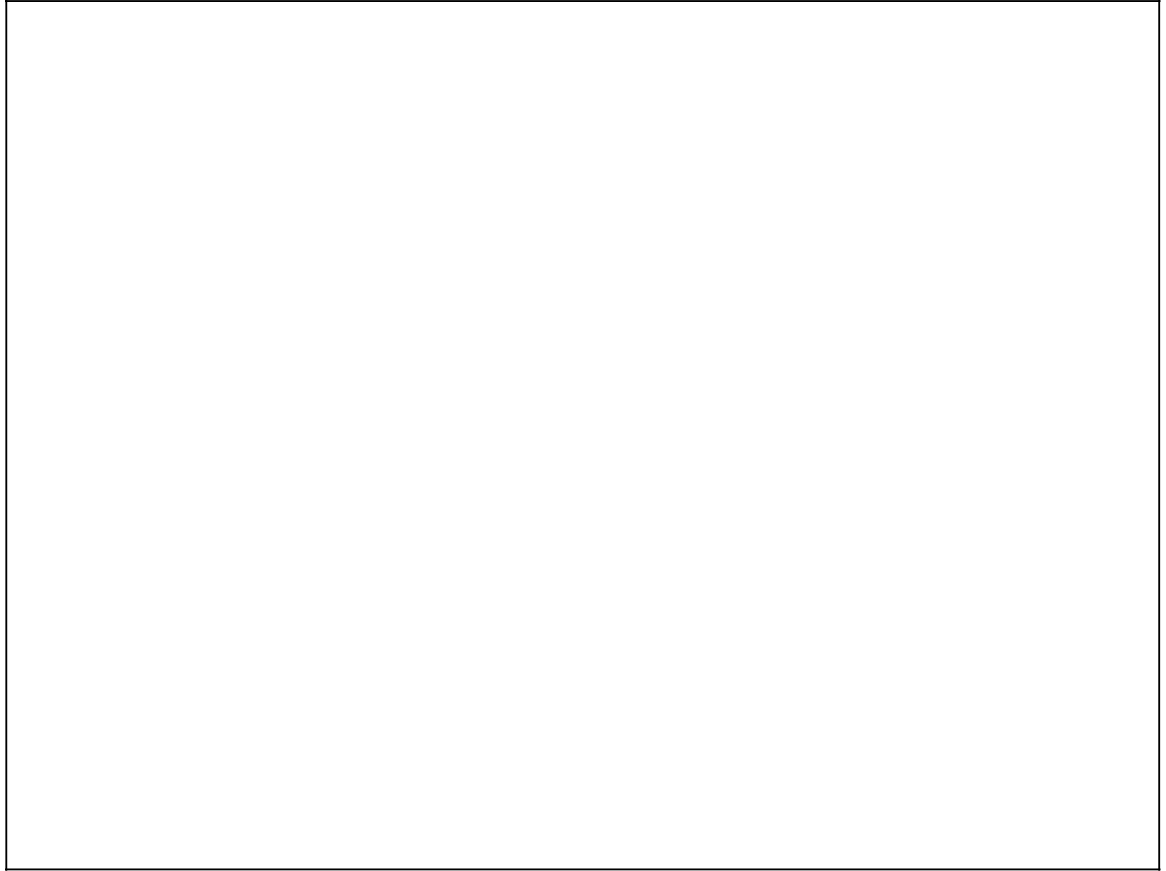
Printing with PCIA Dump feature

The PCIA (Printer Control Input Area) dump is a diagnostics tool similar to the printer data monitor. Like the printer data monitor, it also prints the hexadecimal value of the data received, but it prints exactly what the host transmits to the buffer. It may help to think of a PCIA buffer dump as a snapshot of the buffer during a print order.

A service representative or systems analyst may use a PCIA buffer dump to determine the host escape sequences or to see what the host is sending to the buffer. To the person who is not trained to decode the printout, this sophisticated tool is meaningless. However, if you are having a problem, contact the Xerox support personnel.

Follow steps 1 through 8 for "Printing a Coax configuration sheet" (the display reads IBM UTILITIES/PRINT CONFIG), then press the Last Page **C** button until the display reads IBM UTILITIES/DATA MONITOR. Now press the Test **B** button to display data monitor options. The display reads DATA MONITOR/NONE*. Next press the Last Page **C** button to display DATA MONITOR/PCIA DUMP. To select the PCIA dump option, press the Select **D** button. Put the printer back online by pressing the Online **H** button. Files sent to the printer now will print in the format shown in figure A3-17.

Figure A3-17. **PCIA dump feature**



Printing with HEX Dump feature

The Interface Data Monitor is a diagnostics tool similar to the printer data monitor. Like the printer data monitor, it also prints the hexadecimal value of the data received, but it prints exactly what the host transmits to the interface. The format of the printout is similar to that of the printer data monitor except it shows a representation of EBCDIC data not ISO.

A service representative or systems analyst may use the Interface Data Monitor to determine the host escape sequences, or to see what the host is sending to the buffer. To the person who is not trained to decode the printout, this sophisticated tool is meaningless. However, if you are having a problem, contact the Xerox support personnel.

Follow steps 1 through 8 for "Printing a Coax configuration sheet" and proceed from here:

The display reads:

```
IBM UTILITIES  
PRINT CONFIG
```

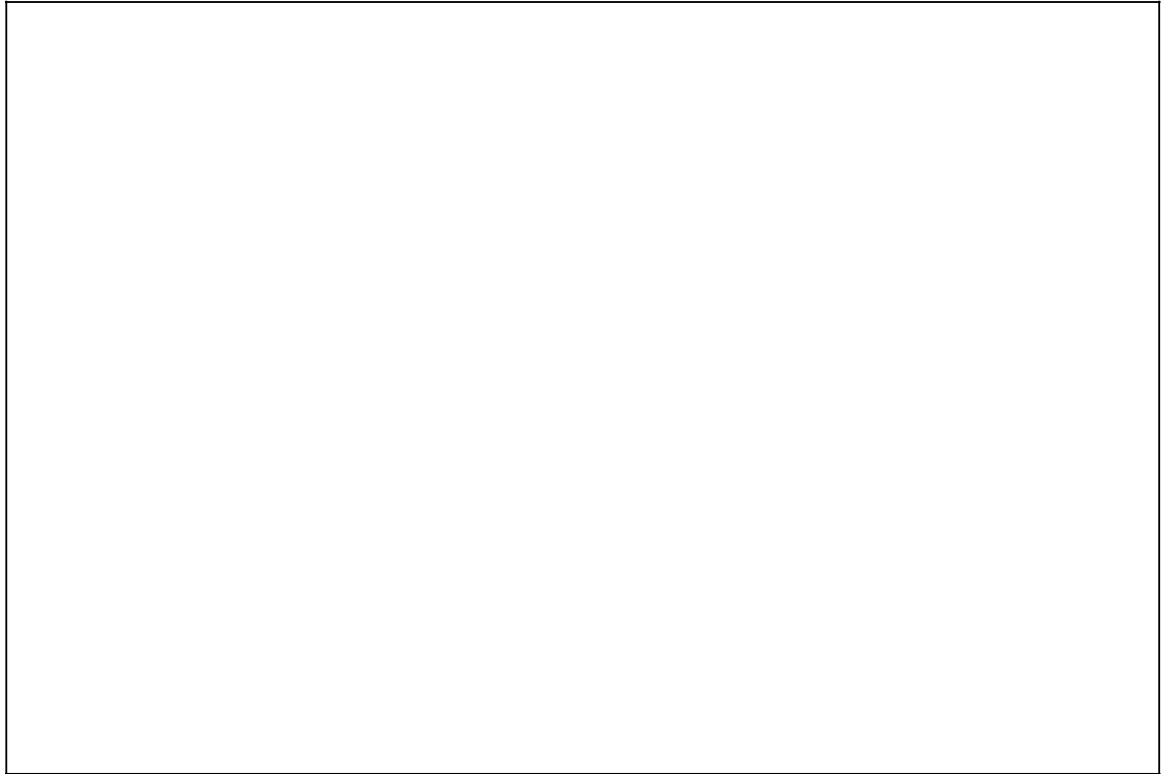
- C 9. Press the Last Page button until the display reads:

```
IBM UTILITIES  
DATA MONITOR
```
- B 10. Press the Test button to display the available data monitoring options. The display reads:

```
DATA MONITOR  
NONE*
```
- C 11. Press the Last Page button. The display reads:

```
DATA MONITOR  
HEX DUMP
```
- D 12. Press the Select button to select the HEX dump option.
- H 13. Press the Online button to put the printer back online. Files which are now sent to the printer will print in the format shown on figure 3A-18.

Figure A3-18. **HEX dump feature**



Disabling the PCIA dump and HEX dump features

The PCIA and HEX dump modes cannot be selected at the same time. Enabling one will automatically disable the other.

Follow steps 1 through 8 for "Printing a Coax configuration sheet" and proceed from here:

The display reads:

IBM UTILITIES
PRINT CONFIG

- C 9. Press the Last Page button until the display reads:

IBM UTILITIES
DATA MONITOR

- B 10. Press the Test button to display the available data monitoring options. The display reads:

DATA MONITOR
PCIA DUMP*

or

DATA MONITOR
HEX DUMP*

- C 11. Press the Last Page button until display reads:

DATA MONITOR
NONE

- D 12. Press the Select button to disable PCIA dump or HEX dump option.

- H 13. Press the Online button to put the printer back online and the PCIA buffer dump or HEX buffer dump will be disabled.

Using the IBM Twinax interface

This section describes the Twinax option available at the control panel and how you may set them.

IBM Main Menu Twinax option

Once the physical components of the interface are connected and the XES emulation has been set up, the XCTO may need to be set up, or configured to meet the needs of your office. The configuration options are set through the IBM Main Menu.

Note: The factory defaults refer to those defaults in place when the interface is first installed. You can change the factory defaults to meet your particular needs. Defaults are the settings in effect each time the system is switched on.

The menu is accessed from the printer control panel.

By configuring the interface, you are establishing your own default settings. There are two types of changes to the interface configuration.

- Permanent settings which remain unchanged even through a power off/on cycle.
- Temporary settings which remain current until a software command to change the setting is received, or the printer is switched off.

The options available for IBM Twinax interface are:

- IBM buttons
- Twinax configuration
 - Page configuration
 - Data Stream Compatibility (DSC) configuration
 - Language
 - Special features

- IBM utilities
 - Print configuration
 - Print table
 - Data monitor
- IBM communications
 - Twinax
 - Coax.

The IBM Main Menu map for Twinax

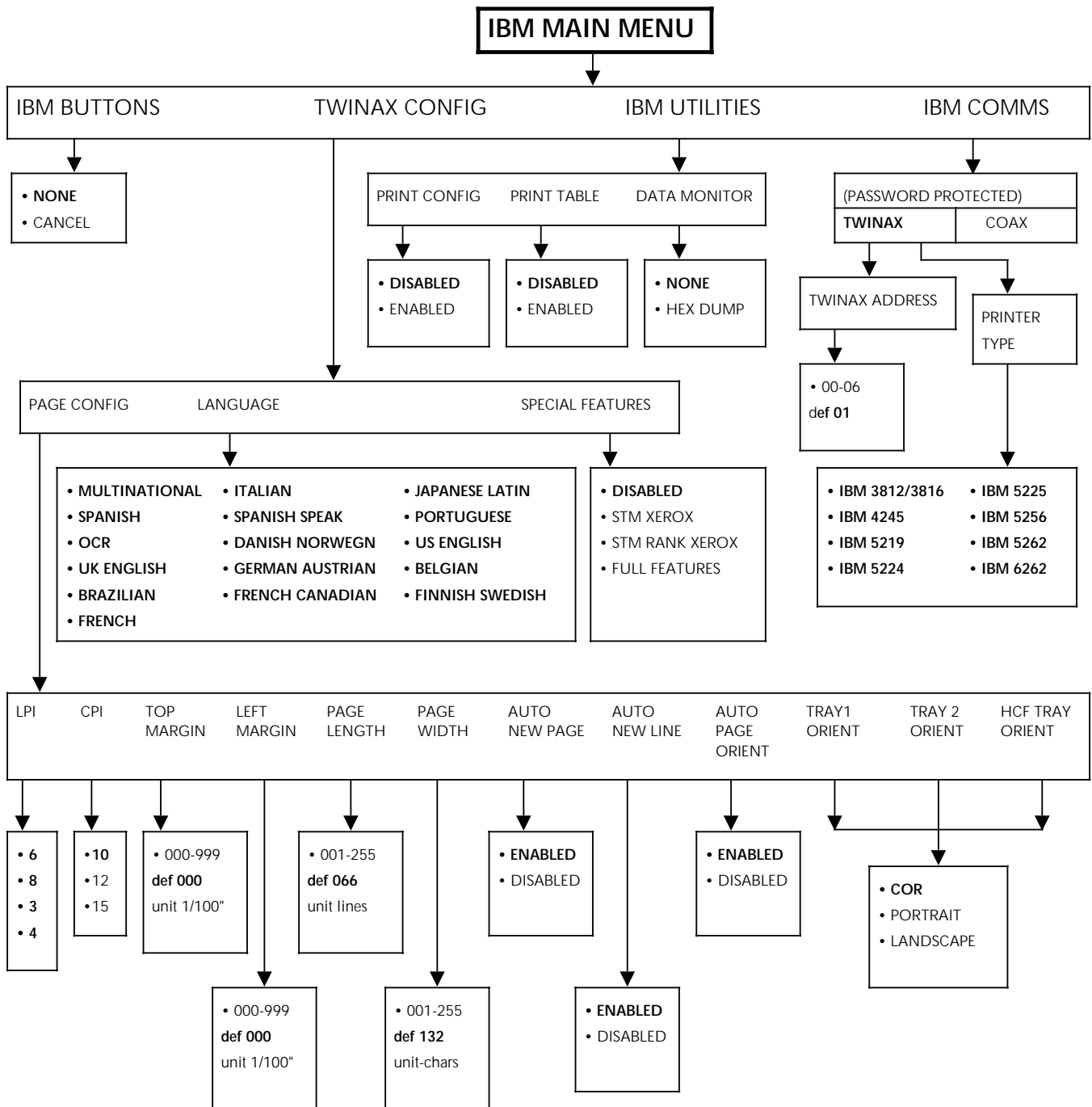
The IBM Main Menu is made up of top level menu headings and up to three lower but associated levels of menu headings and options. Refer to figure A3-19 for a detailed IBM Main Menu map for Twinax.

