



IBM Network Connectivity for Intelliprint Laser Printers

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How This User's Guide is Organized

The content and layout of this *User's Guide* is as follows:

Chapter 1 The IBM Network Interface in Coax/IPDS Environments

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for Coax/IPDS emulation, and how to use the available options within the sub-menus. Coax systems supported and related publications are also discussed in this chapter.

Chapter 2 The IBM Network Interface in Twinax/IPDS Environments

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for Twinax/IPDS emulation, and how to use the available options within the sub-menus. Twinax systems supported and related publications are also discussed in this chapter.

Chapter 3 The IBM Network Interface in Coax/SCS Environments

This chapter describes the auto-switching emulation feature of your network interface, the SCS MENU structure for Coax/SCS emulation, and how to use the available options within the sub-menus.

Chapter 4 The IBM Network Interface in Twinax/SCS Environments

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for Twinax/SCS emulation, and how to use the available options within the sub-menus. Twinax systems supported and related publications are also discussed in this chapter.

Chapter 5 IBM Network Connectivity in LAN/IPDS Environments

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for LAN/IPDS emulation, and how to use the available options within the sub-menus.

Chapter 6 Online Function Selection (OFS) Commands

This chapter describes the Online Function Selection (OFS) Sequences for embedding printer and control functions in the data stream.

Chapter 7 Problem Solving

This chapter describes LCD display messages requiring user intervention and also LCD messages involving fatal errors.

Manual Conventions

NOTE: Notes contain tips, extra information, or important information that deserves emphasis or reiteration.



Caution: Cautions present information that you need to know to avoid equipment damage, process failure, or extreme annoyance. Pay special attention to these sections and read them fully before operating the printer. The manufacturer will not be responsible for any problems or damage arising from improper use.



WARNING! Warnings indicate the possibility of personal injury if a specific procedure is not performed exactly as described in the manual. Pay special attention to these sections and read them fully to prevent possible injury.



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Chapter 1

IBM Network Connectivity in Coax/IPDS Environments

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About this Chapter

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for Coax/IPDS emulation, and how to use the available options within the sub-menus. Coax systems supported and related publications are also discussed in this chapter.

This chapter is intended for use by Coax/IPDS users only.

Auto-Switching with the Coax Port

The printer automatically switches between the parallel, serial and IBM interface coax port. When the printer switches to the Coax port on the IBM interface, the Coax port will switch back based upon the port activity and the Wait Timeout Menu selection. When the Coax port is not actively receiving data, it will wait until the Wait Timeout Menu has occurred, and if still not receiving data, will return control to the printer. If the port receives data before the timer expires, the port retains control of the printer. It will restart the timer the next time it is not receiving data.

Control Panel MENU Structure

When the IBM network interface is configured for Coax/IPDS environments, the printer control panel menu structure is as follows:

| Menu | | | | |
|------|----------------|------------------|-----------------|------------------|
| | Paper Menu | | | |
| | Interface Menu | | | |
| | | Port | | |
| | | | Parallel | |
| | | | Coax | |
| | | Parallel Setup | | |
| | | Spooling | | |
| | PS Menu | | | |
| | PCL Menu | | | |
| | IPDS Menu | | | |
| | | Code Page | | |
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| | | VPA Check | | |
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| | | Margins to Sys | | |
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| | SCS Menu | | | |
| | | Tray Settings | | |
| | | | Tray 1 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | Tray 2 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | Envelope Feeder | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | LPI | | |
| | | CPI | | |
| | | MPP | | |
| | | MPL | | |
| | | Source Tray | | |
| | | Mono/Dual Case | | |
| | | Auto FF Lcl Copy | | |
| | | Intervent Reqd | | |
| | | Auto NL MPP+1 | | |
| | | Addl NL MPP+1 | | |
| | | FF Data | | |
| | | Buffer Auto NL | | |
| | | Null Suppression | | |
| | | FF Command Pos | | |
| | | Buffer Auto FF | | |
| | | IBM CommFeature | | |
| | | VPD Serial No. | | |
| | | VPD Location | | |
| | | SCS Page Format | | |
| | | 13 Pitch Subst | | |
| | | Auto Wrap | | |
| | System Menu | | | |
| | Quality Menu | | | |

Addition to the INTERFACE Menu

The following option becomes available in the PORT submenu of the INTERFACE menu when the IBM network interface is configured for Coax/IPDS environments.

Coax

The **Coax** option enables you to turn off the coax port on the interface. This selection is often used to permit uninterrupted communication to other ports such as the parallel, serial, or other network option ports..

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

IPDS MENU Structure

The IPDS MENU is a submenu of the MENU Mode and allows configuration of the following variables:

Code Page

The default **Code Page** (CPGID) options allows you to select the default code page. This is the code page used by the printer when the host requests the default.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | 500 Intl 5 037 US/Canada 038 ASCII 256 Intl 1 260 Canada Fr 273 Aust/Gr 274 Belgium 277 Den/Nor 278 Fin/Swe 280 Italy 281 Japan 284 Spain 285 UK 286 Aus/Gr Alt 287 Den/Nr Alt 288 Fin/Sw Alt 289 Spain Alt 297 France 424 Hebrew 871 Iceland |
| DEFAULT | 500 Intl 5 |

CP Version

Some of the code pages available for the printer are in two versions. The Code Page Version option allows you to select the version that best fits the application. If characters such as f , $=$, \div , x , or \copyright do not print properly, try the other code page version.

| | |
|----------------------|------------------------|
| AVAILABLE SELECTIONS | Version 0 Version 1 |
| DEFAULT | Version 1 |

Page Format

Four IPDS page formats are available:

- IPDS Whole Page
- IPDS Print Page (PRINT PAGE 1)
- IPDS Print Page Format with Compressed Line Spacing (PRINT PAGE 2)
- IPDS Print Page Format with Compressed Line Spacing and Text Cursor Movement (PRINT PAGE 3)

Your selection of a page format affects how data is positioned on the page. When using the factory default — whole page format — the printer starts positioning text from the top left edge of the paper. In print page format, printing starts from the inside edge of the left unprintable area and the lower edge of the top unprintable area. This option *only* affects the IPDS mode.

In **Whole Page** format, any characters positioned in the unprintable area will result in missing characters or missing lines of text. In print page format, data may be lost on the right and bottom edges of the page. In either format, any data placed in the unprintable area does not print.

Print Page 1 format does not allow more data to be placed in the printable area, but it moves the data down and to the right on the page. This function is used when your application has not moved data out of the unprintable area by using suitable margins.

When you select **Print Page 2**, the space between lines generated by Begin Line IPDS commands is reduced.

When you select **Print Page 3**, the space between lines generated by Begin Line and vertical text cursor positioning IPDS commands is reduced.

For either value, the printer reduces space between lines to allow more lines to print in the printable area. For example, if the printer is set for 6 LPI, 66 lines are printed in the printable area of an 8-1/2 x 11 inch page. If the printer is set for 8 LPI, 88 lines are printed in the printable area of an 8-1/2 x 11 inch page.

- NOTE:**
1. Compressed line spacing has the least impact on software applications. If your application uses only Begin Line commands to move between lines, you should select compressed line spacing. If you want to reduce all text cursor moves, select compressed line spacing with text cursor movement.
 2. You may experience alignment problems printing jobs that mix text with images, graphics, or bar codes. Problems arise when text positioning commands are used to move across text or into non-text (image, graphic, or bar code) areas. Both choices reduce the line spacing of text only and have no effect on non-text data. To minimize this problem, select compressed line spacing, because Begin Line commands are not normally used to move across or into non-text areas. If the application you want to compress does not use Begin Line commands, however, you should select compressed line spacing with text cursor movement.
 3. For compressed line spacing with text cursor movement (**Print Page 3**), the following IPDS vertical text positioning commands are affected:
 - Absolute Move Baseline
 - Relative Move Baseline
 - Temporary Move Baseline
 - Draw B Axis Rule

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Whole Page Print Page 1 Print Page 2 Print Page 3 |
| DEFAULT | Whole Page |

VPA Check

Valid Printable Area Check is used to verify the valid printable area to the host. When set to *On*, checks are detected when cursor position exceeds printable area as determined by the Margins to System setting above. When set to *OFF*, no IPDS position check will be detected. This option only affects the IPDS mode.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Overlay Cache

Overlay Cache is used to improve throughput. When set to *On*, the first transmission of an IPDS overlay from the host is translated to a PCL5 macro and stored within the printer memory for future reference. This eliminates the need of conversion for each occurrence resulting in faster printing. However, use of this option significantly reduces available printer memory.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| FACTORY DEFAULTS | Off |

Margins to Sys

The **Margins to System** option is used to notify the host of the printable area of the printer. When set to *On*, the IPDS printable area will reflect PCL5 printable area. When set to *Off*, IPDS printable area report will match 4028 response.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

3812 Font Supp.

3812 Font Support compatibility is provided entirely from an internal font package that exists in the firmware on the IPDS Font SIMM. 3812 Font Compatibility has been achieved by adding the following fonts to the default internal font set:

| Typeface | Font ID (hex) | Typeface | Font ID (hex) |
|------------------------------|---------------|-------------------------------|---------------|
| Boldface Italic PS | 155 | Orator 10 Pitch | 5 |
| Courier 5 Pitch | 244 | Orator Bold 10 Pitch | 38 |
| Courier Bold 5 Pitch | 245 | Script 12 Pitch | 84 |
| Courier 17 Pitch (super/sub) | 254 | Serif Text 10 Pitch | 42 |
| Courier Bold 17 Pitch | 253 | Serif Italic 10 Pitch | 43 |
| Document PS | 175 | Serif Text 12 Pitch | 70 |
| Essay PS | 160 | Serif Italic 12 Pitch | 71 |
| Essay Italic PS | 162 | Serif Bold | 1272 |
| Essay Bold PS | 163 | Serif Text 15 Pitch | 229 |
| Gothic Text 10 Pitch | 40 | Sonoran Serif 8 Point Medium | 751 |
| Gothic Bold 10 Pitch | 39 | Sonoran Serif 10 Point Medium | 1051 |
| Gothic Text 12 Pitch | 66 | Sonoran Serif 10 Point Bold | 1053 |
| Gothic Bold 12 Pitch | 69 | Sonoran Serif 10 Point Italic | 1056 |
| Gothic Italic 12 Pitch | 68 | Sonoran Serif 12 Point Medium | 1351 |
| Gothic Text 13 Pitch | 204 | Sonoran Serif 16 Point Bold | 1653 |
| Gothic Text 15 Pitch | 230 | Sonoran Serif 24 Point Bold | 2103 |
| Gothic Text 27 Pitch | 290 | | |

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

SCS MENU Structure

The SCS MENU is a submenu of the MENU Mode and allows configuration of the following variables:

Tray Settings

Tray 1

Tray 2

MBF

ENV

-
- NOTE:**
1. The following definitions for Page Format, and Auto Orientation to Tray 1, Tray 2, ENV and the MBF sub-menu selections within the Tray Settings menu selection.
 2. Either the MBF or the ENV menu selection will be available depending on the option installed.
-

Page Format

When **Auto Orientation** is set to *Off*, the **Page Format** option selects the page format for the currently selected paper source.

-
- NOTE:** COR is defined as 70% vertical spacing. If Computer Output Reduction is selected, the printer will rotate the page to landscape orientation, set the top and left margins to 0.5 inches, reduce the vertical spacing 70%, and change the CPI according to the following table:
-

| | | |
|----------|-----------|----------|
| 10 CPI | prints at | 13.3 CPI |
| 12 CPI | prints at | 15 CPI |
| 15 CPI | prints at | 20 CPI |
| 17.1 CPI | prints at | 27 CPI |
| 20 CPI | prints at | 27 CPI |
| 27 CPI | prints at | 27 CPI |

-
- NOTE:** If the host does not specify a CPI, LPI, MPP or MPL value, the current menu value will be used.
-

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | Portrait Landscape COR (Output Reduction) |
| DEFAULT | COR |

Auto Orientation

Auto Orientation selection is based on the print job sent to the printer. If automatic orientation is enabled and the host computer has not specifically selected an orientation, the printer will calculate the size of the page to be printed using maximum print position divided by characters per inch (MPP ÷ CPI) for the width and maximum page length divided by lines per inch (MPL/ LPI) for the length. It will use the calculated width and length to determine if the printed page will fit the currently selected paper size. If it fits, and the length is greater than the width, the page will print in portrait orientation; if it fits and the width is greater than the length, the page will print in

landscape orientation. If it will not fit in either orientation, the printer will print the job in the selected orientation option for the current paper tray. Portrait, Landscape, or Output Reduction can be selected for each individual paper source.

NOTE: If the host does not specify a CPI, LPI, MPP or MPL value, the current menu value will be used.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

LPI

In LU-1 mode the **Lines Per Inch** (LPI) option sets the default LPI setting but may be overridden by the data stream. In DSC/DSE modes this option sets the absolute LPI setting and cannot be overridden by the data stream.

| | |
|----------------------|------------------|
| AVAILABLE SELECTIONS | 3 4 6 8 |
| DEFAULT | 6 |

CPI

In LU-1 mode, the **Characters Per Inch** (CPI) option sets the default value for CPI but may be overridden by the data stream. In DSC/DSE mode, this option sets the absolute CPI setting and cannot be overridden by the data stream.

NOTE: The following CPI values are used when in COR:

| Portrait Landscape (CPI) | Computer Output Reduction (CPI) |
|--------------------------|---------------------------------|
| 10 | 13.3 |
| 12 | 15 |
| 15 | 20 |
| 17.1 | 27 |
| 20 | 27 |
| 27 | 27 |

| | |
|----------------------|------------------------------------|
| AVAILABLE SELECTIONS | 10 12 15 17.1 20 27 |
| DEFAULT | 10 |

MPP

The **Maximum Print Position** (MPP) option sets the value for the default maximum print position. In LU-1 (SCS) mode it may be overridden by the data stream. When powered on, the printer computes available MPP. If this option is set to zero or a value greater than the computed maximum, the printer will use the computed maximum as the default. In DSC/DSE mode this value cannot be overridden.

| | |
|----------------------|---------------------|
| AVAILABLE SELECTIONS | 1 to 999 characters |
| DEFAULT | 132 |

MPL

In LU-1 (SCS) mode the **Maximum Page Length** (MPL) option sets the value for the default maximum page length, but may be overridden by the data stream. When powered on, the printer computes available page length. If the MPL is set to zero or a value greater than the computed maximum, the printer will use the computed maximum as the default. In DSC/DSE mode, this option sets the absolute MPL and cannot be overridden by the data stream.

| | |
|----------------------|---------------------|
| AVAILABLE SELECTIONS | 1 to 999 characters |
| DEFAULT | 64 |

Source Tray

The **Source Tray** option selects the current paper source for the Coax port.

This option always offers all possible choices. If a paper source that is not installed in the printer is selected, the last paper source used by any port will be selected.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Tray 1 Tray 2 Tray 3 Tray 4 Tray 5 MBF ENV |
| DEFAULT | Tray 1 |

Mono/Dual Case

The **Mono Case/Dual Case** option enables the printer to print in upper and lower case when set to *Dual Case*, or in just upper case when set to *Mono Case*.

NOTE: This option is valid for DSC/DSE modes only, LU-1 always prints dual case.

| | |
|----------------------|------------------------|
| AVAILABLE SELECTIONS | Dual Case Mono Case |
| DEFAULT | Dual Case |

Auto FF Lcl Copy

The **Auto Form Feed After Local Copy** option causes the printer to execute a Form Feed after the print buffer is completed in an Operator Initiated Local Copy print job. The printer ejects the page and is set to print at column 1, line 1 of the next page. This option overrides **Form Feed at End of Buffer** to allow the printer to maintain compatibility with application programs designed for earlier printers.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Intervent Reqd

Under certain **Intervention Required** (error) conditions (Paper Out, Cover Open, Offline, etc.) the printer will start a timeout. If the condition is not removed within the timeout period, the printer sends an Intervention Required message to the host computer. If set to *Off*, the Intervention Required option will suppress the sending of Intervention Required.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Auto NL MPP+1

If **Auto New Line at MPP + 1** is set to *Col 1 Next Line* and a Carriage Return is executed at MPP + 1, a new line will also be executed. The next print position will be on the next line, column 1. If set to *Col 1 Curr Line* and a Carriage Return is executed at MPP + 1, there will be no new line executed, and the next print position will be on the current line, column 1.

| | |
|----------------------|------------------------------------|
| AVAILABLE SELECTIONS | Col 1 Next Line Col 1 Curr Line |
| DEFAULT | Col 1 Next Line |

Addl NL MPP+1

If **Additional New Line at MPP + 1** is set to *Curr + 2 Lines* and a New Line is executed at MPP + 1, an additional new line is executed automatically. The next print position will be in column 1 and down 2 lines. If set to *Next Line*, no additional new line is executed at MPP + 1 and the next print position will be on column 1 of the next line.

| | |
|----------------------|-----------------------------|
| AVAILABLE SELECTIONS | Curr + 2 Lines Next Line |
| DEFAULT | Curr + 2 Lines |

FF Data

When printing in LU-3 mode, the **Form Feed Followed by Data** sequence is used to select the action taken if a form feed is received by the printer and it is not the last character in the IBM print buffer. When set to *Line 1 Col 2*, the current print position after the form feed will be the second position on line one of the next form. If set to *Line 1 Col 1*, the current print position will be the first print position on line one of the next form.

| | |
|----------------------|------------------------------|
| AVAILABLE SELECTIONS | Line 1 Col 1 Line 1 Col 2 |
| DEFAULT | Line 1 Col 1 |

Buffer Auto NL

When printing in LU-3 mode, the **Buffer End Auto New Line** command is used to select the action taken if a form feed is received by the printer and it is the last character in the IBM print buffer. When set to *Ln2 Next Form*, the current print position after the form feed will be the first position on line two of the next form. If set to *Ln1 Next Form*, the current print position will be the first print position on line one of the next form.

| | |
|----------------------|----------------------------------|
| AVAILABLE SELECTIONS | Ln 2 Next Form Ln 1 Next Form |
| DEFAULT | Ln 1 Next Form |

Null Suppression

If **Null Suppression** is activated, and if Printer Control Information Area (PCIA) byte 0017 has bit 7 set to true, indicating formatted print (ignore NL, EM, CR and print spaces instead), then all lines consisting entirely of nonprintable characters (nulls, attributes, and nondisplay or nonprint fields) will be suppressed and not printed. Menu selections enable Null Suppression activation in Local Copy and/or Non-SCS modes. If Null Suppression is set to *Disabled*, all lines consisting of nonprintable characters (nulls, attributes, and nondisplay or nonprint fields) will be printed as blank lines and a New Line executed at the end of the line. The next print position after such a line will be on the next line, column 1.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | L Cpy+Non-SCS Non-SCS Only Local Copy Only Disabled |
| DEFAULT | L Cpy+Non-SCS |

FF Command Pos

Form Feed commands may be executed anywhere or treated as blanks if they do not occur at MPP + 1 (current print position [CPP] = 1), the first print position of a line (column 1).

| | |
|----------------------|----------------------------------|
| AVAILABLE SELECTIONS | CPP=1 or MPP+1 Allow Anywhere |
| DEFAULT | CPP=1 or MPP+1 |

Buffer Auto FF

When printing in LU-3 mode, the **Buffer End Auto Form Feed** option is used to specify what action will be taken when the printing of an IBM print buffer is completed. If set to *Form Feed*, the printer will automatically execute a form feed at the end of the print buffer or a local copy unless the last character received was already a form feed. If set to *Newline*, and the last character is not a form feed, new line, or carriage return, a new line will automatically be executed.

