

EPSON®



C o a x
Interface Card



C82314 *

USER'S GUIDE
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
GUÍA DEL USUARIO
MANUALE PER L'UTENTE



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COAX INTERFACE CARD C82314*

USER'S GUIDE

SCHNITTSTELLENDARTE COAX C82314*

BEDIENUNGSANLEITUNG

CARTE D'INTERFACE COAX C82314*

MODE D'EMPLOI

TARJETA DE INTERFACE COAX C82314*

GUIA DEL USUARIO

SCHEDA DI INTERFACCIA COAX C82314*

MANUALE PER L'UTENTE

APPENDIX C

ANHANG C/APPENDICE C/APÉNDICE C/APPENDICE C

User's Guide

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INTRODUCTION

The Epson 3270 coax interface card C82314* with PC auto parallel sharing port is an optional Epson interface card. It allows the direct connection of supported Epson ESC/P dot matrix and laser printers to a coax type-A adapter of an IBM 3174/3274/3276 Control Unit or IBM 3270 mainframe system. In addition, a Centronics compatible mini-parallel port with auto switching allows a PC or alternate host to share the printer with the 3270 host for optimum printer utilization.

The Epson interface can emulate IBM 3287, 3268, 4214-1, and 4224 (non-IPDS) dot matrix printers and IBM 3812-1 and 4028 (non-IPDS) laser printers. When the interface is installed in an Epson printer with HP LaserJet emulation, the Computer Output Reduction (COR) feature enables data processing reports to automatically be reduced and printed on letter size paper. Also, custom Font ID's allow you to specify multiple fonts that will automatically be used in your documents.

The Epson interface supports LU3 (DSC) and LUI .(SCS) mode printing. It has a large selection of user definable setup selections (including IBM RPQ options) that can be changed and stored in non-volatile memory using commands imbedded in documents sent to the printer (downloaded from the host). A Command Pass-Thru (hex transparency) feature allows a user to access the special features of the Epson printer directly from the coax host. The interface does not support coax host-controlled color printing options, AFP, IPDS, GDDM, APL, programmed symbols.

Epson printers that have a slot for an optional interface card are supported:

DLQ-2000	LQ-570/1070	LQ870/1170
SQ-870/1 170	EPL-4000/4100	EPL-8000/8100
ActionPrinter 5000/5500	ActionLaserII	

Note: See your printer's User's Guide for information on the optional interfaces it supports. Contact your Epson dealer for further information on C82314* interface support.

GENERAL SPECIFICATIONS

Input Protocol:	IBM 3270 coax LU1 or LU3 protocol and Centronics parallel protocol
Output Protocol:	Epson parallel, internal interface connection
Receive Data Rate:	Maximum burst: 2.3587 million bits/second
Data Buffering:	4K byte coax communication buffer
Language Support:	Standard IBM 3174 language sections (See Appendix A, Command 8 for list of languages.)
Connectors:	Female BNC coax connector and mini-Centronics parallel connector for alternate host (PC) sharing
Indicators:	One red LED One green LED
Switches:	Two push buttons
Power Required:	+5V @ 240mA, supplied by the printer

LED SPECIFICATIONS

LED Indication status

Green ON	The control unit (CU) is communicating with the interface card (within past 30 seconds).
Green OFF	The CU is not communicating with the interface card.
Red ON	The program attention (PA) manual option (see Appendix A, command 35) is active and the printer received a request (from the host software) for a PA button to be pressed by the user so printing can continue.
Red Blinks Twice	The user pressed and released both buttons at the same time (for less than 1 second) sending a cancel message to the host.
Red Remains on after turn on	The interface encountered problems during its self test. (The red LED goes off after a normal self test.)

BUTTON SPECIFICATIONS

<u>Button</u>	<u>Functions</u>
Top	<p>PA1 response when the PA red LED is on</p> <p>Prints out a page listing when pressed and held for 2 seconds. If the coax cable is disconnected, then a RAM/ROM self test is also performed and the results are printed.</p> <p>YES response during push button setup (see Appendix B)</p>
Bottom	<p>PA2 response when the PA red LED is on</p> <p>Begins restoration of factory default setup (see "Restoring Factory Default Configuration" section)</p> <p>NO response during push button setup (see Appendix B)</p>
Both	<p>After turning on, if both buttons are pressed and released (for less than one second) a cancel signal is sent to the host. The red LED will blink twice times to confirm the cancel signal was sent. (Note: The printer will continue printing until its buffer is empty.)</p> <p>After turning on, if both buttons are pressed and held more than two seconds, the interface enters the hexadecimal (buffer dump) diagnostic printing mode. The printer then prints "Buffer print is active" and the green LED will blink twice. Turn off the printer to exit this mode or press and hold both buttons for more than two seconds which will cause the green LED to blink twice. (Also, see Command 42 in Appendix A for a download command.)</p>

INSTALLATION

CONTENTS OF INTERFACE KIT

Make sure the interface kit includes all items listed below:

- Coax interface card
- PC Auto Parallel Sharing Cable
- User's guide

INSTALLING THE INTERFACE CARD

Install the coax interface card in the same way as any Epson optional interface. This procedure is explained in detail for the individual Epson printers in either an appendix or the section on Using Printer Options in the user's manual that comes with the printer. Please follow the instructions carefully to install the coax interface card. Secure the interface with the thumb screws. Take precautions to protect the interface card from static discharge by touching a grounded surface immediately before installing.

The mini-Centronics connector on the coax interface card can be used for automatic alternate host (PC) sharing by using the parallel printer share cable included in the box with the interface.

The interface card is supplied with default setup selections stored in its nonvolatile memory. These default selections will suffice for most user requirements. Refer to Appendix A for a listing of the user definable setup selections and custom features.

EXECUTING A SELF-TEST

Verify proper installation of the coax interface card by performing an interface card self-test. The self-test also prints out the current setup selections.

1. Before testing the interface card, perform a test of the printer to confirm that it is functional. Refer to instructions in the printer's User's Guide. Do not proceed unless the printer is operational.
2. To test the coax interface, disconnect the coax and mini-Centronics connectors from the interface and turn the printer on. After the printer is ready, press the top (PA1) button on the interface and hold it for more than two seconds. Release the button and the self test results are printed as well as a listing of the setup selections.
3. The printer prints out the self-test page if the interface is installed properly. See the self test printout example, Appendix C.
4. If nothing prints, the interface is not installed properly. A separate test of the interface may be performed by disconnecting the coax and mini-Centronics connectors and turning on the printer. If the LED displays red and then goes out, it indicates successful completion of the self tests. If the red LED remains on, the self tests found a problem with the interface.

INTERFACE CONFIGURATION

After installing the interface card and performing a self-test, the interface is ready to operate in most environments. The factory default settings will be satisfactory for most programs and applications. Be sure to check Command 60 on the self test print out to confirm that the interface is configured correctly for either a dot matrix or HP laser printer.

If you are using a laser printer, make sure you set your printer's emulation mode to match that of the interface: HP emulation or dot matrix emulation. (If your laser printer supports Epson Job Language --EJL- commands, do not change the printer's emulation mode using the EJL command or the command-pass-thru feature while this interface is installed. Also, you may not be able to change the printer mode using the control panel.)

If your printer prints a warning message, the interface and printer emulations do not match. Use your printer's control panel to match the interface and printer emulation settings.

Never select the PostScript™ printer mode while this interface is installed.

If the printer is a matrix printer, you must select character set 'Code Page 850' in the setup of the printer. Refer to the printer's User's Guide to determine how to select the character set by using either dip switches or the front panel. If you have selected HP LaserJet emulation, the 'Roman 8' character set is automatically selected.

All configuration selections can be changed by simply embedding commands (as defined in Appendix A) in a 3270 print job or print screen (hard copy) that is sent to the printer. These are called Host Download Commands. If the embedded command is sent correctly, the characters that create the command are not printed. If the command is printed, then the interface did not recognize the command because of a problem in the format of the command. Correct the problem and send the command again. If you wish to confirm the active setup selections for the printer, you can print a listing page by either performing a self test (pressing and holding the top button for 2 seconds) or sending the '98,1' command to the interface.

Unless the '99,6' command is sent to save the active setup in non-volatile (NV) memory, the configuration commands only change the active setup values and are lost when the printer is turned off. By sending a '98,1' command immediately after turning on the printer, you can identify the selections that are stored in NV memory of the interface.

If a coax host is not available and basic setup selections need to be changed, the interface has the option of a push button setup as defined in Appendix B. This option enables the basic interface features and RPQ options to be selected.

RESTORING FACTORY DEFAULT CONFIGURATION

The factory default configuration selections can be restored to the NV memory of the interface by either sending a Host Download Command '98,0' or by turning on the printer when the coax cable is disconnected and performing the following steps (wait for printer to be READY):

1. Press and hold the bottom (PA2) button for more than two seconds and then release; the red and green LED begin to blink alternately.
2. Press and release the top (PA1) button; only the green LED blinks.
3. Press and release the bottom (PA2) button; the red LED blinks twice.
4. Sequence is complete. Factory defaults are restored to the NV memory of the interface. Turn the printer off and then back on.

PRINTER FEATURE ACCESS METHODS

This interface features three methods for accessing the special features of Epson printers not normally available in the IBM printers being emulated:

Command-Pass-Thru
Custom User Strings
SCS Mode Transparent Data

Each of these methods is described below.

1. COMMAND-PASS-THRU

DESCRIPTION

The Command-Pass-Thru (Hex Transparency) feature allows the user to access all of the built-in features of the Epson printer whether or not these features can be accessed by the IBM host software. Command-Pass-Thru provides a method of placing printer specific command sequences into the data sent to the printer from the host. The coax interface recognizes these special sequences and "Passes the Command Thru" to the printer. This feature allows the programmer

to' access all of the Epson features such as color printing, superscripts; and subscripts.

Command-Pass-Thru is accomplished by converting the printer command sequence into a series of two digit hexadecimal values. For example, an Escape has a decimal value of 27 and a hexadecimal value of 1B. In Command-Pass-Thru, an Escape is the character '1' followed by the character 'B'. To allow the coax interface to recognize the sequence, it is preceded by a 'delimiter sequence consisting of an ampersand (&), followed by a percent (%). Several commands may be contained within the enclosing &% pairs. Once the first &% is detected, the coax interface passes hexadecimal data to the printer until it receives the next &% or a character is received that is not in the hexadecimal range of 0 to 9 or A to F -(upper case letters only).

in addition, the user has the option of selecting a different delimiter sequence using setup command 40 (see Appendix A, command 40).