Notes: When sending files with XES commands, it is recommended that AUTO NEW PAGE and AUTO NEW LINE be set to disabled.

COR refers to Computer Output Reduction. This feature allows documents which are formatted for 13-inch fan-fold paper to be printed on A4 cut sheet paper.

Factory default settings are in **boldface**.

Figure A3-19. IBM Main Menu map for Twinax



IBM Twinax Main Menu items

The IBM Main Menu items for Twinax interface are described in detail on the following pages.

Note: Below each menu item description is an example of the message display with the factory default for the item written in **boldface** type followed by an asterisk. The options for each menu item are listed in parentheses following the example of the message display. In the following example, disabled is the factory default for print configuration:

PRINT CONFIG
DISABLED* (DISABLED or ENABLED)

IBM buttons

You may need to provide responses to the 4213 which would have the same effect as pressing buttons on the front panel of an IBM printer. The menu provides you with a selection of two responses that equal these buttons.

IBM BUTTONS
NONE* (NONE, or CANCEL)

Twinax Configuration menu items

The Twinax Configuration menu item lets you make page configuration choices. With this menu you can also select the printer default language and choose one of the available IBM emulations.

Page Configuration

The Page Configuration menu items let you make a number of page formatting decisions. These include page length, page width, top and left margins. All the Page Configuration menu options are described below and are shown as they appear in the message display.

Lines Per Inch:

This menu option selects a default value for the number of lines per inch at power up.

LPI

6* (6, 8, 3, or 4)

Characters Per Inch:

This menu option selects the default number of character per inch at power up.

CPI

10* (10, 12, 15)

Top Binding Margin:

This menu option determines how far from the top of the page the first line of print is placed. This distance is measured in units of 1/100 inch.

TOP MARGIN

000* (000-999)

Left Binding Margin:

This menu option determines how far from the left edge of the page the first print column is placed. This distance is measured in units of 1/100 inch.

LEFT MARGIN

000* (000-999)

Page Length:

This menu option selects the power up default for Maximum Page Length (MPL) in units of single lines. If this option is set to 0, no form feeds will be inserted by the XCTO.

PAGE LENGTH

066* (001-255)

Page Width (Maximum Print Position):

This menu option selects the horizontal position on the page where the last character is printed. The Maximum Print Position is measured in units of columns from the left binding margin and not from the page edge.

PAGE WIDTH

132* (001-255)

Automatic New Page:

This menu option lets you decide whether or not the Last Line Feed on a page can act as a Form Feed. When enabled, the number of lines on the page will be counted. When the line count equals the page length, a form feed will be generated. When disabled, no additional Form Feeds will be inserted. Again calculations will be based upon the page length which can be set at the control panel and overridden by the appropriate IBM command when operating in SCS mode.

AUTO NEW PAGE
ENABLED* (ENABLED or DISABLED)

Automatic New Line:

This menu option lets you select the autowrap function. When this option is enabled, a New Line occurs automatically if any text is found beyond the Maximum Print Position. When the option is disabled, text beyond the Maximum Print Position is lost.

AUTO NEW LINE
ENABLED* (ENABLED or DISABLED)

Auto Page orientation:

This menu option lets you choose between automatic tray orientation based on host commands for all trays or default orientation based on the default orientation setting of each tray. The automatic tray orientation tray algorithm is similar to that used by the IBM 3812/3816.

AUTO PAGE ORIENT
ENABLED* (ENABLED or DISABLED)

Tray 1 orientation:

This menu option lets you define the default page orientation for tray 1.

TRAY 1 ORIENT
COR* (COR, PORTRAIT, or LANDSCAPE)

Tray 2 orientation:

This menu option lets you define the default page orientation for tray 2.

TRAY 2 ORIENT
COR* (COR, PORTRAIT, or LANDSCAPE)

High Capacity Feeder orientation:

This menu option lets you define the default page orientation for the high capacity feeder orientation.

HCF TRAY ORIENT
COR* (COR, PORTRAIT, or LANDSCAPE)

Language

This menu option lets you use the control panel to select the default language of the printed output provided the XES emulation is set up for ISO6937 data encoding.

LANGUAGE
MULTINATIONAL* (MULTINATIONAL, ITALIAN, JAPANESE LATIN, SPANISH, SPANISH SPEAK, PORTUGUESE, OCR, DANISH NORWEGN, US ENGLISH, UK ENGLISH, GERMAN AUSTRIAN, BELGIAN, BRAZILIAN, FRENCH CANADIAN, FINNISH SWEDISH, or FRENCH)

Note: Refer to the *Xerox Coax/Twinax (XCTO) Reference Manual* for details of these character sets.

Special Features

This menu option lets you select the level of Special Features you wish the XCTO to support.

SPECIAL FEATURES
DISABLED* (DISABLED, STM XEROX, STM RANK XEROX, or FULL FEATURES)

Note: STM means Special Transparent Mode. Refer to the *Xerox Coax/Twinax (XCTO) Reference Manual* for information on Special Features.

IBM Utilities

The IBM Utilities menu has three options. They are the Print Configuration, Print Table, and Data Monitor

Print Configuration

The Print Configuration menu option enables you to print the configuration sheet for Twinax. The default is disabled. When this option is enabled, it automatically becomes disabled once the configuration sheet has been printed.

PRINT CONFIG
DISABLED* (ENABLED or DISABLED)

Print Table

The Print Table menu option allows you to print the currently selected custom translation tables (currently active EBCDIC-ISO tables) that are set using the Special Features function. When this option is enabled, it automatically becomes disabled once the translate tables have been printed.

PRINT TABLE
DISABLED* (DISABLED or ENABLED)

Data Monitor

The Data Monitor menu option provides a diagnostic tool which allows you to print your job in hexadecimal.

DATA MONITOR
NONE* (NONE, or HEX DUMP)

IBM communications

The IBM communication option lets you choose between Coax or Twinax. This function is password protected by a four-digit access code. (The password is 1776.)

IBM COMMS
COax (COax, TWINax)

Twinax Address:
01* (00-06)

Note: You should check this address to make sure that it matches your system requirements. The allowed values for Twinax address are 0 to 6.

Printer type:

This menu option lets you select the printer types available that you need to emulate.

PRINTER TYPE

IBM 3812/3816* (IBM 3812/3816, IBM 4245, IBM 5219, IBM 5224, IBM 5225, IBM 5256, IBM 5262, or IBM 6262)

Note: Changes to IBM COMMS options will be automatically saved as user defaults.

Caution: If you put the 4213 back online at this point, you will lose all new option settings except those associated with the IBM COMMS unless you have previously saved them using the "Saving user defaults" option.

Accessing the IBM Twinax option configuration at the IBM Main Menu

This section shows which buttons on the control panel are used for accessing the IBM Main Menu, advancing through the menu items, and if applicable, selecting configuration options. Refer to "Control panel" section in the "Overview" chapter of this guide for a diagram showing the location of the control panel buttons.

Make sure that the relevant XES parameters have been correctly set. Remember that you must use the XES emulation with the Twinax option. Refer to "Setting XES parameters for XCTO" section.

Setting the Twinax option as host interface

Use the following buttons at the printer control panel to select Twinax option as the host interface:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- A 2. Immediately press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:

MAIN MENU
PRINTER LANGUAGE

- C 3. Press the Last Page button until the display reads:
MAIN MENU
HOST INTERFACE
- B 4. Press the Test button to display the available host interface headings. The display reads:
HOST INTERFACE
SERIAL*
- C 5. Press the Last Page button until the display reads:
HOST INTERFACE
IBM COax/TWINax*
- D 6. Press the Select button to select the Twinax option interface. An asterisk appears next to your selection.

Note: IBM Coax/Twinax must first be selected.

Setting the Twinax option

- B 7. Press the Test button to display the IBM Main Menu heading. The display reads:
IBM MAIN MENU
IBM BUTTONS
- C 8. Press the Last Page button until the display reads:
IBM MAIN MENU
IBM COMMS
- B 9. Press the Test button. The display reads:
0000
A four-digit access code is required (password is 1776). The highlighted **number** represents the first position of the Twinax password.
10. Use the following buttons to enter the password:
- A • Menu increases the displayed number.
 - B • Test decreases the displayed number.
 - C • Last Page moves to the next numeric position in the four digit password.

- D 11. When the password entry is completed, press the Select button. The display should read:

IBM COMMS
COAX*

- C 12. Press the Last Page. The display reads:

IBM COMMS
TWINAX

- D 13. Press the Select button to select the Twinax communications option.

You may immediately use the IBM Twinax interface by following the final step below.

- H 14. Press the Online button to take the printer online. This step is necessary to initialise the Twinax option. The green online indicator light is lit and the 4213 is ready and the IBM Twinax interface is in place.

Note: Initialising the Twinax option by pressing the online button to put the 4213 back online will restart the host communication and reload the configuration option with Twinax configuration defaults.

- H 15. Press the Online button to take the printer off line to re-configure the Twinax option, if required. The green online indicator light is not lit.

- Notes**
- The Twinax configuration sheet will not print unless the Coax/Twinax host interface is selected and activated.
 - If you wish to change any of the IBM Twinax interface configuration options, proceed to "Changing the IBM Twinax Configuration" section. If you wish the IBM Twinax interface to be in place each time the 4213 is switched on, proceed directly to "Saving the IBM Twinax configuration" section.

Setting different options under the IBM Main Menu for Twinax

To change the IBM Twinax interface configuration, follow steps 1 to 7 in the previous section to access the IBM Main Menu heading.

- B
- Use the Test button to move to the next lower menu level.

- C • Use the Last Page button to move the display to the right to display the menu headings/options at the same level. When you display the last heading/option available for the menu item, pressing this button again will wrap around to display the first heading/option in the list.
- D • Use the Select button *before* you initiate changes to numeric entries, such as, TOP MARGIN, LEFT MARGIN, PAGE LENGTH, PAGE WIDTH, and TWINAX ADDRESS.
- A • Use the Menu button to move to the next higher menu level.
- D • Use the Select button to select a displayed option. When an option is selected, an asterisk (*) appears next to the option in the display.

Notes: The asterisk does not appear when Select is pressed to select numeric entries, such as, TOP MARGIN, LEFT MARGIN, PAGE LENGTH, PAGE WIDTH, and TWINAX ADDRESS.

The control panel will allow you to select values beyond the acceptable range for certain options. If you select out of range parameters, they will be ignored. The maximum allowed value for that parameter will be used instead.

2. Use either of the following buttons to exit the Main Menu:

- A • Use the Menu button until OFF LINE appears in the message display. The printer is off line. The online indicator light is not lit.
- H • Use the Online button. The printer is online (ready-to-accept-data) and any configuration changes made using this menu are in effect. The online indicator light is lit.

Note: Care must be taken when exiting to the Main Menu after changing option settings for the IBM Comms menu. This is because if you put the 4213 back online, you will lose all new option settings not associated with the IBM Comms, unless you have previously saved them using the "Saving user defaults" option.

Note: Again, you must use the SAVE DEFAULTS option to save any changes made to the printer configuration settings if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the configuration returns to the configuration that was previously saved. Refer to "Saving User Defaults" section in this guide.

Using IBM Twinax Utility Menus

This section shows how to use the IBM utilities and provides samples of the expected printed outputs.

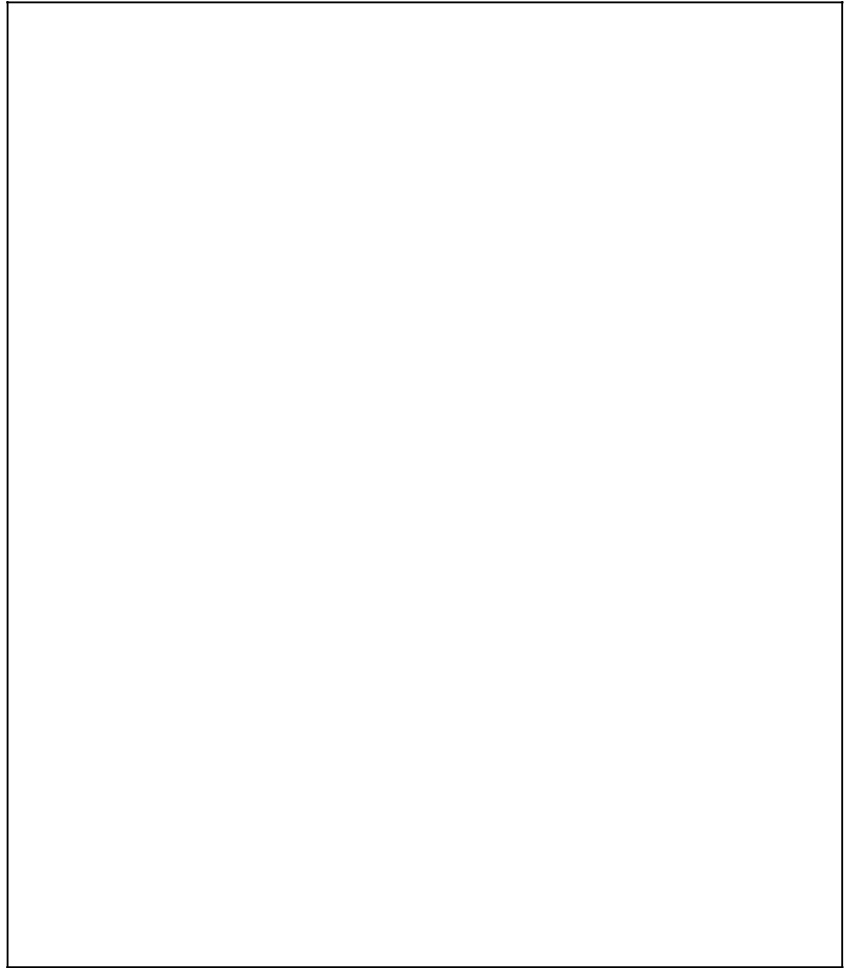
Printing a Twinax configuration sheet

Follow these steps to print a Twinax configuration sheet:

- H Press the Online button to take the printer off line. (The green online indicator light is not lit.) Next press and release the Menu A button to display MAIN MENU/PRINTER LANGUAGE. (If the display reads IBM MAIN MENU/IBM BUTTONS, skip the next four steps.)
- C Press the Last Page button until the display reads MAIN MENU/HOST INTERFACE. Now press the Test B button to display the interface headings available. The display reads HOST INTERFACE/IBM COAX/TWINAX*. Next press the Select D button to select the option Coax/Twinax.