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | Newline Form Feed |
| DEFAULT | Newline |

IBM Comm Feature

The **IBM Communication Feature** option enables or disables the Extended Attribute Buffer and enables or disables the Query Reply.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | No Query But EAB Query and EAB No Query/No EAB |
| DEFAULT | Query and EAB |

VPD Serial No

The **VPD Serial Number** option is a 5 digit number entered by the user to uniquely identify the printer. The communications buffer is loaded at the following addresses with the VPD (Vital Product Data). After the controller receives a POR (Power On Reset) response from the printer it reads this area as required by the host. The controller then clears the buffer. The VPD is loaded prior to any sequence that requires a POR response to the controller.

| Address (hex) | Function | Values (hex) | Description |
|---------------|------------------------|--|---|
| 0060 to 0053 | Device Type | F4 F0 F2 F8 | Same as the IBM 4028 (emulation type). |
| 0054 | Device Characteristics | 11 | IBM Hardware Type. |
| 0055 to 0057 | Model Number | D5 E2 F0 | Model Number in EBCDIC. |
| 0058 to 0059 | Location | F0 F0 (value is not set by user) | This is a two digit value changeable by user to identify a location (see below). |
| 005A to 005B | Reserved | F0 F0 | Not Used |
| 005C to 0060 | Serial Number | F0 F0 F0 F0 F0 (Value not set by user) | Five digit serial number set by user to identify this device at a location (see below). |
| 0061 to 0063 | PGM Level | f) F1 E4 | Corresponding IBM PGM Level. |
| 0064 to 0073 | EC Level | F0 F0 F0 F0 F0 F0 F0 F0 F0 F5 F3 F2 F1 F0 F4 | Corresponding IBM EC Level. |

Two menu options allow the user to set a unique user determined serial number (VPD Serial) and a unique location (VPD Location) for each printer. These values will be posted to the communications buffer prior to the printer sending a POR (Power On Reset) response to the controller.

This value can only be changed by using this menu. It will not be reset to zero by a Reset to factory defaults.

| | |
|----------------------|------------|
| AVAILABLE SELECTIONS | 0 to 32767 |
| DEFAULT | 0 |

VPD Location

The **VPD Location** selection is a 2 digit number entered by you to uniquely identify the location of this printer or a unique group of printers.

This value can only be changed by using this menu. It will not be reset to zero by a reset to factory defaults.

| | |
|----------------------|---------|
| AVAILABLE SELECTIONS | 0 to 99 |
| DEFAULT | 0 |

SCS Page Format

The SCS Page Format setting is used for SCS and DSC/DSE modes only. Your selection of a page format affects how data is positioned on the page. This option has no effect in the IPDS mode.

Four page formats are available in non-IPDS mode:

- SCS print page format (PRINT PAGE 1)
- SCS whole page format (WHOLE PAGE)
- SCS print page format with compressed line spacing (PRINT PAGE 2)
- SCS page format with compressed line spacing and Text Cursor Movement (PRINT PAGE 3)

When you use PRINT PAGE format, the factory default, printing starts from the inside edge of the left unprintable area and the lower edge of the top unprintable area.

In WHOLE PAGE format, the printer starts positioning text from the top left edge of the paper.

In PRINT PAGE 2 format, the printer reduces spacing between all lines to allow more lines to print in the printable area. For example, if the printer is set for 6 LPI, 66 lines are printed in the printable area of an 8-1/2 x 11 inch page. If the printer is set for 8 LPI, 88 lines are printed in the printable area of an 8-1/2 by 11 inch page.

When you select PRINT PAGE 3, the space between lines generated by Begin Line and vertical text cursor positioning commands is reduced.

For either value, the printer reduces space between lines to allow more lines to print in the printable area. For example, if the printer is set for 6 LPI, 66 lines are printed in the printable area of an 8-1/2 x 11 inch page. If the printer is set for 8 LPI, 88 lines are printed in the printable area of an 8-1/2 x 11 inch page.

NOTE: In WHOLE PAGE format, positioning characters in the unprintable area results in missing characters or missing lines of text; the characters do not print. In PRINT PAGE format, text positioned in unprintable areas wraps to the next line or page.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Print Page 1 Whole Page Print Page 2 Print Page 3 |
| DEFAULT | Print Page 1 |

13 Pitch Subst

The **13 Pitch Substitution** setting allows DSC/DCE and LU-1 (SCS) modes to request 13.3 pitch font selection.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Auto Wrap

Auto Wrap is used to automatically wrap text to the next line when the edge of the printable area is reached. When turned to *Off*, data may be lost. This option has no effect in IPDS mode.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Resident Fonts on IPDS Font SIMM

The IPDS Font SIMM installed in FLASH SIMM 2 slot of the controller contains the 32 fonts listed in the following two tables.

| Typeface | FGID | Pitch/CPI | Point Size |
|----------|------|-----------|------------|
| Boldface | 159 | PS | 12 |
| Courier | 011 | 10 | 12 |
| Courier | 085 | 12 | 10 |
| Courier | 223 | 15 | 9 |

| Typeface | FGID | Pitch/CPI | Point Size |
|-----------------------|------|-----------|------------|
| Courier | 254 | 17.1 | 8.5 |
| Courier Bold | 046 | 10 | 12 |
| Courier Italic | 018 | 10 | 12 |
| Courier Italic | 092 | 12 | 10 |
| Letter Gothic | 281 | 20 | 7.5 |
| OCR A | 019 | 10 | 12 |
| OCR B | 003 | 10 | 12 |
| Prestige Pica | 012 | 10 | 12 |
| Prestige | 164 | PS | 12 |
| Prestige | 221 | 15 | 9 |
| Prestige | 256 | 17.1 | 8.5 |
| Prestige Elite | 086 | 12 | 10 |
| Prestige Elite Bold | 111 | 12 | 10 |
| Prestige Elite Italic | 112 | 12 | 10 |

Some host systems may not allow typographic font selection by FGID and point size. For these systems, you should use the alternate FGID to select typographic fonts.

| Typeface | FGID | Alt FGID | Pitch/CPI | Point Size |
|-------------------------|------|----------|-----------|------------|
| Times Roman | 5687 | 760 | Typo | 6 |
| Times Roman | 5687 | 751 | Typo | 8 |
| Times Roman | 5687 | 1051 | Typo | 10 |
| Times Roman | 5687 | 1351 | Typo | 12 |
| Times Roman Bold | 5707 | 1053 | Typo | 10 |
| Times Roman Bold | 5707 | 761 | Typo | 12 |
| Times Roman Bold | 5707 | 762 | Typo | 14 |
| Times Roman Bold | 5707 | 1803 | Typo | 18 |
| Times Roman Bold | 5707 | 2103 | Typo | 24 |
| Times Roman Italic | 5815 | 1056 | Typo | 10 |
| Times Roman Italic | 5815 | 763 | Typo | 12 |
| Times Roman Bold Italic | 5835 | 764 | Typo | 10 |
| Times Roman Bold Italic | 5835 | 765 | Typo | 12 |

Font Best Fit Selection

If a font is requested that is not currently installed in the printer, it performs a font best fit function. The font best fit function searches for and selects a substitute font from only those supported in the requested code page.

Wrong Characters Printing

You may need to change the default code page to 037 if the characters !, ^, [,], or ¢ are not printing correctly when entered from a display.

You may need to change the default code page to version 0 if the characters †, =, ¸, x, or © are not printing correctly when entered from a display.

Bar Codes

With the appropriate host software, the IBM Network Interface can produce the following bar codes:

- 3 of 9 code
- MSI
- UPC/CGPC Version A
- UPC/CGPC Version E
- UPC Two-Character Supplemental
- UPC Five-Character Supplemental
- EAN-8
- EAN-13
- 2 of 5 Industrial
- 2 of 5 Matrix
- 2 of 5 Interleaved
- USS-Codabar
- Code 128
- EAN Two-DigitAdd on
- EAN Five-DigitAdd on
- Postal Barcode- POSTNET.

NOTE: 1. Bar codes should only be printed in the recommended print area. If a bar code is placed so that a portion of it is in the unprintable area, a portion of the bar code prints in solid black.

2. POSTNET can be generated using the DDS keyword POSTNET on the AS/400 with OS/400 Version 2, Release 1.

For optimum performance, use a label recommended for bar code applications.

Related Publications

- *IBM LaserPrinter 4028 Introduction and Planning Guide*, IBM Form No. S544-4258 (P/N 1045099)
- *3270 Programming Guide and Reference Manual for the IBM LaserPrinter 4028 Model*

NSI, IBM Form No. S544-4262 (P/N 1045097)



Chapter 2

IBM Network Connectivity in Twinax/IPDS Environments

In this Chapter . . .

- “About this Chapter” on page 2-2
- “Auto-Switching with the IBM Twinax Port” on page 2-2
- “Control Panel MENU Structure” on page 2-3
- “Additions to the INTERFACE Menu” on page 2-3
- “TWINAX SETUP Menu” on page 2-4
- “IPDS MENU Structure” on page 2-4
- “Resident Fonts on IPDS Font SIMM” on page 2-9
- “Font Best Fit Selection” on page 2-10
- “Wrong Characters Printing” on page 2-10
- “Bar Codes” on page 2-11

About this Chapter

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for Twinax/IPDS emulation, and how to use the available options within the sub-menus. Twinax systems supported and related publications are also discussed in this chapter.

This chapter is intended for use by Twinax/IPDS users only.

Auto-Switching with the IBM Twinax Port

The printer automatically switches between the parallel, serial and network interface ports. When the printer switches to the Twinax port on the network interface, the Twinax port will switch back based upon the port activity and the Wait Timeout Menu selection. When the Twinax port is not actively receiving data, it will wait until the Wait Timeout Menu has occurred, and if still not receiving data, will return control to the printer. If the port receives data before the timer expires, the port retains control of the printer. It will restart the timer the next time it is not receiving data.

Control Panel MENU Structure

When the IBM network interface is configured for Twinax/IPDS environments, the printer control panel menu structure is shown below. Highlighted selections are the result of the IBM network interface being configured for Twinax/IPDS environments.

| Menu | | | |
|------|----------------|-----------------|-----------------|
| | Paper Menu | | |
| | Interface Menu | | |
| | | Port | |
| | | | Parallel |
| | | | Twinax |
| | | Parallel Setup | |
| | | Twinax Setup | |
| | | | Station Address |
| | | | Buffer Size |
| | | Spooling | |
| | PS Menu | | |
| | PCL Menu | | |
| | IPDS Menu | | |
| | | Code Page | |
| | | CP Version | |
| | | Page Format | |
| | | VPA Check | |
| | | Overlay Cache | |
| | | Margins to Sys | |
| | | 3812 Font Supp. | |
| | System Menu | | |
| | Quality Menu | | |

Additions to the INTERFACE Menu

The following option becomes available in the PORT submenu of the INTERFACE menu when the IBM network interface is configured for Twinax/IPDS environments.

Twinax

The **Twinax** option enables you to turn off the twinax port on the interface. This selections is often used to permit uninterrupted communication to other ports such as the parallel, serial, or other network option ports..

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

TWINAX SETUP Menu

The TWINAX SETUP menu is a submenu of the INTERFACE menu and allows selection of the following options:

Station Address

The Station Address option selects the station address used to communicate with the host computer.

| | |
|----------------------|-------------|
| AVAILABLE SELECTIONS | 0 through 6 |
| DEFAULT | 0 |

Buffer Size

The Buffer Size option allows you to change the buffer size used to communicate from 256 bytes to 1024 bytes (1K). The 1K size can only be used with an AS/400 Workstation Controller and 5394 Remote Control Unit release 2.2 or higher.

| | |
|----------------------|-------------------------|
| AVAILABLE SELECTIONS | 256 Bytes 1024 Bytes |
| DEFAULT | 256 Bytes |

IPDS MENU Structure

The IPDS MENU is a submenu of the MENU Mode and allows configuration of the following options:

Code Page

The default **Code Page** (CPGID) options allows you to select the default code page. This is the code page used by the printer when the host requests the default.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | 500 INTL 5 037 US/CANADA 038 ASCII 256 INTL 1 260 CANADA FR 273 AUST/GR 274 BELGIUM 277 DEN/NOR 278 FIN/SWE 280 ITALY 281 JAPAN 284 SPAIN 285 UK 286 AUS/GR ALT 287 DEN/NR ALT 288 FIN/SW ALT 289 PAIN ALT 297 FRANCE 424 HEBREW 871 ICELAND |
| DEFAULT | 500 INTL 5 |

CP Version

Some of the code pages available for the printer are in two versions. The Code Page Version option allows you to select the version that best fits the application. If characters such as f , $=$, \div , x , or \copyright do not print properly, try the other code page version.

| | |
|----------------------|------------------------|
| AVAILABLE SELECTIONS | Version 0 Version 1 |
| DEFAULT | Version 1 |

Page Format

Four IPDS page formats are available:

- IPDS Whole Page
- IPDS Print Page (PRINT PAGE 1)
- IPDS Print Page Format with Compressed Line Spacing (PRINT PAGE 2)
- IPDS Print Page Format with Compressed Line Spacing and Text Cursor Movement (PRINT PAGE 3)

Your selection of a page format affects how data is positioned on the page. When using the factory default — whole page format — the printer starts positioning text from the top left edge of the paper. In print page format, printing starts from the inside edge of the left unprintable area and the lower edge of the top unprintable area. This option *only affects the IPDS mode*.

In WHOLE PAGE format, any characters positioned in the unprintable area will result in missing characters or missing lines of text. In print page format, data may be lost on the right and bottom edges of the page. In either format, any data placed in the unprintable area does not print.

PRINT PAGE 1 format does not allow more data to be placed in the printable area, but it moves the data down and to the right on the page. This function is used when your application has not moved data out of the unprintable area by using suitable margins.

When you select PRINT PAGE 2, the space between lines generated by Begin Line IPDS commands is reduced.

When you select PRINT PAGE 3, the space between lines generated by Begin Line and vertical text cursor positioning IPDS commands is reduced.

For either value, the printer reduces space between lines to allow more lines to print in the printable area. For example, if the printer is set for 6 LPI, 66 lines are printed in the printable area of an 8-1/2 x 11 inch page. If the printer is set for 8 LPI, 88 lines are printed in the printable area of an 8-1/2 x 11 inch page.

-
- NOTE:**
1. Compressed line spacing has the least impact on software applications. If your application uses only Begin Line commands to move between lines, you should select compressed line spacing. If you want to reduce all text cursor moves, select compressed line spacing with text cursor movement.
 2. You may experience alignment problems printing jobs that mix text with images, graphics, or bar codes. Problems arise when text positioning commands are used to move across text or into non-text (image, graphic, or bar code) areas. Both choices reduce the line spacing of text only and have no effect on non-text data. To minimize this problem, select compressed line spacing, because Begin Line commands are not normally used to move across or into non-text areas. If the application you want to compress does not use Begin Line commands, however, you should select compressed line spacing with text cursor movement.
 3. For compressed line spacing with text cursor movement (PRINT PAGE 3), the following IPDS vertical text positioning commands are affected:

- Absolute Move Baseline
 - Relative Move Baseline
 - Temporary Move Baseline
 - Draw B Axis Rule
-

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Whole Page Print Page 1 Print Page 2 Print Page 3 |
| DEFAULT | Whole Page |

VPA Check

Valid Printable Area Check is used to verify the valid printable area to the host. When set to *On*, position checks are detected when cursor position exceeds printable area as determined by the Margins to System setting above. When set to *Off*, no IPDS position check will be detected. This option only affects the IPDS mode.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Overlay Cache

Overlay Cache is used to improve throughput. When set to *On*, the first transmission of an IPDS overlay from the host is translated to a PCL5 macro and stored within the printer memory for future reference. This eliminates the need of conversion for each occurrence resulting in faster printing. However, use of this option significantly reduces available printer memory.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| FACTORY DEFAULTS | Off |

Margins to Sys

The **Margins to System** option is used to notify the host of the printable area of the printer. When set to *On*, the IPDS printable area will reflect PCL5 printable area. When set to *Off*, IPDS printable area report will match 4028 response.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

3812 Font Suppt

3812 Font Support compatibility is provided entirely from an internal font package that exists in the firmware on the IPDS Font SIMM. 3812 Font Compatibility has been achieved by adding the following fonts to the default internal font set:

| Typeface | Font ID (hex) | Typeface | Font ID (hex) |
|------------------------------|---------------|----------------------|---------------|
| Boldface Italic PS | 155 | Orator 10 Pitch | 5 |
| Courier 5 Pitch | 244 | Orator Bold 10 Pitch | 38 |
| Courier Bold 5 Pitch | 245 | Script 12 Pitch | 84 |
| Courier 17 Pitch (super/sub) | 254 | Serif Text 10 Pitch | 42 |

| Typeface | Font ID (hex) | Typeface | Font ID (hex) |
|------------------------|---------------|-------------------------------|---------------|
| Courier Bold 17 Pitch | 253 | Serif Italic 10 Pitch | 43 |
| Document PS | 175 | Serif Text 12 Pitch | 70 |
| Essay PS | 160 | Serif Italic 12 Pitch | 71 |
| Essay Italic PS | 162 | Serif Bold | 1272 |
| Essay Bold PS | 163 | Serif Text 15 Pitch | 229 |
| Gothic Text 10 Pitch | 40 | Sonoran Serif 8 Point Medium | 751 |
| Gothic Bold 10 Pitch | 39 | Sonoran Serif 10 Point Medium | 1051 |
| Gothic Text 12 Pitch | 66 | Sonoran Serif 10 Point Bold | 1053 |
| Gothic Bold 12 Pitch | 69 | Sonoran Serif 10 Point Italic | 1056 |
| Gothic Italic 12 Pitch | 68 | Sonoran Serif 12 Point Medium | 1351 |
| Gothic Text 13 Pitch | 204 | Sonoran Serif 16 Point Bold | 1653 |
| Gothic Text 15 Pitch | 230 | Sonoran Serif 24 Point Bold | 2103 |
| Gothic Text 27 Pitch | 290 | | |

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Resident Fonts on IPDS Font SIMM

The IPDS Font SIMM installed in FLASH SIMM 2 slot of the controller contains the 32 fonts listed in the following two tables.

| Typeface | FGID | Pitch/CPI | Point Size |
|-----------------------|------|-----------|------------|
| Boldface | 159 | PS | 12 |
| Courier | 011 | 10 | 12 |
| Courier | 085 | 12 | 10 |
| Courier | 223 | 15 | 9 |
| Courier | 254 | 17.1 | 8.5 |
| Courier Bold | 046 | 10 | 12 |
| Courier Italic | 018 | 10 | 12 |
| Courier Italic | 092 | 12 | 10 |
| Letter Gothic | 281 | 20 | 7.5 |
| OCR A | 019 | 10 | 12 |
| OCR B | 003 | 10 | 12 |
| Prestige Pica | 012 | 10 | 12 |
| Prestige | 164 | PS | 12 |
| Prestige | 221 | 15 | 9 |
| Prestige | 256 | 17.1 | 8.5 |
| Prestige Elite | 086 | 12 | 10 |
| Prestige Elite Bold | 111 | 12 | 10 |
| Prestige Elite Italic | 112 | 12 | 10 |

Some host systems may not allow typographic font selection by FGID and point size. For these systems, you should use the alternate FGID to select typographic fonts.

| Typeface | FGID | Alt FGID | Pitch/CPI | Point Size |
|-------------------------|-------------|-----------------|------------------|-------------------|
| Times Roman | 5687 | 760 | Typo | 6 |
| Times Roman | 5687 | 751 | Typo | 8 |
| Times Roman | 5687 | 1051 | Typo | 10 |
| Times Roman | 5687 | 1351 | Typo | 12 |
| Times Roman Bold | 5707 | 1053 | Typo | 10 |
| Times Roman Bold | 5707 | 761 | Typo | 12 |
| Times Roman Bold | 5707 | 762 | Typo | 14 |
| Times Roman Bold | 5707 | 1803 | Typo | 18 |
| Times Roman Bold | 5707 | 2103 | Typo | 24 |
| Times Roman Italic | 5815 | 1056 | Typo | 10 |
| Times Roman Italic | 5815 | 763 | Typo | 12 |
| Times Roman Bold Italic | 5835 | 764 | Typo | 10 |
| Times Roman Bold Italic | 5835 | 765 | Typo | 12 |

Font Best Fit Selection

If a font is requested that is not currently installed in the printer, it performs a font best fit function. The font best fit function searches for and selects a substitute font from only those supported in the requested code page.