EXAMPLE

in order to highlight a passage in a document, you may wish to use an Epson printer command such as the emphasized mode. The printer command sequence for emphasized printing listed in your Epson printer's manual is 'ESC E', or '1B 45' in hexadecimal, to begin emphasized print and 'ESC F', or '1B 46' in hexadecimal, to end emphasized print.

At the point in the document where emphasized printing is desired, the sequence &% 1 B 4 5 & % should appear. When you wish to cancel emphasized printing, insert the sequence & % 1 B 4 6 & %. If the document is viewed on a CRT terminal, these characters are displayed. During printing, however, these command sequences only start and stop emphasized mode and do not appear on the paper and do not take up any space.

NOTE: In this example, the characters are separated by spaces for clarity. The spaces between each individual character must be removed from the actual command, but single spaces between pairs of characters are permitted.

RULES FOR COMMAND-PASS-THRU

Command-Pass-Thru must begin with an &% or the alternate delimiter characters specified in Command 40.

Hexadecimal values must be used in the command. These values represent ASCII data which is understood by the Epson printer.

Valid characters for hex codes are 0-9 and A-F (upper case letters only).

No spaces are allowed in the command between the 'delimiter sequence &% and the first hexadecimal value.

A single space is permitted, but not required, to separate pairs of hexadecimal letters (to aid in easier interpretation of the hex codes).

If an error in formatting the command sequence occurs, the interface will resume printing at the point in the sequence where the error occurs.

The data included in a Command-Pass-Thru string can span print buffers. This allows transmission of long strings of hexadecimal data.

During Command-Pass-Thru, the coax interface ignores control codes (NL, LF, CR and FF) but honors the EM code.

2. CUSTOM USER STRINGS

Host download Command 55 (see Appendix A, Command 55) allows a user to permanently define six custom user strings that are frequently used (for example, a special font selection). The custom user string is activated by simply putting the delimiter (&%), a capital letter U, and the number of the desired custom user string in the text of a page, i.e. "&%U3". The custom user strings can be any combination of text or special commands for the printer, especially ones that are often used.

3. SCS MODE TRANSPARENT DATA

SCS transparent mode (SCS TRN code 35) provides a method for transparent data transmission when operating in LU1 mode. To use this method, you must be connected to a system using SNA protocol and be operating as a Logical Unit Type 1.

A SCS TRN sequence begins with a one byte binary count immediately following the TRN code. The count indicates the number of bytes, not including the count byte, of transparent data to follow. Up to 256 bytes of transparent data can be sent in each sequence.

SCS TRN data is user-defined and is not scanned for SCS control codes. However, to emulate the characteristics of the IBM 3287, non-printable characters (i.e., control characters) are converted to hyphens. Data is translated to ASCII, with undefined characters printed as hyphens. This coax interface offers a configurable option to emulate the IBM 3287 or to pass the data without translation. Refer to Appendix A, Command 35, SCS TRN TRANSLATE.

Another method of Transparent Data Transmission is the Xerox defined SCS TRN code 36. Generally accepted for use **in** laser printer applications, this method is the same as the Coax Interface non-translate method above. Control code sequence rules are the same for SCS code 36 as for code 35.

ALTERNATE HOST (PC) AUTO PARALLEL SHARING

If the C82314* is connected to a PC with **the parallel sharing cable, the PC must be turned on.**

The coax interface card has a mini-Centronics parallel connector which enables it to automatically share the printer between the 3270 host and the alternate host (usually a personal computer). The interface periodically checks the 3270 host and the PC until it finds input data to be printed. The interface continues to print using data from the current source until the input data stops and no additional data is received for the period of time specified with Commands 50 or 51. (Factory defaults are 5 seconds for the parallel port and 10 seconds for the 3270 port.) The other source is then checked for the presence of data to be printed. The automatic checking for data from either sources is accomplished constantly when both hosts are idle. The host with the first data will have printing priority until it has printed all of its data and remained idle for the time interval specified in Commands 50 or 51.

The Epson printer may have large print buffers, so an actual physical break in printing may not be seen between print jobs, yet the interface pauses for the specified time period without passing data to the printer before changing to the other port. While the 3270 host is active, the parallel port accepts the first parallel byte and then goes busy. This allows the interface to know that parallel data is waiting. Conversely, while the parallel port is printing, the 3270 coax port will receive data and then send a busy signal to the host until the printer is available (the time-out period on the parallel port has expired with no additional data having been received). PC printing longer than 20 minutes may cause the 3270 host to drop communication with the printer.

Prior to printing a coax host document, if the previous document comes from the PC sharing port, the interface card sends the coax port initialization string to the printer and restores the printer's format that was last specified by the coax host when switching to coax printing (see Appendix A, Command 57). Also, before printing an initial document from the PC Share port, the interface sends the user defined **shared** port initialization string (see Appendix A Command 56). The alternate (PC) host must send the printer all of the necessary formatting instructions and commands **for** correct printing.

PARALLEL INTERFACE SPECIFICATION

The C82314* coax interface provides a Centronics parallel data input port to allow automatic sharing of the Epson printer between the 3270 host and an alternate host. The parallel interface was designed to be compatible with popular printer interfaces found on personal computers. The following is a description of the parallel interface signals:

PARALLEL INTERFACE SPECIFICATIONS

Signal Pin	Return Pin	Signal	Parallel Cable Pin	Direction	Description
1	19	STROBE	1	IN	Strobe pulse to read data in. Pulse width must be more than .5 μ sec. at the interface
2	20	DATA1	2	IN	These signals represent information in bits 1 to 8 of parallel data respectively. Each signal is HIGH when data is logical 1 and LOW when it is logical 0.
3	21	DATA2	3	IN	
4	22	DATA3	4	IN	
5	23	DATA4	5	IN	
6	24	DATA5	6	IN	
7	25	DATA6	7	IN	
8	26	DATA7	8	IN	
9	27	DATA8	9	IN	
10	28	ACKNLG	10	OUT	A LOW pulse with a minimum width of 4 μ sec. A low indicates that data has been received and that the printer is ready to accept more data.

Signal Pin	Return Pin	Signal	Parallel Cable Pin	Direction	Description
11	29	BUSY	11	OUT	A HIGH signal indicates that the printer cannot receive data. The signal goes HIGH in these cases. -Data entry, for each character -When off line or in error state -When serving the IBM host and a byte of parallel data is received.
12	30	PE	12	OUT	HIGH when the printer is out of paper.
13		SLCT	13	OUT	Pulled up to +5V through a 3.3K ohm resistance.
14		AUTO FEED	14	IN	THIS SIGNAL IS NOT SUPPORTED BY THE C82314* INTERFACE. (Delined by many printers to add a LF to each CR. The IBM 3270 protocol does not allow support of this signal.
15	--	NC	--	--	Not used
16	--	GND	19	--	Logic ground
17	--	CGND	--	--	Chassis ground
18	--	NC	--	--	Not used
19-30	--	GND	21-24	--	Twisted pair ground returns listed above

Signal Pin	Return Pin	Signal	Parallel Cable Pin	Direction	Description
31	-	INIT	16	IN	Defined to reset and clear the printer when LOW; THE RESET AND CLEAR ARE NOT SUPPORTED BY THE C62314*, As the IBM host cannot be interrupted by this signal. An ACKNLG is generated for hand-shaking.
32		ERROR	15	OUT	This signal goes LOW when the printer is in an error state such as out of paper.
33		GND	25		Logic ground
34		NC	--	--	Not used
35		HIGH	--	--	Pulled up to +5V through a 3.3K ohm resistance
36		SLCTIN	17	--	NOT SUPPORTED

NOTE: The mini-parallel connector is a DDK type DHA-36 or equivalent.

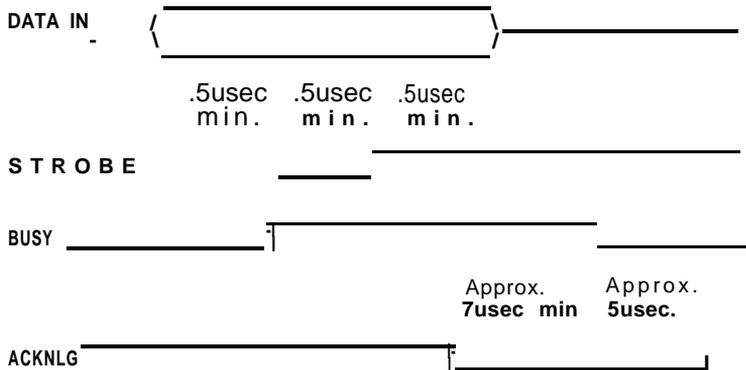
The column heading 'DIRECTION' refers to the direction of signal flow as viewed from the C82314* interface.

'RETURN' denotes the twisted-pair return, to be connected at signal ground level. For the interlace wiring, be sure to use twisted-pair cable for each signal and to complete the connection on the return side. The cable should be shielded and connected to the chassis of the host computer and printer.

All interface conditions as based on TTL levels. Both the rise and the fall times of each signal must be less than 0.2 microseconds.

Data transfer is carried out by observing the ACKNLG or BUSY signals. Data transfer to the printer occurs only after receipt of the ACKNLG signal or when the BUSY signal is LOW.

TIMING



Data must be present a minimum of 0.5 microseconds before and after a minimum 0.5 microsecond STROBE pulse. BUSY goes high before the end of the STROBE signal and remains high until the end of an ACKNLG pulse of minimum 4 microseconds.

EPSON HP LASERJET EMULATION

Most Epson laser printers have an option to emulate the Hewlett Packard LaserJet printer. Check your user's guide to determine if your printer has this option, which can be selected from the front panel of the printer. Be sure to save the HP option selection into the printer's default settings so the HP option is always loaded at power-on. The HP option provides increased capability including easy font selection and portrait and landscape printing.

HP FONT IDENTIFIER CODES

When Command 60 (see Appendix A, command 60) of the interface is used to select HP LaserJet emulation, font changes can be accomplished by simply including the font identifier ID code in the text of the document being printed.

In the Appendix C at the back of the manual is a summary listing of the font identifier codes for the printer's resident fonts and the Epson font cartridges. The code consists of the delimiter characters (&% or alternate delimiters) plus the letter "P" or "L" depending on whether the user wants portrait or landscape printing, and the font ID number.