Press the Test B button to display IBM MAIN MENU/IBM BUTTONS. Now press the Last Page C button until the display reads IBM MAIN MENU/IBM UTILITIES. Press the Test B button again to display IBM UTILITIES/PRINT CONFIG. Press the Test B button again and the display reads PRINT CONFIG/ENABLED. Next press the Select D button to enable printing of the configuration sheet. Last, press the Online H button to put the printer back online. (The green online indicator light is lit.) A Twinax configuration sheet will be printed, as shown in figure 3A-20.

Figure A3-20. **Twinax configuration sheet**



Reading the Twinax configuration sheet

1. The configuration sheet first reports the version levels of the XCTO software.
2. General Configuration shows the communications related options, the language and the special features selections.
3. Page Configuration shows how the options defining the default page format are set.

4. Font information shows how the IBM Global Font Identification (GFID) numbers relate to Xerox font names. The default font selected by the GFID algorithm is **bolded**.

Review the information listed on the configuration sheet to determine if the current settings are satisfactory.

- Notes**
- The font information does not tell you what fonts are available in the 4213 itself.
 - To check the fonts available in the 4213 you will need to print an XES Font Status Sheet.
 - The language option on the configuration sheet will be shown also as "N/A" (not applicable) when the XCTO is operating in its EBCDIC mode.

Printing the currently selected translate tables

Follow steps for "Printing a Twinax configuration sheet" until the display reads IBM UTILITIES/PRINT CONFIG, Now press the Last Page **C** button and the display reads IBM UTILITIES/PRINT TABLE. Next press the Test **B** button and PRINT TABLE/DISABLES* displays. Press the Last Page **C** button and PRINT TABLE/ENABLED displays. Press the Select **D** button to enable printing of the translate tables. Press the Online **H** button to put the printer back online and the currently selected tables will be printed. Figures A3-21 to A3-23 shows sample Twinax Translate Tables.

Figure A3-21. **Twinax ISO Translate Table**

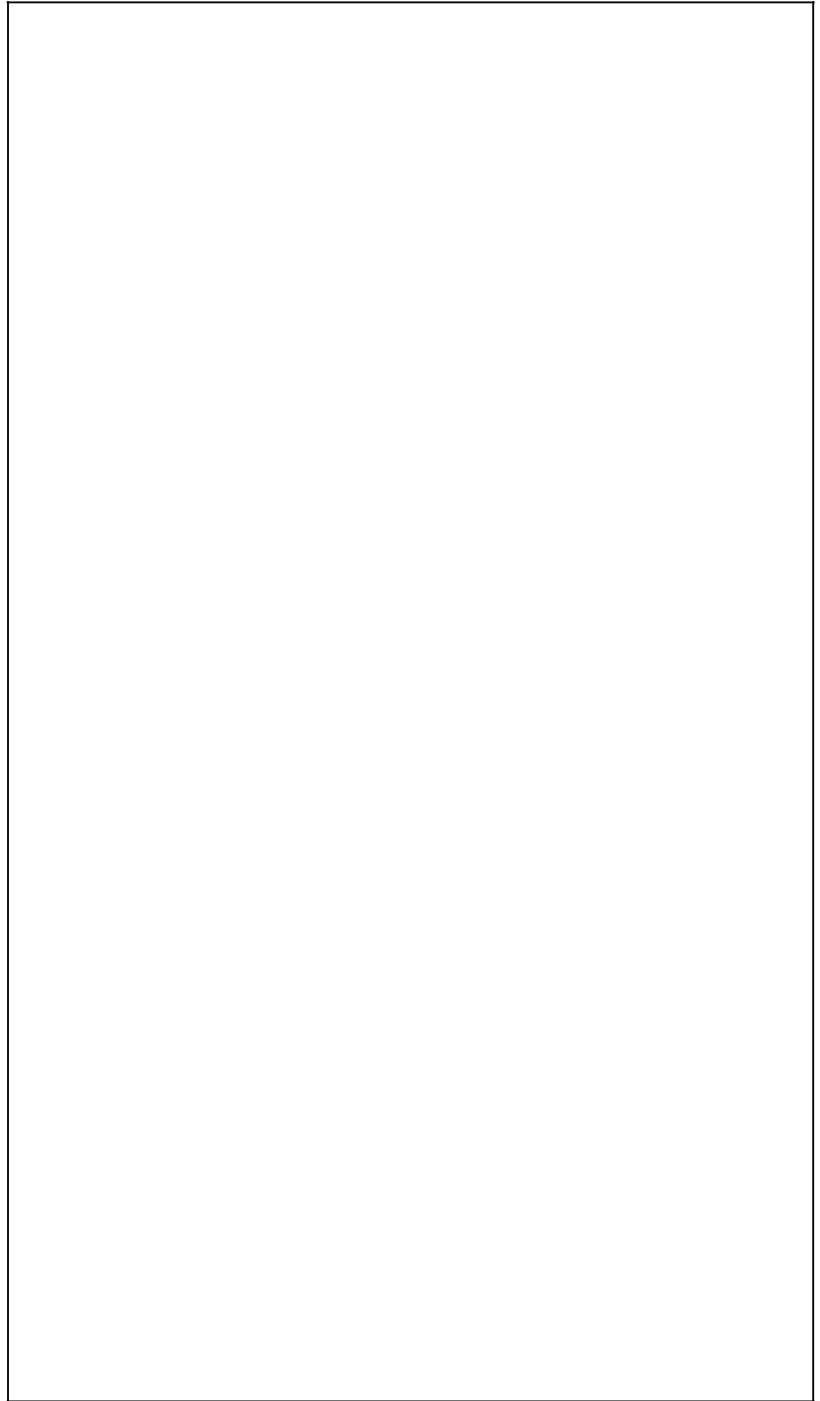


Figure A3-22. **Twinax APL Translate Table**

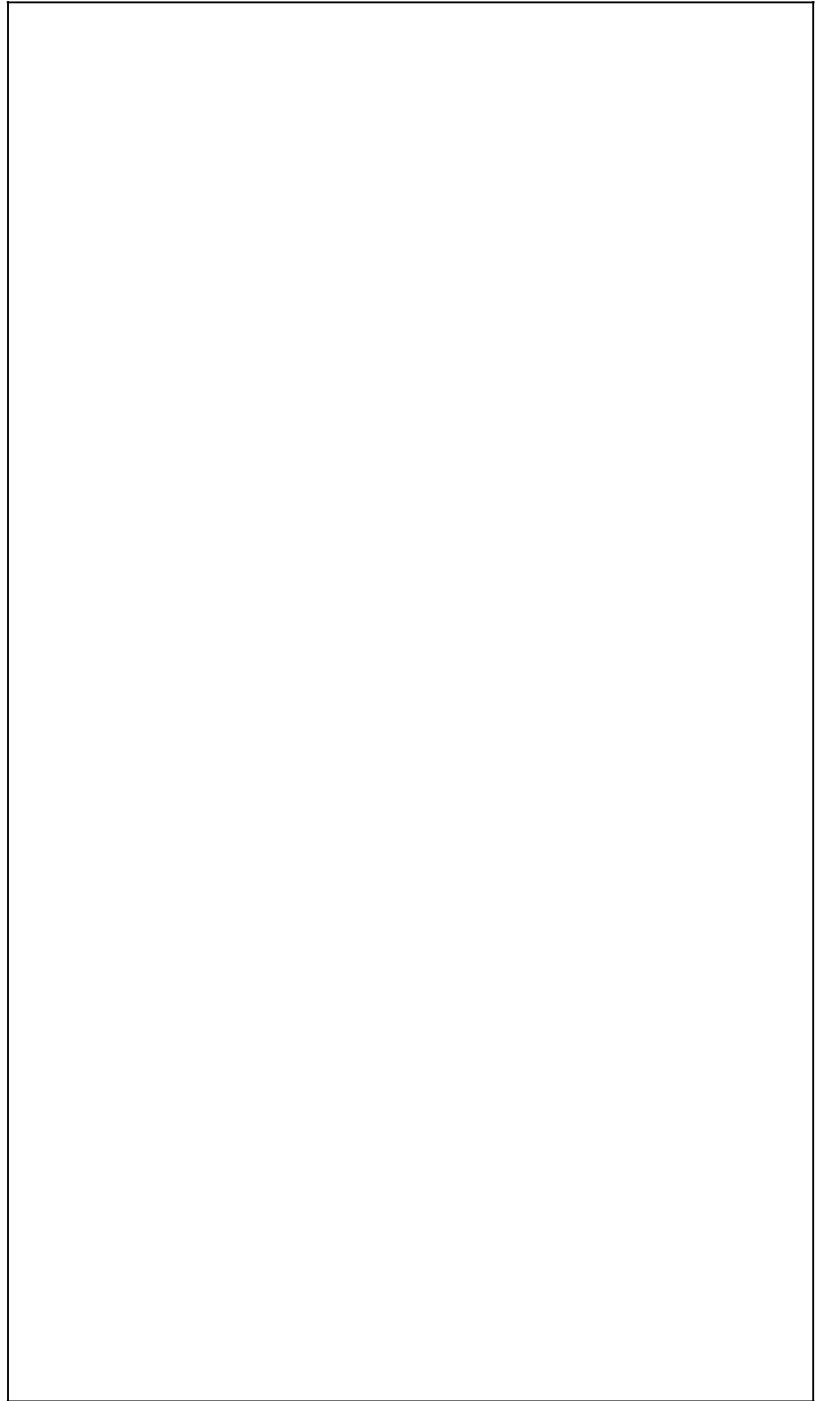
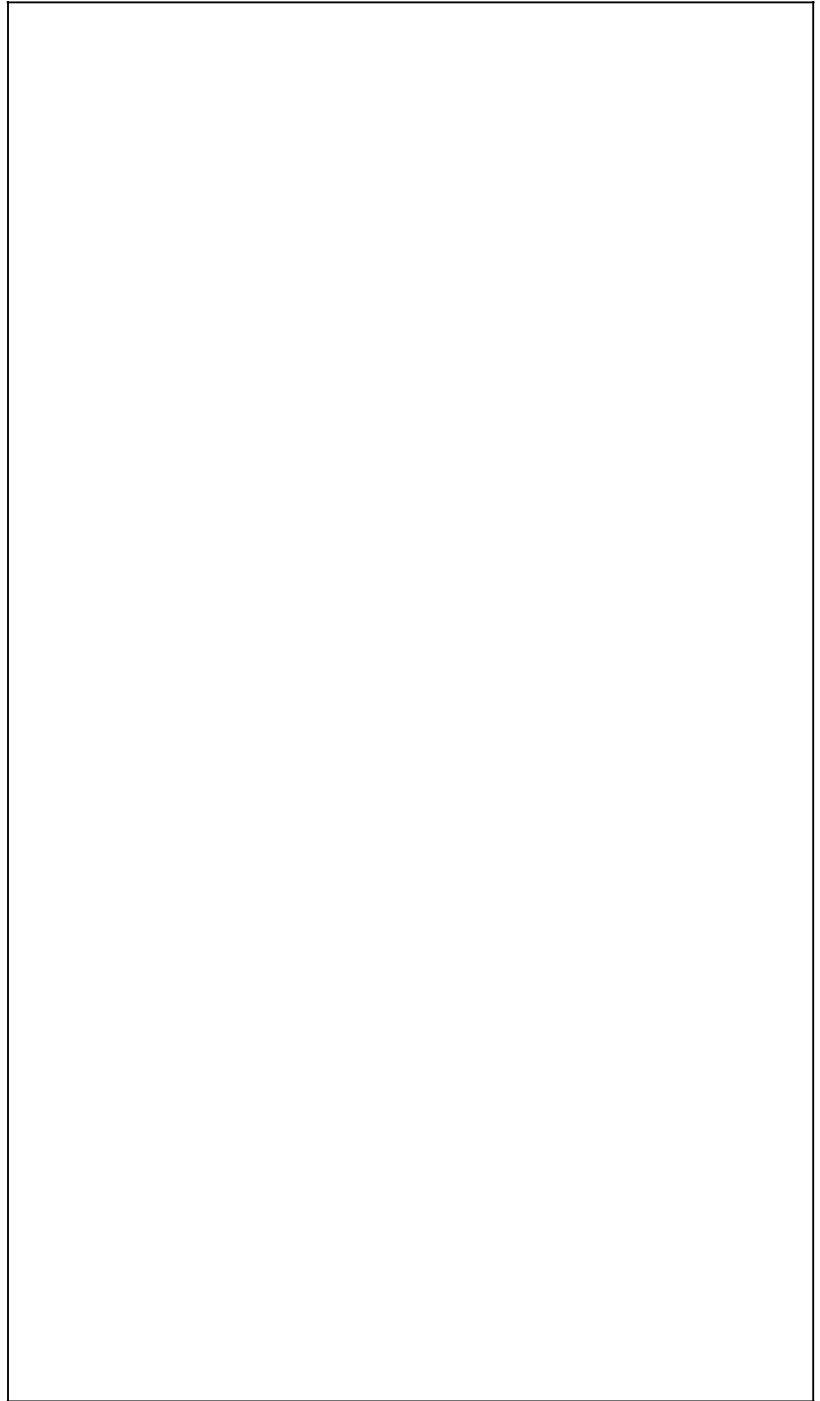
The image shows a large, empty rectangular box with a thin black border. This box is intended to contain the 'Twinax APL Translate Table' mentioned in the caption above it. The table content is not visible in this image.