Wrong Characters Printing

You may need to change the default code page to 037 if the characters !, ^, [,], or ¢ are not printing correctly when entered from a display.

You may need to change the default code page to version 0 if the characters |, =, ~, x, or © are not printing correctly when entered from a display.

Bar Codes

With the appropriate host software, the IBM Network Interface can produce the following bar codes:

- 3 of 9 code
- MSI
- UPC/CGPC Version A
- UPC/CGPC Version E
- UPC Two-Character Supplemental
- UPC Five-Character Supplemental
- EAN-8
- EAN-13
- 2 of 5 Industrial
- 2 of 5 Matrix
- 2 of 5 Interleaved
- USS-Codabar
- Code 128
- EAN Two-DigitAdd on
- EAN Five-DigitAdd on
- Postal Barcode- POSTNET.

NOTE: 1. Bar codes should only be printed in the recommended print area. If a bar code is placed so that a portion of it is in the unprintable area, a portion of the bar code prints in solid black.

2. POSTNET can be generated using the DDS keyword POSTNET on the AS/400 with OS/400 Version 2, Release 1.

For optimum performance, use a label recommended for bar code applications.



Chapter 3

IBM Network Connectivity in Coax/SCS Environments

In this Chapter . . .

- “About this Chapter” on page 3-2
- “Auto-Switching with the IBM Coax Port” on page 3-2
- “Control Panel MENU Structure” on page 3-3
- “Addition to the INTERFACE Menu” on page 3-5
- “SCS Menu Structure” on page 3-5
- “IBM 3812 Font Support” on page 3-20

About this Chapter

This chapter describes the auto-switching emulation feature of your network interface, the SCS MENU structure for Coax/SCS emulation, and how to use the available options within the sub-menus.

This chapter also discusses Font Substitution and IBM 3812 Font Support.

This chapter is intended for use by Coax/SCS users only.

Auto-Switching with the IBM Coax Port

The printer automatically switches between the parallel, serial and INA ports. When the printer switches to the Coax port on the INA interface, the Coax port will switch back based upon the port activity and the Wait Timeout Menu selection. When the Coax port is not actively receiving data, it will wait until the Wait Timeout has occurred, and if still not receiving data, will return control to the printer. If the port receives data before the timer expires, the port retains control of the printer. It will restart the timer the next time it is not receiving data.

Control Panel MENU Structure

When the IBM network interface is configured for Coax/SCS environments, the printer control panel menu structure is as follows:

| Menu | | | | |
|------|----------------|----------------|----------|------------------|
| | Paper Menu | | | |
| | Interface Menu | | | |
| | | Port | | |
| | | | Parallel | |
| | | | Coax | |
| | | Parallel Setup | | |
| | | Spooling | | |
| | PS Menu | | | |
| | PCL Menu | | | |
| | SCS Menu | | | |
| | | Tray Settings | | |
| | | | Tray 1 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 2 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 3 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 4 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 5 | |

3-4 | IBM Network Connectivity for Intelliprint Laser Printers
Control Panel MENU Structure

| | | | | |
|--|--|------------------|-----------------|------------------|
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Envelope Feeder | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | MBF | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | Code page | | |
| | | LPI | | |
| | | CPI | | |
| | | MPP | | |
| | | MPL | | |
| | | Source Tray | | |
| | | Duplex | | |
| | | Override CP | | |
| | | Override LPI | | |
| | | Override CPI | | |
| | | Override MPP | | |
| | | Override MPL | | |
| | | Override Source | | |
| | | Override Size | | |
| | | Override All | | |
| | | Mono/Dual Case | | |
| | | Auto FF Lcl Copy | | |
| | | Intervent Reqd | | |
| | | Auto NL MPP+1 | | |
| | | Addl NL MPP+1 | | |
| | | FF Data | | |
| | | Buffer Auto NL | | |
| | | Null Suppression | | |
| | | FF Command Pos | | |
| | | Buffer Auto FF | | |
| | | Line Ovrflw Cond | | |
| | | Blank Pages | | |
| | | LF Sent as FF | | |

| | | | | |
|--|--------------|-----------------|--|--|
| | | Suppr Cntl Code | | |
| | | VCS Action | | |
| | | IBM CommFeature | | |
| | | TELAGRAF Supp | | |
| | | OFS Char | | |
| | | VPD Serial No. | | |
| | | VPD Location | | |
| | | Overlay | | |
| | System Menu | | | |
| | Quality Menu | | | |

Addition to the INTERFACE Menu

The following option becomes available in the PORT submenu of the INTERFACE menu when the IBM network interface is configured for Coax/SCS environments.

Coax

The **Coax** option enables you to turn off the coax port on the interface. This selections is often used to permit uninterrupted communication to other ports such as the parallel, serial, or other network option ports..

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

SCS Menu Structure

The SCS Menu selections are defined below in the order that they appear as you scroll through the SCS Menu.

Tray Settings

Tray 1

Tray 2

Tray 3

Tray 4

Tray 5

MBF

ENV

NOTE:

1. The following definitions for Page Format, Auto Orientation, Margin Comp, Left Marg Comp, Top Marg Comp, Horizontal Comp, and Vertical Comp apply equally to Tray 1, Tray 2, Tray 3, Tray 4, Tray 5 and the MBF sub-menu selections within the Tray Settings menu selection.
2. Either the MBF or the ENV menu selection will be available depending on the option installed.

Page Format

When **Auto Orientation** is set to *Off*, the **Page Format** option selects the page format for the currently selected paper source.

NOTE: COR is defined as 70% vertical spacing. If Computer Output Reduction is selected, the printer will rotate the page to landscape orientation, set the top and left margins to 0.5 inches, reduce the vertical spacing 70%, and change the CPI according to the following table:

| | | |
|----------|-----------|----------|
| 10 CPI | prints at | 13.3 CPI |
| 12 CPI | prints at | 15 CPI |
| 15 CPI | prints at | 20 CPI |
| 17.1 CPI | prints at | 27 CPI |
| 20 CPI | prints at | 27 CPI |
| 27 CPI | prints at | 27 CPI |

NOTE: If the host does not specify a CPI, LPI, MPP or MPL value, the current menu value will be used.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | Portrait Landscape COR (Output Reduction) |
| DEFAULT | COR |

Auto Orientation

Auto Orientation selection is based on the print job sent to the printer. If automatic orientation is enabled and the host computer has not specifically selected an orientation, the printer will calculate the size of the page to be printed using maximum print position divided by characters per inch (MPP ÷ CPI) for the width and maximum page length divided by lines per inch (MPL / LPI) for the length. It will use the calculated width and length to determine if the printed page will fit the currently selected paper size. If it fits, and the length is greater than the width, the page will print in portrait orientation; if it fits and the width is greater than the length, the page will print in landscape orientation. If it will not fit in either orientation, the printer will print the job in the selected orientation option for the current paper tray. Portrait, Landscape, or Output Reduction can be selected for each individual paper source.

NOTE: If the host does not specify a CPI, LPI, MPP or MPL value, the current menu value will be used.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Margin Comp

The **Margin Compensation** option activates any selections made in the **Left Margin Comp** and **Top Margin Comp** below.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Left Marg Comp

The **Left Margin Compensation** option sets the physical absolute left-hand printable position on the paper. This option is used to compensate for the difference between IBM mainframe printers and printers supporting HP LaserJet emulations. Selections can be made in increments of 1/1440".

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | from -20000 to 20000 |
| DEFAULT | -120 |

Top Marg Comp

The **Top Margin Compensation** option sets the physical absolute top printable position on the paper. This option is used to compensate for the difference between IBM mainframe printers and printers supporting HP LaserJet emulations. Selections can be made in increments of 1/1440".

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | from -20000 to 20000 |
| DEFAULT | -240 |

Horizontal Comp

The **Horizontal Compression** option enables printing of a larger number of characters on a line than is normally printed. A 10% compression is achieved when enabled. For example, at 15 CPI (Characters Per Inch), Horizontal Compression enables 16.5 characters to fit in the one inch (1") normally allocated for 15 characters. The width of characters remains the same following compression. Only the spacing between characters is reduced.

NOTE: **Horizontal Compression** is available in Portrait and Landscape orientations only. It is not available in COR. It only affects currently selected paper source. **Horizontal Compression** functions independently of **Vertical Compression** defined below.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Vertical Comp

The **Vertical Compression** option enables printing of a larger number of lines on a specific size of paper than is normally printed. For example, with vertical compression enabled in 6 LPI (Lines Per Inch), 66 lines can be compressed to fit within the printable area on Letter size paper. Letter size paper normally accommodates 62 lines within the printable area at 6 LPI. The vertical height of characters remains the same following compression. Only the spacing between lines is reduced.

NOTE: **Vertical Compression** is available in Portrait and Landscape orientations only. It is not available in COR. It only affects currently selected paper source. **Vertical Compression** functions independently of **Horizontal Compression** above.

| | |
|----------------------|--------------------------------------|
| AVAILABLE SELECTIONS | 1 to 100 (percentage of current LPI) |
| DEFAULT | 100 |

Code Page

The Default Code Page option selects the Character Set and Code Page.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | 500 Int'l 5 037 US/Canada 037 Can Bilingual 038 US/ASCII 260 Canada/Fr. 273 Austria/Germ 277 Denmark/Norw 278 Finland/Swed 280 Italy 281 Japan/Eng 284 Spain 285 UK 286 Aust/Ger Alt 287 Den/Nor Alt 288 Fin//Swe Alt 289 Spain Alt 290 Japan 297 France 105 500 Swiss/Fr Ger 274 Belgium 275 Brazil 282 Portugal |
| DEFAULT | 500 Int'l 5 |

LPI

In LU-1 mode the **Lines Per Inch** (LPI) option sets the default LPI setting but may be overridden by the data stream. In DSC/DSE modes this option sets the absolute LPI setting and cannot be overridden by the data stream.

| | |
|----------------------|------------------|
| AVAILABLE SELECTIONS | 3 4 6 8 |
| DEFAULT | 6 |

CPI

In LU-1 mode, the **Characters Per Inch** (CPI) option sets the default value for CPI but may be overridden by the data stream. In DSC/DSE mode, this option sets the absolute CPI setting and cannot be overridden by the data stream.

NOTE: The following CPI values are used when in COR:

| Portrait Landscape (CPI) | Computer Output Reduction (CPI) |
|--------------------------|---------------------------------|
| 10 | 13.3 |
| 12 | 15 |
| 15 | 20 |
| 17.1 | 27 |
| 20 | 27 |
| 27 | 27 |

| | |
|----------------------|------------------------------------|
| AVAILABLE SELECTIONS | 10 12 15 17.1 20 27 |
| DEFAULT | 10 |

MPP

The **Maximum Print Position** (MPP) option sets the value for the default maximum print position. In LU-1 (SCS) mode it may be overridden by the data stream. When powered on, the printer computes available MPP. If this option is set to zero or a value greater than the computed maximum, the printer will use the computed maximum as the default. In DSC/DSE mode this value cannot be overridden.

| | |
|----------------------|---------------------|
| AVAILABLE SELECTIONS | 1 to 999 characters |
| DEFAULT | 132 |

MPL

In LU-1 (SCS) mode the **Maximum Page Length** (MPL) option sets the value for the default maximum page length, but may be overridden by the data stream. When powered on, the printer computes available page length. If the MPL is set to zero or a value greater than the computed maximum, the printer will use the computed maximum as the default. In DSC/DSE mode, this option sets the absolute MPL and cannot be overridden by the data stream.

| | |
|----------------------|---------------------|
| AVAILABLE SELECTIONS | 1 to 999 characters |
| DEFAULT | 64 |

Source Tray

The **Source Tray** option selects the current paper source for the Coax port.

This option always offers all possible choices. If a paper source that is not installed in the printer is selected, the last paper source used by any port will be selected.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Tray 1 Tray 2 Tray 3 Tray 4 Tray 5 MBF ENV |
| DEFAULT | Tray 1 |

Duplex

Duplex refers to the way pages are bound or connected. Selecting the type of duplex binding determines how the printing on the back (even-numbered) pages of a print job is oriented in relation to the printing on the front (odd-numbered) pages.

| | |
|----------------------|--------------------------------|
| AVAILABLE SELECTIONS | Off Long Edge Short Edge |
| DEFAULT | Off |

Override CP

When **Override Code Page** is set to *On*, the printer will override any command from the Host to change the Code Page to one other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override LPI

When **Override Lines Per Inch** is set to *On*, the printer will override any command from the Host to set the LPI value to one other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override CPI

When **Override Characters Per Inch** is set to *On*, the printer will override any command from the Host to set the CPI value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override MPP

When **Override Maximum Print Position** is set to *On*, the printer will override any command from the Host to set the MPP value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override MPL

When **Override Maximum Page Length** is set to *On*, the printer will override any command from the Host to set the MPL value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override Source

When **Override Paper Source** is set to *On*, the printer will override any command from the Host to set the Paper Source value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override Size

When **Override Paper Size** is set to *On*, the printer will override any command from the Host to set the Paper Size value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override All

When **Override All** is set to *On*, the printer will override any command from the Host that would change the value of **CPI**, **LPI**, **MPP**, **MPL**, **Code Page**, **Paper Source** and **Paper Size** to one other than the current menu value. When this option is set to *Off*, the other overrides give the user individual control of each override function.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Mono/Dual Case

The **Mono Case/Dual Case** option enables the printer to print in upper and lower case when set to *Dual Case*, or in just upper case when set to *Mono Case*.

NOTE: This option is valid for DSC/DSE modes only, LU-1 always prints dual case.

| | |
|----------------------|------------------------|
| AVAILABLE SELECTIONS | Dual Case Mono Case |
| DEFAULT | Dual Case |

Auto FF Lcl Copy

The **Auto Form Feed After Local Copy** option causes the printer to execute a Form Feed after the print buffer is completed in an Operator Initiated Local Copy print job. The printer ejects the page and is set to print at column 1, line 1 of the next page. This option overrides **Form Feed at End of Buffer** to allow the printer to maintain compatibility with application programs designed for earlier printers.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

FF Before L. Cpy

The **Form Feed Before Local Copy** option causes the printer to execute a Form Feed before the print buffer is completed in an Operator Initiated Local Copy print job.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Intervent Reqd

Under certain **Intervention Required** (error) conditions (Paper Out, Cover Open, Offline, etc.) the printer will start a timeout. If the condition is not removed within the timeout period, the printer sends an Intervention Required message to the host computer. If set to *Off*, the Intervention Required option will suppress the sending of Intervention Required.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Auto NL MPP+1

If **Auto New Line at MPP + 1** is set to *Col 1 Next Line* and a Carriage Return is executed at MPP + 1, a new line will also be executed. The next print position will be on the next line, column 1. If set to *Col 1 Curr Line* and a Carriage Return is executed at MPP + 1, there will be no new line executed, and the next print position will be on the current line, column 1.

| | |
|----------------------|------------------------------------|
| AVAILABLE SELECTIONS | Col 1 Next Line Col 1 Curr Line |
| DEFAULT | Col 1 Next Line |

Addl NL MPP+1

If **Additional New Line at MPP + 1** is set to *Curr + 2 Lines* and a New Line is executed at MPP + 1, an additional new line is executed automatically. The next print position will be in column 1 and down 2 lines. If set to *Next Line*, no additional new line is executed at MPP + 1 and the next print position will be on column 1 of the next line.

| | |
|----------------------|-----------------------------|
| AVAILABLE SELECTIONS | Curr + 2 Lines Next Line |
| DEFAULT | Curr + 2 Lines |

FF Data

When printing in LU-3 mode, the **Form Feed Followed by Data** sequence is used to select the action taken if a form feed is received by the printer and it is not the last character in the IBM print buffer. When set to *Line 1 Col 2*, the current print position after the form feed will be the second position on line one of the next form. If set to *Line 1 Col 1*, the current print position will be the first print position on line one of the next form.

| | |
|----------------------|------------------------------|
| AVAILABLE SELECTIONS | Line 1 Col 1 Line 1 Col 2 |
| DEFAULT | Line 1 Col 1 |

Buffer Auto NL

When printing in LU-3 mode, the Buffer End Auto New Line command is used to select the action taken if a form feed is received by the printer and it is the last character in the IBM print buffer. When set to *Ln2 Next Form*, the current print position after the form feed will be the first position on line two of the next form. If set to *Ln1 Next Form*, the current print position will be the first print position on line one of the next form.

| | |
|----------------------|----------------------------------|
| AVAILABLE SELECTIONS | Ln 2 Next Form Ln 1 Next Form |
| DEFAULT | Ln 1 Next Form |

Null Suppression

If **Null Suppression** is activated, and if Printer Control Information Area (PCIA) byte 0017 has bit 7 set to true, indicating formatted print (ignore NL, EM, CR and print spaces instead), then all lines consisting entirely of nonprintable characters (nulls, attributes, and nondisplay or nonprint fields) will be suppressed and not printed. Menu selections enable Null Suppression activation in Local Copy and/or Non-SCS modes. If Null Suppression is set to *Disabled*, all lines consisting of nonprintable characters (nulls, attributes, and nondisplay or nonprint fields) will be printed as blank lines and a New Line executed at the end of the line. The next print position after such a line will be on the next line, column 1.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | L Cpy+Non-SCS Non-SCS Only Local Copy Only Disabled |
| DEFAULT | L Cpy+Non-SCS |

FF Command Pos

FF (Form Feed) commands may be executed anywhere or treated as blanks if they do not occur at MPP + 1 (current print position [CPP] = 1), the first print position of a line (column 1).

| | |
|----------------------|----------------------------------|
| AVAILABLE SELECTIONS | CPP=1 or MPP+1 Allow Anywhere |
| DEFAULT | CPP=1 or MPP+1 |

Buffer Auto FF

When printing in LU-3 mode, the **Buffer End Auto Form Feed** option is used to specify what action will be taken when the printing of an IBM print buffer is completed. If set to *Form Feed*, the printer will automatically execute a form feed at the end of the print buffer or a local copy unless the last character received was already a form feed. If set to *Newline*, and the last character is not a form feed, new line, or carriage return, a new line will automatically be executed.

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | Newline Form Feed |
| DEFAULT | Newline |

Line Ovrflw Cond

The **Line Overflow Condition** option is used to enable lines longer than the printed line to wrap overflow data onto the next line. However, wrapped data to the next line will not increase the MPL calculation by 1.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Blank Pages

While in DSC/DSE or LU-1 (SCS) mode, the **Blank Pages** option enables suppression of all Form Feeds received from the host when the print buffer doesn't contain a printable character.

| | |
|----------------------|-----------------------|
| AVAILABLE SELECTIONS | Print Do Not Print |
| DEFAULT | Do Not Print |

LF Sent As FF

When set to *On*, **Line Feed Sent as Form Feed** will eject a page by sending a Form Feed.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Suppr Cntl Code

When set to *On*, **Suppress Control Code** will suppress control codes generated by the IBM host.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

VCS Action

VCS (Vertical Channel Select) Action is used to select the VCS emulation.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | 3287 3268/4214 Non-SCS 3268 Non-SCS 3287 |
| DEFAULT | 3268/4214 |

IBM Comm Feature

The **IBM Communication Feature** option enables or disables the Extended Attribute Buffer and enables or disables the Query Reply.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | No Query But EAB Query and EAB No Query/No EAB |
| DEFAULT | Query and EAB |

TEL-A-GRAF Supp

The **TEL-A-GRAF Support** option is used to determine how the interface will send hex data to the printer. When the interface finds an OFS character in the datastream followed by a hexadecimal value, and the hex value matches the ID# of a User Defined ESC String (OFS Command 90, "[Chapter 7 Problem Solving](#)"), it will send the User Defined ESC String. If no matching User ESC ID# is found, and Tele-A-Graf Support is *On*, the interface will send the number of hex characters to the printer equal to the decimal value of the hex character. If it is *Off*, the printer will send only the hex value following the OFS character to the printer.