If a non-Epson supplied HP compatible font cartridge is used, the font ID number assigned to the font in the Epson cartridges works with the HP compatible cartridges. Additional font ID numbers are assigned to other fonts available in many of the HP compatible cartridges and these are listed in an Appendix C at the back of the manual. If the font you want to use is not listed with a font ID number, it is simple to assign the font command to a custom user string and access the font by using the user string command.

Example: Code &%L086 identifies a landscape Prestige 12 CPI font in the Epson 5412 font cartridge. If the font cartridge is not installed, then the printer automatically selects an alternate landscape font and uses it to print the document.

Multiple font changes can be made in a document as long as all fonts are specified in the same orientation. A change in orientation (portrait or landscape) automatically ejects the page. A blank page at the first of a document is often caused by a change in orientation. A font ID must be absolutely the first data on the page, i.e. at the first position on the very first line of the page when it specifies a change in orientation from the previously printed page, or a blank page will be ejected.

COMPUTER OUTPUT REDUCTION (COR), HP EMULATION

The landscape printing capability of the HP LaserJet emulation enables the interface to automatically print traditional data processing reports requiring 66 lines by 132 columns or 198 columns of data on 8.5 x 11.0 inch paper.

When Command 60 selects HP LaserJet protocol and APO is active (Command 61) and COR is selected for the paper source specified (Commands 62-64), the following format changes are automatically made to data processing reports:

The Page is printed in landscape orientation.

Vertical line height is 70% of that specified.

A 0.5 inch blank area is provided on the top and left edge of the paper.

The selected font is changed, as follows:

10 pitch to 13.3 pitch

12 pitch to 15 pitch

15 pitch to 19 pitch

A combination of control codes in the printer data stream and the settings in the configuration are used to determine page orientation when processing DSC, DSE, or LUI (SCS) data streams.

Some data processing applications will not allow the user to insert the data stream commands required to achieve orientation and format selection. Where the insertion of the required data stream commands is not possible, the user can select the orientation and format desired by using the interface's default configuration settings. Use of the Write Control Character (WCC) in the DSC/DSE data streams for orientation and format selection is not recommended.

Using the HP LaserJet emulation, the COR feature enables 132 column X 66 line and 198 column X 66 line data processing reports to be printed on 8 1/2" X 11" paper in landscape orientation. This enables a tremendous amount of data to be stored in ordinary file cabinet drawers and a staple on the edge of the pages will secure the sequence of the pages.

AUTOMATIC PRINT ORIENTATION (APO), HP EMULATION

When Automatic Print Orientation (APO) is specified active (see Appendix A, command 61), the coax interface notes the page format parameters of the print image and calculates the required print dimensions in inches. The page calculations are based on the following equations:

$$\begin{array}{l} \text{Requested} \quad \text{Characters per line (MPP)} \\ \text{Print Width} = \frac{\text{-----}}{\text{(in inches)}} \quad \text{Characters per inch (CPI)} \end{array}$$

$$\begin{array}{l} \text{Requested} \quad \text{Lines per Page (MPL)} \\ \text{Print Length} = \frac{\text{-----}}{\text{(in inches)}} \quad \text{Lines per Inch (LPI)} \end{array}$$

EXAMPLE:

The printer calculates a 13.2 x 11 .0 inch page size if:

Characters per line = 132
Font = 10 pitch (CPI)
Lines per page = 66
Lines per inch = 6

Because the calculated paper size is larger than 8.5 x 11.0 inches, the Paper Tray Orientation selection (see Appendix A, Commands 62-64) determines the orientation of the printing. Reference the following Page Orientation Logic Illustration.

In LU3 (DSC/DSE) mode, the values of the parameters used in the calculations are those specified by the interface's active configuration selections. In LUI (SCS) mode, the values used are those specified in the data stream by the SCS controls. If a value has not been set in the SCS data stream, the interface's active configuration is used.

Understand that the interface does not supply automatic orientation based on the amount of incoming data from the host for each line or page. The values must be provided in the data stream or by use of the printer's configuration selections.

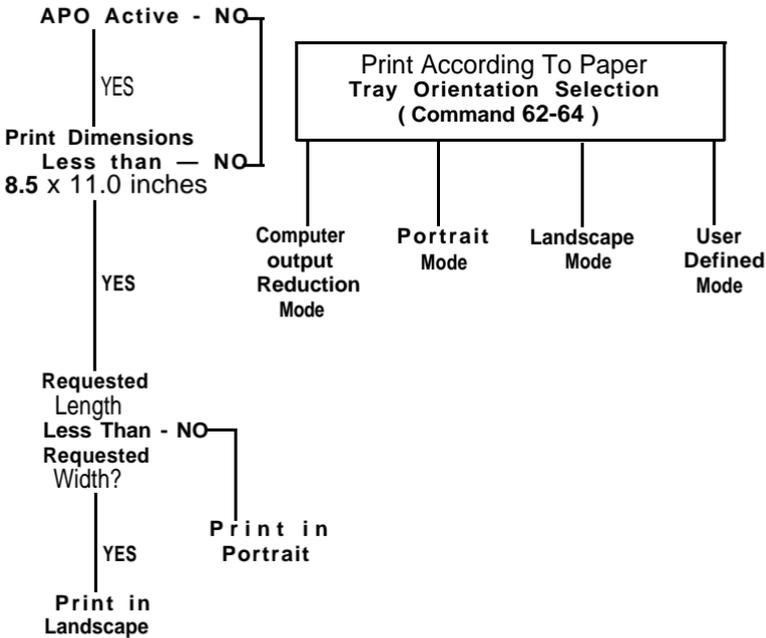
The Automatic Print Orientation (APO) feature also utilizes the requested print width and print length as specified above to determine the print orientation when the print dimensions are less than the 8.5 x 11 inch paper size, When the width is greater than the length and APO is active, the document prints in landscape

regardless of whether the user specified a portrait font ID. You should be aware of the significance of the specified form size (as defined by the MPP and MPL) and select these values in accordance with your desired orientation when APO is active.

PAGE ORIENTATION LOGIC

The page orientation logic is as follows depending on whether APO in Command 61 is active and the Paper Tray Orientation selections made in Commands 62 to 64. The requested print length and width is important when APO is active as illustrated below:

START
Page Orientation Logic



APPENDIX A: HOST DOWNLOAD CONFIGURATION COMMANDS

This appendix defines the configuration commands which may be used to select setup values for the printer interface. These commands may be sent to the printer as part of a normal 3270 coax print job or hard copy print screen. The interface will identify the commands and obey their instructions without printing the text of the command. If the text of a command prints, check that the format of the command is correct.

The format for all configuration commands is:

&%Z'Command Number, 'Value and/or data'

The '&%' characters are defined as the default 'delimiter characters and the upper case 'Z' is the default command ID character. It is possible to specify user selectable alternate values for the 'delimiter characters (reference Command 40). The capital letter Z (or other command character, reference Command 41) precedes all command numbers. Chaining multiple commands together is permitted by using a slash (/) or backslash (\) to separate the commands with no spaces allowed. Each command string must be preceded by an &% and terminated by at least one space or a control character (i.e. LF, NL, CR, or FF). Commands are utilized by the interface and sent to the printer immediately upon receipt from the host. Commands chained together with slashes and located on the first line and first position take effect immediately on the page where they are located. Otherwise they take effect on the next page.

NOTES: The asterisk (*) character identifies factory default selections.

All commands have immediate effect unless noted otherwise.

For a command to be permanently stored in non-volatile memory, the Command '/Z99,0' must be used.

An error causes the interface to exit download mode and print from the point of error.

The RPQs are only active in LU3, non-SCS mode.

APPENDIX A: HOST DOWNLOAD CONFIGURATION COMMANDS

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COMMAND 1: BUFFER SIZE

Selects logical default buffer size

VALUE DESCRIPTION

1	960 characters
*2	1920 characters
3	2560 characters
4	3440 characters
5	3564 characters

NOTES: This command, along with the 'Z99,0' command, changes the logical buffer size selection in the non-volatile memory of the interface. **The** logical buffer size is only reported to the host the next time the unit is powered up.

The physical buffer size is permanently set at 4K.

EXAMPLE: &%Z1,3 Sets logical buffer size to 2560 characters.

COMMAND 2: LINES PER INCH

Selects default LPI.

VALUE DESCRIPTION

3	3 LPI
4	4 LPI
*6	6 LPI
8	8 LPI

NOTES: This default emulates the front panel selection on an IBM printer.

The IBM host can control the LPI unless Command 36 is used to select override of host LPI commands.

EXAMPLE: &%Z2,8 Sets the printer to 8 LPI default

COMMAND 3: CHARACTERS PER INCH

Selects default CPI

VALUE	DESCRIPTION
0	No default sent to printer
*10	10 CPI
12	12 CPI
15	15 CPI
16	16.7 CPI

NOTE: The IBM host controls CPI unless Command 36 is used to select override of host CPI commands.

EXAMPLE: &%Z3,15 Sets the printer to 15 CPI default

COMMAND 4: LINE SPACING

Selects default Line Spacing

VALUE	DESCRIPTION
*1	Single Space
2	Double Space

EXAMPLE: &%Z4,2 Sets the printer to double space default

COMMAND 5: FORM LENGTH

Selects default Form Length (MPL, Maximum Print Lines)

VALUE	DESCRIPTION
000 to 255	Set Form Length in number of lines
*066	(Factory Default)

NOTE: This default emulates the front panel selection on an IBM printer.

EXAMPLE: &%Z5,72 Sets form length to 72 lines for A-4 paper

COMMAND 6: MAXIMUM PRINT POSITION

Selects current and default Maximum Print Position, the maximum number of characters which can be printed on each line.

VALUE DESCRIPTION

000	Infinite Line Length
001	Set MPP in number of characters
to	
255	
* 132	(Factory Default)

NOTES: Normal values are 80, 132, or 198 characters.

This default emulates the front panel selection on an IBM printer,

MPP and the current position will not be changed by changes in CPI.

The infinite line length will place no limits on the number of characters that can be sent to the printer on a single line.

EXAMPLE: &%Z6,80 Sets MPP to 80 characters

COMMAND 7: PRINT CASE

Selects default Print Case

VALUE DESCRIPTION

0	Mono case
*1	Dual case

NOTES: Mono case = Upper case characters only

Dual case = Upper and lower case characters

This default only affects LU3 printing

EXAMPLE: &%Z7,0 Sets default to mono case

COMMAND 8: LU1 LANGUAGE

Selects default LU1 Language.