Figure A3-23. **Twinax OCR Translate Table**

The image shows a large, empty rectangular box with a thin black border. This box is intended to contain the 'Twinax OCR Translate Table' mentioned in the caption above it. The table content is not visible in this image.

Reading the Twinax translate tables

The printed translate tables show how EBCDIC character codes are translated into ISO/ASCII characters before being sent to the 4213. Therefore, these tables are not relevant when the XCTO is operating in its EBCDIC mode.

Each translate table printed out will have three columns. Each column consists of a sequence of characters similar to those shown below:

CFh : C4 6F

ō

The characters to the left of the colon represent a hexadecimal EBCDIC code point. In the above example, the EBCDIC code point is X'CF' which corresponds to the boxed character shown in the left margin. The characters to the right of the colon represent the hexadecimal code points which constitute the required character in ISO/ASCII.

Certain special features available on the XCTO will allow you to customise this translation process, if required. For further information, refer to the *Xerox Coax/Twinax (XCTO) Reference Manual*.

Printing with HEX Dump feature

The Interface Data Monitor is a diagnostics tool similar to the printer data monitor. Like the printer data monitor, it also prints the hexadecimal value of the data received, but it prints exactly what the host transmits to the interface. The format of the printout is similar to that of the printer data monitor except it shows a representation of EBCDIC data not ISO.

A service representative or systems analyst may use the Interface Data Monitor to determine the host escape sequences, or to see what the host is sending to the buffer. To the person who is not trained to decode the printout, this sophisticated tool is meaningless. However, if you are having a problem, contact the Xerox support personnel.

Follow steps 1 to 8 for "Printing a Twinax configuration sheet" and proceed from here:

The display reads:

IBM UTILITIES
PRINT CONFIG

- C 9. Press the Last Page button until the display reads:
IBM UTILITIES
DATA MONITOR
- B 10. Press the Test button to display the available data monitoring options. The display reads:
DATA MONITOR
NONE*
- C 11. Press the Last Page button. The display reads:
DATA MONITOR
HEX DUMP
- D 12. Press the Select button to select the HEX dump option.
- H 13. Press the Online button to put the printer back online. Files which are now sent to the printer will print in the format shown on figure A3-24.

Figure A3-24. HEX dump feature

2B C6 02 0C 2B C2 02 42 2B C1	02 84 0D 34 C4 01 00 2B C8 03	- F - - - B - a - - -	- - - - - D - i - s - - H - -
40 01 00 0D 34 C4 03 34 C0 13	C6 96 95 A3 40 89 A2 40 F8 F6	- - - - - (- F - d o - - -	- - - - - t l d - - - -
40 4D D7 99 85 A2 A3 89 87 85	40 C5 93 89 A3 85 40 F1 F2 5D	- (- P r - e s t i - i - g i -	- - - - - e - - - - - l - - -
4B 40 40 E3 88 89 A2 40 89 A2	40 96 84 84 40 97 81 87 85 40	. - - - - h e a d e r - o	- - - - - - - - - - -
88 85 81 84 85 99 40 96 95 00	0D 00 00 00 00 00 00 0C 00	h e a d e r - o	- - - - - - - - - - -
00 00 00 00 34 C4 03 00 00 00	00 00 34 C0 13 C6 96 95 A3 40	- - - - - D - - - - -	- - - - - F o n t - - -
89 A2 40 F8 F6 40 4D D7 99 85	A2 A3 89 87 85 40 C5 93 89 A3	i e s - 8 6 (- P r - e s t i - i - g i -	- - - - - e - - - - - l d - - -
85 40 F1 F2 5D 4B 40 40 E3 88	89 A2 40 89 A2 40 96 84 84 40	e e p a g e { - p a g e	- - - - - - - - - - -
97 81 87 85 00 0D 00 0D 00 15	99 40 96 95 00 15 00 0D 00 0D	- - - - -	- - - - - - - - - - -
00 15 34 C0 13 97 81 87 85 40	F1 40 96 86 40 84 96 83 A4 94	- - - - -	- - - - - - - - - - -
85 95 A3 40 C1 E2 E3 C5 E2 E3	F1 C1 61 E3 E7 E3 C1 D5 D5 C5	e n t - - A S T E S T l A / T X T A N N E	- - - - - 2 0 - - & - -
6H 40 97 99 89 95 A3 85 84 40	96 95 40 D5 96 A5 85 94 82 85	, - - p r l n t e d - o n - a - - -	- - - - - 6 - - - L P I y
99 61 F2 F6 61 F1 F9 F9 F1 40	81 A3 40 F0 F9 7A F2 F8 7A F4	r / / Z 8 / - - - - -	- - - - - - - - - - -
F6 4B 00 15 00 0D 00 0D 00 15	15 15 34 C0 13 E3 88 89 A2 40	6 - - - - - i s - d o c u m e n t - A S T E S T	- - - - - - - - - - -
89 A2 40 84 96 83 A4 94 85 95	A3 40 C1 E2 E3 C5 E2 E3 F1 C1	i s - d o c u m e n t - A S T E S T	- - - - - - - - - - -
4B 40 40 D4 81 99 87 89 95 A2	40 81 99 85 40 F2 F0 40 50 40	. - - - - M a s r g i n s - a r i e n - 2 0 - - & - -	- - - - - - - - - - -
F8 F6 6B 40 A2 89 95 87 93 85	40 93 89 95 85 00 15 00 0D 00	8 - - - - - s i n g l e a c t i n g f i e d - - -	- - - - - - - - - - -
0D 00 15 34 C0 13 A2 87 81 83	89 95 87 8B 40 F6 40 D3 D7 C9	- - - - - { - - - - -	- - - - - - - - - - -
6B 40 93 85 86 A3 40 91 A4 A2	A3 89 86 89 85 84 6B 40 A3 A8	, - - l e f t - j	- - - - - - - - - - -
97 85 A2 A3 A8 93 85 40 F8 F5	40 4D E3 89 A3 81 95 40 F1 F2	p e s t y l e - 8 5 - (T i t a n -	- - - - - - - - - - -
5D 6B 40 83 96 93 96 A4 99 40	F0 00 15 00 0D 00 0D 00 15 34) , - (c o l o u r - 0 - - - - -	- - - - - - - - - - -
C0 13 4D 82 81 A2 85 5D 6B 40	A6 89 A3 88 40 81 84 91 A4 A2	{ - - - (b o a r d - - - - -	- - - - - - - - - - -
A3 40 93 89 95 85 40 85 95 84	89 95 87 A2 40 95 95 81 82 93	t e d - l i n e - e n d i n g - { - - -	- - - - - - - - - - -
85 84 4B 00 15 00 0D 00 0D 00	15 15 34 C0 13 E3 88 89 A2 40	97 81 99 81 87 99 81 97 88 40	- - - - - - - - - - -
97 81 99 81 87 99 81 97 88 40	89 A2 40 95 96 A6 40 91 A4 A2	p a r a g r a p h - i s - n o w - j	- - - - - - - - - - -
A3 89 86 89 85 84 4B 40 40 D1	81 83 92 40 81 95 84 40 D1 89	t i f i e d . - - J a c k - a n d - J i	- - - - - - - - - - -
93 93 40 A6 85 95 A3 40 A4 97	40 A3 88 85 40 88 89 93 93 00	l l l - w e n t - - u p - t o - e f f e c t -	- - - - - - - - - - -
15 00 0D 00 0D 00 15 34 C0 13	A3 96 40 86 85 A3 83 88 40 81	- - - - - { - - - - -	- - - - - - - - - - -
40 97 81 89 93 40 96 86 40 A6	81 A3 85 99 40 82 A4 A3 40 D1	- p a i l - o f - w a t e r - a n d - b	- - - - - - - - - - -
81 83 92 40 86 85 93 93 40 84	96 A6 95 40 81 95 84 40 82 99	a c k - f e l l - d o w n - a n d - b	- - - - - - - - - - -
96 92 85 40 88 89 A2 40 83 99	96 A6 95 00 15 00 0D 00 0D 00	o k e - h i s - c r o w n - - - - -	- - - - - - - - - - -
15 34 C0 13 81 95 84 40 D1 89	93 93 40 83 81 94 85 40 A3 A4	- - - - - [- a n d - J i l l e r - c - a m e -	- - - - - - - - - - -
94 82 93 89 95 87 40 81 86 A3	85 99 4B 40 40 D3 89 A3 A3 93	m b l i n g - a f t e r . - - - - -	- - - - - - - - - - -
85 40 D4 89 A2 A2 40 D4 A4 86	66 85 A3 A3 40 A2 81 A3 40 96	e - M i s s - M u t f e t - - - - -	- - - - - - - - - - -
95 40 81 00 15 00 0D 00 0D 00	15 34 C0 13 A3 A4 86 86 85 A3	n - a - - - - -	- - - - - - - - - - -
A3 40 85 81 A3 89 95 87 40 88	85 99 40 83 A4 99 84 A2 40 81	t - e a t i n g - h e r - c u r d s - a	- - - - - - - - - - -
95 84 40 A6 88 85 A8 40 A6 88	85 95 40 81 93 96 95 87 40 83	n d - w e y - w h e r - c a l o n - g	- - - - - - - - - - -
81 94 85 40 81 40 A2 97 89 84	85 99 40 81 95 84 40 A2 81 A3	a m e - a - s p i d e r - - a a n d -	- - - - - - - - - - -
00 15 00 0D 00 0D 00 15 34 C0	13 84 96 A6 95 40 82 85 A2 89	- - - - - - - - - - -	- - - - - - - - - - -
84 85 40 88 85 99 40 81 95 84	40 86 99 89 87 88 A3 85 95 85	d e - h e r - a n d - d o w n - b e s e	- - - - - - - - - - -
84 40 D4 89 A2 A2 40 D4 A4 86	86 85 A3 A3 40 81 A6 81 A8 4B	d - M i s s - M u f f e t t h - a w a y .	- - - - - - - - - - -
00 15 00 0D 00 0D 00 15 34 34	C0 13 E3 88 89 A2 40 97 81 99	- - - - - - - - - - -	- - - - - - - - - - -
81 87 99 81 97 88 40 89 A2 40	95 96 A6 40 88 81 93 86 40 91	- a g r a p h - i s - n o w - t h - h a l	- - - - - - - - - - -
A4 A2 A3 89 86 89 85 84 4B 40	40 D1 81 83 92 40 81 95 84 40	u s t i f i e d . - - J a c k - a n - d -	- - - - - - - - - - -
D1 89 93 93 40 A6 85 95 A3 40	A4 97 40 A3 88 85 00 15 00 0D	J i l l - w e n t - u p - - - - -	- - - - - - - - - - -
00 0D 00 15 34 C0 13 88 89 93	93 40 A3 96 40 86 85 A3 83 88	- - - - - (- h i l l - t o t f e t c h	- - - - - - - - - - -
40 81 40 97 81 89 93 40 96 86	40 A6 81 A3 85 99 40 82 A4 A3	- - - - - a - p a k - i l l - f o l l - w a o -	- - - - - - - - - - -
40 D1 81 83 92 40 86 85 93 93	40 84 96 A6 95 40 81 95 84 40	- - - - - J a c k - f e l l - d o w n - a -	- - - - - - - - - - -
82 99 96 92 85 40 88 89 A2 00	15 00 0D 00 0D 00 15 34 C0 13	b r o w n - h i s - - - - -	- - - - - - - - - - -
83 99 96 A6 95 40 81 95 84 40	D1 89 93 93 40 83 81 94 85 40	c r o w n - a n d - J i l l - l - c a m	- - - - - - - - - - -

Disabling the HEX dump feature

Follow steps 1 to 8 for "Printing a Twinax configuration sheet" and proceed from here:

The display reads:

IBM UTILITIES
PRINT CONFIG

- C 9. Press the Last Page button until the display reads:
IBM UTILITIES
DATA MONITOR
- B 10. Press the Test button to display the available data monitoring options. The display reads:
DATA MONITOR
HEX DUMP*
- C 11. Press the Last Page button until display reads:
DATA MONITOR
NONE
- D 12. Press the Select button to disable the HEX dump option.
- H 13. Press the Online button to put the printer back online and the HEX buffer dump will be disabled.

Saving and recalling defaults

This section describes how you can save the configuration changes you have made as your default, recall your own default configuration, and recall the appropriate factory default configuration. Remember that there is a different set of defaults for Twinax and Coax.

Saving user defaults

You must use the SAVE DEFAULTS option to save any changes made to the printer configuration settings if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the configuration returns to the configuration that was previously saved.

You must exit the Main Menu and access the Reset Menu to save your selections as the Coax or Twinax configuration defaults.

1. There are two ways to exit the Main Menu:

- A • Press the Menu button until OFF LINE appears in the message display.
or
- H • Press the Online button. The printer is online. The green online indicator light is lit.
- H • Press the Online button again to take the printer off line. The green online indicator light is not lit.

Note: Do not use this way of exiting the Main Menu after changing the option settings for the *IBM Comms* menus. This is because if you put the printer back online, you will lose all the new option settings except for those associated with the IBM Communications.

Use the following buttons to save your selections as the IBM Twinax default configuration:

- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
SAVE DEFAULTS

- D 4. Press the Select button to save the printer configuration as the default configuration.
- H 5. Press the Online button to put the printer back online. The green online indicator light is lit.

Note: The changes made to the IBM Coax or the Twinax configuration do not come into effect until you place the printer online.

Recalling user-saved defaults

You must exit the Main Menu and access the Reset Menu to recall the default selections you saved previous to using the SAVE DEFAULTS option.

- 1. Exit the Main Menu. Refer to procedural step number 1 in the "Saving user defaults" section.

Use the following buttons to recall your saved default configuration:

- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
RECALL USER DFT
- D 4. Press the Select button to recall user default configuration.
- H 5. Press the Online button to put the printer back online. The green online indicator light is lit.