Examples: OFS character = #

Following string was used to store "test" as a User ESC string with ID=0A

#Y90,0A,'test'#spaces are used for ease of reading and are not required

Case 1: Matching User ID#

0A 1234 send user ESC ID#0A to the printer and the 1234 characters. (test 1234)

Case 2: No Matching User ID# and Tel-A-Graf mode is On

05 1B 26 6C 31 4F send the following five hex bytes: 1B 26 6C 31 4F

Case 3: No Matching User ID# and Tel-A-Graf mode is Off

#0C 1234 send 0x0C to the printer (ASCII FF) and 1 2 3 4

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

OFS Char

The **OFS (Online Feature Selection) Lead In-Character** option enables changing of the Lead-In Character of an OFS character string. OFS Characters can also be embedded in the data stream, see "[Chapter 7 Problem Solving](#)".

NOTE: 00 will disable the OFS Character.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | 0 to 255 (any user-defined lead-in character) |
| DEFAULT | 0 |

VPD Serial No

The **VPD Serial Number** option is a 5 digit number entered by the user to uniquely identify the printer. The communications buffer is loaded at the following addresses with the VPD (Vital Product Data). After the controller receives a POR (Power On Reset) response from the printer it reads this area as required by the host. The controller then clears the buffer. The VPD is loaded prior to any sequence that requires a POR response to the controller.

| Address (hex) | Function | Values (hex) | Description |
|---------------|------------------------|--|---|
| 0060 to 0053 | Device Type | F4 F0 F2 F8 | Same as the IBM 4028 (emulation type). |
| 0054 | Device Characteristics | 11 | IBM Hardware Type. |
| 0055 to 0057 | Model Number | D5 E2 F0 | Model Number in EBCDIC. |
| 0058 to 0059 | Location | F0 F0 (value is not set by user) | This is a two digit value changeable by user to identify a location (see below). |
| 005A to 005B | Reserved | F0 F0 | Not Used |
| 005C to 0060 | Serial Number | F0 F0 F0 F0 F0 (Value not set by user) | Five digit serial number set by user to identify this device at a location (see below). |

| Address (hex) | Function | Values (hex) | Description |
|---------------|-----------|---|------------------------------|
| 0061 to 0063 | PGM Level | f) F1 E4 | Corresponding IBM PGM Level. |
| 0064 to 0073 | EC Level | F0 F0 F0 F0 F0 F0 F0 F0 F0 F0 F5 F3 F2 F1 F0 F4 | Corresponding IBM EC Level. |

Two menu options allow the user to set a unique user determined serial number (VPD Serial) and a unique location (VPD Location) for each printer. These values will be posted to the communications buffer prior to the printer sending a POR (Power On Reset) response to the controller.

This value can only be changed by using this menu. It will not be reset to zero by a Reset to factory defaults.

| | |
|----------------------|------------|
| AVAILABLE SELECTIONS | 0 to 32767 |
| DEFAULT | 0 |

VPD Location

The **VPD Location** selection is a 2 digit number entered by you to uniquely identify the location of this printer or a unique group of printers.

This value can only be changed by using this menu. It will not be reset to zero by a reset to factory defaults.

| | |
|----------------------|---------|
| AVAILABLE SELECTIONS | 0 to 99 |
| DEFAULT | 0 |

Overlay

The **Overlay** option enables merging of application data with a PCL macro stored in the printer's FLASH memory. The overlay is enabled by setting the menu value to the macro ID number (1 to 32767) of the PCL macro previously loaded to FLASH. The selected overlay will remain in effect until changed to another macro ID number, or 0 (zero). Zero is used to disable the Overlay selection.

NOTE: A PCL macro loaded to RAM will override a PCL macro stored in FLASH with the same ID number.

| | |
|----------------------|------------|
| AVAILABLE SELECTIONS | 0 to 32767 |
| DEFAULT | 0 |

IBM 3812 Font Support

The IBM Network Option provides font support via pre-programmed and user-programmable font selection strings. The factory default strings in the firmware have been expanded such that, by default, the Network Option will support the following IBM 3812 fonts:

| Typeface | Font ID (hex) |
|-----------------------------|---------------|
| Courier 5 Pitch | 244 |
| Courier Bold 5 Pitch | 18 |
| Courier 10 Pitch | 245 |
| Courier Italic 10 Pitch | 11 |
| Courier Bold 10 Pitch | 46 |
| Courier 12 Pitch | 85 |
| Courier 15 Pitch | 223 |
| Courier 17 Pitch | 252 |
| Courier Bold 17 Pitch | 253 |
| Gothic Bold 10 Pitch | 39 |
| Gothic Text 10 Pitch | 40 |
| Gothic Text 12 Pitch | 66 |
| Gothic Italic 12 Pitch | 68 |
| Gothic Bold 12 Pitch | 69 |
| Letter Gothic 12 Pitch | 87 |
| Letter Gothic Bold 12 Pitch | 110 |
| Gothic Text 13 Pitch | 204 |
| Gothic Text 15 Pitch | 230 |
| Gothic Text 20 Pitch | 281 |
| Gothic Text 27 Pitch | 290 |
| Modern PS | 158 |
| Boldface PS | 159 |
| Boldface Italic PS | 155 |
| Essay PS | 160 |
| Essay Italic PS | 162 |
| Essay Bold PS | 163 |



Chapter 4

IBM Network Connectivity in Twinax/SCS Environments

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- “TWINAX SETUP Menu” on page 4-5
- “SCS Menu Structure” on page 4-5
- “IBM 3812 Font Support” on page 4-15

About this Chapter

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for Twinax/SCS emulation, and how to use the available options within the sub-menus. Twinax systems supported and related publications are also discussed in this chapter.

This chapter is intended for use by Twinax/SCS users only.

Auto-Switching with the IBM Twinax Port

The printer automatically switches between the parallel, serial and IBM network interface ports. When the printer switches to the Twinax port on the IBM network interface, the Twinax port will switch back based upon the port activity and the Wait Timeout menu setting. When the Twinax port is not actively receiving data, it will wait until the Wait Timeout setting has occurred, and if still not receiving data, will return control to the printer. If the port receives data before the timer expires, the port retains control of the printer. It will restart the timer the next time it is not receiving data.

Control Panel MENU Structure

When the IBM network interface is configured for Coax/SCS environments, the printer control panel menu structure is as follows:

| Menu | | | | |
|------|----------------|----------------|----------|------------------|
| | Paper Menu | | | |
| | Interface Menu | | | |
| | | Port | | |
| | | | Parallel | |
| | | | Twinax | |
| | | Parallel Setup | | |
| | | Spooling | | |
| | PS Menu | | | |
| | PCL Menu | | | |
| | SCS Menu | | | |
| | | Tray Settings | | |
| | | | Tray 1 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 2 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 3 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 4 | |
| | | | | Page Format |
| | | | | Auto Orientation |
| | | | | Margin Comp |
| | | | | Left Marg Comp |
| | | | | Top Marg Comp |
| | | | | Horizontal Comp |
| | | | | Vertical Comp |
| | | | Tray 5 | |
| | | | | Page Format |
| | | | | Auto Orientation |

4-4 | IBM Network Connectivity for Intelliprint Laser Printers
Addition to the INTERFACE Menu

| | | | | | |
|--|--------------|-----------------|-----------------|------------------|--|
| | | | | Margin Comp | |
| | | | | Left Marg Comp | |
| | | | | Top Marg Comp | |
| | | | | Horizontal Comp | |
| | | | | Vertical Comp | |
| | | | Envelope Feeder | | |
| | | | | Page Format | |
| | | | | Auto Orientation | |
| | | | | Margin Comp | |
| | | | | Left Marg Comp | |
| | | | | Top Marg Comp | |
| | | | | Horizontal Comp | |
| | | | | Vertical Comp | |
| | | | MBF | | |
| | | | | Page Format | |
| | | | | Auto Orientation | |
| | | | | Margin Comp | |
| | | | | Left Marg Comp | |
| | | | | Top Marg Comp | |
| | | | | Horizontal Comp | |
| | | | | Vertical Comp | |
| | | Emulation | | | |
| | | Code Page | | | |
| | | LPI | | | |
| | | CPI | | | |
| | | MPP | | | |
| | | MPL | | | |
| | | Source Tray | | | |
| | | Duplex | | | |
| | | Override CP | | | |
| | | Override LPI | | | |
| | | Override CPI | | | |
| | | Override MPP | | | |
| | | Override MPL | | | |
| | | Override Source | | | |
| | | Override Size | | | |
| | | Override All | | | |
| | | COR Vert Scale | | | |
| | | Ext Pass Thru | | | |
| | | OFS Char | | | |
| | | Overlay | | | |
| | System Menu | | | | |
| | Quality Menu | | | | |

Addition to the INTERFACE Menu

The following option becomes available in the PORT submenu of the INTERFACE menu when the IBM network interface is configured for Twinax/SCS environments.

Twinax

The **Twinax** option enables you to turn off the twinax port on the interface. This selection is often used to permit uninterrupted communication to other ports such as the parallel, serial, or other network option ports..

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

TWINAX SETUP Menu

The TWINAX SETUP menu is a submenu of the INTERFACE menu and allows selection of the station address:

Station Address

The Station Address option selects the station address used to communicate with the host computer.

| | |
|----------------------|-------------|
| AVAILABLE SELECTIONS | 0 through 6 |
| DEFAULT | 0 |

SCS Menu Structure

The SCS Menu selections are defined below in the order that they appear as you scroll through the SCS Menu.

Tray Settings

Tray 1

Tray 2

Tray 3

Tray 4

Tray 5

MBF

ENV

-
- NOTE:**
1. The following definitions for Page Format, Auto Orientation, Margin Comp, Left Marg Comp, Top Marg Comp, Horizontal Comp, and Vertical Comp apply equally to Tray 1, Tray 2, Tray 3, Tray 4, Tray 5 and the MBF sub-menu selections within the Tray Settings menu selection.
 2. Either the MBF or the ENV menu selection will be available depending on the option installed.
-

Page Format

When **Auto Orientation** is set to *Off*, the **Page Format** option selects the page format for the currently selected paper source.

NOTE: COR is defined as 70% vertical spacing. If Computer Output Reduction is selected, the printer will rotate the page to landscape orientation, set the top and left margins to 0.5 inches, reduce the vertical spacing 70%, and change the CPI according to the following table:

| | | |
|----------|-----------|----------|
| 10 CPI | prints at | 13.3 CPI |
| 12 CPI | prints at | 15 CPI |
| 15 CPI | prints at | 20 CPI |
| 17.1 CPI | prints at | 27 CPI |
| 20 CPI | prints at | 27 CPI |
| 27 CPI | prints at | 27 CPI |

NOTE: If the host does not specify a CPI, LPI, MPP or MPL value, the current menu value will be used.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | Portrait Landscape COR (Output Reduction) |
| DEFAULT | COR |

Auto Orientation

Auto Orientation selection is based on the print job sent to the printer. If automatic orientation is enabled and the host computer has not specifically selected an orientation, the printer will calculate the size of the page to be printed using maximum print position divided by characters per inch (MPP ÷ CPI) for the width and maximum page length divided by lines per inch (MPL / LPI) for the length. It will use the calculated width and length to determine if the printed page will fit the currently selected paper size. If it fits, and the length is greater than the width, the page will print in portrait orientation; if it fits and the width is greater than the length, the page will print in landscape orientation. If it will not fit in either orientation, the printer will print the job in the selected orientation option for the current paper tray. Portrait, Landscape, or Output Reduction can be selected for each individual paper source.

NOTE: If the host does not specify a CPI, LPI, MPP or MPL value, the current menu value will be used.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Margin Comp

The **Margin Compensation** option activates any selections made in the **Left Margin Comp** and **Top Margin Comp** below.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Left Marg Comp

The **Left Margin Compensation** option sets the physical absolute left-hand printable position on the paper. This option is used to compensate for the difference between IBM mainframe printers and printers supporting HP LaserJet emulations. Selections can be made in increments of 1/1440".

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | from -20000 to 20000 |
| DEFAULT | -120 |

Top Marg Comp

The **Top Margin Compensation** option sets the physical absolute top printable position on the paper. This option is used to compensate for the difference between IBM mainframe printers and printers supporting HP LaserJet emulations. Selections can be made in increments of 1/1440".

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | from -20000 to 20000 |
| DEFAULT | -240 |

Horizontal Comp

The **Horizontal Compression** option enables printing of a larger number of characters on a line than is normally printed. A 10% compression is achieved when enabled. For example, at 15 CPI (Characters Per Inch), Horizontal Compression enables 16.5 characters to fit in the one inch (1") normally allocated for 15 characters. The width of characters remains the same following compression. Only the spacing between characters is reduced.

NOTE: **Horizontal Compression** is available in Portrait and Landscape orientations only. It is not available in COR. It only affects currently selected paper source. **Horizontal Compression** functions independently of **Vertical Compression** defined below.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Vertical Comp

The **Vertical Compression** option enables printing of a larger number of lines on a specific size of paper than is normally printed. For example, with vertical compression enabled in 6 LPI (Lines Per Inch), 66 lines can be compressed to fit within the printable area on Letter size paper. Letter size paper normally accommodates 62 lines within the printable area at 6 LPI. The vertical height of characters remains the same following compression. Only the spacing between lines is reduced.

NOTE: **Vertical Compression** is available in Portrait and Landscape orientations only. It is not available in COR. It only affects currently selected paper source. **Vertical Compression** functions independently of **Horizontal Compression** above.

| | |
|----------------------|--------------------------------------|
| AVAILABLE SELECTIONS | 1 to 100 (percentage of current LPI) |
| DEFAULT | 100 |

Emulation

The **Emulation** option sets the current Twinax/SCS emulation for the IBM network interface.

| | |
|----------------------|----------------------|
| AVAILABLE SELECTIONS | 5256 5224 5219 |
| DEFAULT | 5219 |

Code Page

The Default Code Page option selects the Character Set and Code Page.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | 500 Int'l 5 037 US/Canada 037 Can Bilingual 038 US/ASCII 260 Canada/Fr. 273 Austria/Germ 277 Denmark/Norw 278 Finland/Swed 280 Italy 281 Japan/Eng 284 Spain 285 UK 286 Aust/Ger Alt 287 Den/Nor Alt 288 Fin//Swe Alt 289 Spain Alt 290 Japan 297 France 105 500 Swiss/Fr Ger 274 Belgium 275 Brazil 282 Portugal |
| DEFAULT | 500 Int'l 5 |

LPI

In LU-1 mode the **Lines Per Inch** (LPI) option sets the default LPI setting but may be overridden by the data stream. In DSC/DSE modes this option sets the absolute LPI setting and cannot be overridden by the data stream.

| | |
|----------------------|------------------|
| AVAILABLE SELECTIONS | 3 4 6 8 |
| DEFAULT | 6 |

CPI

In LU-1 mode, the **Characters Per Inch** (CPI) option sets the default value for CPI but may be overridden by the data stream. In DSC/DSE mode, this option sets the absolute CPI setting and cannot be overridden by the data stream.

NOTE: The following CPI values are used when in COR:

| Portrait Landscape (CPI) | Computer Output Reduction (CPI) |
|--------------------------|---------------------------------|
| 10 | 13.3 |
| 12 | 15 |
| 15 | 20 |
| 17.1 | 27 |
| 20 | 27 |
| 27 | 27 |

| | |
|----------------------|------------------------------------|
| AVAILABLE SELECTIONS | 10 12 15 17.1 20 27 |
| DEFAULT | 10 |

MPP

The **Maximum Print Position** (MPP) option sets the value for the default maximum print position. In LU-1 (SCS) mode it may be overridden by the data stream. When powered on, the printer computes available MPP. If this option is set to zero or a value greater than the computed maximum, the printer will use the computed maximum as the default. In DSC/DSE mode this value cannot be overridden.

| | |
|----------------------|---------------------|
| AVAILABLE SELECTIONS | 1 to 999 characters |
| DEFAULT | 132 |

MPL

In LU-1 (SCS) mode the **Maximum Page Length** (MPL) option sets the value for the default maximum page length, but may be overridden by the data stream. When powered on, the printer computes available page length. If the MPL is set to zero or a value greater than the computed maximum, the printer will use the computed maximum as the default. In DSC/DSE mode, this option sets the absolute MPL and cannot be overridden by the data stream.

| | |
|----------------------|---------------------|
| AVAILABLE SELECTIONS | 1 to 999 characters |
| DEFAULT | 64 |

Source Tray

The **Source Tray** option selects the current paper source for the twinax port. This option always offers all possible choices. If a paper source that is not installed in the printer is selected, the last paper source used by any port will be selected.

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Tray 1 Tray 2 Tray 3 Tray 4 Tray 5 MBF ENV |
| DEFAULT | Tray 1 |

Duplex

Duplex refers to the way pages are bound or connected. Selecting the type of duplex binding determines how the printing on the back (even-numbered) pages of a print job is oriented in relation to the printing on the front (odd-numbered) pages.

| | |
|----------------------|--------------------------------|
| AVAILABLE SELECTIONS | Off Long Edge Short Edge |
| DEFAULT | Off |

Override CP

When **Override Code Page** is set to *On*, the printer will override any command from the Host to change the Code Page to one other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override LPI

When **Override Lines Per Inch** is set to *On*, the printer will override any command from the Host to set the LPI value to one other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override CPI

When **Override Characters Per Inch** is set to *On*, the printer will override any command from the Host to set the CPI value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override MPP

When **Override Maximum Print Position** is set to *On*, the printer will override any command from the Host to set the MPP value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override MPL

When **Override Maximum Page Length** is set to *On*, the printer will override any command from the Host to set the MPL value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override Source

When **Override Paper Source** is set to *On*, the printer will override any command from the Host to set the Paper Source value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override Size

When **Override Paper Size** is set to *On*, the printer will override any command from the Host to set the Paper Size value to other than the current menu value. This option has no effect if **Override All** is set to *On*.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Override All

When **Override All** is set to *On*, the printer will override any command from the Host that would change the value of **CPI**, **LPI**, **MPP**, **MPL**, **Code Page**, **Paper Source** and **Paper Size** to one other than the current menu value. When this option is set to *Off*, the other overrides give the user individual control of each override function.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

COR Vert Scale

The **COR Vertical Scale** option modifies the amount of reduction while printing in COR mode. Normally in COR mode, the total length of the page is reduced to 70% of the original size. This option allows you to change this value. For example, if this option was set to 60, the total length of the image printed on the page will be reduced to 60 percent of its original size. If 66 lines fit in 11 inches when not in COR mode, they would be reduced to fit in 6.6 inches when in COR mode (60% of 11 inches = 6.6 inches)

| | |
|----------------------|--------------------|
| AVAILABLE SELECTIONS | 60 to 69 (percent) |
| DEFAULT | 69 |

Ext Pass Thru

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

OFS Char

The **OFS (Online Feature Selection) Lead In-Character** option enables changing of the Lead-In Character of an OFS character string. OFS Characters can also be embedded in the data stream, see "[Chapter 7 Problem Solving](#)".

NOTE: 00 will disable the OFS Character.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | 0 to 255 (any user-defined lead-in character) |
| DEFAULT | 0 |

Overlay

The **Overlay** option enables merging of application data with a PCL macro stored in the printer's FLASH memory. The overlay is enabled by setting the menu value to the macro ID number (1 to 32767) of the PCL macro previously loaded to FLASH. The selected overlay will remain in effect until changed to another macro ID number, or 0 (zero). Zero is used to disable the Overlay selection.