VALUE	DESCRIPTION
* 01	English (U.S.) EBCDIC
03	Austrian/German
04	Belgian
05	Brazilian
06	Canadian (French)
07	Danish/Norwegian
08	Danish/Norwegian (alt.)
09	Finnish/Swedish
10	Finnish/Swedish (alt.)
11	French
12 (same as 11)	French (alt.)
13	Austrian/German (alt.)
14	International Set 5
15	Italian
16	Japanese (English)
17 (same as 16)	French (alt.)
19	S p a n i s h
20	Spanish (alt.)
21	Spanish Speaking
22	English (U.K.)
23 (same as 07)	Norwegian
24 (same as 09)	Swedish
25 (same as 01)	EBCDIC (alt.)
26 (same as 08)	Norwegian (alt.)
27 (same as 10)	Swedish (at.)
28	Portuguese
29 (same as 06)	Canadian (Bilingual)
30 (same as 11)	French AZERTY (105 character)
31 (same as 14)	Swiss German
32 (same as 14)	Swiss French

NOTES: This command, along with command 'Z99,0', changes the default LU1 language selection in the non-volatile memory of the interface.

The number of the command value should agree with the language number used in IBM CU configuration sequence number 121.

EXAMPLE: &%Z8,04 Sets LU1 language to Belgian

COMMAND 9: FONT SELECT (Matrix Printer]

Selects Epson default font when dot matrix printer protocol is selected in Command 60. This command is not functional when laser printer protocol is selected.

VALUE DESCRIPTION

- *1 Draft Print Quality
- 2 Roman, NLQ
- 3 **Sans Serif, NLQ**
- 4 Courier, NLQ (Font Cartridge Required)
- 5 Prestige, NLQ (Font Cartridge Required)
- 6 Script, NLQ (Font Cartridge Required)
- 7 OCR-B, NLQ (Font Cartridge Required)
- 8 OCR-A, NLQ (Font Cartridge Required)
- 9 Orator, NLQ (Font Cartridge Required)
- 10 Orator-S, **NLQ** (Font Cartridge Required)
- 11 Script C, NLQ (Font Cartridge Required)

EXAMPLE: &%Z9,2 Selects near-letter-quality (Roman) as the default

COMMAND 11: PAPER PATH

Selects default paper path for the Page Presentation Media (PPM) command

VALUE DESCRIPTION

- 0 Ignore the host PPM Command; paper tray selection determined by use of the printer's front panel.
- 1 Tractor Feed or only one paper source used (Ignore the Host PPM)
- *2 Cut-Sheet Feeding from primary bin is default
- 3 Cut-Sheet Feeding from alternate bin is default
- 4 Envelope Feeder default
- 5 Manual Sheet Feed default
- 6 Manual Envelope Feed default

NOTES: This command defines the default paper source for the Page Presentation Media (PPM) Host command in SCS mode. If the PPM command is received from the host, the interface always sends the SCS mode paper source command to the printer unless values 0 or 1 are selected. If the printer does not have a secondary paper bin or an envelope feeder, it ignores the command, but it will be used for Commands 62-64 logic.

If manual sheet feed is specified in the SCS PPM command and no paper is installed in the manual feed slot, the printer will wait for the operator to insert perhaps letter head or a special form before printing continues.

If this command is placed as the first printable data on the page, (line 1, position 1) the specified paper path will take effect immediately. If the command is placed at any other position on the page, the change will have effect on the next page.

EXAMPLE: &%Z11,5 Selects manual sheet feed default source for paper

COMMAND 12: FORM FEED BEFORE LOCAL SCREEN COPY

Specifies whether a Form Feed is performed before-doing local screen hard copy.

VALUE	DESCRIPTION
-------	-------------

- | | |
|----|---|
| *0 | No Form Feed before local screen hard copy |
| 1 | Form Feed performed before local screen hard copy |

NOTES: This command only affects the local screen copy function, not the host-initiated local copy printing.

Functions only in non-SCS operations

EXAMPLE: &%Z12,1 Performs a FF before local screen copy

COMMAND 13: FORM FEED AFTER LOCAL SCREEN COPY

Specifies whether a Form Feed is performed after a local screen hard copy.

VALUE	DESCRIPTION
-------	-------------

- | | |
|----|--|
| *0 | No Form Feed after local screen hard copy |
| 1 | Form Feed performed after local screen hard copy |

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9508
IBM 3287 RPQ MC3750
IBM 4214 OPT 20=3

This command only affects the local screen copy, not the host-initiated local copy printing.

Functions only in non-SCS operations

EXAMPLE: &%Z13,1 Perform a FF after local screen copy

COMMAND 14: LU3 PRINT IMAGE (Non-SCS Mode)

Selects Null Line Suppression or True Screen Image in LU3 printing mode

VALUE	DESCRIPTION
-------	-------------

- | | |
|----|--|
| *0 | Null line suppression in Local Copy and non-SCS print |
| 1 | Null line suppression in non-SCS print and true screen image in Local Copy |
| 2 | True screen image in non-SCS print and null line suppression in Local Copy |
| 3 | True screen image in non-SCS print and true screen image in Local copy |

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9505
IBM 3287 RPQ SC3741
IBM 4214 OPT 18=2

Available only in non-SCS operation

Command 14, Values 0 and 1 are only functional from CUT terminals.

EXAMPLE: &%Z14,3 Prints true screen image In non-SCS **print** and local copy

COMMAND 15: CR at MPP + 1

Sets the printer in accordance with the RPQ installed in the control unit.

VALUE DESCRIPTION

*0 First print position (PP) of next line
1 First PP of current line

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9501
IBM 3287 RPQ S30219
IBM 4214 OPT 15=1

Available only in non-SCS operation

EXAMPLE: &%Z15,1 Prints first PP of current line as the next PP when a CR is received at MPP + 1.

COMMAND 16: NL at MPP + 1

Sets the printer in accordance with the RPQ installed in the control unit

VALUE DESCRIPTION

*0 First PP of current line + 2 lines
1 First PP of next line

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9502
IBM 3287 RPQ S30219
IBM 4214 OPT 15=1

Available only in non-SCS operation.

EXAMPLE: &%Z16,1 Performs first PP of next line as the next PP when an NL is received at MPP+ 1.

COMMAND 17: VALID FF FOLLOWED BY DATA

Sets the printer in accordance with the RPQ installed in the control unit

VALUE	DESCRIPTION
-------	-------------

*0	Second print position of first line on next form
1	First print position (PP) of first line on next form

NOTES: For the Value 1 selection, the RPQ would be:

IBM 3268 RPQ SC9503

IBM 3287 RPQ N/A

IBM 4214 OPT 16=2

Available only in non-SCS operation

EXAMPLE: &%Z17,1 Performs first PP of first line on next form as the next PP when a valid FF (positioned anywhere but the end of an IBM print buffer) is received.

COMMAND 18: VALID FF AT END OF PRINT BUFFER

Sets the printer in accordance with the RPQ installed in the control unit

VALUE	DESCRIPTION
-------	-------------

0	First PP of second line on next form
*1	First PP of first line on next form

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9504

IBM 3287 RPQ SC3749

IBM 4214 OPT 17=2

Available only in non-SCS operation

EXAMPLE: &%Z18,1 Performs first PP of first line on next form as the next PP when a valid FF is received at the end of an IBM print buffer.

COMMAND 19: FF VALID LOCATION

Sets the printer in accordance with the RPQ installed in the control unit

VALUE DESCRIPTION

- | | |
|-----|--|
| * 0 | FF is valid only at the first print position or at position MPP+1. |
| 1 | FF is valid anywhere it occurs. |

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9506
IBM 3287 RPQ SC3739
IBM 4214 OPT 19=1

Available only in non-SCS operation.

EXAMPLE: &%Z19,1 Makes FF valid anywhere it occurs

COMMAND 20: AUTOMATIC FUNCTION AT END OF JOB

Sets the printer in accordance with the RPQ installed in the control unit.

VALUE DESCRIPTION

- | | |
|-----|--|
| * 0 | NL is automatically executed after the buffer is completed (unless an FF, NL, or CR was last in the buffer). |
| 1 | FF is automatically executed after the print buffer is completed (unless an FF was last in the buffer). |

NOTES: To use this function, the RPQ should be:

IBM 3268 RPQ SC9507
IBM 3287 RPQ SC3740
IBM 4214 OPT 20=2

Available only in non-SCS operation

Do not press the form feed or line feed buttons on the front of the printer. This will cause the host and printer to lose synchronization of paper position. This command reduces the need to advance the paper.

EXAMPLE: &%Z20,1 Sets the printer to issue an FF automatically at the end of the print buffer.

COMMAND 25: FORM FEED USAGE

Enables a Forms Feed from the host system to be converted to the required number of line feeds (beneficial when forms length is controlled by the interface).

VALUE	DESCRIPTION
-------	-------------

0	Pass FF from host to the printer (Laser Printer default)
*1	Count the lines in Command 5 and send multiple line feeds to the printer in place of the host FF.

EXAMPLE: &%Z25,1 Sets the printer to count the lines specified in Command 5.

COMMAND 26: SUPPRESS EMPTY FORMS

Blank printout pages caused by Form Feed commands that occur at the top of a form can be suppressed.

VALUE	DESCRIPTION
-------	-------------

*0	No, do not suppress empty forms
1	Yes, suppress empty forms

NOTES: If selected, the coax interface ignores Forms Feed commands located at the top of form position.

This command affects printing in both DSC and SCS modes. This differs from the IBM 3287, which suppresses Form Feeds only in DSC mode.

EXAMPLE: &%Z26,1 Sets the interface to suppress empty forms

COMMAND 27: FF AFTER TIME ELAPSE

Sends a Form Feed if unprinted data remains in the print buffer for the specified coax port time-out interval in Command 51.

VALUE DESCRIPTION

- *0 No extra FF is sent
- 1 Send FF after time out value

NOTES: The time-out value is the same as the time-out used to switch between host and alternate host printer sharing. (See Command 51)

Generally, the host application generates a termination FF, and there is no need to change this command from the default.

In duplex printing, the last page will be ejected.

EXAMPLE: `&%Z27,1` Sends FF after time delay selected by command 51 (default = 10 sec.) when unprinted data remains in the print buffer.

COMMAND 31: TRUNCATE/WRAP SELECT

The user can select whether the interface truncates or wraps the text if the maximum print position is exceeded.

VALUE DESCRIPTION

- *0 Allow text to print on next line when maximum print position is exceeded.
- 1 Truncate text beyond the maximum print position

EXAMPLE: `&%Z31,1` Causes text which exceeds the maximum print position to be lost.