Recalling factory defaults

You must exit the Main Menu and access the Reset Menu to recall the factory default selections.

1. Exit the Main Menu. Refer to procedural step number 1 in the "Saving user defaults" section.

Use the following buttons to recall the factory default configuration:

- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
RECALL FACT DFT
- D 4. Press the Select button to recall factory default configuration.
- H 5. Press the Online button to put the printer back online. The green online indicator light is lit.

IBM error codes

This section describes the error codes which will be reported by the 4213 laser printer to the error logging system.

Table A3-3. **IBM Error Codes**

Number	Message	Meaning/action
1410	IBM Type 1 error	A condition has occurred that may cause loss of text information.
1411	IBM Type 2 error	A condition has occurred that may cause a change in the intended appearance or presented information but does not affect the interpretation of text or cause presentation space overruns.
1412	IBM Type 3 error	A data stream command has been received with an unsupported control class or type code. This may result in loss of text or change in appearance of presented information.
1413	IBM Type 4 error	An out of range control code parameter has been detected. This may result in loss of text and or change in appearance of presented information.
1414	IBM graphic character error	An unsupported graphic character code has been detected. This may result in a change in appearance of presented information.
1415	IBM Invalid SCS parameter error	An out of range control code parameter has been detected in SCS mode. This may result in loss of text and/or change in appearance of presented information.
1416	IBM invalid SCS command error	A data stream command has been received in SCS mode with an unsupported control class or type code. This may result in loss of text and/or change in appearance of presented information.
1417	IBM invalid character set ID error	An invalid character set has been requested.
1418	IBM function not supported.	An IBM command has been received which is not supported by the selected printer type.

Table A3-3. IBM Error Codes (continued)

Number	Message	Meaning/action
1419	XES formatting error	An inconsistency has occurred in translating the data stream into XES. This may result in loss of text and/or change in appearance of presented information.
1420	Initialisation error	An inconsistency has occurred during initialisation. Results of subsequent operations may be unreliable.
1421	Software error	A software inconsistency has been detected. Results of subsequent operations may be unreliable.
1422	Set up parser error	An invalid set up command has been detected in the host data stream.
1423	Protocol error	An inconsistency has been detected at the protocol level.
1424	Non-volatile RAM error	An invalid checksum was detected in the non-volatile memory. All settings have been reset to factory defaults.
1425	Multiple errors occurred.	Some error reports have been lost.
1511	Power up diagnostic tests indicate a fault with the Co-Ax/Twin-Ax interface.	Power off. Check that the PWB and the cartridge are installed correctly. Then, power back on. If fault continues to occur, replace the PWB and cartridge.

Replace this sheet with the following tab:

“PostScript emulation”

If you have purchased the page description language (PDL) option package with your 4213 laser printer, it can operate as a PostScript language laser printer. You can use the 4213 laser printer in PostScript language mode with your favourite application programme to print text, graphics and scanned photographic images.

This appendix provides the following information:

- Instructions for installing the PDL option
- Instructions for installing the coprocessor
- An overview explaining how PostScript is used
- A menu map showing the PostScript Menu
- A detailed explanation for each menu item and associated options
- Maps detailing the path used to navigate the menu
- The procedures for entering the menu and selecting options
- Examples which show how to change the PostScript configuration:
 - A. Changing the emulation from XES to POSTSCRIPT
 - B. Placing the printer in 1-sided print mode with book binding

Contents of the PDL package

The package contains a PDL printed wiring board assembly (PWBA) and 2 mounting pegs (refer to figure A4-1).

Note: In these instructions, a PWBA is referred to as a board (example: system controller board, PDL board, and so forth).

Figure A4-1. PDL package contents

1. PDL board
2. Mounting pegs

Memory requirements

This option requires a minimum of 4 MB (or two 2 MB SIMM boards) of additional memory.

If your printer does not have the required extra memory, call your sales representative.

Note: The PDL kit complete supplies 6 MB as standard.

Before you begin

If you do not wish to install the PDL board or coprocessor yourself, call for service and for a nominal charge, a local service representative will be sent to perform the installation for you.

If you choose to do the installation yourself, refer to the following instructions.

Perform the following steps before beginning the PDL board installation procedures. (Refer to figure A4-2.)

WARNING

1. POWER OFF THE PRINTER.
2. Remove any font or emulation cartridges from the printer.

Note: Font or emulation cartridges should be removed any time you prepare to remove the system controller board.

Figure A4-2. **Front and back views of the 4213 laser printer**

1. Cartridge slots
2. Thumbscrews
3. Power switch

PDL installation procedures

The following steps guide you through the removal of the system controller board, installation of the mounting pegs, and PDL board.

System controller board removal

1. Locate the two thumb screws on the system controller access cover plate. (Refer to figure A4-2 for location of the plate.)

For steps 2 to 10, refer to figure A4-3.

Figure A4-3. **System controller board**

1. Connector J16 for PDL board
 2. Mounting peg holes
 3. Thumbscrews
 4. System controller access cover plate
 5. Cable connector J7
 6. Cable connector J2
2. Turn the thumb screws counterclockwise until they are loose and turn freely.

Note: The screws cannot be removed from the bracket.

3. Pull the system controller board out approximately 102 mm (4 inches) along the receiving rails.
4. Depress the clip to disconnect the cable connector from the system controller board at J7.
5. Disconnect the cable connector from the system controller board at J2.

Note: Connection is snug. A gentle back-and-forth and side-to-side rocking motion will help to loosen it.

6. Lift slightly and pull to remove the system controller board from printer, and place it on a firm, flat surface.

Mounting pegs installation

7. Remove the PDL board and the mounting pegs from their packaging. (Refer to figure A4-4.)

Caution: Care should be taken when handling the PDL board, as there are sharp contacts on the top side of the board.

8. Locate the mounting peg install holes on the system controller board near J6.
9. Put the mounting pegs into the holes on the system controller board near J6. Push down on the pegs until they are fully seated.
10. Locate the socket/connector (J16) on the system controller board.

PDL board installation

For steps 11 to 13, refer to figure A4-4.

Figure A4-4. **Align the PDL board for installation**

1. Connector J16
 2. Mounting pegs inserted in holes
 3. PDL board2
11. Locate the connector on the PDL board at J16.
 12. Align the connector of the PDL board (J16) with the connector on the system controller board (J16). Push down on the outer corners of the PDL board above this connector until the connector is fully seated.

13. Align the mounting pegs with the holes in the PDL board. Press down firmly on either side of the holes on the PDL board until the pegs snap into position. (Refer to figure A4-5.) Moderate, even pressure must be applied to the PDL board to seat it correctly in the connector.

Figure A4-5. **PDL board correctly installed**

Contents of the coprocessor package

The coprocessor package contains a printed wiring board assembly (PWBA), as pictured in figure A4-6.

Note: In these instructions, a PWBA is referred to as a board (example: system controller board, coprocessor board, and so on).

Figure A4-6

Coprocessor installation procedures

The following steps guide you through the installation of the coprocessor board and the reinstallation of the system controller board.

1. Locate the coprocessor board socket on the system controller board at J10 (refer to figure A4-7).

Figure A4-7. **System controller board**

1. Thumbscrews
 2. System controller access cover plate
 3. Cable connector J7
 4. Cable connector J2
 5. Coprocessor connector J10
2. Hold the coprocessor board as shown in figure A4-8, making sure the notch is on the bottom and closest to the outside of the system controller board.

Figure A4-8. **How to hold a coprocessor board**

1. Coprocessor board
2. Notch
3. Carefully insert the board at an angle of approximately 30° from vertical (refer to figure A4-9).

Figure A4-9. **Coprocessor board at 30° angle**

1. Coprocessor board inserted at 30° angle
2. Coprocessor board tilted toward upright position
3. Coprocessor board locked in upright position
4. With firm, even pressure over the length of the coprocessor board, tilt it to a vertical position until the edges of the board snap behind the locking tabs of the connector (refer to figure A4-9).

Note: A slight force may be required to engage the locking tabs.

5. Check to make sure the coprocessor board is securely held by the locking tabs.
 - If the board tilts easily back to the 30° angle, repeat steps 1 to 4.
 - If the board does not move, installation is complete.

For installation of SIMMS, see A5.

Install additional options

If you purchased additional options for your printer, you can install them at this time while the system controller board is out of the printer. If there are no additional options to be installed, continue with step 6.

System controller board reinstallation

6. Place the system controller board into the receiving rails of the printer.
7. For reinstallation of the system controller board, reverse the removal process in steps 1 to 6 of the PDL installation procedure.
8. Print a configuration sheet. If the sheet prints and indicates the PDL PWB and coprocessor are present, installation was successful.

Caution: Cable connectors may interfere with the reinstallation of the system controller board; therefore, route them carefully.

Change the printer emulation

You must change the printer emulation to PostScript in order to use the PDL option. Refer to the following steps.

1. Turn on the printer. The message display reads:
READY
- H 2. At the printer control panel, press the Online button to take the printer off line. (The green online indicator light is not lit.)
- A 3. Press and release the Menu button to display the first Main Menu heading in the top level menu. The display reads:
MAIN MENU
PRINTER LANGUAGE
- C 4. Press the Last Page button until the display reads:
MAIN MENU
EMULATION
- B 5. Press the Test button. The display reads:
EMULATION
YES
- C 6. Press the Last Page button until the display reads:
EMULATION
PS
- D 7. Press the Select button to select PostScript as the emulation option.
- H 8. Press the Online button to put the printer back online. (The green online indicator light is lit.)

For detailed instructions on printing, refer to chapter 4, "Printing with the 4213."

The 4213 laser printer in PostScript language mode

The following is a list of what the 4213 laser printer can do in the PostScript language mode:

- Create and position various shapes such as straight lines, dashed lines, arcs, and curves.
- Combine text and graphics. Rotate and clip words and images.
- Print images that have been scanned from photographs or created synthetically.
- Produce documents that contain multiple typeface changes and different symbol sets.

PostScript, a page description language

PostScript is known as a page description language (PDL), which is a programming language designed specifically to communicate the description of practically any printable document from a computer to a printer that can interpret the programming code and print the document.

Letting your application do the work

In most cases, there is no need to write PostScript programmes for describing page structure, fonts and graphics. The PostScript language code is generated automatically by the application software you are using. Most word processing, desktop publishing, spreadsheet and computer graphics programmes are designed to work with printers, like the 4213 laser printer, that “speak” page description languages like PostScript. Use your application programme to lay out a page, set margins, choose a typeface, print text and generate line art, half-tones and grey-scaling on the 4213 laser printer. You can take advantage of the wealth of features available in PostScript language mode without having to learn the page description language.

Menu map of the 4213 PostScript submenu

The 4213 PostScript submenu is accessed from the Main Menu at the control panel under emulation submenu.

The following map is included as an overview of the submenu and illustrates the different options within the menu. You use the following buttons at the control panel to move through the different menu levels:

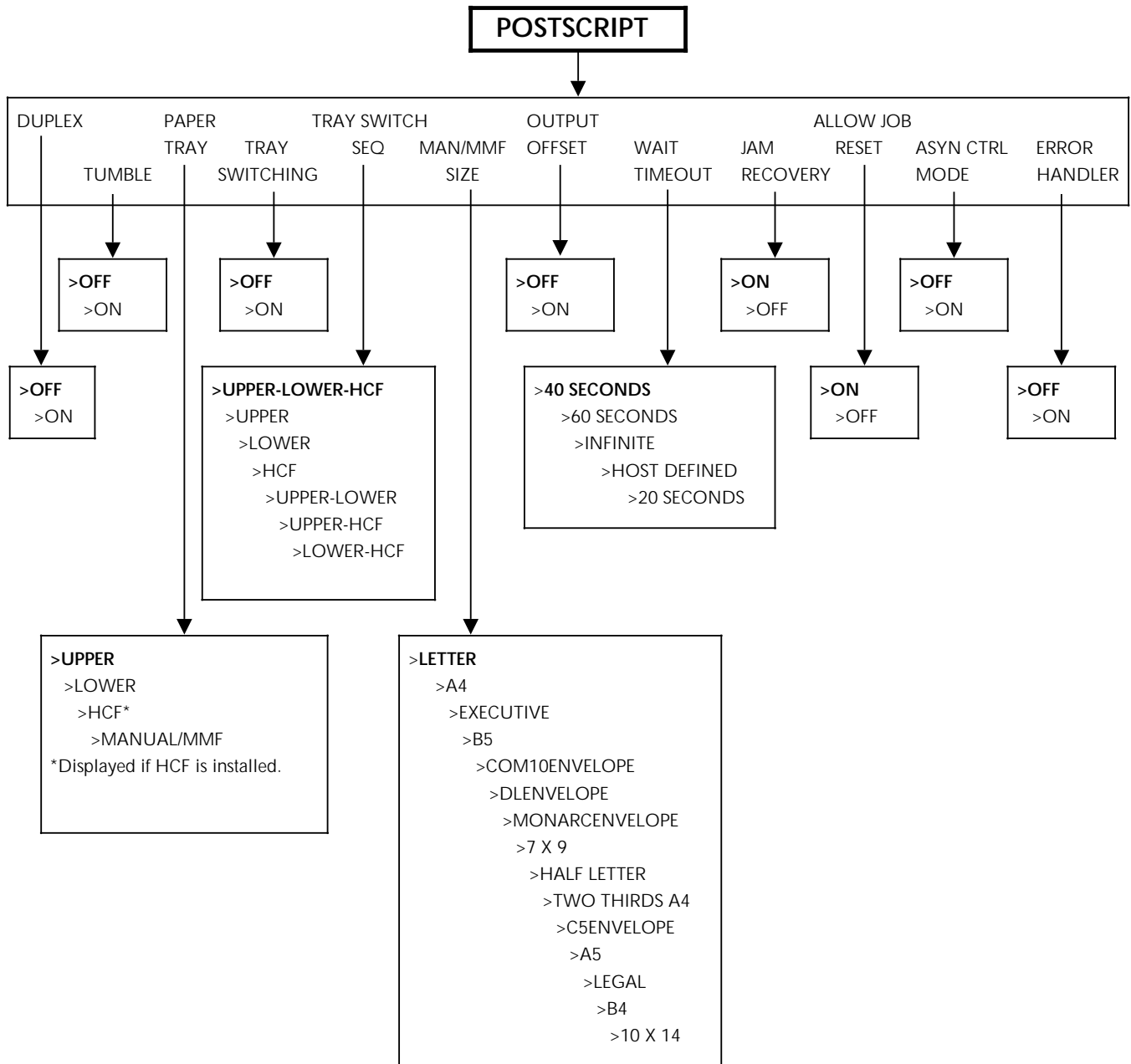
- B • Use the Test button to move to the next lower menu level.
This move is illustrated on the maps by a down arrow.
- C • Use the Last Page button to move the display to the right to display the menu options/headings at the same level.
This move to the right to headings/options on the same menu level, is illustrated by listing headings/options across the map on the same level, horizontally; or, when necessary due to space limitations, listing them diagonally on the page.
- A • Use the Menu button to move to the next higher menu level.
This move is in the opposite direction of the down arrow on the map.
- D • Use the Select button to select a new configuration setting.
- H • Use the Online button to exit the menu.