NOTE: A PCL macro loaded to RAM will override a PCL macro stored in FLASH with the same ID number.

| | |
|----------------------|------------|
| AVAILABLE SELECTIONS | 0 to 32767 |
| DEFAULT | 0 |

IBM 3812 Font Support

The Network Option provides font support via pre-programmed and user-programmable font selection strings. The factory default strings in the firmware have been expanded such that, by default, the Network Option will support the following IBM 3812 fonts:

| Typeface | Font ID (hex) |
|-----------------------------|---------------|
| Courier 5 Pitch | 244 |
| Courier Bold 5 Pitch | 18 |
| Courier 10 Pitch | 245 |
| Courier Italic 10 Pitch | 11 |
| Courier Bold 10 Pitch | 46 |
| Courier 12 Pitch | 85 |
| Courier 15 Pitch | 223 |
| Courier 17 Pitch | 252 |
| Courier Bold 17 Pitch | 253 |
| Gothic Bold 10 Pitch | 39 |
| Gothic Text 10 Pitch | 40 |
| Gothic Text 12 Pitch | 66 |
| Gothic Italic 12 Pitch | 68 |
| Gothic Bold 12 Pitch | 69 |
| Letter Gothic 12 Pitch | 87 |
| Letter Gothic Bold 12 Pitch | 110 |
| Gothic Text 13 Pitch | 204 |
| Gothic Text 15 Pitch | 230 |
| Gothic Text 20 Pitch | 281 |
| Gothic Text 27 Pitch | 290 |
| Modern PS | 158 |
| Boldface PS | 159 |
| Boldface Italic PS | 155 |
| Essay PS | 160 |
| Essay Italic PS | 162 |
| Essay Bold PS | 163 |



Chapter 5

IBM Network Connectivity in LAN/IPDS Environments

In this Chapter . . .

- “About this Chapter” on page 5-2
- “Auto-Switching with the Ethernet Interface” on page 5-2
- “Control Panel MENU Structure” on page 5-3
- “IPDS MENU Structure” on page 5-3
- “Resident Fonts on IPDS Font SIMM” on page 5-7
- “Font Best Fit Selection” on page 5-8
- “Font Best Fit Selection” on page 5-8
- “Wrong Characters Printing” on page 5-8
- “Bar Codes” on page 5-9

About this Chapter

This chapter describes the auto-switching emulation feature of your printer, additions to the control panel menu structure for LAN/IPDS emulation, and how to use the available options within the sub-menus.

This chapter is intended for use by LAN/IPDS users only.

Auto-Switching with the Ethernet Interface

NOTE: Port 5001 traffic is processed as IPDS data. Port 9100 traffic is assumed to be a normal PCL or PostScript datastream.

The printer automatically switches between the parallel, serial and network interface ports. When the printer switches to the ethernet interface, the port will switch back based upon the port activity and the Wait Timeout Menu setting. When the port is not actively receiving data, it will wait until the Wait Timeout has occurred, and if still not receiving data, will return control to the printer. If the port receives data before the timer expires, the port retains control of the printer. It will restart the timer the next time it is not receiving data.

Control Panel MENU Structure

When configured for LAN/IPDS environments, the printer control panel menu structure is supplemented with an IPDS MENU as shown in the highlighted selection below.

| Menu | | |
|------|----------------|-----------------|
| | Paper Menu | |
| | Interface Menu | |
| | PS Menu | |
| | PCL Menu | |
| | IPDS Menu | |
| | | Code Page |
| | | CP Version |
| | | Page Format |
| | | VPA Check |
| | | Overlay Cache |
| | | Margins to Sys |
| | | 3812 Font Supp. |
| | System Menu | |
| | Quality Menu | |

IPDS MENU Structure

The IPDS MENU is a submenu of the MENU Mode and allows configuration of the following options:

Code Page

The default **Code Page** (CPGID) options allows you to select the default code page. This is the code page used by the printer when the host requests the default.

| | |
|----------------------|---|
| AVAILABLE SELECTIONS | 500 INTL 5 037 US/CANADA 038 ASCII 256 INTL 1 260 CANADA FR 273 AUST/GR 274 BELGIUM 277 DEN/NOR 278 FIN/SWE 280 ITALY 281 JAPAN 284 SPAIN 285 UK 286 AUS/GR ALT 287 DEN/NR ALT 288 FIN/SW ALT 289 PAIN ALT 297 FRANCE 424 HEBREW 871 ICELAND |
| DEFAULT | 500 INTL 5 |

CP Version

Some of the code pages available for the printer are in two versions. The Code Page Version option allows you to select the version that best fits the application. If characters such as f , $=$, \div , x , or \copyright do not print properly, try the other code page version.

| | |
|----------------------|------------------------|
| AVAILABLE SELECTIONS | Version 0 Version 1 |
| DEFAULT | Version 1 |

Page Format

Four IPDS page formats are available:

- IPDS Whole Page
- IPDS Print Page (PRINT PAGE 1)
- IPDS Print Page Format with Compressed Line Spacing (PRINT PAGE 2)
- IPDS Print Page Format with Compressed Line Spacing and Text Cursor Movement (PRINT PAGE 3)

Your selection of a page format affects how data is positioned on the page. When using the factory default — whole page format — the printer starts positioning text from the top left edge of the paper. In print page format, printing starts from the inside edge of the left unprintable area and the lower edge of the top unprintable area. This option *only affects the IPDS mode*.

In WHOLE PAGE format, any characters positioned in the unprintable area will result in missing characters or missing lines of text. In print page format, data may be lost on the right and bottom edges of the page. In either format, any data placed in the unprintable area does not print.

PRINT PAGE 1 format does not allow more data to be placed in the printable area, but it moves the data down and to the right on the page. This function is used when your application has not moved data out of the unprintable area by using suitable margins.

When you select PRINT PAGE 2, the space between lines generated by Begin Line IPDS commands is reduced.

When you select PRINT PAGE 3, the space between lines generated by Begin Line and vertical text cursor positioning IPDS commands is reduced.

For either value, the printer reduces space between lines to allow more lines to print in the printable area. For example, if the printer is set for 6 LPI, 66 lines are printed in the printable area of an 8-1/2 x 11 inch page. If the printer is set for 8 LPI, 88 lines are printed in the printable area of an 8-1/2 x 11 inch page.

- NOTE:**
1. Compressed line spacing has the least impact on software applications. If your application uses only Begin Line commands to move between lines, you should select compressed line spacing. If you want to reduce all text cursor moves, select compressed line spacing with text cursor movement.
 2. You may experience alignment problems printing jobs that mix text with images, graphics, or bar codes. Problems arise when text positioning commands are used to move across text or into non-text (image, graphic, or bar code) areas. Both choices reduce the line spacing of text only and have no effect on non-text data. To minimize this problem, select compressed line spacing, because Begin Line commands are not normally used to move across or into non-text areas. If the application you want to compress does not use Begin Line commands, however, you should select compressed line spacing with text cursor movement.
 3. For compressed line spacing with text cursor movement (PRINT PAGE 3), the following IPDS vertical text positioning commands are affected:
 - Absolute Move Baseline
 - Relative Move Baseline
 - Temporary Move Baseline
 - Draw B Axis Rule

| | |
|----------------------|--|
| AVAILABLE SELECTIONS | Whole Page Print Page 1 Print Page 2 Print Page 3 |
| DEFAULT | Whole Page |

VPA Check

Valid Printable Area Check is used to verify the valid printable area to the host. When set to *On*, position checks are detected when cursor position exceeds printable area as determined by the Margins to System setting above. When set to *Off*, no IPDS position check will be detected. This option only affects the IPDS mode.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | On |

Overlay Cache

Overlay Cache is used to improve throughput. When set to *On*, the first transmission of an IPDS overlay from the host is translated to a PCL5 macro and stored within the printer memory for future reference. This eliminates the need of conversion for each occurrence resulting in faster printing. However, use of this option significantly reduces available printer memory.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| FACTORY DEFAULTS | Off |

Margins to Sys

The **Margins to System** option is used to notify the host of the printable area of the printer. When set to *On*, the IPDS printable area will reflect PCL5 printable area. When set to *Off*, IPDS printable area report will match 4028 response.

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

3812 Font Suppt

3812 Font Support compatibility is provided entirely from an internal font package that exists in the firmware on the IPDS Font SIMM. 3812 Font Compatibility has been achieved by adding the following fonts to the default internal font set:

| Typeface | Font ID (hex) | Typeface | Font ID (hex) |
|------------------------------|---------------|-------------------------------|---------------|
| Boldface Italic PS | 155 | Orator 10 Pitch | 5 |
| Courier 5 Pitch | 244 | Orator Bold 10 Pitch | 38 |
| Courier Bold 5 Pitch | 245 | Script 12 Pitch | 84 |
| Courier 17 Pitch (super/sub) | 254 | Serif Text 10 Pitch | 42 |
| Courier Bold 17 Pitch | 253 | Serif Italic 10 Pitch | 43 |
| Document PS | 175 | Serif Text 12 Pitch | 70 |
| Essay PS | 160 | Serif Italic 12 Pitch | 71 |
| Essay Italic PS | 162 | Serif Bold | 1272 |
| Essay Bold PS | 163 | Serif Text 15 Pitch | 229 |
| Gothic Text 10 Pitch | 40 | Sonoran Serif 8 Point Medium | 751 |
| Gothic Bold 10 Pitch | 39 | Sonoran Serif 10 Point Medium | 1051 |
| Gothic Text 12 Pitch | 66 | Sonoran Serif 10 Point Bold | 1053 |
| Gothic Bold 12 Pitch | 69 | Sonoran Serif 10 Point Italic | 1056 |
| Gothic Italic 12 Pitch | 68 | Sonoran Serif 12 Point Medium | 1351 |
| Gothic Text 13 Pitch | 204 | Sonoran Serif 16 Point Bold | 1653 |
| Gothic Text 15 Pitch | 230 | Sonoran Serif 24 Point Bold | 2103 |
| Gothic Text 27 Pitch | 290 | | |

| | |
|----------------------|-----------|
| AVAILABLE SELECTIONS | On Off |
| DEFAULT | Off |

Resident Fonts on IPDS Font SIMM

The IPDS Font SIMM installed in FLASH SIMM 2 slot of the controller contains the 32 fonts listed in the following two tables.

| Typeface | FGID | Pitch/CPI | Point Size |
|-----------------------|------|-----------|------------|
| Boldface | 159 | PS | 12 |
| Courier | 011 | 10 | 12 |
| Courier | 085 | 12 | 10 |
| Courier | 223 | 15 | 9 |
| Courier | 254 | 17.1 | 8.5 |
| Courier Bold | 046 | 10 | 12 |
| Courier Italic | 018 | 10 | 12 |
| Courier Italic | 092 | 12 | 10 |
| Letter Gothic | 281 | 20 | 7.5 |
| OCR A | 019 | 10 | 12 |
| OCR B | 003 | 10 | 12 |
| Prestige Pica | 012 | 10 | 12 |
| Prestige | 164 | PS | 12 |
| Prestige | 221 | 15 | 9 |
| Prestige | 256 | 17.1 | 8.5 |
| Prestige Elite | 086 | 12 | 10 |
| Prestige Elite Bold | 111 | 12 | 10 |
| Prestige Elite Italic | 112 | 12 | 10 |

Some host systems may not allow typographic font selection by FGID and point size. For these systems, you should use the alternate FGID to select typographic fonts.

| Typeface | FGID | Alt FGID | Pitch/CPI | Point Size |
|-------------------------|-------------|-----------------|------------------|-------------------|
| Times Roman | 5687 | 760 | Typo | 6 |
| Times Roman | 5687 | 751 | Typo | 8 |
| Times Roman | 5687 | 1051 | Typo | 10 |
| Times Roman | 5687 | 1351 | Typo | 12 |
| Times Roman Bold | 5707 | 1053 | Typo | 10 |
| Times Roman Bold | 5707 | 761 | Typo | 12 |
| Times Roman Bold | 5707 | 762 | Typo | 14 |
| Times Roman Bold | 5707 | 1803 | Typo | 18 |
| Times Roman Bold | 5707 | 2103 | Typo | 24 |
| Times Roman Italic | 5815 | 1056 | Typo | 10 |
| Times Roman Italic | 5815 | 763 | Typo | 12 |
| Times Roman Bold Italic | 5835 | 764 | Typo | 10 |
| Times Roman Bold Italic | 5835 | 765 | Typo | 12 |

Font Best Fit Selection

If a font is requested that is not currently installed in the printer, it performs a font best fit function. The font best fit function searches for and selects a substitute font from only those supported in the requested code page.

Wrong Characters Printing

You may need to change the default code page to 037 if the characters !, ^, [,], or ¢ are not printing correctly when entered from a display.

You may need to change the default code page to version 0 if the characters |, =, ~, x, or © are not printing correctly when entered from a display.

Bar Codes

With the appropriate host software, the following bar codes can be produced:

- 3 of 9 code
- MSI
- UPC/CGPC Version A
- UPC/CGPC Version E
- UPC Two-Character Supplemental
- UPC Five-Character Supplemental
- EAN-8
- EAN-13
- 2 of 5 Industrial
- 2 of 5 Matrix
- 2 of 5 Interleaved
- USS-Codabar
- Code 128
- EAN Two-DigitAdd on
- EAN Five-DigitAdd on
- Postal Barcode- POSTNET.

NOTE: 1. Bar codes should only be printed in the recommended print area. If a bar code is placed so that a portion of it is in the unprintable area, a portion of the bar code prints in solid black.

2. POSTNET can be generated using the DDS keyword POSTNET on the AS/400 with OS/400 Version 2, Release 1.

For optimum performance, use a label recommended for bar code applications.



Chapter 6

Online Function Selection (OFS) Commands

In this Chapter . . .

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- “Online Function Selection (OFS) Lead-In Sequences” on page 6-2
- “OFS Online Function Selections Defined” on page 6-6
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About this Chapter

This chapter describes the Online Function Selection (OFS) Sequences for embedding printer and control functions in the data stream.

This chapter is intended for use by Coax and Twinax users in SCS (non-IPDS) environments.

Online Function Selection (OFS) Lead-In Sequences

The network interface supports five special types of Online Function Selection (OFS) commands. When they are embedded in the data stream they allow the user to configure and control the printer. An OFS command is a string of printable characters that can be recognized by the printer as an instruction instead of printable text. One of the characters, called the OFS Lead-In Character is changeable. This is to permit all possible combinations of printable strings. It is always the first character of the sequence but is also used elsewhere. The percent sign character ('%'), EBCDIC value 6C hex, DSC/DSE value 2E hex), is the character used in all the examples.

Sequence Types

There are five sequence types:

- 1. Temporary OFS Command
- 2. Hex Pass Through Command
- 3. Store and Read Command
- 4. Send User String Command
- 5. OFS Selection Command

The explanations and examples that follow throughout this chapter will use the following notation and characters:

| | |
|----------|---|
| % | OFS Lead-In Characters |
| <value> | a required parameter of "value". |
| [value] | an optional parameter of "value" |
| , | a comma to separate parameters (used only as shown) |
| 'string' | a string - apostrophe characters "" required |

Types of Values

There are four types of values:

- hex = hexadecimal pair representing an ASCII character. i.e. 1B
- char = a character
- num = an OFS command number
- parameter = parameter value defined in the OFS command definition

1. Temporary OFS Command:

SYNTAX: &&??<char>

| where: | |
|--------|---|
| &&?? | are the required lead-in characters. The &&?? characters are always required to initiate a temporary OFS Command and cannot be redefined by the user. |
| <char> | is the character to be used as the temporary OFS Lead-In Character |

EXAMPLE:

&&??@ sets the temporary OFS Lead-In Character to the '@' character

2. Hex-Pass Through Sequence

The %% command is used to send any character or character string to the printer.

SYNTAX: %%<hex> [hex] ... ['string' ...] %

| where: | |
|------------|---|
| %% | are two OFS Lead-In Characters |
| <hex> | is a required hex character pair |
| [hex] | are optional additional hexadecimal pairs |
| ['string'] | are optional character strings |
| % | is a terminating OFS Lead-In Character |

Between the first and last characters of the Hex Pass Through Command, all blanks, control codes and the character “,” (comma) will be ignored. They may be inserted in the data stream to aid in program readability. However, only the characters 0 - 9, A - F, or option character strings between apostrophes (') may be used in specifying the hex codes; other characters will give unpredictable results (usually causing the command to be printed, but not always).

EXAMPLES:

%%1B 26 6C 32 48 % Either of these characters strings will send an <esc> & l 2 H
%% 1B ' &l2H' % command which is an HP LaserJet II escape sequence used to
 select manual feed.

Using the Hex Pass Thru Sequence, a group of commands can be sent as follows:

EXAMPLES:

| | |
|-------------------------------------|--|
| %% 1B '&l6D' 1B '&l10' 1B '&l2A' % | Either of these HP LaserJet II escape sequences can be |
| %% 1B 26 6C 36 44 1B 26 6C 31 4F 1B | used to set the following: |
| 26 6C 32 41 % | |
| | LPI = 6 |
| | Orientation = Landscape |
| | Paper Size = Letter |

3. Store and Read Sequences

The Store and Read commands are used to store the current configuration settings in permanent memory, recall the configuration settings stored last, or restore the factory default configuration settings.

The following is the syntax for the commands:

%X1 Store defaults

This command stores the current printer defaults into permanent memory. The stored settings will be used on power up. The command replaces all stored default settings with the currently selected default settings.

%X3 Reset factory defaults

This command sets the current printer defaults to the factory settings and saves them to permanent memory.

%X4 Retrieve defaults

This command sets the current printer default settings to the settings loaded into permanent memory by the last %X1 command. This permits the user to reset the printer to the default configuration without performing a power on reset.

4. Send User String Command

This command is used to send User-Defined Strings to the printer from the data stream. User-defined strings are strings of characters that can be sent to the printer transparent to the Coax or Twinax emulation selected. These strings can be used to send any printer escape string directly to the printer permitting the user to access features on his printer that can not be accessed directly by a coax data stream designed for one of the emulations available, such as in Duplexing or selection of fonts with the 5256 emulation. The User-defined strings are discussed and explained in more detail later in this chapter under Command 61, Set-up of User-Defined Strings.

SYNTAX: % Z <num>

| where: | |
|------------|---|
| % | is the OFS Lead-in character |
| Z | is the command identifier and determines the sequence type. |
| <num> | is the number assigned to the User-Defined String. |
| ['string'] | are optional character strings |
| % | is a terminating OFS Lead-In Character |

EXAMPLE:

%Z6 sends the current string stored as ID #6

5. Online Function Selection Commands

The OFS Commands are used to set the printer environment or change the user default settings via the data stream. The command specifies the default setting to be changed and the new default value or values.

SYNTAX: % Y, <num>, <parameter> [parameter] %

| where: | |
|--------------|---|
| % | is the OFS Lead-in character |
| Z | is the command identifier and determines the sequence type. |
| <num> | is the number of the OFS command setting to be changed. |
| , | separates sequence number and parameter values. |
| <parameter1> | is a required parameter |
| [parametern] | are additional parameters that may or may not be required depending on the OFS command being changed. |
| % | is an OFS Character to terminate the command |

EXAMPLES:

%Y2, 8% sets LPI to 8 lines per inch
 %Y3, 15% sets CPI to 15 characters per inch
 %Y98, 0% enables Automatic Page Orientation

OFS Online Function Selections Defined

The following are the available OFS Commands via the data stream for the IBM 3270 Coax/SCS and 5250 Twinax/SCS environments. Each OFS Command description has at least one example unique to that command's settings. In all examples, the default OFS Lead-in Character is used.

NOTE: Unless otherwise noted, OFS commands are available in both Twinax/SCS and Coax/SCS environments.

OFS 1 Buffer Size (coax only)

SYNTAX: %Y1,<parameter>%

This command changes the Buffer Size to the value given by the parameter value.

| Parameter | Value |
|-----------|-----------------|
| 1 | 960 characters |
| 2 | 1920 characters |
| 3 | 2560 characters |
| 4 | 3440 characters |
| 5 | 3564 characters |

NOTE: To store this selection in memory for retrieval during the next power-up of the printer, this selection should be saved using the X1 Store and Read Sequence explained earlier in this chapter.