COMMAND 32: PAPER SIZE (LASER)

Specifies the paper size used for printing

VALUE DESCRIPTION

- *0 Selects 8 1/2" X 11" letter paper
- 1 Selects 210mm X 297mm (8.27" X 11.69") A-4 paper
- 2 Selects 8 1/2" X 14" legal paper

EXAMPLE: `&%Z32,1` The interface tells the printer to use A-4 paper.

COMMAND 34: INTERVENTION REQUIRED (IR) TIME OUT

Sets the time interval before an intervention required signal is sent to the host after a printer error occurs.

VALUE	DESCRIPTION
-------	-------------

000	Never send an IR
-----	------------------

001 to 255	Send IR after the VALUE times 5 seconds after printer error occurs.
------------------	---

* 120	Default, send IR after ten minutes.
-------	-------------------------------------

EXAMPLE: &%Z34,036 Sets IR time interval to 3 minutes

COMMAND 35: PROGRAM ATTENTION (PA) RESPONSE

The IBM host software can send a program attention (PA) request to the printer, causing the printer to stop printing until a PA1 or PA2 response from the printer is sent to the host software. The interface can be set to either automatically return a PA1 response upon receiving a PA request or stop and wait (with red LED on) until the operator presses one of the two push buttons on the interface card.

VALUE	DESCRIPTION
-------	-------------

*0	Printer stops and waits for operator to press a PA1 or PA2 push button before sending the PA response to the host.
----	--

1	Interface automatically responds with a PA1 if a PA request is received from the host.
---	--

NOTE: This can be used to enable an operator to install special forms, colored paper, legal paper, etc. in the printer before the PA push button is pressed.

EXAMPLE: &%,Z35,1 Printer automatically responds with a PA1 response.

COMMAND 36: SUPPRESS IBM CONTROL CODES

This function is used to select suppression of all or some IBM control codes sent from the host system.

VALUE	DESCRIPTION
*0	Obey all IBM control codes
1	Suppress all IBM control codes
2	Suppress only LPI and CPI control codes
3	Suppress only CPI control codes
4	Suppress only LPI control codes
5	Suppress print quality specified in the PPM command.

NOTES: If this command is set to 1, documents will have to be formatted by sending transparent control codes to the printer using Command-Pass-Thru or SCS mode transparent data

If this command is set to 2, the SCS pitch (CPI) and line density (LPI) commands are suppressed (Not sent to the printer).

EXAMPLE: &%Z36,2 No LPI or CPI commands are sent to the printer.
The printer prints using the user specified selections.

COMMAND 37: VERTICAL CHANNEL SELECT (VCS)

Specifies vertical channel select (VCS) emulation.

VALUE	DESCRIPTION
0	3287 VCS emulation
*1	3268/4214/4224 VCS emulation

EXAMPLE: &%Z37,0 Selects 3287 VCS emulation

COMMAND 38: TRUE LPI SPACING (LASER)

Because laser printers have a non-printable border around the edge of single-sheet pages, 6-LPI and 8-LPI spacing is compressed slightly to enable 66 lines and 88 lines to be printed on 11-inch long paper. This can occasionally cause a problem, especially with preprinted forms. Command 38 enables a user to override the normal laser printer LPI compression.

VALUE DESCRIPTION

- *0 Compress the vertical LPI spacing
- 1 Print using true 6 and 8 LPI spacing

NOTE: If true LPI is selected, the user needs to adjust the document formats to allow for the reduced number of lines that can be printed per page; otherwise, blank pages are ejected by the laser printer because of blank line feeds that do not fit on the reduced page size. (Refer to the laser printer's operator's manual.)

EXAMPLE: &%Z38,1 Specifies that vertical spacing prints using true 6 and 8 LPI. For an 11" page, 63 lines at 6 LPI or 84 lines at 8 LPI are the maximum that fit on a page

COMMAND 40: ALTERNATE DELIMITER CHARACTERS

Specifies two characters in addition to &% which can be used for the 'delimiter' characters for Command-Pass-Thru and Host Download Commands.

VALUE DESCRIPTION

- 0000 Deletes previously selected alternate characters
- XXYY XX is the ASCII HEXADECIMAL value of the first character and YY is the ASCII HEX value of the second character.

EXAMPLE: &%Z40,253F Specifies the %? characters as the alternate 'delimiter' characters, % ASCII hex value is 25 and ? ASCII hex value is 3F in this example.

COMMAND 41: COMMAND ID CHARACTER

Specifies the character which can be used for the command identifier (in place of "Z" which follows the 'Lead In' characters).

VALUE DESCRIPTION

*5A Makes Z the command character.

ZZ ZZ is the ASCII HEX value of the command ID character.

NOTE: The character selected must not be 0 through 9 or A through F (valid hex values), or L, P, U.

EXAMPLE: &%Z41,59 Specifies 'Y' as the alternate command ID character

COMMAND 42: START AND STOP BUFFER HEX DUMP

Upon receipt of a start command, the coax interface, starting with the next buffer received, sends all host data directly to the printer as hexadecimal printing until a stop command is received or the printer is powered off.

VALUE DESCRIPTION

* 0 No Action Taken

1 Start Buffer Hex Dump

2 Stop Buffer Hex Dump

NOTES: This is an alternative to pressing both push buttons on the interface card and holding them for more than 2 seconds to activate Buffer Hex Dump.

This command enables the user to print only the section of the document that is in question in Buffer Hex Dump Format. But, hex printing starts with the buffer following the start command and stops with the buffer following the stop command.

EXAMPLES: &%Z42,1 Starts Buffer Hex Dump Printing
 &%Z42,2 Stops Buffer Hex Dump Printing

COMMAND 45: SCS TRN TRANSLATE

Specifies how transparent data sent using SCS code 35 is handled.

VALUE	DESCRIPTION
0	Binary Transparent
*1	Emulate IBM 3287 Printer

NOTES: Value 1 causes valid graphic characters to be printed normally (i.e., converted from EBCDIC to ASCII), control codes and invalid graphics to be printed as hyphens, and normal page formatting is maintained.

Value 0 causes the 8 bit binary codes to be sent directly to the printer just as they are received from the host.

SCS code 36 functions the same as code 35.

EXAMPLE: &%Z45,0 All SCS Code 35 data is sent to the printer as binary codes without translation.

COMMAND 50: PARALLEL PORT TIME OUT

Selects the time interval that the interface waits for receipt of additional data from the alternate (PC) host before automatically switching to check for data from the coax host.

VALUE	DESCRIPTION
01 to 60	Time interval in number of seconds
*5	Factory Default is 5 seconds

NOTES: The interface sends a reset command to the printer and restores the coax host defined format commands (i.e. LPI, CPI, MPL, MPP) prior to printing data from the coax host after having printed data from the shared parallel port.

Because the printer is being shared between the parallel port and the 3270 host, careful attention should be paid to setting up the PC so that jobs are not automatically terminated because the printer is busy.

This problem may be helped by setting the PC timer "off by writing "mode 1pt1:.,,p" (in case of an LPT1 printer) in DOS.

Use of the DOS PRINT command or a spooling program for the PC is recommended.

If your printer supports intelligent Emulation Switching (IES), make sure your printer's IES timeout period is less than the command 50 timeout setting.

EXAMPLE: &%Z50,10 Sets the time interval to 10 seconds

COMMAND 51: COAX PORT TIME OUT

Selects the time interval that the interface waits for receipt of additional data from the coax host before automatically switching to check for data from the alternate (PC) host.

VALUE DESCRIPTION

00 The interface never checks for parallel port data (parallel shared port is disabled).

01 Time interval in number of seconds
to
60

*10 Factory Default is 10 seconds

NOTE: The alternate (PC) host is responsible for sending any needed format commands required by the printer prior to sending printable data.

If your printer supports Intelligent Emulation Switching (IES), make sure your printer's IES timeout period is less than the command 51 timeout setting.

EXAMPLE: &%Z51,05 Sets the time interval to 5 seconds

COMMAND 55: CUSTOM USER STRINGS

Allows a coax user to define up to six custom user strings, of up to 25 bytes each, which are stored in the memory of the interface card and sent to the printer whenever the "two-letter delimiter, letter U, and number of the string" appears in the text of the document, i.e. &%U3.

VALUE DESCRIPTION

0 Following the value number, insert a parenthesis, followed by
to the ASCII hex bytes included in the user string, and then a
5 parenthesis to end.

NOTES: To aid in readability, a single space is allowed between hex bytes but is not included in the string.

The strings could specify a special font selection command or other custom command to be sent directly to the printer.

This command, if placed as the first printable data at the top of the page (position 1, line 1), will be sent to the printer prior to the data.

To change a custom user string, simply input the new custom user string values. The entire old string is automatically erased.

To delete a custom user string from the NV memory, simply put nothing between the parentheses.

EXAMPLES: &%Z55,3(1 B01)	Defines the &%U3 custom user string to send an "ESC and SOH" (1B and 01 hex) to the printer. This is the Epson Double-Width, One Line, ON command.
&%Z55,4(O F)	Defines the &%U4 custom command to send "SI" (shift in, OF hex) to the printer wherever the &%U4 command appears in the text. This turns ON the Epson condensed printing.
&%Z55,5(12)	Defines the &%U5 custom command to send "DC2" (Device Control 2, 12 hex) to the printer. This is the Epson condensed printing OFF command.
&%Z55,1()	Deletes from NV memory any hex string that had been previously defined for the &%U1 custom command.

COMMAND 56: SHARED PORT INITIALIZATION STRING

Allows the user to define an initialization string of up to 25 bytes which are stored in the memory of the interface card and sent to the printer at the beginning of any printing received from the alternate shared port.

VALUE DESCRIPTION

- 1 Following the value number, insert a parenthesis, followed by the hex bytes included in the command string, and then a parenthesis to end.

NOTES: To aid in readability, a single space is allowed between hex bytes but is not included in the string.

The string could specify a special font selection command or other custom command to be sent directly to the printer prior to the data that is received from the parallel shared port.

To change the initialization string simply input the new command values. The entire old string is automatically erased.

To delete the initialization string from the NV memory, simply put nothing between the parentheses.

EXAMPLE: &%Z56,1() Deletes from NV memory any hex string that had been previously defined for the parallel port initialization string.

COMMAND 57: COAX PORT INITIALIZATION STRING

Allows the user to define an initialization string of up to 25 bytes. This string is stored in the memory of the interface card and is sent to initialize the printer for coax port printing after printing from the shared parallel port has occurred. The interface also, after the initialization string, sends commands to restore the default or host defined page format parameters prior to coax port printing.