Note: Factory default settings are in **boldface** type

Note: Once in the PostScript emulation, going online will return you to the PostScript menu rather than the system menu when the Menu A button is pressed.

The PostScript submenu

The PostScript submenu is made up of top level menu headings and up to one associated lower level menu heading and options.



PostScript configuration

The PostScript submenu allows you to change options in the emulation. This submenu is accessed from the EMULATION heading at the Main Menu.

There are two types of configuration changes which can be done:

- Permanent settings, which remain unchanged even through power off/on cycle.
- Temporary settings, which remain current until a software command is received, or the printer is switched off.

- Note**
- The options you select as defaults apply to the selected emulation only. To change the options for an emulation, first display the emulation heading at the Main Menu, step through the options and select those you want as the defaults for the emulation. Then save the emulation configuration at the Reset Menu.

Emulation settings for PostScript

The following PostScript emulation menu items may be set permanently or temporarily:

- 2-sided print mode
- Tumble (print as pad or book binding)
- Paper tray
- Tray switching
- Tray switch sequence
- Paper size for Manual Bypass/Multi-Media feeder

- Output offset
- Wait timeout
- Jam recovery
- Allow reset of job
- Asynchronous control mode
- Error handler.

PostScript items

The following section describes the PostScript sub-menu items and their corresponding options.

Note: Below each sub-menu item description is an example of the message display with the factory default for the item written in **boldface** type followed by an asterisk.

The options for each menu item are listed in parentheses following the example of the message display. In the following example, OFF is the factory default for the 2-sided print mode:

2-sided
OFF* (ON or OFF)

2-sided print mode

The menu item, when on, gives you 2-sided printing. If off, 1-sided printing is received.

Note: The TUMBLE menu item allows you to select the page format for 2-sided printing.

The 2-sided Print Mode menu item options are listed below as they appear on the message display:

2-sided
OFF* (ON or OFF)

Tumble: Pad or book binding

The Tumble menu item allows you to select the page format for 1-sided and 2-sided printings.

ON = Pad binding

The Tumble menu item options are listed below as they appear on the message display:

TUMBLE
OFF* (ON or OFF)

Paper Tray

The Paper Tray menu item allows you to select the primary feed tray as the paper source. If tray sequencing is used, the tray selected here is the first tray used as part of the sequence.

The Paper Tray menu item options are listed below as they appear on the message display:

PAPER TRAY
UPPER* (UPPER, LOWER or MANUAL/MMF)

The Paper Tray menu item options are listed below as they appear on the message display when the optional High Capacity Feeder (HCF) is installed:

PAPER TRAY
HCF* (UPPER, LOWER, HCF or MANUAL/MMF)

The Paper Tray menu item options are listed below as they appear on the message display when the optional Manual Bypass or Multi-Media Feeder (MMF) is installed:

PAPER TRAY
UPPER* (UPPER, LOWER, MANUAL/MMF)

Tray Switching

The Tray Switching menu item, when on, allows for tray switching as part of the job. If off, tray switching cannot occur.

The Tray Switching menu item options are listed below as they appear on the message display:

TRAY SWITCHING
OFF* (ON or OFF)

Tray Switch Sequence

The Tray Switch Sequence menu item allows you to switch automatically to another tray when the active tray is empty. The Tray Switch Sequence menu item selects the order in which trays are used as the paper source. The first tray used is determined by which tray is selected at the paper tray menu item. For example:

- Single tray selection - paper is fed from one tray only.

- Two tray sequence selection - paper is fed from the first tray. When the first tray is empty, paper is fed from the second tray. Paper is fed from the second tray only until the first tray is refilled or replaced, then it feeds again from the first tray.
- Three tray sequence selection - paper is fed from the first tray. When the first tray is empty, paper is fed from the second tray. The second tray is the feed tray until the first tray is filled or replaced. The third tray is the feed tray only if the first and second trays are empty or out of the printer.

If you select a multiple tray sequence, you should have the same size paper trays and the same paper size and type installed in the selected paper trays. The printer will switch to the other paper tray when the first tray becomes empty.

The Tray Switch Sequence menu item options are listed below as they appear on the message display:

TRAY SWITCH SEQ
UPPER-LOWER-HCF* (UPPER-LOWER-HCF, UPPER, LOWER,
HCF, UPPER-LOWER, UPPER-HCF, LOWER-HCF)

- D **Note:** The Select button overrides the 4213 to feed paper from Tray 1.

MAN/MMF SIZE paper size

The Manual Bypass/Multi-Media Feeder (MAN/MMF SIZE) Paper Size menu item allows you to identify the paper size being fed through the manual bypass slot or placed in the optional multi-media feeder.

The MAN/MMF SIZE menu item options are listed below as they appear in the message display:

MAN/MMF SIZE
LETTER* (Refer to Table A4-1.)

Table A4-1. Paper and envelope size requests

Paper/envelope name	Paper/envelope size	Imageable area
LETTER	216 x 279 mm (8.5" x 11")	206 x 273 mm (8.1" x 10.75")
A4	210 x 297 mm (8.27" x 11.69")	199 x 290.5 mm
EXECUTIVE	184 x 267 mm (7.25" x 10.5")	176 x 260 mm (6.93" x 10.25")
B5	182 x 257 mm (7.15" x 10.1")	171 x 251 mm (6.75" x 9.9")
COM10ENVELOPE	105 x 241 mm (4.125" x 9.5")	95 x 235 mm (3.73" x 9.25")
DLENVELOPE	110 x 220 mm (4.33" x 8.66")	101.5 x 213.2 mm
MONARCENVELOPE	98 x 191 mm (3.875" x 7.5")	88 x 184 mm (3.45" x 7.25")
7 x 9	178 x 229 mm (7" x 9")	168 x 222 mm (6.61" x 8.73")
HALFLETTER	140 x 216 mm (5.5" x 8.5")	130 x 208 mm (5.1" x 8.2")
TWOTHIRDSA4	198 x 210 mm (7.8" x 8.27")	187.5 x 203.2 mm
C5ENVELOPE	162 x 229 mm (6.38" x 9.01")	152 x 222 mm (5.98" x 8.75")
A5	148.5 x 210 mm (5.85" x 8.27")	138.1 x 203.2 mm
LEGAL	216 x 356 mm (8.5" x 14")	206 x 349 mm (8.1" x 13.75")
EUROLEGAL	210 x 330 mm (8.28 x 13")	210 x 330 mm
B4	257 x 363 mm (10.1" x 14.3")	246 x 358 mm (9.7" x 14.1")
10 x 14	254 x 356 mm (10" x 14")	244 x 349 mm (9.6" x 13.75")

Output Offset

The Output Offset menu item determines whether or not offsetting in the output tray is allowed. When Output Offset is on and when the job asks for it, the individual job is offset from the previous job in the output tray. This function is regulated by the offset commands for PostScript.

If this item is off, no offsetting is allowed, even if the job asks for it. PostScript commands to offset the output are ignored. Disabling the output position allows more sheets to be stacked in the output tray.

The Output Offset menu item options are listed below as they appear in the message display:

OUTPUT OFFSET
OFF* (ON or OFF)

Wait Timeout

The Wait Timeout menu item allows you to choose whether the printer continues printing automatically when a communication error occurs.

If a Wait Timeout period is set, the printer pauses for the number of seconds (20, 40, or 60) while displaying the error message, then automatically continues printing.

If the Wait Timeout option is set to infinite, the printer pauses and does not resume printing when an error occurs.

If you want the Wait Timeout period to be controlled by the setting at your host computer, set the option through the input stream.

The Wait Timeout menu item options are listed below as they appear in the message display:

WAIT TIMEOUT
40 SECONDS* (20 SECONDS, 40 SECONDS, 60 SECONDS,
INFINITE or HOST DEFINED)

Jam Recovery

The Jam Recovery menu item controls whether or not pages are automatically reprinted after a paper jam, or if the pages lost due to a paper jam must be resent from the host.

- ON - Automatic recovery without loss of data
- OFF - No recovery, pages must be resent

The Jam Recovery menu item options are listed below as they appear in the message display:

JAM RECOVERY
ON* (ON or OFF)

Allow Job Reset

The Allow Job Reset menu item, when on, enables the operator to reset the job currently being processed.

ALLOW JOB RESET
ON* (ON or OFF)

Asynchronous Control Mode

When the Asynchronous Control Mode is ON, any CNTL C (cancel) or CNTL T (status) sent to the printer is acted on immediately. Set this option to OFF when using MCK to switch to PCL. Many PCL applications contain CNTL C, so a job will be cancelled if this option is ON.

The Asynchronous Control Mode menu item options are listed below as they appear in the message display:

ASYNCHRONOUS CONTROL MODE
OFF* (ON or OFF)

Error Handler

The Error Handler menu item option is listed below as it appears in the message display:

ERROR HANDLER
OFF* (ON or OFF)

Note: To enable the Error Handler menu item option, you should go into PostScript submenu from the UI to the Error Handler selection. The default is OFF. You can select ON; the feature is not enabled until power is recycled or you can exit current emulation to another emulation and re-enter PostScript emulation.

Changing the PostScript configuration at the Main Menu

The PostScript sub-menus list the configuration options. The configuration sub-menu is selected through the Main Menu and then set up individually to conform to your printing needs.

This section shows which buttons on the control panel are used for accessing the Main Menu, advancing to display the PostScript emulation, and if applicable, selecting emulation configuration options.

If necessary, refer to "Control panel," in chapter 2, "4213 Overview," for a diagram showing the location of the control panel buttons.

Accessing the Main Menu and selecting PostScript

Select the PostScript option from the Emulation Menu, and make any emulation configuration changes required.

Saving the POSTSCRIPT emulation configuration

When you have made your selections, use the following buttons to save them as the emulation configuration defaults:

- H 1. Press the Online button to take the printer off line. (The green online indicator light is not lit.)
- G 2. Press the Reset button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
- C 3. Press the Last Page button until the display reads:
RESET MENU
SAVE DEFAULTS

- D 4. Press the Select button to save the emulation configuration as the default configuration.
- H 5. Press the Online button to put the printer back online. (The green online indicator light is lit.)

Note: Changes to the emulation configuration are not in effect until you place the printer online. You must use the SAVE DEFAULTS option to save any changes made to the emulation configuration settings, if you wish these settings to be permanent and active each time the system is switched on. Otherwise, when your system is switched off and then on again, the emulation configuration returns to the configuration that was previously saved.

PostScript emulation configuration examples

The examples provided in this section illustrate step by step procedures for changing the emulation configuration. Examples include:

- A. Changing the emulation from XES to POSTSCRIPT.
- B. Placing the printer in 1-sided print mode with book binding.
- C. Changing the tray switching sequence.

Note: In each of the following examples only one setting is changed, in order to demonstrate the procedures for changing a specific default setting. When you are making emulation configuration changes using the Main Menu, you can make one or many changes to the default settings before exiting the menu and saving the configuration.

A. Changing the emulation from XES to PostScript

This example shows you how to change the current printer emulation from the default, XES, to POSTSCRIPT.

- H Press the Online button to take the printer off line.
- A Press the Menu button to access the Main Menu.
- C Press the Last Page button until the display reads EMULATION.
- B Press the Test button to display the available emulation headings. The display reads XES*.
- C Press the Last Page button until the display reads POSTSCRIPT.
- D Press the Select button to select POSTSCRIPT as the current emulation. An asterisk appears next to your selection.
- H Press the Online button to put the printer back online. POSTSCRIPT* is the current emulation, in place until a command to change emulations is received, the emulation is changed using this menu, the printer is reset, or the printer is switched off.

To save POSTSCRIPT as the default emulation:

- H Press the Online button to take the printer off line.
- G Press the Reset button to access the Reset Menu. The display reads EMULATION RESET.
- C Press the Last Page button until the display reads SAVE DEFAULTS.
- D Press the Select button to select the option.
- H Press the Online button to put the printer back online.

To reset XES as the default emulation:

- H Press the Online button to take the printer off line.
- G Press the Reset button to access the Reset Menu. The display reads EMULATION RESET.
Go back into the menu and select XES.
- D Press the Select button to select the option.
- H Press the Online button to put the printer back online.

B. Placing the printer in 1-sided print mode with book binding

This example shows you how to change the printing mode to 1-sided, (book binding for POSTSCRIPT).

To select 1-sided printing:

- H Press the Online button to take the printer off line.
- A Press the Menu button to access the Main Menu.
- C Press the Last Page button until the display reads EMULATION.
- B Press the Test button to display the available emulation headings. The display reads XES*.
- C Press the Last Page button until the display reads POSTSCRIPT.
- D Press the Select button to select POSTSCRIPT.
- B Press the Test button to display the POSTSCRIPT emulation configuration headings. The display reads DUPLEX.
- B Press the Test button to display the duplex options. The display reads ON*.
- C Press the Last Page button until the display reads OFF.
- D Press the Select button to select OFF.