EXAMPLE:

%Y1,4% will change the Buffer Size to 3440 characters

OFS 2 Lines Per Inch (LPI)

SYNTAX: %Y2,<parameter>%

This command changes the line spacing setting to the value given by the parameter value.

| Parameter | Value |
|-----------|-------|
| 3 | 3 LPI |
| 4 | 4 LPI |
| 6 | 6 LPI |
| 8 | 8 LPI |

EXAMPLE:

%Y2, 4% will change the LPI to 4 Lines Per Inch

OFS 3 Characters per Inch (CPI)

SYNTAX: %Y3, <parameter>%

This command changes the character spacing to the value given by the parameter value.

| Parameter | Value |
|-----------|----------|
| 10 | 10 CPI |
| 12 | 12 CPI |
| 15 | 15 CPI |
| 17.1 | 17.1 CPI |
| 20 | 20 CPI |
| 27 | 27 CPI |

EXAMPLE:

%Y3, 15% will change the CPI to 15 Characters Per Inch.

OFS 5 Maximum Page Length (coax only)

SYNTAX: %Y5, <parameter>%

This command changes the MPL to the value given by the parameter value.

| Parameter | Value |
|-----------|----------------------------------|
| 0 | Disable |
| 1 to 999 | Sets MPL in line increments of 1 |

EXAMPLE:

%Y5, 64% will change the Maximum Page Length to 64 lines.

OFS 6 Maximum Print Position (coax only)

SYNTAX: %Y6,<parameter>%

This command changes the MPP to the value given by the parameter value.

| Parameter | Value |
|-----------|---------------------------------------|
| 0 | Disable |
| 1 to 999 | Sets MPP in character increments of 1 |

EXAMPLE:

%Y6,132% will change the Maximum Print Position to 132 characters.

OFS 7 Case (coax only)

SYNTAX: %Y7,<parameter>%

This command changes the case of characters between upper case only (Mono Case) and upper and lower case (Dual Case). This command will execute in DSC/DSE mode only.

| Parameter | Value |
|-----------|-----------|
| 0 | Mono Case |
| 1 | Dual Case |

EXAMPLE:

%Y7,0% will change characters to Mono Case (upper case only).

OFS 8 Code Page

SYNTAX: %Y8,<parameter>%

This command selects the Code Page and Character Set.

| Parameter | Value |
|-----------|-----------------|
| 1 | EBCDIC / U.S. |
| 3 | Austria/Germany |
| 4 | Belgium |
| 5 | Brazil |

| Parameter | Value |
|-----------|----------------------|
| 6 | Canada/French |
| 7 | Denmark/Norway |
| 8 | Denmark/Norwegian |
| 9 | Finland/Sweden |
| 10 | Finland/Sweden Alt. |
| 11 | France 105 |
| 13 | Austria/Germany Alt. |
| 14 | International |
| 15 | Italy |
| 16 | Japan (English) |
| 19 | Spain |
| 20 | Spain Alt. |
| 22 | English UK |
| 28 | Portugal |
| 30 | France 105 |
| 31 | Swiss/German/French |

EXAMPLE:

%Y8, 15% will change the Code Page setting to Italy

OFS 9 Print Quality (coax only)

SYNTAX: %Y9, <parameter>%

This command is used to define the print quality.

| Parameter | Value |
|-----------|---------------------|
| 1 | Draft Print Quality |
| 2 | Near Letter Quality |
| 3 | Correspondence |

EXAMPLE:

%Y9, 2% will set the print quality to Near Letter Quality.

OFS 10 Page Format

SYNTAX: %Y10,<parameter1>[,parameter2] %

This command will set the format to be used when printing a page. The command can be used to set the format of a tray by using the second parameter, or to set the format of all trays by omitting the second parameter.

| Parameter1 | Value |
|------------|---------------------------------|
| 0 | Portrait |
| 1 | Landscape |
| 2 | COR (Computer Output Reduction) |

| Parameter2 | Value |
|------------|------------------------|
| 1 | Standard Tray (Tray 1) |
| 2 | Top Tray (Tray 1) |
| 3 | Bottom Tray (Tray 2) |
| 4 | Manual Feeder |
| 5 | Envelope Feeder |
| 6 | Third Tray (Tray 2) |

NOTE: If Parameter2 is used, the value selected becomes the default paper tray.

EXAMPLES:

%Y10,0,1% will set the Page format of Tray 1 to Portrait and Tray 1 becomes the default paper tray.

%Y10,2% will set all Trays to COR (factory default).

OFS 11 Paper Tray Selection

SYNTAX: %Y11,<parameter>%

This command changes the selected default Paper Tray. To use Manual Feed, Envelope Feed or Optional Cassette, the corresponding option must be installed. If this is the first command on a page, the tray selected will be used to print that page. However, if the command is sent in the middle of a page, the command will not take effect until the start of a new page.

| Parameter | Value |
|-----------|------------------------|
| 1 | Standard Tray (Tray 1) |
| 2 | Top Tray (Tray 1) |
| 3 | Bottom Tray (Tray 2) |
| 4 | Manual Feeder |
| 5 | Envelope Feeder |
| 6 | Third Tray (Tray 2) |

EXAMPLE:

%Y11,5% will change selected paper tray to envelope feed if the envelope feeder is installed.

OFS 12 Paper Size

SYNTAX: %Y12,<parameter1>,[parameter2,Parameter3]>%

This command is used to define the paper sizes the Coax Interface can expect in each of the paper trays.

parameter1 is expected paper size
parameter2 is tray being defined
parameter3 is a valid paper size the printer will use to determine auto-orientation. This value should always match parameter1.

| Parameter1 | Value |
|------------|--------------------------------------|
| 1 | A4 (210mm X 297mm) |
| 2 | Legal (8.5" X 14") |
| 3 | Letter (8.5" X 11") |
| 4 | Executive (7.25" X 10.5") |
| 5 | Letter Monarch Env.(3 7/8" X 7 1/2") |

| Parameter1 | Value |
|------------|---|
| 6 | Business (Com 10) Env.(4 1/8" X 9 1/2") |
| 7 | International DL Env.(110mm X 220mm) |
| 8 | International C5 Env.(162mm X 229mm) |
| 9 | B5 tray feed (182mm X 257mm) |
| 10 | A3 |
| 11 | Ledger |
| 15 | Comm 9 Env.(98.4mm X 190.5mm) |
| 16 | B5 Env.(176mm X 250mm) |

| Parameter2 | Value |
|------------|------------------------|
| 1 | Standard Tray (Tray 1) |
| 2 | Top Tray (Tray 1) |
| 3 | Bottom Tray (Tray 2) |
| 4 | Manual Feeder |
| 5 | Envelope Feeder |
| 6 | Third Tray (Tray 2) |

NOTE: If Parameter2 is used, the value selected becomes the default paper tray.

| Parameter3 | Value |
|------------|---|
| 1 | A4 (210mm X 297mm) |
| 2 | Legal (8.5" X 14") |
| 3 | Letter (8.5" X 11") |
| 4 | Executive (7.25" X 10.5") |
| 5 | Letter Monarch Env.(3 7/8" X 7 1/2") |
| 6 | Business (Com 10) Env.(4 1/8" X 9 1/2") |
| 7 | International DL Env.(110mm X 220mm) |
| 8 | International C5 Env.(162mm X 229mm) |
| 9 | B5 tray feed (182mm X 257mm) |
| 10 | A3 |
| 11 | Ledger |

| Parameter3 | Value |
|------------|-------------------------------|
| 15 | Comm 9 Env.(98.4mm X 190.5mm) |
| 16 | B5 Env.(176mm X 250mm) |

EXAMPLE:

%Y12,6,5,6% will set the paper size in the envelope feeder to Business (C10) and the envelope feeder becomes the default paper tray.

OFS 13 Line Overflow Condition

SYNTAX: %Y13,<parameter1>, [parameter2] %

This command is used to enable lines longer than the printed line to wrap overflow data onto the next line. However, wrapped data to the next line will **not** increase the MPL calculation by 1.

| Parameter1 | Value |
|------------|--|
| 0 | lines longer than the printed line are wrapped placing overflow data on next line. |
| 1 | lines longer than the printed line are truncated and overflow data is not printed. |

| Parameter2 | Value |
|------------|-----------------|
| 1 | Tractor (Upper) |
| 2 | Tray 1 (Upper) |
| 3 | Tray 2(Lower) |
| 4 | Manual Feeder |
| 5 | Envelope Feeder |
| 6 | Tray 3 (Lower) |

EXAMPLE:

%Y13,0,2% On print jobs originating from Tray 1, this command will enable the lines that are longer than the print line to be wrapped and continue printing on the following line.

OFS 19 Duplex Printing

SYNTAX: %Y19,<parameter>%

This command is used to enable or disable the duplexer. The duplexer can be enabled to do long or short edge duplexing.

| Parameter | Value |
|-----------|-------------------------|
| 0 | duplexer OFF |
| 1 | duplexer ON, long edge |
| 2 | duplexer ON, short edge |

EXAMPLE:

%Y19,1% will enable the duplexer and bind printed pages at the long edge.

OFS 21 Print Compression

SYNTAX: %Y21,<parameter1>[parameter2,
parameter3] %

SYNTAX:

This command is used to enable horizontal and vertical print compression.

parameter1 is horizontal compression
parameter2 is paper source
parameter3 is vertical compression

NOTE: If parameter2 used, the value selected becomes the default paper tray.

| Parameter1 | Value |
|------------|-------------------------------------|
| 0 | On (10% compression of current CPI) |
| 1 | Off |

| Parameter2 | Value |
|------------|------------------------|
| 1 | Standard Tray (Tray 1) |
| 2 | Top Tray (Tray 1) |
| 3 | Bottom Tray (Tray 2) |
| 4 | Manual Feeder |

| Parameter2 | Value |
|------------|---------------------|
| 5 | Envelope Feeder |
| 6 | Third Tray (Tray 2) |

| Parameter3 | Value |
|------------|------------------------------------|
| 1 to 255 | increments of 1/100 of current LPI |
| 1 | On |

EXAMPLES:

%Y21, 0, 3% will enable horizontal compression for printed pages from the Bottom Tray. The Bottom Tray becomes the default.

%Y21, 1, 2, 90% will enable 10% vertical compression (90/100 of current LPI) for printed pages from the Top Tray and the Top Tray becomes the default paper tray.

OFS 25 Form Feed Before Local Copy (coax only)

SYNTAX: %Y25, <parameter>%

This command selects a Form Feed to be performed prior to an operator-initiated Local Copy.

| Parameter | Value |
|-----------|--------------------------------|
| 0 | No Form Feed before Local Copy |
| 1 | Form Feed before Local Copy |

EXAMPLE:

%Y25, 1% will set a Form Feed function to be performed prior to an operator-initiated Local Copy.

OFS 26 Form Feed After Local Copy (coax only)

SYNTAX: %Y26, <parameter>%

This command selects a Form Feed to be performed after an operator-initiated Local Copy.

| Parameter | Value |
|-----------|-------------------------------|
| 0 | No Form Feed after Local Copy |
| 1 | Form Feed after Local Copy |

EXAMPLE:

%Y26,1% will set a Form Feed function to be performed following an operator-initiated Local Copy.

OFS 27 Null Suppression (coax only)

SYNTAX: %Y27,<parameter>%

This command selects Null Suppression in Local Copy and/or Non-SCS modes.

| Parameter | Value |
|-----------|---|
| 0 | Null line suppression in Local Copy and Non-SCS print |
| 1 | Null line suppression in Non-SCS print only |
| 2 | Null line suppression in Local Copy only |
| 3 | Null line suppression disabled |

EXAMPLE:

%Y27,2% will activate null line suppression in Local Copy only.

OFS 28 CR at MPP+1

SYNTAX: %Y28,<parameter>%

This command determines the outcome of a Carriage Return executed at MPP + 1.

| Parameter | Value |
|-----------|------------------------|
| 0 | 1st PP of Next Line |
| 1 | 1st PP of Current Line |

EXAMPLE:

%Y28,1% will set 1st PP of Current Line as the next PP when a CR is received at MPP + 1.

OFS 29 NL at MPP+1

SYNTAX: %Y29,<parameter>%

This command determines the outcome of a New Line executed at MPP + 1.

| Parameter | Value |
|-----------|----------------------------------|
| 0 | 1st PP of Current Line + 2 Lines |
| 1 | 1st PP of Next Line |

EXAMPLE:

%Y29,1% will set 1st PP of Current Line as the next PP when a CR is received at MPP + 1.

OFS 30 Form Feed Followed by Data (coax only)

SYNTAX: %Y30,<parameter>%

This command determines the outcome of an executed Form Feed command that is **not** the last character in the IBM print buffer.

| Parameter | Value |
|-----------|-----------------|
| 0 | Line 1 Column 1 |
| 1 | Line 1 Column 2 |

EXAMPLE:

%Y30,1% will set the next Print Position as Line 1 Column 2 when a Form Feed command is received that is not positioned at the end of an IBM print buffer.

OFS 31 Form Feed at End of Print Buffer (coax only)

SYNTAX: %Y31,<parameter>%

This command determines the outcome of an executed Form Feed command that is the last character in the IBM print buffer.

| Parameter | Value |
|-----------|------------------|
| 0 | Line 2 Next Form |
| 1 | Line 1 Next Form |

EXAMPLE:

%Y31,1% will set the next Print Position as Line 1 Next Form when a Form Feed command is received that is positioned at the end of an IBM print buffer.

OFS 32 FF Command Position (coax only)

SYNTAX: %Y32,<parameter>%

This command determines the outcome of a valid executed Form Feed command.

| Parameter | Value |
|-----------|--------------------|
| 0 | CPP=MPP+1 or CPP=1 |
| 1 | Allow Anywhere |

EXAMPLE:

%Y32,0% will treat valid Form Feed commands as blanks if they do not occur at MPP+1

OFS 33 Automatic Function at End of Job (coax only)

SYNTAX: %Y33,<parameter>%

This command determines what happens at the end of a print buffer.

| Parameter | Value |
|-----------|-----------|
| 0 | New Line |
| 1 | Form Feed |

EXAMPLE:

%Y33, 1% will execute a Form Feed following the completion of a print buffer.

OFS 34 Last LF on Page Sent as FF

SYNTAX: %Y34, <parameter>%

This command is used to eject a page by sending a Form Feed command replacing the last Line Feed on a page

| Parameter | Value |
|-----------|--|
| 0 | No. Form Feed replacement of last Line Feed |
| 1 | Yes. Count lines as determined by OFS Command 5 and send Form Feed |

EXAMPLE:

%Y34, 1% will consider the number of lines per page as determined by OFS Command 5, and will replace the last Line Feed command with a Form Feed command.

OFS 36 Suppress IBM Host Control Codes (coax only)

SYNTAX: %Y36, <parameter>%

This command is used to suppress or respect control codes generated by the IBM host.

| Parameter | Value |
|-----------|--------------------|
| 0 | Respect all codes |
| 1 | Suppress all codes |

EXAMPLE:

%Y36, 0% will respect all control codes generated by the IBM host.

OFS 37 Vertical Channel Selection (VCS) Action (coax only)

SYNTAX: %Y37,<parameter>%

This command is used to select VCS emulation.

| Parameter | Value |
|-----------|--|
| 0 | 3287 emulation |
| 1 | 3268/4214 emulation |
| 2 | In 3268 emulation, HEX '00 - 3F' sent transparently except valid SCS codes. TRN sent non-transparently. '00 - FF' are printed as "—" (hyphen). |
| 4 | In 3287 emulation, HEX '00 - 3F' sent as blank spaces except valid SCS codes. TRN sent transparently. |

EXAMPLE:

%Y37, 0% will establish 3287 emulation.

OFS 38 IBM Communications Feature (coax only)

SYNTAX: %Y38,<parameter>%

This command is used to enable Extended Attribute Buffer and/or Query Reply.

| Parameter | Value |
|-----------|---------------------------|
| 0 | No query reply, but EAB |
| 1 | Query reply and EAB |
| 2 | No query reply and no EAB |

EXAMPLE:

%Y38, 0% will disable query reply and enable EAB.

OFS 46 IRQ Time (coax only)

SYNTAX: %Y46,<parameter1>, [parameter2,
 parameter3] %

This command is used to set IRQ Time, Hold Timeout and Busy Timeout.

| Parameter1 | Value |
|------------|---|
| 000 | Never send IRQ |
| 001 to 255 | Send IRQ after parameter1 x 5 seconds in the event of printer error |
| 12 | Default. Send IRQ after 1 minute (5 x 12 seconds) |

| Parameter2 | Value |
|------------|---------------------------|
| 000 | Never send Hold Timeout |
| 1 | Query reply and EAB |
| 2 | No query reply and no EAB |

| Parameter3 | Value |
|------------|---|
| 000 | Never send Busy Timeout IRQ |
| 001 to 255 | Send Busy Timeout IRQ after parameter1 x 5 seconds. |
| 240 | Default. Send IRQ after 20 minutes (5 x 240 seconds). |

EXAMPLES:

%Y46,02% will set IRQ time to 2 minutes

%Y46,024,,120% will set IRQ time to 2 minutes and Busy Timeout to 10 minutes

NOTE: Although parameter2 was not specified in the second example above, for syntax purposes it must be designated by the use of commas.

OFS 47 Tel-A-Graf Support (coax only)

SYNTAX: %Y47,<parameter>%

This command is used to select Tel-A-Graf support. Refer to ["Chapter 3 IBM Network Connectivity in Coax/SCS Environments"](#) for a detailed description of Tel-A-Graf Support.

| Parameter | Value |
|-----------|-------------------------|
| 1 | ESC xx sent as "xx" HEX |
| 2 | Tel-A-Graf support |

EXAMPLE:

%Y47,2% will select Tel-A-Graf support.

OFS 48 Permanent OFS Character

SYNTAX: %Y48,'<char>'%
or
%Y48,'<hex>'%

This command is used to change the current OFS Character. The OFS Character is a printable character when it is not part of a valid OFS command. If it is part of an OFS command, neither the OFS character or any part of the valid command will be printable.

| Parameter | Value |
|-----------|--|
| <char> | any printable character from the current language. |
| <hex> | hexadecimal value for any printable character |

The character specified must be a printable character.

NOTE: BECAUSE THE SYSTEM VALUE OF SOME CHARACTERS CHANGES WITH THE LANGUAGE SELECTED BY THE HOST, IT IS RECOMMENDED THAT A CHARACTER BE TESTED BEFORE ASSIGNING IT AS A PERMANENT OFS CHARACTER.

To disable the Permanent OFS character, set it to a space ' ' character or to a null (00 Hex).

EXAMPLES:

%Y48,'&'% will change the OFS Character to the & character.

&Y48, ' % ' & will use the new OFS Character to change it back to the % character

%Y48, 00% will disable the OFS Character

or

%Y48, ' ' %

OFS 51 User-Defined String(s) at Power-up

SYNTAX: %Y51, <NUM>, [NUM] %

| where: | |
|--------|--|
| <NUM> | is a required string ID number, from 1 to 8, and |
| [NUM] | are optional additional string ID numbers. |

This command sends a list of user-defined strings to the printer on power-up. The strings need to be assigned to the string ID number using OFS command 61 (Setup for User-Defined Strings) described later in text.

EXAMPLES:

%Y51, 3% sends string number 3 to the printer

%Y51, 3, 8, 34% sends strings number 3, 8 and 34 to the printer.

OFS 57 User Defined String(s) Before Local Copy (coax only)

SYNTAX: %Y57, <NUM>, [NUM] %

| where: | |
|--------|--|
| <NUM> | is a required string ID number, from 1 to 8, and |
| [NUM] | are optional additional string ID numbers. |

This command sends a list of user-defined strings to the printer before Local Copy. The strings need to be assigned to the string ID number using OFS Command 61 (Setup for User-Defined Strings) described later in text.