VALUE DESCRIPTION

- 1 Following the value number, insert a parenthesis, followed by the hex bytes included in the command string, and then a parenthesis to end.

NOTES: To aid in readability, a single space is allowed between hex bytes but is not included in the string.

The coax port initialization string is only sent to the printer when you *turn* the printer on and after printing by the shared parallel port has occurred. Host SCS commands and download commands have priority over the initialization string instructions.

To change the initialization string simply input the new command values. The entire old string is automatically erased.

To delete the initialization string from the NV memory, simply put nothing between the parentheses.

EXAMPLE: `&%Z57,1()` Deletes from NV memory any hex string that had been previously defined for the coax port initialization string

COMMAND 60: ASCII PRINTER PROTOCOL

Specifies the type of ASCII printer protocol instructions that the interface will use when converting from the 3270 coax cable commands. Most Epson ESC/P printers will automatically on power up set this command to agree with the type of printer in which the interface is installed. If your printer is a laser printer, this command is invalid.

VALUE DESCRIPTION

*1	Epson ESC/P dot matrix protocol
2	HP LaserJet PCL4 laser protocol

NOTES: HP LaserJet protocol automatically uses the Roman 8 character set and Epson ESC/P requires that the Code Page 850 character set be selected by the user through front panel selections or DIP switch selections.

The HP LaserJet laser protocol supports the ability to specify cartridge fonts by simply including a font ID Command in the document.

A change in this command is not active until it is saved to NV memory using an `'&%Z99,0'` and the unit is turned off and then on again.

When laser protocol is selected, the default for Command 25 changes to the 'form feed' option.

EXAMPLE: `&%Z60,2` Selects use of the HP LaserJet PCL4 laser protocol

COMMAND 61: AUTOMATIC PRINT ORIENTATION (APO) (LASER)

Laser printers automatically control page orientation if the user decides to activate auto print orientation (APO). Refer to the page orientation logic chart in the computer output reduction section of the manual.

VALUE DESCRIPTION

- * 0 Auto Print Orientation (APO) is ACTIVE. The page dimensions of a document are checked to determine if the data should be printed in landscape because the width is greater than the length.
- 1 Auto Print Orientation (APO) is NOT ACTIVE. Print orientation is controlled by the orientation selections specified in Commands 62, 63, and 64.

NOTE: APO active is the recommended selection.

A user can manipulate the page dimensions using SCS commands to control the orientation of the printing as long as the page size required is 8 1/2" X 11" or smaller.

EXAMPLE: &%Z61 ,1 APO is not active.

COMMAND 62: PRIMARY PAPER TRAY ORIENTATION (LASER)

The SCS (LU1) PPM command, which specifies the source for the paper, assigns a printing orientation to the primary paper tray. Refer to the page orientation logic chart in the computer output reduction section of the manual. This command duplicates the IBM 3812 and 4028 printer's feature with the additional selection of option 3 below.

VALUE DESCRIPTION

- *0 Computer Output Reduction (COR) Mode is active when paper is specified to be selected from the primary tray.
- 1 PORTRAIT orientation will occur using the active font when the primary tray is specified.
- 2 LANDSCAPE orientation printing occurs using the active font when the primary tray is specified.

- 3 User Defined mode; documents are printed using the fonts and orientation that the user specifies through use of the &% font ID commands.

EXAMPLE: &%Z62,3 Specifies that the document is printed as formatted when the primary paper tray is specified as the paper source.

COMMAND 63: ALTERNATE PAPER TRAY ORIENTATION (LASER)

This command functions identically to Command 62 except it controls the orientation for printing that specifies (SCS,LU1) the alternate tray for the paper source.

Values are the same as Command 62 except substitute 'alternate tray' for 'primary tray' in the descriptions.

NOTES: Even if the printer does not have an alternate paper tray and defaults to the primary tray, if the SCS (LU1) host specifies the alternate tray, the interface prints the document in accordance with the selection in Command 63.

The value 3 is an excellent choice when COR is not required, since the user can decide the fonts and orientation he desires by using &% font ID commands.

EXAMPLE: &%Z63,2 Specifies that landscape orientation will be used for all printing in which the SCS (LU1) PPM code specifies the alternate paper tray be used.

COMMAND 64: MANUAL FEED TRAY ORIENTATION (LASER)

This command functions identically to Command 62 except it controls the orientation for printing when the PPM Command specifies the manual feed tray for the paper source.

Values are the same as Command 62 except substitute 'manual feed tray' in place of 'primary tray' in the descriptions.

NOTE: A laser printer, upon receipt of the manual feed tray command, does not proceed with printing until paper is placed into the manual feed slot. This allows a user to insert special forms, letter head, or colored paper into the manual feed slot.

EXAMPLE: &%Z64,1 Specifies all printing performed using paper from the manual feed slot be printed in portrait orientation.

COMMAND 65: CHARACTER SET SELECTION

Enables the user to make a special selection of the ASCII character set that is used in the conversion from EBCDIC (SCS/LU1) or DSC (LU3) to ASCII. This is the character set that the printer uses in printing. It must be selected at the printer by using the front panel or dip switches of the printer. Changing the protocol selection in Command 60 automatically changes the character set as required. However, Command 65 can override the automatic selection.

VALUE	DESCRIPTION
-------	-------------

1	Roman 8 character set
* 2	Code Page 850 character set

NOTES: The character set substitutions defined in Commands 70 and 71 must be adjusted if the ASCII character set is changed. All previously defined substitutions are lost from NV memory when the character set selection is changed.

Refer to the character set summary tables at the end of the self test to confirm which ASCII character is printed for each of the 3270 hex codes. Both the EBCDIC and DSC tables are provided.

EXAMPLE: &%Z65,2 Selects the Code Page 850 character set

COMMAND 70: OVERWRITE EBCDIC (SCS/LU1) TRANSLATION TABLE

Custom substitutions defined by this command and stored in NV memory are written into the EBCDIC (SCS/LU1)-to-ASCII translation table.

VALUE	DESCRIPTION
-------	-------------

xx	The hex location in the EBCDIC table that sends the following ASCII hex sequence.
YY	The ASCII hex sequence that is overwritten in the EBCDIC translation table.

NOTES: Previously stored substitutions are automatically changed to the new selection when the same hex location is specified in the EBCDIC table.

Previously stored substitutions are cancelled if an ASCII hex sequence of 00 is specified.

Command 'Z99,0' must be used to store the substitutions in NV Memory for them to be effective when the printer is next turned on.

The active EBCDIC (SCS/LU1) translation table prints out at the end of the interface self-test summary.

EXAMPLE: &%Z70,7B,40/Z99,0 Overwrites the ASCII hex output for the EBCDIC 7B (a # symbol) to send a 40 ASCII hex which will print a @ symbol instead. The command is followed by a command 'Z99,0' which stores the active setup selections in non-volatile memory.

COMMAND 71: OVERWRITE DSC (LU3) TRANSLATION TABLE

Custom substitutions defined by this command, and stored in the NV memory, are overwritten into the DSC (LU3) to ASCII translation table.

NOTES: This command functions identically to Command 70 except that the substitutions are applicable to the DSC (LU3) translation table. Refer to the Command 70 instructions.

The active DSC (LU3) translation table prints out at the end of the interface self-test summary.

COMMAND 98: RESTORE DEFAULTS CR PRINT CONFIGURATION

Restores the factory default configuration selections, prints out a copy of the active configuration selections, or restores the non volatile memory (NV) selections to the active configuration status.

VALUE DESCRIPTION

- | | |
|---|--|
| 0 | Restores the factory defaults to the NV memory of the interface. |
| 1 | Prints out the active setup selections for review by the user. |
| 2 | Restores the setup selections stored in the NV memory to active status of the interface. |

NOTES: The active setup selections are the same as the NV memory selections if no host download commands have been sent to the printer since it was turned on.

Value 2 is a quick way, after having printed a document using special setup selections, to return the interface to the normal selections. Put a `&%Z98,2` at the end of the special document to restore the standard setup parameters for the next coax user of the printer.

The active setup and NV *memory* setup selections are the same after a command `'Z99,0` or a Command `'Z98,2'` is sent to the printer.

EXAMPLE: `&%Z98,1` Prints out the active-setup selections for review by the user.

COMMAND 99: STORE CONFIGURATION IN NV MEMORY

Send this command after all desired host download configuration commands have been sent to the interface. It stores the active setup in the NV memory of the interface so that it will be in effect whenever you turn on the printer. Otherwise, active configuration commands are lost when the printer is turned off.

VALUE DESCRIPTION

- | | |
|---|---|
| 0 | To complete the command format, the value 0 must be used. |
|---|---|

NOTES: Only host download selections which have been followed by a Command `'Z99,0'` will be stored in NV memory and restored to the active setup when the printer is turned on.

Only use Command `'Z99,0'` when the host download selection needs to be permanently stored in the memory of the coax interface.

EXAMPLE: `&%Z99,0` Stores the currently active setup selections in the NV memory of the interface.

APPENDIX B: PUSH BUTTON SETUP

Push button (Yes / No) setup provides an alternate method for a user to select the basic configuration selections for the printer emulation. Selections can also be changed by the Host Download Configuration Commands as specified in Appendix A which has more detailed information on the selections.

Push button setup is selected by performing a self test and at the end of the self test print out the last line of printing will have the question: 'Do you want to do push button set up?' Press the PA1 push button to answer the question "Yes". Press the PA2 push button to answer the question "No", or simply turn off the printer to discontinue push button setup.

NOTE: For reference, your 'Yes' or "No" response is printed before the next option statement is printed. Some printers may require you to line feed the paper to a position where the printed text can be read. On a laser printer, it is necessary to form feed a page to read the printed output.

A detailed example of the Push Button Setup printout is as follows:

1920 =	Logical Buffer Size	
	Do you want this changed? (Yes I No)	Yes
<u>2560</u> =	Logical Buffer Size	
	Do you want this changed? (Yes / No)	Yes
<u>3564</u> =	Logical Buffer Size	
	Do you want this changed? (Yes / No)	Yes
<u>3440</u> =	Logical Buffer Size	
	Do you want this changed? (Yes / No)	Yes
<u>960</u> =	Logical Buffer Size	
	Do you want this changed? (Yes / No)	Yes
<u>1920</u> =	Logical Buffer . ..(Sequence repeats until a 'No' response is given)	

A "Yes" response causes the next selection in the option group to be substituted into the printed statement with a similar Yes / No response requested. When the 'No' button is pushed, the current configuration selection remains and the selection jumps to the next configuration setup option group. The selections are

grouped together with periodic opportunities to end push button setup provided at the end of each group.