To select book binding:

- A Press the Menu button to return to the higher level menu heading.
- C Press the Last Page button until the display reads TUMBLE.
- B Press the Test button to display the tumble options. The display reads ON*.
- C Press the Last Page button until the display reads OFF.
- D Press the Select button to select OFF.
- H Press the Online button to put the printer back online. 1-sided copies are received until a command to change emulations is received, the emulation is changed using this menu, or the printer is switched off.

PostScript status messages

Table A4-2 lists the PostScript-specific status messages that appear in the message display and gives the meaning of the message.

Table A4-2. **PostScript status messages**

Message	Meaning
WAIT FOR OFF LINE	Displayed when off line and processing a job and allow job reset is off.
PRESS(*) TO ABORT	Displayed when off line and processing a job and allow job reset is on.
INITIALISING PS	Displayed when PostScript mode is entered but not ready to accept host data.
WAITING	PostScript is waiting for more data.
BUSY	PostScript is processing job.
READY	PostScript is in idle state.

When the 4213 is operating in full power mode and is put back online after switching to the PostScript emulation, the display reads:

INITIALISING
PS

When the 4213 is in power saver mode, the display reads:

PLEASE
WAIT

Replace this sheet with the following tab:

“SIMM kit”

A5. SIMM kit installation and removal instructions

Contents of the kit

The kit contains one Single InLine Memory Module (SIMM) printed wiring board assembly (PWBA) (refer to figure A5-10.).

Note: In these instructions, a PWBA is referred to as a board (for example, system controller board, SIMM board, and so forth).

Figure A5-1. **SIMM kit contents**

1. Front view of SIMM board
2. Back view of SIMM board

Note: The special SIMMS used in the 4213 are not compatible with those used in PCs etc.

Before you begin

If you do not wish to install the SIMM board yourself, call Rank Xerox Service and for a nominal charge, a representative will be sent to perform the installation for you.

If you choose to install this option yourself, refer to the following instructions.

Perform the following steps before beginning the SIMM board installation procedures.

1. Switch off the printer.
2. Remove any font or emulation cartridges from the printer.

Note: Font or emulation cartridges should be removed any time you prepare to remove the system controller board.

Figure A5-2. **Front and back views of the 4213 printer**

1. Cartridge slots
2. Thumbscrews
3. Power switch

Installation procedures

The following steps guide you through the removal of the system controller board, the installation of the SIMM board(s), and the reinstallation of the system controller board.

System controller board removal

1. Locate the two thumb screws on the system controller access cover plate. (Refer to figure A5-2 for location of this plate.)

For steps 2 to 7, refer to figure A5-3.

Figure A5-3. **System controller board**

1. Thumbscrews
2. System controller access cover plate
3. Cable connector J7
4. Cable connector J2
5. SIMM connectors J15-J11

2. Turn the thumb screws anti-clockwise until they are loose and turn freely.

Note: The screws cannot be removed from the bracket.

3. Pull the system controller board out approximately 102 mm (4 inches) along the receiving rails.
4. Depress the clip to disconnect the cable connector from the system controller board at J7.
5. Disconnect the cable connector from the system controller board at J2.

Note: Connection is snug. A gentle back-and-forth and side-to-side rocking motion will help to loosen it.

6. Lift slightly and pull to remove the system controller board from printer, and place it on a firm, flat surface.
7. Locate the five SIMM connectors on the system controller board (J11, J12, J13, J14, and J15).

Note: The five SIMM boards must be installed in descending order, J15 first and J11 last. If only one SIMM is being installed, it must be placed in the J15 connector. If a second SIMM is installed, it would be placed in the J14 connector, the third in J13, and so on.

SIMM board installation

8. Hold the first SIMM board (J15), as shown in figure A5-4, and make sure that the notch is on the bottom and closest to the outside of the system controller board.

Figure A5-4. **How to hold a SIMM board**

1. SIMM board
2. Notch

For steps 9 and 10, refer to figure A5-5.

Figure A5-5. **SIMM board at 30° angle for installation**

1. SIMM board inserted at 30° angle
2. SIMM board tilted toward upright position
3. SIMM board locked in upright position

9. With the SIMM board at an angle of approximately 30° from vertical, carefully insert the board into the connector. The SIMM must be fully seated in the connector before tilting it to the vertical position.

Make sure that the locating tab fits into the hole in the SIMM board as shown in the satellite drawing numbered three.

10. With firm, even pressure over the length of the SIMM board, tilt it to a vertical position until the edges of the board snap behind the locking tabs of the connector (refer to the satellite in figure A5-5).

Note: A slight force may be required to engage the locking tabs.

Figure A5-6 shows the first SIMM board correctly installed in connector J15.

Figure A5-6. **SIMM board installed in J15**

1. SIMM board installed in J15
2. Locking tab in proper position

11. Check to make sure the SIMM board is securely held by the locking tabs.
 - If the board tilts easily back to the 30° angle, repeat steps 2 to 5.
 - If the board does not move, continue with step 12.
12. To install remaining boards, repeat steps 7 to 11.

Note: Install one board at a time, beginning with J15, and work in descending order until all the SIMM boards are installed. Figure A5-7 shows 5 SIMM boards in place.

Figure A5-7. **System controller board with 5 SIMM boards in place**

5 SIMM boards installed in J15-J11

Install additional options

If you purchased additional options for your printer, you can install them at this time while the system controller board is out of the printer. If there are no additional options to be installed, continue with step 13.

System controller board reinstallation

13. Place the system controller board into the receiving rails of the printer.
14. For reinstallation of the system controller board, reverse the removal process in steps 1 to 6.

Caution: Cable connectors may interfere with the reinstallation of the system controller board; therefore, route them carefully.

SIMM board removal and replacement procedures

When an error message on the message display shows that a SIMM board is faulty, use the following steps to remove or replace one or all of the boards.

Before you begin

Perform the following steps before beginning the SIMM board removal and replacement procedures (refer to figure A5-8).

Figure A5-8. Front and back views of the 4213 laser printer

1. Cartridge slots
 2. Thumbscrews
 3. Power switch
1. Remove any font or emulation cartridges from the printer.
Note: Font or emulation cartridges should be removed any time you prepare to remove the system controller board.
 2. Switch off the printer.

System controller board removal

3. Follow steps 1 to 6 in the installation instructions for removing the system controller board from the printer.

SIMM board removal

4. Locate the SIMM boards on the system controller board (J11, J12, J13, J14, and J15) (refer to figure A5-9).

Note: In order to prevent damage to the system controller board, the SIMM boards must be removed in ascending order, J11 first and J15 last.

For example, if the SIMM board to be removed is J12, J13, J14, or J15, the preceding board(s) must be removed first.

Figure A5-9. **System controller board with 5 SIMM boards in place**

5 SIMM boards installed in J15-J11

5. Grasp the connector housing of the first SIMM board (J11) at each end (refer to figure A5-10).

Figure A5-10. **How to release the locking tabs**

6. Press out on the locking tabs to release the SIMM board.
7. Allow the board to rotate backward to a 30° angle, and remove it from the slot (refer to figure A5-11).

Figure A5-11. **Rotating SIMM board to a 30° angle for removal**

SIMM board in J11 rotated to 30° angle

8. To remove the remaining SIMM boards, repeat steps 2 to 4.
Note: Remove only the SIMM boards that are obstructing the replacement of the faulty SIMM board.
9. Once all the obstructing SIMM boards are removed, replace the faulty board(s) with the new board(s).
Note: Refer to the installation procedures for instructions on installing SIMM boards.

System controller board reinstallation

10. Place the system controller board into the receiving rails of the printer.
11. For reinstallation of the system controller board, reverse the removal process in steps 1 to 6.

Caution: Cable connectors may interfere with the reinstallation of the system controller board; therefore, route them carefully.

Removal of SIMM board without replacement

You may choose to remove the faulty SIMM board, but not replace it. If this is the case, you must rearrange the remaining SIMM board(s) so that there is no gap between boards.

Note: If there is a gap left between the SIMM boards after removal of a board, the printer will not recognise any SIMM boards in the connectors with numbers lower than that of the connector with a missing SIMM board.

Follow the previous instructions for SIMM board removal and installation, if necessary.

Replace this sheet with the following tab:

“Multi Media Feeder”

This chapter describes:

- Features of the MMF
- MMF installation
- How to load media
- Use of the control panel to select the MMF as a feed source
- Special considerations in using the MMF

Features of the Multi Media Feeder

A Multi Media Feeder (MMF) may be purchased as an accessory for your 4213 laser printer. The MMF allows you to print on special materials such as envelopes and label stock. It can handle weights ranging from 90 gsm to 160 gsm.

The MMF acts as a feed source for the following media:

- Up to 75 envelopes
- Up to 150 sheets of 28 lb. bond or 60 sheets of 65 lb. cover, letter size; or 170 sheets of 90 gsm, or 80 sheets of 160 gsm, A4 size.
- Up to 75 sheets of label stock
- Media size ranges are: width, 100 to 216 mm (3.9 to 8.5 inches); length, 190 to 297 mm (7.5 to 11.69 inches).

Figure 1. **Multi Media Feeder**

Installing the Multi Media Feeder

As you open your MMF kit, make sure the following items are included:

- Mounting bracket
- Screwdriver.

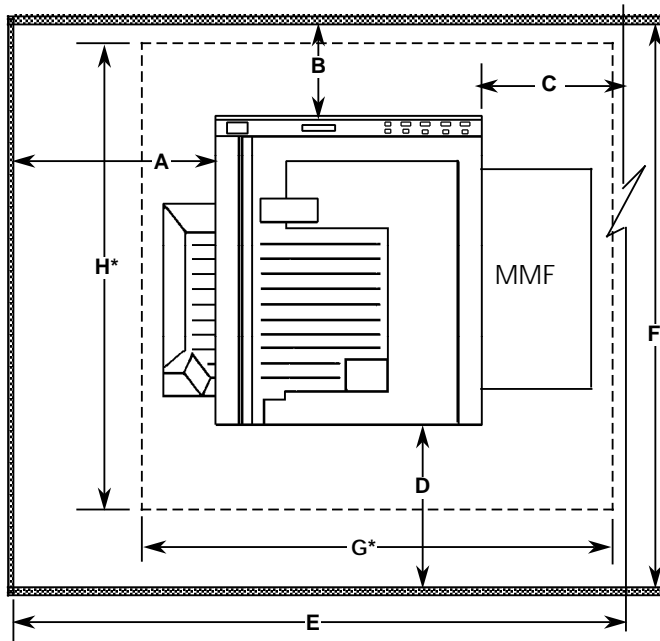
Space requirements

Figure 2 is a top view of the printer with the optional MMF. These are the minimum space requirements needed for operation and maintenance.

- The height requirements from the floor to the bottom of the printer are:
 - 46 cm (18 inches) minimum
 - 91 cm (36 inches) maximum

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

Figure 2. Space requirements with the MMF



A	49.0 cm	19.3 in.
B	10.2 cm	4.0 in.
C	76.9 cm	30.3 in.
D	61.9 cm	24.4 in.
E	171.7 cm	67.6 in.
F	122.2 cm	48.1 in.
G*	91.4 cm	36.0 in.
H*	66.0 cm	26.0 in.

*These are the minimum table top dimensions.

Installation steps

Follow the instructions below to install the MMF on your 4213 printer.

7. Plug the MMF interface cable securely into the printer.

8. Switch on the printer power. The power switch should be in the "I" position.

Loading paper

Follow the instructions below to load the MMF with paper.

1. Move the adjustable guide toward the rear of the machine and raise the weighted arm.
2. First fan the paper stack then gently tap the stack on a firm surface to align the edges of the sheets.
3. Load the paper short edge into the MMF. Paper should be loaded curl side down. This is opposite the way paper is loaded in the paper trays. Insert the media into the MMF until it meets resistance, making sure all edges are aligned as shown in figure 3. Refer to chapter 5, "Care and maintenance," for more information on paper curl.
4. Slide the adjustable guide against the stack of paper and place the weighted arm on top of the paper stack.

Do not load paper above the lower MAX line on the adjustable guide of the MMF.

Notes: Approximately 6 seconds after loading, the bottom sheet will prefeed to a ready to feed state.

Your MMF installation is complete.

Figure 3. Paper loaded in the MMF

Selecting the Multi Media Feeder as the paper source

Note: The MMF cannot be selected as part of a tray selection sequence.

Before submitting your print job, use the following buttons on the control panel to access the Main Menu and to select the MMF as the paper source for the current emulation.

1. Press the Online H button to take the printer off line. (The green online indicator light is not lit.)
2. Press the Menu A button to access the Main Menu. The display reads:

MAIN MENU
PRINTER LANGUAGE

3. Press the Last Page C button until the display reads:

MAIN MENU
EMULATION

4. Press the Test B button to display the available emulation headings. The display reads:

EMULATION
XES*

Note: If XES is not the emulation you wish to use, press the Last Page C button to display the LJ2D emulation.

5. Press the Test **B** button to display the lower level emulation options. The display reads:

XES or LJ2D
COPIES 01

6. Press the Last Page **C** button until the display reads:

XES or LJ2D
TRAY SEQ MODE

7. Press the Test **B** button to display the available tray sequence mode options. The display reads:

TRAY SEQ MODE
TRAY 1*

Note: If the current emulation is LJ2D, TRAY 1-2* is the default tray sequence.

8. Press the Last Page **C** button until the MMF is displayed in the message display. Possible choices are:

- TRAY 1
- TRAY 2
- TRAY 1-2
- MMF

9. Press the Select **D** button to select the MMF as the feed source. An asterisk appears next to your selection.

Note: To select the MMF for another emulation:

- Press the Menu **A** button twice to return to the emulation menu heading. The display reads:

EMULATION
XES*/(other available emulation)

- Press the Last Page **C** button to display a new emulation heading.
- Follow steps 5 to 9 above to select the MMF as the feed source for this emulation.

10. Press the Online \mathbb{H} button to put the printer back online. (The green online indicator light is lit.) **The MMF is now ready to receive a print command from the host.** Unless otherwise directed through your application software or through a printer command, the MMF is the only source for your print job.