EXAMPLES:

%Y57, 3% sends string number 3 to the printer before Local Copy

%Y57, 3, 8, 34% sends strings number 3, 8 and 34 to the printer before Local Copy

OFS 58 User Defined String(s) After Local Copy (coax only)

SYNTAX: %Y58,<NUM>,[NUM] %

| where: | |
|--------|---|
| <NUM> | is a required string ID number, from 0 to 99, and |
| [NUM] | are optional additional string ID numbers. |

This command sends a list of user-defined strings to the printer after Local Copy. The strings need to be assigned to the string ID number using OFS Command 61 (Setup for User-Defined Strings) described later in text.

EXAMPLES:

%Y58,3% sends string number 3 to the printer after Local Copy
 %Y58,3,8,34% sends strings number 3, 8 and 34 to the printer after Local Copy

OFS 59 Bar Code Type Definition

SYNTAX: %Y59,<PARAMETER1>,[PARAMETER2, PARAMETER3,
PARAMETER 4, PARAMETER5] %

This command is used to define the various variables of a Bar Code.

| Parameter1 | Value |
|------------|---|
| 1 - 8 | user-designated Bar code definition number. |
| [NUM] | are optional additional string ID numbers. |

| Parameter2 | Value |
|------------|---|
| 22-39 | Bar code type. |
| 2x | Bar code with numeric or alphanumeric characters printed below the bar code defined below. |
| 3x | Bar code without numeric or alphanumeric characters printed below the bar code defined below. |
| x2 | UPC 8/EAN 8 and UPC 13/EAN13 |
| x3 | Interleaved 2 of 5 |
| x4 | Industrial 2 of 5 |
| x5 | Codabar |
| x6 | MSI |

| Parameter2 | Value |
|------------|------------------|
| x8 | Modified Plessey |
| x9 | Code 3 of 9 |

| Parameter3 | Value |
|-------------------------------|--|
| 1 - 255 (decimal units) | Bar code height specified in 1/9 inch. |

| Parameter4 | Value |
|------------------------------|--|
| 1 - 32 (decimal units) | Horizontal expansion factor of bar code expressed in decimal. ncrements are half the length obtained by setting the expansion factor to 1. |

| Parameter5 | Value |
|------------|--|
| 1 - 65535 | GFID number for printing bar codes via GFID selection. |

NOTE: Use of parameter5 is optional.

EXAMPLES:

%Y59,1% will delete Barcode Definition 1.
 %Y59,1,23,9,5% defines Barcode 1 to be Interleaved 2 of 5, 1 inch tall and have an expansion factor of 5. Alphanumeric characters will be printed below the barcode.
 %Y59,8,35,18,7% defines Barcode 8 to be Codabar, 2 inches tall and have an expansion factor of 7.

OFS 60 Font Link (coax only)

SYNTAX: %Y60,<PARAMETER1>, [PARAMETER2] %

This command is used to change the GFID associated with a CPI value.

| Parameter1 | Value |
|------------|------------------------------|
| CPI | 0, 10, 13, 15, 16, 20, or 27 |

| Parameter2 | Value |
|------------|-------------|
| 1 to 65535 | GFID number |

Default values for GFID number are:

| CPI | GFID |
|-----------|------|
| 10 | 11 |
| 12 | 86 |
| 13 (13.3) | 204 |
| 15 | 233 |
| 16 (15.7) | 253 |
| 20 | 281 |
| 27 | 290 |
| 0 | 1412 |

EXAMPLE:

%Y60,12,223% will select 12 CPI (OFS Command 3) to link with GFID 223

OFS 61 Setup for User-Defined Strings

SYNTAX: %Y61,<NUM>,<HEX... 'STRING'>%

| where: | |
|-------------------|---|
| <NUM> | is the string ID number (1 to 8) to be assigned, and |
| <HEX... 'STRING'> | is the ASCII string to be sent to the printer when the string ID number is sent using OFS Command 51 (User-Defined String(s) at Powerup). |

The rules for writing the user-defined string are the same as in the HEX PASS THROUGH Command. A user-defined string ID number can be reused by assigning a new string value to the ID number.

A user string is deleted by sending the command %Y61,<num>% and omitting the <hex... 'string'>.

EXAMPLES:

| | |
|------------------------|--|
| %Y61,4,1B '&L1O'% | assigns the HP escape sequence for setting the orientation to landscape to String ID number 4. |
| %Y61,4,1B 26 6C 36 44% | reassigns the command to a set LPI= 6 HP escape sequence. |
| %Y61,4% | deletes the string from ID number 4. |

OFS 62 Setup for IBM Defined Strings (coax only)

SYNTAX: %Y62,<PARAMETER1>,<PARAMETER2>%

This command is used to define IBM setup strings.

| Parameter1 | Value |
|-------------------------|--|
| (24) | Format for OFS Command 10 (Page Format) = 2 Optional |
| (25) | Format for OFS Command 10 (Page Format) = 3Optional |
| LPI | |
| 101 | 3 LPI |
| 102 | 4 LPI |
| 103 | 6 LPI |
| 104 | 8 LPI |
| CPI | |
| 111 | 5 CPI |
| 112 | 10 CPI |
| 113 | 12 CPI |
| 114 | 15 CPI |
| 115 | 13.3 CPI |
| 118 | 27 CPI |
| Paper Handling | |
| 121 | Envelope Feed |
| 123 | Manual Cut-Sheet Feeder |
| 125 | Drawer 1 |
| 126 | Drawer 2 |
| 127 | Drawer 3 |
| Attributes | |
| 130 | Bold On |
| 131 | Bold Off |
| 132 | Underscore On |
| 133 | Underscore Off |
| Page Orientation | |
| 150 | Portrait |
| 151 | Landscape |

| Parameter1 | Value |
|--------------------------------------|------------------------|
| HMI (Horizontal Motion Index) | |
| 241 | HMI for 5 CPI |
| 242 | HMI for 10 CPI |
| 243 | HMI for 12 CPI |
| 244 | HMI for 15 CPI |
| 245 | HMI for 13.3 CPI |
| 246 | HMI for 16.7 CPI |
| 247 | HMI for 20 CPI |
| 248 | HMI for 27 CPI |
| Printing | |
| 270 | Simplex |
| 271 | Short edge duplex |
| 272 | Long edge duplex |
| 273 | Duplex page shift |
| 280 | Line wrap |
| 281 | Line cut |
| Parameter2 | Value |
| 00 to FF | String contents in HEX |

EXAMPLE:

%Y62101,1B,'&L13.7C'%% will define 3 LPI to be ^a 3.5 LPI

OFS 72 Reset Translate Table (coax only)

SYNTAX: %Y72,<PARAMETER>%

This command is used to reset the selected Translate Table to default.

| Parameter | Value |
|-----------|--------------------------------------|
| 1 - 8 | Reset the indicated translate table. |

EXAMPLE:

%72,2% will clear Translate Table 2.

OFS 73 Select Translate Table

SYNTAX: %Y73 , <PARAMETER1> [PARAMETER2] %

This command is used to select the desired translate table (parameter1) and symbol set (parameter2).

NOTE: Use of parameter2 is optional. However, if used, it must correspond with the selection used in Parameter1.

| Parameter1 | Translate Table |
|------------|-----------------|
| 1 | Roman-8 |
| 2 | IBM PB-8 |
| 3 | ECMA Latin 1 |
| 5 | US ASCII |
| 6 | OCR A |
| 7 | OCR B |
| 8 | PC 850 |

| Parameter2 | Translate Table |
|------------|-----------------|
| 1 | Roman-8 |
| 2 | IBM PB-8 |
| 3 | ECMA Latin 1 |
| 5 | US ASCII |
| 6 | OCR A |
| 7 | OCR B |
| 8 | PC 850 |

EXAMPLE:

%73 , 8 , 8% will select translate table and symbol set to be PC 850.

OFS 74 Font Symbol Set Definition

SYNTAX: %Y74 , <NUM> , <HEX . . . 'STRING' >%

The rules for writing the user-defined string are the same as in the HEX PASS THROUGH Command.

A user-defined string ID number can be reused by assigning a new string value to the ID number.

A user string is deleted by sending the command %Y74,<num>% and omitting the <hex... 'string'>.

| where: | |
|-------------------|---|
| <NUM> | is the string ID number to be assigned |
| <HEX... 'STRING'> | is the ASCII string to be sent to the printer when the string ID number is sent using OFS Command 91 (Font Definition). |

EXAMPLE:

%Y74,10,1B'(OI'% sets the symbol set to ISO ITALIAN.

OFS 75 Overwrite Translate Table

SYNTAX: %Y75,<PARAMETER1>,[PARAMETER2],
 <PARAMETER3>%

This command is used to match the printer's character table. Changes are made in the currently selected translate table; in either OFS Command 91, Font Definition or OFS Command 73, Select Translate Table. This command can be used to change a single character, a series of characters, or create a multi-strike character.

| Parameter1 | Value |
|------------|--|
| 00 to FF | Position of character to be translated (expressed in HEX). |
| Parameter2 | Value |
| 1 to 8 | Symbol set as defined in OFS Command 74 (Font Symbol Set Definition) |
| Parameter3 | Value |
| 00 to FF | Data required to print the character (expressed in ASCII HEX). |

NOTE:

1. A colon (:) denotes that the next number in a series of numbers is an address in the LU3 mode.
2. A semicolon (;) denotes that the next number is an ASCII HEX value that will be placed in the next consecutive address in the LU3 table.

EXAMPLES:

| | |
|----------------------------------|--|
| %Y75,BC,7C% | will define LU3 character BC to be ASCII character 7C. |
| %Y75,B0,50;51;52% | will define the LU3 addresses X'B0 B1 B2' to be the ASCII values X'50 51 52' respectively. |
| %Y75,2C,8C:3B,13% | will define the LU3 address X'2C' to be the ASCII value X'8C' and the LU3 address X'3B' to be the ASCII value X'13'. |
| %Y75,13,5D;2F;41;33,07,5C:2D,E5% | will define the LU3 address X'13' to be the ASCII value X'5D', the LU3 address X'14' to be the ASCII value X'2F' and the LU3 address X'15' to be the ASCII value X'41' — followed by the LU3 address X'16' defined as a multistrike character made from ASCII values X'33 07 5C'. Also, the LU3 address X'2D' is defined as the ASCII value X'E5'. |

OFS 88 Physical Margins

SYNTAX: %Y88,<PARAMETER1>,<PARAMETER2>[,PARAMETER3]%

This command is used to shift the image starting position on the physical page. The image can be shifted in 1/1440" increments in the vertical and the horizontal direction. This command can be applied to each page format (portrait, landscape & COR).

| Parameter1 | Value |
|---------------|--|
| 0 to +/-20000 | sets the horizontal image shift. (-288 is factory default) |

| Parameter2 | Value |
|---------------|--|
| 0 to +/-20000 | sets the vertical image shift. (-480 is factory default) |

| Parameter3 | Value |
|------------|----------------------------------|
| | selects the orientation to shift |
| 0 | Portrait |
| 1 | Landscape |
| 2 | COR (computer Output Reduction) |

NOTE: Parameter3 is optional, but if not specified, the image shift will apply to all orientations. The shift will be in effect the next time the page format is changed.

EXAMPLES:

| | |
|-------------------|--|
| %Y88,0,0,2% | will shift both the margins 0" in COR format |
| %Y88,1440,1440,0% | will shift both the margins 1" in portrait. |

OFS 89 Physical Margin Compensation

SYNTAX: %Y89,<PARAMETER1>[,<PARAMETER2>]

This command will assign the margin compensation set in Command 88 (Physical Margins) to a paper path. The compensation can be turned ON or OFF for each tray.

| Parameter1 | Value |
|------------|-------------------------------|
| 0 | turns OFF margin compensation |
| 1 | turns ON margin compensation |

| Parameter2 | Value |
|------------|--|
| 1 | sets the horizontal image shift. (-288 is factory default) |
| 2 | Standard Tray (Tray 1) |
| 3 | Top Tray (Tray 1) |
| 4 | Bottom Tray (Tray 2) |
| 5 | Manual Feeder |
| 6 | Envelope Feeder |

NOTE: Parameter2 is optional. If it is used, the value selected will become the default paper tray.

EXAMPLES:

%Y89,0,1% will turn OFF compensation for Tray 1, and Tray 1 becomes the default paper tray.

%Y89,1,3% will turn the compensation ON for Tray 2, and Tray 2 becomes the default paper tray.

%Y89,1% will turn the compensation on for all trays.

OFS 90 User ESC String Definition

SYNTAX: %Y90,<PARAMETER1>,<PARAMETER2>

This command is used to define a number of ESC sequences (ESC followed by a HEX number from X'01" to X'FF") to be substituted by a string.

| Parameter1 | Value |
|------------|-------------------------------|
| 0 | Erase |
| 01 - FF | String no. (expressed in HEX) |

| Parameter2 | Value |
|--------------|--|
| ' <STRING> ' | string contents in apostrophe notation |

EXAMPLE:

%Y90,01,'%73,8,8%'% will exchange future occurrences of ESC 01
with an OFS Command 73

OFS 91 Font Definition

SYNTAX: %Y91,<PARAMETER1>,<PARAMETER2>,
 <PARAMETER3>,<PARAMETER4>,<PARAMETER5>[,<PARAMETER6>]%

This command is used to store 16 user-defined fonts. They may be new definitions for current GFID numbers or unique numbers of their own. The user defines these fonts using the same parameters used to simulate the IBM GFID's. They are: Typeface Attribute Symbol Set Point Size Translate Table.

| Parameter1 | Value |
|------------|--------------------------|
| 1 - 65535 | IBM or user-defined FGID |

| Parameter2 | Typeface |
|------------|---|
| 0 - 255 | This is the ID number of a string defined by Command 94 (Font Typeface Definition). If none are defined, the printer defaults are used. |

| Parameter3 | Attribute |
|------------|---|
| | This is the ID number of a string defined by Command 93 (Font Attribute Definition). If none are defined, the printer will use the following: |
| 0 | No attributes |
| 1 | Bold |
| 2 | Italic |
| 3 | Bold and Italic |
| 4 | Proportional |
| 5 | Proportional Bold |
| 6 | Proportional Italics |
| 7 | Proportional Bold and Italic |

| Parameter4 | Symbol Set |
|------------|--|
| | This is the ID number of a string defined by Command 74 (Font Symbol Set Definition). If none are defined, the printer will use: |
| 1 | Roman-8 |
| 2 | IBM PC-8 |
| 3 | ECMA Latin 1 |
| 5 | US ASCII |
| 6 | OCR A |
| 7 | OCR B |
| 8 | PC 850 |

| Parameter5 | Point Size |
|------------|---|
| 1 - 255 | This is the ID number of a string defined by Command 92 (Font Point Size Definition). If none are defined, the printer uses this value as the point size. |

| Parameter6 | Translate Table |
|------------|-----------------|
| 1 | Roman-8 |
| 2 | IBM PB-8 |
| 3 | ECMA Latin 1 |
| 5 | US ASCII |
| 6 | OCR A |
| 7 | OCR B |
| 8 | PC 850 |

EXAMPLE:

%Y91,1000,7,1,8,12,8% will assign the following values to FGID 1000 (parameter1):
Typeface = Courier (parameter2 value of 7 per Command 94)
Attribute = Bold (parameter3 value of 1 per Command 93)
Symbol Set = PC850 (parameter4 value of 8 per Command 74)
Point Size = 12 (parameter5 value of 12 per Command 92)
Translate Table = PC850 (parameter6 value of 8)

OFS 92 Font Point Size Definition

SYNTAX: %Y92,<NUM>,<HEX... 'STRING'>%

| where: | |
|-------------------|---|
| <NUM> | is the string ID number to be assigned, and |
| <HEX... 'STRING'> | is the ASCII string to be sent to the printer |

The rules for writing the user-defined string are the same as in the HEX PASS THROUGH Command.

A user-defined string ID number can be reused by assigning a new string value to the ID number.

A user string is deleted by sending the command %Y92,<num>% and omitting the <hex... 'string'>.

EXAMPLE:

%Y92,3,1B' (S15V'% sets the point size to 15

OFS 93 Font Attribute Definition

SYNTAX: %Y93,<NUM>,<HEX... 'STRING'>%

| where: | |
|-------------------|---|
| <NUM> | is the string ID number to be assigned, and |
| <HEX... 'STRING'> | is the ASCII string to be sent to the printer when the string ID number is sent using OFS Command 91 (Font Definition). |

The rules for writing the user-defined string are the same as in the HEX PASS THROUGH Command.

A user-defined string ID number can be reused by assigning a new string value to the ID number.

A user string is deleted by sending the command %Y93,<num>% and omitting the <hex... 'string'>.

EXAMPLE:

%Y93,4,1B' (S40B'% sets an extra bold medium stroke weight

OFS 94 Font Typeface Definition

SYNTAX: %Y94,<NUM>,<HEX... 'STRING'>%

| where: | |
|-------------------|---|
| <NUM> | is the string ID number to be assigned, and |
| <HEX... 'STRING'> | is the ASCII string to be sent to the printer when the string ID number is sent using OFS Command 91 (Font Definition). |

The rules for writing the user-defined string are the same as in the HEX PASS THROUGH Command.

A user-defined string ID number can be reused by assigning a new string value to the ID number.

A user string is deleted by sending the command %Y94,<num>% and omitting the <hex... 'string'>.

EXAMPLE:

%Y94,7,1B'(S3T'% selects a Courier typeface

OFS 96 Font Simulation

SYNTAX: %Y96,<PARAMETER>%

This command allows the user to select one of the available GFID's when sending data to a printer emulation that normally will not support font changes.

| Parameter | Value |
|------------|-------------|
| 1 to 65535 | GFID number |

EXAMPLE:

%Y96,253% will select a Courier 17 Bold font

OFS 97 User GFID/Font Selection

SYNTAX: %Y97, <PARAMETER>, <PARAMETER> [: PARAMETER] %

This command allows the user to assign a printer specific font to a GFID number. The user should define a portrait and a landscape font. If none are defined the interface defined value is used. If no landscape font is defined the portrait is used in its place.

Parameter1 = the GFID to be defined
Parameter2 = the string to be used to select the portrait font
Parameter3 = the string to be used for the landscape font

EXAMPLE:

%97,101,1B'(8U'1B'(S0P12.0H10.0V0S0B3T'% selects a 12 CPI, 10 pt., upright, medium, Courier, Portrait font.

OFS 98 Automatic Page Orientation

SYNTAX: %Y98, <parameter1> [, parameter2] %

This command is used to turn ON or OFF the automatic orientation capabilities for the individual paper paths.

| Parameter1 | Value |
|------------|--------------------------------|
| 0 | Turn ON Automatic Orientation |
| 1 | Turn OFF Automatic Orientation |

| Parameter2 | Value |
|------------|------------------------|
| 1 | Standard Tray (Tray 1) |
| 2 | Top Tray (Tray 1) |
| 3 | Bottom Tray (Tray 2) |
| 4 | Manual Feeder |
| 5 | Envelope Feeder |
| 6 | Third Tray (Tray 2) |

NOTE: Parameter2 is optional. If it is used, the value selected becomes the default paper tray.

EXAMPLE:

| | |
|-----------|--|
| %Y98,0,1% | Automatic Orientation is turned ON for Tray 1 and Tray 1 becomes the default paper tray. |
| %Y98,1% | Automatic Orientation is turned OFF for all Trays. |

OFS 100 Port Sharing Option

SYNTAX: %Y100,<PARAMETER1>[,HEX... 'STRING']%

This command sets the time the interface will retain control of the printer after it has stopped receiving data. It can also be used to send an optional string to the printer after it has been given control.

| Parameter | Value |
|-----------|---|
| 5 - 99 | valid time out interval between 5 and 99 seconds. |

The rules for writing the user-defined string are the same as in the HEX PASS THROUGH Command. Leaving the string out will remove it.