Following is the summary list of the push button setup option groups that are used to select the basic configuration. The underlined segment of each statement is the portion that changes.

*Epson ESC/P dot matrix protocol active (Reference Command 60)
Do you want this changed? (Yes/ No)
Alternate Selections:
* HP Laserjet PCL
* Epson ESC/P dot matrix

*1920= Logical Buffer Size (Reference Command 1)
Do you want this changed? (Yes / No)
Alternate Selections:
* 2560
* 3564
* 3440
* 960
* 1920

*6 = Default LPI (Reference Command 2)
Do you want this changed? (Yes / No)
Alternate Selections:
* 8
* 3
* 4
* 6

*10 = Default CPI (Reference Command 3)
Do you want this changed? (Yes/No)
Alternate Selections:
* 12
* 15
* 16.7
* 10

*Single (6 or 8 LPI) = Default Spacing (Reference Command 4)
Do you want this changed? (Yes | No)
Alternate Selections:
* Double (3 or 4 LPI)
* Single (6 or 8 LPI)

* 66 = MPL (Reference Command 5)
Do you want this changed? (Yes / No)
Alternate Selections:
* 72
* 84
* 66

*132 = Default MPP (Reference Command 6)
Do you want this changed? (Yes / No)
Alternate Selections:
* 198
* 255
* Infinite
* 80
* 132

*Dual Case = Default Print Case (Reference Command 7)
Do you want this changed? (Yes / No)
Alternate Selections:
* Mono
* Dual

*English (U.S.) = Default Language (Reference Command 8)
Do you want this changed? (Yes | No)
Alternate Selections:
* Austrian / German
* Belgian
* Brazilian
* Canadian / French
* Danish / Norwegian
* Danish / Norwegian (alt)
* Finnish / Swedish
* Finnish / Swedish (alt)

- * French
 - * Austrian / German (alt)
 - * International
 - * Italian
 - * Japanese (English)
 - * Spanish
 - * Span&h (alt)
 - * Spanish Speaking
 - * English (U.K.)
 - * Portuguese
 - * English (U.S.)
-

Do you want to END? (Yes / No)

NO response continues with following set-up selections.

YES response prints: Save current settings? (Yes / No)

YES response prints: Selections stored, turn off unit.

*No FF before local screen hard copy (Reference Command 12)

Do you want this changed? (Yes / No)

Alternate Selections:

- * FF
 - * No FF
-

*No FF after local screen hard copy (Reference Command 13)

Do you want this changed? (Yes / No)

Alternate Selections:

- * FF
 - * No FF
-

*LU3 and Local Copy Null line suppression (Reference Command 14)

Do you want this changed? (Yes / No)

Alternate Selections:

- * LU3
 - * Local copy
 - * NO
 - * LU3 and Local Copy
-

*Next Line first PP, for CR at MPP + 1 (Reference Command 15)

Do you want this changed? (Yes / No)

Alternate Selections:

* Current line

* Next line

*Current Line + 2 is next PP for NL at MPP + 1 (Reference Command 16)

Do you want this changed? (Yes / No)

Alternate Selections:

* Next line

* Current line + 2

* 2nd PP of line 1 on next form, for FF (Reference Command 17)

Do you want this changed? (Yes / No)

Alternate Selections:

* 1st PP

* 2nd PP

*Line 1 first PP of next form, for valid FF at EOB (Reference Command 18)

Do you want this changed? (Yes / No)

Alternate Selections:

* Line 2

* Line 1

*FF valid at 1st PP or MPP + 1 (Reference Command 19)

Do you want this changed? (Yes / No)

Alternate Selections:

* FF valid anywhere

* FF valid at 1st PP or MPP + 1

* NL will be added at EOB if not present (Reference Command 20)

Do you want this changed? (Yes / No)

Alternate Selections:

* FF

* NL

Do you wish to end? (Yes / No)
NO response continues with following set up selections.
YES response prints: Save current settings? (Yes / No)
YES response prints: Selections stored, turn off unit.

*Multi LF's used to eject forms (Reference Command 25)
Do you want this changed? (Yes / No)
Alternate Selections:
* FF
* Multi LF

*Suppress empty forms (Reference Command 26)
Do you want this changed? (Yes / No)
Alternate Selections:
* Do not suppress empty forms.
* suppress empty forms.

*Do Not FF if data in the printer after time out (Reference Command 27)
Do you want this changed? (Yes / No)
Alternate Selections:
* Do
* Do not send

*Wrap text beyond MPP (Reference Command 31)
Do you want this changed? (Yes / No)
Alternate Selections:
* Truncate
* Wrap

*10 min. = IR timeout

(Reference Command 34)

Do you want this changed? (Yes | No)

Alternate Selections:

- * 20 min
 - * Disabled
 - * 5 sec
 - * 30 sec
 - * 60 sec
 - * 3 min
 - * 10 min
-

*Manual PA1/2 response

(Reference Command 35)

Do you want this changed? (Yes / No)

Alternate Selections:

- * Auto PA1
 - * Manual PA1/2
-

*No IBM control codes suppressed

(Reference Command 36)

Do you want this changed? (Yes / No)

Alternate Selections:

- * CPI
 - * LPI
 - * CPI/LPI
 - * Print quality
 - * All
 - * No
-

* 3268/4224 VCS emulation

(Reference Command 37)

Do you want this changed? (Yes / No)

Alternate Selections:

- * 3287
 - * 3268/4224
-

*Compressed LPI spacing

(Reference Command 38)

Do you want this changed? (Yes / No)

Alternate Selections:

- * True
 - * Compressed (Normal)
-

*3287 emulation of SCS command 35 (Reference Command 45)
Do you want this changed? (Yes / No)
Alternate Selections:
* Binary transparent data
* 3287

*5 Seconds for Parallel Port time out (Reference Command 50)
Do you want this changed? (Yes / No)
Alternate Selections:
* 10
* 20
* 30
* 60
* 5

*10 Seconds for Coax Port time out (Reference Command 51)
Go you want this changed? (Yes / No)
Alternate Selections:
* 20
* 30
* 60
* 5
* 10

Do you want to END? (Yes / No)
NO response continues,with following set-up selections.
YES response prints: Save current settings? (Yes / No)
YES response prints: Selections stored, turn off unit.

*APO active (Reference Command 61)
Do you want this changed? (Yes / No)
Alternate Selections:
I APO not
I APO

*COR Is primary paper tray orientation (Reference Command 62)
Do you want this changed? (Yes / No)
Alternate Selections:
* Portrait
* landscape
* User Defined
* COR

*COR is secondary paper tray orientation (Reference Command 63)
Do you want this changed? (Yes / No)
Alternate Selections:
* Portrait
* Landscape
* User Define
* COR

*COR is manual paper tray orientation (Reference Command 64).
Do you want this changed? (Yes / No)
Alternate Selections:
* Portrait
* Landscape
* User Define
* COR

*Code Page 850 is character set (Reference Command 65)
Do you want this changed? (Yes / No)
Alternate Selections:
* Roman 8
* Code Page 850

SAVE CURRENT SETTINGS? (Yes / No)
YES Response Prints: Selections stored, turn off unit.
NO Response returns to the beginning.

APPENDIX C

Anhang C / Appendice C / Apéndice C / Appendice C

Sample printouts - Self Test
Druckmuster - Selbsttest
Exemples d'impression - Autotest
Ejemplos de impresión - Auto-test
Esempi di stampa - Test automatico

IBM 3270 Printer Interface
Copyright (c) 1992 Sherwood Digital Electronics Corp.
Ram Ok
Rom Ok
MICROCODE LOAD - OK

Software Version 0.83

Active Configuration Selections:

01 Buffer Size (Characters)	2	1920
02 Lines Per Inch (LPI)	6	
03 Characters Per Inch (CPI)	10	
04 Line Spacing	1	Single(6 or 8 LPI)
05 Form Length (MPL)	066	
06 Maximum Print Position (MPP)	132	
07 Print Case	1	Dual
08 LU1 Language	01	English (US)
11 Paper Path	2	Cut Sheet Primary
12 FF Before Local Screen Copy	0	No
13 FF After Local Screen Copy	0	No
14 LU3 Print Image(Non-SCS Mode)	0	LU3 and Local Copy Null line suppression
15 CR at MPP + 1	0	Next line
16 NL at MPP + 1	0	Current line + 2
17 Valid FF Followed by Data	0	2nd PP
18 Valid FF at End of Buffer	1	Line 1
19 FF Valid Location	0	FF valid at 1st PP or MPP + 1
20 Auto Function at End of Job	0	NL
25 Form Feed Usage	0	FF
26 Suppress Empty Forms	0	No
27 Form Feed After Time Elapse	0	No
31 Truncate/Wrap select	0	Wrap text beyond MPP
32 Paper Size (Laser)	0	Letter
34 Interv Required (IR) Time out	120	Times 5 Seconds
35 Program Attn (PA) Response	0	Manual PA1/2
36 Suppress Host Control Codes	0	No
37 Vertical Channel Select (VCS)	1	3268/4224
38 True LPI spacing (Laser)	0	Compressed (Normal)
40 Alt Delimiter Chars (ASCII)	2625	(44)
41 Command ID Char (ASCII)	5A	(Z)
42 Start/Stop Buffer Hex Dump	0	No Action
45 SCS TRN Translate	1	3287 emulation of SCS command 35
50 Parallel Port Time out	05	Seconds
51 Coax Port Time out	10	Seconds
55 Custom User Strings:		
U0:		
U1:		
U2:		
U3:		
U4:		
U5:		
56 Shared Port Init String:		
SP:		
57 Coax Port Init String:		
CP:		
60 ASCII Printer Protocol	2	HP Laserjet PCL-4
61 Auto Print Orientation (Laser)	0	Yes
62 Primary Tray Options (Laser)	0	COR
63 Alternate Tray Options (Laser)	0	COR
64 Manual Feed Options (Laser)	0	COR
65 Character Set Selection	1	Roman 8

APPENDIX C

Anhang C / Appendice C / Apéndice C / Appendice C

Sample printouts - HP Roman 8 character set
 Druckmuster - Zeichentabelle HP Roman 8
 Exemples d'impression - Table de caractères HP Roman 8
 Ejemplos de impresión - Tabla de caracteres HP Roman 8
 Esempi di stampa - Tabella dei caratteri HP Roman 8