Note: You cannot print a configuration sheet from the MMF.

Note: If you use the MMF as the default tray at the control panel, your job should contain a paper size selection command issued before the margin command or the page size used will be the current default under the PAPER SIZE, BYPASS in the MAIN MENU. If you are using a #10 envelope in the XES emulation, you must use the $\mathbb{E}zybF$ command in your job. See the *4213 Laser Printer Programmer Reference* for more information on this command.

Saving the setting for the MMF

Use the following buttons at the control panel to save your MMF selection for the emulation as defaults, to be in place each time the printer is switched on.

1. Press the Online \mathbb{H} button to take the printer off line. (The green online indicator light is not lit.)
2. Press the Reset \mathbb{G} button to access the Reset Menu. The display reads:
RESET MENU
EMULATION RESET
3. Press the Last Page \mathbb{C} button until the display reads:
RESET MENU
SAVE DEFAULTS
4. Press the Select \mathbb{D} button to select the option.
5. Press the Online \mathbb{H} button to put the printer back online. (The green online indicator light is lit.)

Handling special papers in the Multi Media Feeder

The following paper requires special handling:

- **Predrilled paper** is loaded with the holes (long edge) next to the left side of the MMF (opposite the paper guide with the Max line).
- **Letterhead and preprinted paper** are loaded face up with the top of the preprinted page inserted first.
- **Labels** are loaded with labels face up.
- Do not load paper above lower MAX line.
- Before loading, first fan the stack of papers or labels then gently tap the edges of these special papers on a firm surface to align the edges before loading them into the MMF.
- Slide the adjustable guide against the stack of material in the MMF.
- Always lower the weighted arm onto the media stack when using these materials.

Note: The Manual Bypass Feed slot cannot be used for single sheet feeding when the MMF is installed.

Handling envelopes in the Multi Media Feeder

Up to 75 envelopes can be loaded into the MMF:

- Move the adjustable guide toward the rear of the machine.
- For general envelope orientation see diagram below:

Figure 4. **Envelope orientation**

(See chapter 4 "Printing with the 4213", "Printing on Envelopes" for additional information.)

Note: Do not load above the upper MAX line on the adjustable guide.

- First fan the stack of envelopes then gently tap the stack on a firm surface to align the edges.
- Slide adjustable guide against side of the envelope stack.
- Always lower the weighted arm onto the stack of envelopes.

Correcting a shutdown condition caused by the Multi Media Feeder

A MMF shutdown can be caused by the following conditions:

- MMF is out of media
- Media did not feed (misfeed)
- Jam after MMF feed (sheet partially fed).

An "out of media" condition or "misfeed" is indicated by the following display message "CHECK MMF 0700", in the LJ2D emulation.

A "Jam after MMF feed" is first indicated by the message "CLEAR PAPER PATH 820" which requires that all paper be cleared from the machine. If paper is not cleared from the MMF area, the message "CHECK MMF 0700" will appear.

To correct these conditions perform the following:

- Add media
- To clear a MMF misfeed or jam remove the media stack from the MMF and discard the bottom sheet. If the bottom sheet is jammed, push the grey release button on the left side of the MMF to release. This button aids in jam removal, but some moderate force is still needed to pull the jammed sheet from the feeder. Reload the stack. Open and close any door to reset the printer. The MMF resumes operation in 4 to 6 seconds.

Special consideration when using the MMF

The 4213 is designed to operate in a wide range of environmental conditions, with optimum print quality and paper handling performance occurring at 22°C [72°F]/55% relative humidity.

Degradation of print quality and paper handling can occur in either low or high humidity conditions. The degree of degradation is determined by these factors: the type of media in use and the temperature range experienced during media storage or operation of the printer.

Typical problems which may occur are:

- Premature sealing of the envelope flap, output stacking, and wrinkling in high humidity conditions (above 55%RH)

- Light images on envelopes in low humidity conditions
- Image permanence/degradation in solid density areas when using heavy weight paper (160 gsm) in extreme humidity conditions
- Excessive envelope skew when using low grade envelope stock
- Image degradation caused by contamination of the printer when using pressure sensitive labels which have adhesive coating extending to the edge of the stock
- Label misfeeding due to curl in extreme humidity conditions.

Optimizing MMF performance

- Do not expose unwrapped paper media to humidity extremes (that is, outside the range of 35 to 55% relative humidity) or temperature extremes (below 10°C [50°F] or above 32°C [90°F]).
- In high humidity conditions, store envelopes, paper, and labels in a sealed plastic bag.
- Always allow paper media to acclimatise to the same environment as the printer if there is a significant temperature difference between the paper storage area and the printer location.
- Do not load media above the MAX lines on the adjustable side guide. Envelopes should not exceed the higher MAX line. All other media should not exceed the lower MAX line.
- Keep envelope addresses within the area described in chapter 4 of the User Guide, "Printing with the 4213".
- Before purchasing large quantities of special paper media, do a trial run with that media to evaluate print quality and paper handling performance.
- If skewing of the media persists, make sure the MMF mounting bracket is tightly secured to the printer and that the MMF is securely mounted onto the pins of the bracket.
- If you experience print quality problems when using special media such as labels, card stock or envelopes, run a job from a fixed tray, using standard 20 lb. (80 gsm) paper before you call Xerox Service. This will help isolate the problem, for example, media, printer, MMF.

Recommended materials

Table 1 shows materials recommended for use with the MMF.

Table 1. Recommended materials


United States		Multinational	
Material	Xerox part no.	Material	RX part no.
20 lb. statement size	3R2072	90 gsm	3R90600
28 lb. bond,4024DP	3R2353	120 gsm	3R90700
65 lb. cover	3R3041	160 gsm	3R90800
33 up label	3R4469	21 to a view label	3R96298
Commercial #10 envelope (4 1/8 in. by 9 1/2 in.)	N.A.	24 to a view label	3R96282
		DL Envelope (110 by 220 mm)	N.A.
		C5 Envelope (162 by 229 mm)	N.A.

Note: Xerox does not warrant or recommend the use of a particular envelope since the envelope manufacturing process is not controlled by Xerox.

Note: In Canada, contact Supplies Telemarketing about the availability of these materials.

- 1-sided printing** Printing on one side of the page. Use one side of paper. See *2-sided printing*.
- ASCII** American Standard Code for Information Interchange. A digital coding system used to represent characters or control functions electronically, each character being represented by either seven or eight bits. This coding system is used to control printers and communication devices.
- background spots** Spots caused by toner particles being randomly deposited in non image areas.
- baud rate** Rate at which the information is sent from the host computer to the printer. Baud rate is the data transfer rate between the computer and the printer. The computer and the printer must be configured at the same baud rate. The rate can be set from between 1200 and 19,200 baud depending on the type of computer used. The baud rate is set only if the serial interface is used.
- bit mapped** Display screen image generated by bit for each point, or dot, on screen. Resolution is very high because any point on screen can be addressed. Scanner is directed by software to create characters and/or graphics.
- buffer** Compartment of memory in which data is stored during transfer from one device to another. Useful for (1) accumulating data into blocks before storage or processing, and (2) for adjusting differences of speed between devices, or between a device and a communicating facility.

byte	Unit of seven or eight consecutive bits (the smallest unit of information) used to represent a character or control function. It is a fixed number of bits (in data processing, usually 8) operated upon as a unit. A byte may represent a character, a machine instruction or some other logical unit of information.
bypass	The manual feed in slot. This device can also accept several automated input accessories.
carriage return <CR>	A control character that (unless set to be interpreted as a line end) causes the printer to begin printing at the left margin of the current line.
clear to send	One of the hardware signals in the RS-232C interface.
coaxial cable	PVC or teflon shielded 50-ohm cable, used for Ethernet. It is designed to accommodate transmission rate of 10 megabits per second. It comes in three lengths: 77, 230, and 384 feet.
curl	The distortion of paper built in when paper is manufactured and placed on large rollers before being cut into sheets. Effect is intensified when paper is exposed to heat, pressure, moisture, and drying.
Data set ready	One of the hardware signals in the RS-232C interface.
Data terminal ready	One of the hardware signals in the RS-232C interface.
default	A printer setting that is used in place of a software application selection.
default font	The font that the printer automatically uses whenever the printer is reset unless another font is specified by the user.
deletion area	An area on a page on which data may not print.
downloaded font	These are 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.

EBCDIC	Extended Binary-Coded Decimal Interchange Code—A digital coding system used to represent characters electronically, each character being represented by eight bits.
escape character (ESC)	A control code, or control character, represented by ASCII 27 (1BH), which must be placed in front of a printer command. The escape character tells the printer to execute the following character string rather than print it. It is represented by the icon  .
escape sequence	A sequence of characters beginning with an escape code and comprising a printer command.
fixed spacing	Arrangement of characters on a line so that all characters occupy the same amount of horizontal space.
fuser	Printer component that permanently affixes toner to paper through application of heat.
fuser jam	Occurs when any sheet is late in arriving at the post feed-out roll sensor, either 2-sided or 1-sided.
grain	On a sheet of paper, the direction in which most of the fibres run. In long grain paper, the fibres run parallel to the long side; while in short grain paper, the fibres run parallel to the short side.
image	Refers to the decomposed bit map that will be directed through the ROS onto a page.
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. It is a common boundary between systems or parts of systems. Often refers to electronic device that enables one kind of equipment to communicate with or control another.
job	A print operation. A job delimited by job control (JC), end of job (EOJ), or JC suspension of host communications.

kilobyte (KB)	Unit of 1,024 bytes.
landscape page orientation	Landscape orientation refers to printing across the length of the page (as opposed to portrait orientation which prints across the width of the paper). The image on a landscape orientation, therefore, runs parallel to the long edge of the paper. The term "landscape" is derived from pictures of landscape, which are usually horizontal in format.
leading	Pronounced "ledding." 1. Vertical distance between lines (also called line space), measured from a baseline of one line to the baseline of the next. It also refers to extra spacing between lines of type. In typography, spacing between lines and paragraphs.
light emitting diode (LED)	Solid substance that glows when a current is passed through it. Often used for indicator lights on disk drives or modems, as well as displays on other electronic equipment.
line feed <LF>	A control character (ASCII 10, 0AH) that causes the printer to begin printing in the current character position of the next line.
Mbyte	See <i>megabyte</i> .
megabyte (MB)	Unit of 1,048,576 bytes.
mimic	Lighted window on the machine to provide information to the operator.
modem	See modulator/demodulator.
modulator/demodulator	Device that converts digital information into an analog signal suitable for sending over analog phone lines. Also converts an analog signal from phone lines into digital information.
Multi-sheet bypass feeder	An accessory device which supplies sheets of input material by way of the BYPASS.
Multi-media feeder	An accessory device which supplies various types of input material by way of the BYPASS.

page orientation	Direction in which data is printed on a page. Refer to <i>landscape page orientation</i> and <i>portrait page orientation</i> .
page or side	Refers to the side 1 or 2 of a sheet.
parallel interface	A type of interface between a printer and its host in which data is transmitted and received in bytes rather than bits. Used for local printing over short distances (25 feet, 7.63 metres, or less).
parity	The addition of a check bit to data information in order to verify the accuracy of the information.
photoreceptor	The photoreceptor or print drum is found in the replaceable print cartridge and is used to form letter or line images on documents.
pixel	Abbreviation for "picture element." The smallest unit of a graphic image. An unmagnified pixel is 1/300 inch (.08 mm). A pixel is also referred to as a dot or a spot. It is the smallest addressable point of a bit-mapped screen that can be independently assigned colour and intensity.
portrait page orientation	A page orientation in which the image runs parallel to the short edge of the paper. Portrait refers to printing across the width of a page (letter style). This is the opposite of landscape orientation which is printing across the length of the page. The term "portrait" is derived from portraits of people, which are usually vertical in format.
print cartridge	The print (photoreceptor) cartridge contains a photosensitive "print drum" used in the printing process. The cartridge is disposable.
print density	Print density refers to the relative darkness of print on the page. Very dense print appears totally black. Less dense print looks lighter, and solid filled areas may not be totally black. You can adjust print density in the printer.

page description language (PDL)	Language used to describe printing jobs to an LPS. PDL describes the input (type, format, characteristics), performs the processing functions (logical processing), and describes the output (type format, font selection, accounting options). Or, a utility that puts new JDLs onto system disk.
prints per minute	In the case of 2-sided, there are two prints on a delivered page.
random access memory (RAM)	A type of memory used by a micro processor which has the ability to read as well as write. Storage that allows data (such as documents) to be stored and retrieved directly by address location without reading through any other data.
resident	In ROM
Read only memory (ROM)	A type of memory used by a micro processor which can only be read. Solid-state memory for programmes. It cannot be rewritten.
Request to send	One of the hardware signals in the RS-232C interface.
scan line	An individual scan of the laser device across the width of the image. The line of video data printed in one pass of the laser beam across the length of the xerographic drum.
serial interface	A type or method of sending codes from computer to printer or other device, one bit of information at a time over a communication line. Serial interfaces can function over great distances.
skew	The rotational deviation (tilt or angle) of a character in relation to the bottom of the document.
soft font	Font that can be transferred from diskettes in your computer to the memory of the printer.
status sheet	A one-page printout produced by the printer when requested through a job command. Contains information about fonts used and errors detected in a job.

temporary fonts	Fonts that are erased from the memory of the printer when the printer is powered off or reset.
throughput	In data processing systems, the amount of data that can be processed, transmitted, printed, etc., per a specified unit of time.
toggle	To switch (alternate) from one tray to another. The system will switch from an active feeder or stacker tray to an inactive one to allow continuous printing when the proper commands are involved. Or, symbol that specifies shift between two predefined states in print line, such as from uppercase and vice versa. Each appearance of toggle shifts printing to opposite state.
toner	Toner is a fine powdered substance of resin and carbon black used to create images in the printing process. The toner supply for the system is contained inside the disposable Toner Cartridge. Toner can accept an electrical charge.
typeface	1. All type of a single design, such as Optima or Helvetica. 2. Set of characters with design features that make them similar to one another.

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