EXAMPLE:

| | |
|--------------------------|--|
| %Y100,20,1B '&L10'% | sets the timer to 20 seconds and the orientation to landscape after a switch to coax |
| %Y100,10,1B 26 6C 36 44% | sets the timer to 10 seconds and the LPI = 6 |
| %Y100,5% | sets the timer to 5 seconds and deletes the string. |

OFS 200 Override Default Code Page (twinax only)

SYNTAX: %Y201,<parameter>%

This command is used to override any host command(s) attempting to change the Default Code Page setting.

| Parameter | Value |
|-----------|---|
| 0 | disables the Override Default Code Page |
| 1 | enables the Override Default Code Page |

EXAMPLE:

`%Y200,1%` enables the Override Default Code Page thereby overriding any host command(s) attempting to change the Code Page.

OFS 201 Override LPI (Lines Per Inch Override) (twinax only)

SYNTAX: `%Y201,<parameter>%`

This command is used to override any host command(s) attempting to change the LPI (Lines Per Inch) setting.

| Parameter | Value |
|-----------|---------------------------|
| 0 | disables the Override LPI |
| 1 | enables the Override LPI |

EXAMPLE:

`%Y201,1%` enables the Override LPI thereby overriding any host command(s) attempting to change the LPI setting.

OFS 202 Override CPI (Characters Per Inch Override) (twinax only)

SYNTAX: `%Y202,<parameter>%`

This command is used to override any host command(s) attempting to change the CPI (Characters Per Inch) setting.

| Parameter | Value |
|-----------|---------------------------|
| 0 | disables the Override CPI |
| 1 | enables the Override CPI |

EXAMPLE:

`%Y202,1%` enables the Override CPI thereby overriding any host command(s) attempting to change the CPI setting.

OFS 203 Override MPP (Maximum Print Position Override) (twinax only)

SYNTAX: %Y203,<parameter>%

This command is used to override any host command(s) attempting to change the MPP (Maximum Print Position) setting.

| Parameter | Value |
|-----------|----------------------------------|
| 0 | disables the Override MPP |
| 1 | enables the Override MPP |

EXAMPLE:

%Y203,1% enables the Override MPP thereby overriding any host command(s) attempting to change the MPP setting.

OFS 204 Override MPL (Maximum Page Length Override) (twinax only)

SYNTAX: %Y204,<parameter>%

This command is used to override any host command(s) attempting to change the MPL (Maximum Page Length) setting.

| Parameter | Value |
|-----------|----------------------------------|
| 0 | disables the Override MPL |
| 1 | enables the Override MPL |

EXAMPLE:

%Y204,1% enables the Override MPL thereby overriding any host command(s) attempting to change the MPL setting.

OFS 205 Override All

SYNTAX: %Y205,<parameter>%

This command is used to override any host command(s) attempting to change the CPI, LPI, MPP, MPL, Code Page, Paper Source and Paper Size settings.

| Parameter | Value |
|-----------|----------------------------------|
| 0 | disables the Override All |
| 1 | enables the Override All |

EXAMPLES:

%Y205,1% enables the Override All thereby overriding any host command(s) attempting to change the CPI, LPI, MPP, MPL, Code Page, Paper Source and Paper Size setting.

%Y205,0% disables the Override All thereby permitting any host command(s) to change the CPI, LPI, MPP, MPL or Code Page, Paper Source and Paper Size setting on an individual basis per the values of Commands 200 through 204, 206 and 207.

OFS 206 Override Paper Source (twinax only)

SYNTAX: %Y206,<parameter>%

This command is used to override any host command(s) attempting to change the Paper Source setting.

| Parameter | Value |
|-----------|------------------------------------|
| 0 | disables the Override Paper Source |
| 1 | enables the Override Paper Source |

EXAMPLE:

%Y206,1% enables the Override Paper Source thereby overriding any host command(s) attempting to change the Paper Source setting.

OFS 207 Override Paper Source (twinax only)

SYNTAX: %Y207,<parameter>%

This command is used to override any host command(s) attempting to change the Paper Size setting.

| Parameter | Value |
|-----------|----------------------------------|
| 0 | disables the Override Paper Size |
| 1 | enables the Override Paper Size |

EXAMPLE:

%Y207,1% enables the Override Paper Size thereby overriding any host command(s) attempting to change the Paper Size setting.

Test Commands (Command T)

SYNTAX: %T,<Test No.>

This command is used to conduct online tests.

| Test No. | Value |
|----------|---|
| 1 | Online HEX dump of IBM buffer. Will print a buffer dump of data received by the printer in which the %T1 command was included. Test 1 terminates by repeating the T1 Command. |
| 3 | Online ASCII HEX dump of IBM buffer. Will set the printer in dump mode to print in dump format all data following the %T3 command as received by the printer. Test 3 is terminated by repeating the T3 Command. |
| 4 | OFS Settings Printout. Will print the current OFS command settings. Test 4 terminates automatically. |

EXAMPLE:

%T,4% will print out current OFS command settings.

Bar Code Printing (Command W)

SYNTAX: %W,<parameter1>, [parameter2] %

This command is used to print bar codes.

| Parameter1 | Value |
|------------|---|
| 1 thru 8 | Bar code definition as defined in OFS Function 59 |

| Parameter2 | Value |
|------------|--|
| data | Up to 34 Numeric or alphanumeric characters to be printed in bar code. |

EXAMPLE:

%W1% will print the bar code format to match the criteria as set in bar code definition 1 in OFS Command 59 (Bar Code Type Definition).

Font Support

A variety of fonts are supported or simulated by the Coax/Twinax SCS Network Option. The user may select any of the fonts found in the following Default Font Table by using the OFS Command 96 Font Simulation and the FGID listed in the table. If the characteristics of the font match those listed in the Default Font Table, the exact font desired will be selected either resident in the printer or from an installed PCL type font card. However, if the font characteristics do not match exactly, the Network Option will then select the best fit font from the fonts available.

NOTE: If the simulated font is not desirable, you may want to print a Configuration Summary using the control panel as described in "[Chapter 1 IBM Network Connectivity in Coax/IPDS Environments](#)", to ensure that none of the font characteristics have been altered using OFS Commands.

If none of the default fonts are suitable for a specific application, customized fonts can be used in one of two ways:

1. Using the OFS Command 91 — Font Definition, and optionally the following:

OFS Command 74 — Printer Symbol Set Definition Strings

OFS Command 92 — Font Point Definition Strings

OFS Command 93 — Font Attribute Definition Strings

OFS Command 94 — Font Typeface Definition Strings

NOTE: OFS Commands 74, 92, 93 and 94 are used in conjunction ONLY with OFS Command 91. If a default font is selected with a Typeface attribute of 8, and a Font Typeface Definition String (OFS Command 94) is also defined as 8, the Typeface Definition String will be used.

2. Using a Scalable Font. Typographical fonts (FGIDs 400-65535) may be scaled. If a font is selected that is not in the default table nor defined by the user via Function 91, a scalable font algorithm will select a suitable font.

Default Font Table

The following legend applies to the Default Font Table beginning on the next page:

| Typeface | | Attribute | | Symbol Set | | Translate Table | |
|-----------------------|---------------|-----------|------------------------------|------------|--------------|-----------------|--------------|
| 0 | Line Printer | 0 | No Attributes | 1 | Roman-8 | 0 | IBM Resident |
| 3 | Courier | 1 | Bold | 2 | IBM PC-8 | 1 | Roman-8 |
| 4 | Helvetica | 2 | Italic | 3 | ECMA Latin 1 | 2 | IBM PC-8 |
| 5 | Times Roman | 3 | Bold and Italic | 5 | US ASCII | 3 | ECMA Latin 1 |
| 6 | Letter Gothic | 4 | Proportional | 6 | OCR A | 4 | Roman-8 |
| 8 | Prestige | 5 | Proportional Bold | 7 | OCR B | 5 | US ASCII |
| 10 | Orator | 6 | Proportional Italic | 8 | PC 850 | 6 | OCR A |
| 11 | Presentation | 7 | Proportional Bold and Italic | | | 7 | OCR B |
| 55 2 | Roman | | | | | | |

| Default Font Table | | | | | | |
|--------------------|---------------|----------|-----------|------------|------------|-----------------|
| FGID | Font | Typeface | Attribute | Symbol Set | Point Size | Translate Table |
| 3 | OCR B | 0 | 0 | 8 | 12 | 7 |
| 5 | Orator | 10 | 0 | 8 | 14 | 1 |
| 11 | Courier | 3 | 0 | 8 | 14 | 1 |
| 12 | Prestige | 8 | 0 | 8 | 10 | 1 |
| 18 | Courier | 3 | 2 | 8 | 12 | 1 |
| 19 | OCR A | 0 | 0 | 8 | 12 | 6 |
| 38 | Presentation | 11 | 1 | 8 | 14 | 5 |
| 39 | Letter Gothic | 6 | 1 | 8 | 14 | 1 |
| 40 | Letter Gothic | 6 | 0 | 8 | 14 | 1 |
| 41 | Roman | 552 | 1 | 8 | 12 | 1 |
| 42 | Courier | 3 | 0 | 8 | 12 | 1 |
| 43 | Courier | 3 | 2 | 8 | 12 | 1 |
| 46 | Courier | 3 | 1 | 8 | 12 | 1 |
| 51 | Courier | 3 | 0 | 8 | 12 | 5 |
| 52 | Courier | 3 | 1 | 8 | 12 | 5 |
| 53 | Courier | 3 | 2 | 8 | 12 | 5 |
| 60 | Letter Gothic | 6 | 0 | 8 | 14 | 5 |
| 66 | Letter Gothic | 6 | 0 | 8 | 12 | 1 |
| 68 | Letter Gothic | 6 | 2 | 8 | 12 | 1 |
| 69 | Letter Gothic | 6 | 1 | 8 | 12 | 1 |
| 70 | Prestige | 8 | 0 | 8 | 10 | 1 |
| 71 | Prestige | 8 | 2 | 8 | 10 | 1 |
| 72 | Prestige | 8 | 1 | 8 | 10 | 1 |
| 80 | Prestige | 8 | 0 | 8 | 10 | 0 |
| 85 | Courier | 3 | 0 | 8 | 12 | 1 |
| 86 | Prestige | 8 | 0 | 8 | 10 | 1 |
| 87 | Letter Gothic | 6 | 0 | 8 | 12 | 1 |
| 91 | Letter Gothic | 6 | 2 | 8 | 12 | 1 |
| 110 | Letter Gothic | 6 | 1 | 8 | 12 | 1 |

| Default Font Table | | | | | | |
|--------------------|---------------|----------|-----------|------------|------------|-----------------|
| FGID | Font | Typeface | Attribute | Symbol Set | Point Size | Translate Table |
| 111 | Prestige | 8 | 1 | 8 | 10 | 1 |
| 112 | Prestige | 8 | 2 | 8 | 10 | 1 |
| 115 | Courier | 3 | 1 | 8 | 10 | 1 |
| 116 | Courier | 3 | 2 | 8 | 10 | 1 |
| 117 | Prestige | 8 | 0 | 8 | 10 | 5 |
| 118 | Prestige | 8 | 0 | 8 | 10 | 5 |
| 119 | Prestige | 8 | 2 | 8 | 10 | 5 |
| 204 | Letter Gothic | 3 | 0 | 8 | 12 | 5 |
| 221 | Prestige | 8 | 0 | 8 | 7 | 1 |
| 223 | Courier | 3 | 0 | 8 | 8 | 1 |
| 230 | Letter Gothic | 6 | 0 | 8 | 9 | 1 |
| 244 | Courier | 3 | 0 | 8 | 12 | 1 |
| 245 | Courier | 3 | 1 | 8 | 12 | 1 |
| 252 | Line Printer | 3 | 0 | 8 | 8 | 1 |
| 253 | Line Printer | 3 | 1 | 8 | 8 | 1 |
| 254 | Courier | 3 | 0 | 8 | 4 | 1 |
| 256 | Prestige | 8 | 0 | 8 | 7 | 5 |
| 281 | Prestige | 8 | 0 | 8 | 4 | 1 |
| 290 | Prestige | 8 | 0 | 8 | 4 | 1 |
| 501 | EAN/UPC | 0 | 4 | 8 | 12 | 5 |
| 502 | EAN/UPC | 0 | 5 | 8 | 12 | 5 |
| 601 | Times Roman | 5 | 4 | 8 | 6 | 5 |
| 602 | Times Roman | 5 | 5 | 8 | 6 | 5 |
| 603 | Times Roman | 5 | 6 | 8 | 6 | 5 |
| 611 | Helvetica | 4 | 4 | 8 | 6 | 1 |
| 612 | Helvetica | 4 | 5 | 8 | 6 | 5 |
| 613 | Helvetica | 4 | 6 | 8 | 6 | 5 |
| 614 | Helvetica | 4 | 4 | 8 | 6 | 5 |
| 751 | Times Roman | 5 | 4 | 8 | 8 | 1 |
| 801 | Times Roman | 5 | 4 | 8 | 8 | 1 |
| 802 | Times Roman | 5 | 5 | 8 | 8 | 5 |

| Default Font Table | | | | | | |
|--------------------|-------------|----------|-----------|------------|------------|-----------------|
| FGID | Font | Typeface | Attribute | Symbol Set | Point Size | Translate Table |
| 803 | Times Roman | 5 | 6 | 8 | 8 | 5 |
| 804 | Times Roman | 5 | 4 | 8 | 8 | 5 |
| 811 | Helvetica | 4 | 4 | 8 | 8 | 1 |
| 812 | Helvetica | 4 | 4 | 8 | 8 | 5 |
| 813 | Helvetica | 4 | 4 | 8 | 8 | 5 |
| 814 | Helvetica | 4 | 4 | 8 | 8 | 5 |
| 815 | Helvetica | 4 | 5 | 8 | 8 | 5 |
| 1001 | Times Roman | 5 | 4 | 8 | 10 | 1 |
| 1002 | Times Roman | 5 | 5 | 8 | 10 | 1 |
| 1003 | Times Roman | 5 | 6 | 8 | 10 | 1 |
| 1004 | Times Roman | 5 | 4 | 8 | 10 | 5 |
| 1005 | Times Roman | 5 | 5 | 8 | 10 | 5 |
| 1006 | Times Roman | 5 | 6 | 8 | 10 | 5 |
| 1012 | Helvetica | 4 | 5 | 8 | 10 | 1 |
| 1013 | Helvetica | 4 | 6 | 8 | 10 | 1 |
| 1051 | Times Roman | 5 | 4 | 8 | 10 | 1 |
| 1053 | Times Roman | 5 | 5 | 8 | 10 | 1 |
| 1056 | Times Roman | 5 | 6 | 8 | 10 | 1 |
| 1201 | Times Roman | 5 | 4 | 8 | 12 | 1 |
| 1202 | Times Roman | 5 | 5 | 8 | 12 | 1 |
| 1203 | Times Roman | 5 | 6 | 8 | 12 | 1 |
| 1211 | Helvetica | 4 | 4 | 8 | 12 | 1 |
| 1212 | Helvetica | 4 | 5 | 8 | 12 | 1 |
| 1213 | Helvetica | 4 | 6 | 8 | 12 | 1 |
| 1215 | Helvetica | 4 | 5 | 8 | 12 | 5 |
| 1351 | Times Roman | 5 | 4 | 8 | 12 | 1 |
| 1401 | Times Roman | 5 | 4 | 8 | 14 | 1 |
| 1402 | Times Roman | 5 | 5 | 8 | 14 | 1 |
| 1403 | Times Roman | 5 | 6 | 8 | 14 | 1 |
| 1411 | Helvetica | 4 | 4 | 8 | 14 | 1 |
| 1412 | Helvetica | 4 | 5 | 8 | 14 | 1 |

| Default Font Table | | | | | | |
|--------------------|--------------|----------|-----------|------------|------------|-----------------|
| FGID | Font | Typeface | Attribute | Symbol Set | Point Size | Translate Table |
| 1413 | Helvetica | 4 | 6 | 8 | 14 | 1 |
| 1415 | Helvetica | 4 | 5 | 8 | 12 | 5 |
| 1653 | Times Roman | 5 | 5 | 8 | 16 | 1 |
| 1801 | Times Roman | 5 | 5 | 8 | 18 | 1 |
| 1811 | Helvetica | 4 | 5 | 8 | 18 | 1 |
| 2103 | Times Roman | 5 | 5 | 8 | 24 | 1 |
| 2401 | Times Roman | 5 | 5 | 8 | 24 | 1 |
| 2411 | Helvetica | 4 | 5 | 8 | 24 | 1 |
| 3001 | Times Roman | 5 | 5 | 8 | 30 | 1 |
| 3011 | Helvetica | 4 | 5 | 8 | 30 | 1 |
| 6500 | Presentation | 11 | 5 | 8 | 18 | 5 |
| 8100 | Presentation | 11 | 5 | 8 | 18 | 5 |



Chapter 7

Problem Solving

In this Chapter . . .

- “About this Chapter” on page 7-2
- “Coax Emulation-Related LCD Messages” on page 7-2
- “Twinax Emulation-Related LCD Messages” on page 7-2
- “Wrong Characters Printing” on page 7-3
- “Additional Troubleshooting Tips” on page 7-3

About this Chapter

This chapter describes LCD display messages requiring user intervention and also LCD messages involving fatal errors.

This chapter is intended for Coax and Twinax users.

Coax Emulation-Related LCD Messages

NOTE: All the examples below indicate error messages for the Network 1 port. These same messages apply to Network 2 port also.

Net1: Error 06

Press Start

This ATTENTION message will be displayed whenever the printer receives an SCS BEL “bell code” from the host computer.

Net1: Error 07

Press Start

This EQUIPMENT CHECK message means that an invalid Printer Control Information Area (PCIA) was received from the host computer. To clear this message, press the Start pushbutton.

Net1: Error 27

Press Start

This NOT ENABLED message means the control unit is not ready, a cable problem exists between the printer and the control unit, or the cable has been disconnected and then reconnected. To clear this message, press the Start pushbutton.

Net1: Error 28

Press Start

This NO CU SIGNAL message means that the printer is not receiving polls from the control unit. Check to see if the cable is connected, if the control unit is online, or if the printer hardware has a problem. To clear this message, press the Start pushbutton.

Twinax Emulation-Related LCD Messages

NOTE: All the examples below indicate error messages for the Network 1 port. These same messages apply to Network 2 port also.

Net1: Error 27

Press Start

This NOT ENABLED message means the control unit is not ready, a cable problem exists between the printer and the control unit, or the cable has been disconnected and then reconnected. To clear this message, press the Start pushbutton.

Net1: Error 28

Press Start

This NO CU SIGNAL message means that the printer is not receiving polls from the control unit. Check to see if the cable is connected, if the control unit is online, or if the printer hardware has a problem. To clear this message, press the Start pushbutton.

Wrong Characters Printing

You may need to change the default code page to 037 if the characters !, ^, [,], or ¢ are not printing correctly when entered from a display.

You may need to change the default code page to version 0 if the characters É, =, ~, x, or © are not printing correctly when entered from a display.

Additional Troubleshooting Tips

To confirm that the problem is related to the network interface, you may want to remove the option from the printer. If the problem persists after removing the optional interface, the problem is related to the printer rather than the optional interface. Refer to the User Manual included with the printer to diagnose and solve printer problems.

The LCD display panel contains multiple rows of solid black diamonds.

A fatal error has occurred. Contact your service representative.

The LCD display remains blank.

A fatal error has occurred. Contact your service representative.

Although an IPDS Network Option is installed in the printer, nothing happens following selection of NETWORK MENU 1 or NETWORK MENU 2 from the LCD display.

Turn the printer power OFF, then ON again. Although a fatal error has occurred within the Twi-nax or Coax I/O port, you can continue to use the other I/O ports of the printer. Contact your service representative.

Any other problem(s) should be referred to your service representative.