SCS (LU1) EBCDIC to ASCII Translate Table

EBCDIC	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0	456789ABCDEF
0	20	26	2D	D6	D2	B3	F3	BF	7B	7D	5C	30	&-øø°µC{}\\0
1	20	C5	2F	DC	61	6A	7E	BB	41	4A	19	31	é/Éaj-fAJ1
2	C0	C1	A2	A4	62	6B	73	BC	42	4B	53	32	æÄÄbksYBKS2
3	CC	CD	D8	A5	63	6C	74	F2	43	4C	54	33	äëÄEclt·CLT3
4	C8	C9	A1	A3	64	6D	75	BE	44	4D	55	34	àèÄÈdmufDMU4
5	C4	D5	E0	E5	65	6E	76	BD	45	4E	56	35	áíÁíenv\$ENV5
6	E2	D1	E1	A6	66	6F	77	F4	46	4F	57	36	äiÁífowqFOW6
7	D4	DD	D0	A7	67	70	78	F7	47	50	58	37	ÄYÄÏgpXkGPX7
8	B5	D9	B4	E6	68	71	79	F8	48	51	59	38	çIçIhgyhHOY8
9	B7	DE	B6	A9	69	72	7A	F5	49	52	5A	39	ñBñ`irzZIRZ9
A	5B	5D	7C	3A	FB	F9	B8	5E	2D	31	32	33	[] : « » ; ^ ~ - 123
B	2E	24	2C	23	FD	FA	B9	7C	C2	C3	DF	AE	\$. # % & ; öüÖÜ
C	3C	2A	25	40	E4	D7	E3	B0	CE	CF	DA	DB	< * % @ ó æ ø ö ü Ö Ü
D	28	29	5F	27	B2	20	B1	AB	CA	CB	E8	AD	()_ ' ý Ý " öüÖÜ
E	2B	3B	3E	3D	F0	D3	F1	27	C6	C7	E7	ED	+ ; > = ð æ þ ' öüÖÜ
F	21	5E	3F	22	FE	BA	20	5F	EA	EF	E9	FF	! ^ ? " ± ¨ _ öÿÖ

DSC (LU3) DBC to ASCII Translate Table

DBC	00	10	20	30	40	50	60	70	80	90	A0	B0	0123456789AB
0	00	20	30	26	C8	CC	A1	D8	61	71	41	51	0&ääÄÄaqAQ
1	00	3D	31	2D	C9	CD	A3	A5	62	72	42	52	=1-èëÈÈbrBR
2	00	27	32	2E	D9	DD	E6	A7	63	73	43	53	'2.iiíícsCS
3	00	22	33	2C	CA	CE	E8	DA	64	74	44	54	"3,òöÖödtDT
4	00	2F	34	3A	CB	CF	AD	DB	65	75	45	55	/4:üüÜüeuEU
5	00	5C	35	2B	E2	C0	E1	A2	66	76	46	56	\5+ääÄÄfvFV
6	00	7C	36	5E	EA	C1	E9	A4	67	77	47	57	6^øøÖÖgwGW
7	00	7C	37	B0	EF	D1	59	A6	68	78	48	58	7`ýYíYhxHX
8	3E	3F	38	B3	C8	C2	41	DF	69	79	49	59	>?8^äöÄöjzJZ
9	3C	21	39	00	C9	C3	45	AE	6A	7A	4A	5A	<!9 èüEUjzJZ
A	5B	24	DE	5E	C5	C4	45	E0	6B	D7	4B	D3	[ß^éáEÁkæKE
B	5D	BF	BD	7E	D9	C5	49	DC	6C	D6	4C	D2]çS-léIÉlØLØ
C	29	BB	23	AB	CA	D5	4F	E5	6D	D4	4D	D0)#`"óíoíMáMA
D	28	BC	40	60	CB	C6	55	E7	6E	B5	4E	B4	(#È`ùöUöncNC
E	7D	F2	25	A9	CF	C7	59	ED	6F	3B	4F	3B	}·%`üúYüo;O;
F	7B	BA	5F	00	B5	B7	43	B6	70	2A	50	2A	{_ çñCñP*P*

APPENDIX C

Anhang C / Appendice C / Apéndice C / Appendice C

Sample printouts - PC850 character set
 Druckmuster - Zeichentabelle PC850
 Exemples d'impression - Table de caractères PC 850
 Ejemplos de impresión - Tabla de caracteres PC 850
 Esempi di stampa - Tabella dei caratteri PC 850

SCS (LU1) EBCDIC to ASCII Translate Table

EBCDIC	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0	456789ABCDEF
0	20	26	2D	9B	9D	F8	E6	BD	7B	7D	5C	30	&-øø°µç{ }\0
1	20	82	2F	90	61	6A	7E	9C	41	4A	00	31	é/Éaj~£AJ 1
2	83	88	B6	D2	62	6B	73	BE	42	4B	53	32	æèÀÈbksYBKS2
3	84	89	8E	D3	63	6C	74	FA	43	4C	54	33	äëÄËclt·CLT3
4	85	8A	B7	D4	64	6D	75	9F	44	4D	55	34	àèÀÈdmufDMU4
5	A0	A1	B5	D6	65	6E	76	F5	45	4E	56	35	áíÁíenv\$ENV5
6	C6	8C	C7	D7	66	6F	77	F4	46	4F	57	36	äíÁífowfFOW6
7	86	8B	8F	D8	67	70	78	AC	47	50	58	37	äíÁígpaxGPX7
8	87	8D	80	DE	68	71	79	AB	48	51	59	38	çlçlHqyHqY8
9	A4	E1	A5	60	69	72	7A	F3	49	52	5A	39	ñBñ`irz`IRZ9
A	5B	5D	DD	3A	AE	A6	AD	AA	F0	D5	FD	FC	[] : « » ; ~ - 1 2 3
B	2E	24	2C	23	AF	A7	A8	7C	93	96	E2	EA	. \$, # » « ò ú ö Ÿ
C	3C	2A	25	40	D0	91	D1	EE	94	81	99	9A	< * % @ œ æ ð ö ü ö Ÿ
D	28	29	5F	27	EC	F7	ED	F9	95	97	E3	EB	() _ ' ý , ý " ò ú ö Ÿ
E	2B	3B	3E	3D	E8	92	E7	EF	A2	A3	E0	E9	+ ; > » « ð æ ð ö ú ö Ÿ
F	21	5E	3F	22	F1	CF	A9	F2	E4	98	E5	FF	! ^ ? " ± □ © _ ÷ ý ö

DSC (LU3) DBC to ASCII Translate Table

DBC	00	10	20	30	40	50	60	70	80	90	A0	B0	0123456789AB
0	00	20	30	26	85	84	B7	8E	61	71	41	51	0&àáÀÀaqaQ
1	00	3D	31	2D	8A	89	D4	D3	62	72	42	52	=1-èèÈÈbrBR
2	00	EF	32	2E	8D	8B	DE	D8	63	73	43	53	"2.1ííícsCS
3	00	22	33	2C	95	94	E3	99	64	74	44	54	"3,òòÒòdtDT
4	00	2F	34	3A	97	81	EB	9A	65	75	45	55	/4:úúÛÛeuEU
5	00	5C	35	2B	C6	83	C7	B6	66	76	46	56	\5+ááÁÁfvFV
6	00	7C	36	AA	E4	88	E5	D2	67	77	47	57	6-òèÒègwgW
7	00	DD	37	EE	98	8C	59	D7	68	78	48	58	7~ýíYíhXHX
8	3E	3F	38	F8	85	93	41	E2	69	79	49	59	>?8°àòAòiyIY
9	3C	21	39	00	8A	96	45	EA	6A	7A	4A	5A	<!9 èùÈÛjzJZ
A	5B	24	E1	5E	82	A0	45	B5	6B	91	4B	92	[\$ ß ^ é á É Á k æ K E
B	5D	BD	F5	7E	8D	82	49	90	6C	9B	4C	9D] ç Š ` l é Í l Æ L Ø
C	29	9C	23	F9	95	A1	4F	D6	6D	86	4D	8F] £ # " ò í O í m Á M Á
D	28	BE	40	60	97	A2	55	E0	6E	87	4E	80	(¥ @ ` ù ó Ú ó ñ Ç Ñ Ç
E	7D	FA	25	EF	81	A3	59	E9	6F	3B	4F	3B	} · % ` ú ú Y ú o ; O ;
F	7B	CF	5F	F7	87	A4	43	A5	70	2A	50	2A	{ □ _ , ç ñ Ç ñ * P * *

APPENDIX c

Anhang C / Appendice C / Apéndice C / Appendice C

Sample printouts - Hex Print
Druckmuster - Sedezimaldruck
Exemples d'impression - Impression Hexadécimale
Ejemplos de impresión - Impresión hexadecimal
Esempi di stampa - Stampa esadecimale

LU1 (SCS) MODE

Buffer Print is Active

```
Printer Registers.
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F
0000-00 04 00 00 00 00 00 00 00 00 01 40 15 10 10 00 .....
0010-04 06 00 50 00 39 03 40 00 00 00 00 00 00 00 00 ...&...
0020-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
*DUP*
0040-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....

Print Buffer.
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F
0050-2B C1 01 E3 88 89 A2 40 89 A2 40 81 40 A3 85 A2 .A.This is a tes
0060-A3 15 C1 C2 C3 C4 C5 C6 C7 C8 C9 D1 D2 D3 D4 D5 t.ABCDEFGHIJKLMN
0070-D6 D7 D8 D9 E2 E3 E4 E5 E6 E7 E8 E9 40 F1 F2 F3 OPQRSTUVWXYZ 123
0080-F4 F5 F6 F7 F8 F9 F0 15 0C 4567890..
```

LU3 (DSC) MODE

```
Printer Registers.
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F
0000-00 04 00 00 00 00 00 00 00 00 01 40 15 10 10 00 .....A\ .
0010-00 01 00 50 00 36 03 00 00 00 00 00 00 00 00 00 ...ä. ....
0020-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
*DUP*
0040-00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....

Print Buffer.
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F
0050-B3 87 88 92 10 88 92 10 80 10 93 84 92 93 03 A0 This is a test.A
0060-A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF B0 BCDEFGHIJKLMNO
0070-B1 B2 B3 B4 B5 B6 B7 B8 B9 10 21 22 23 24 25 26 RSTUVWXYZ 123456
0080-27 28 29 20 03 02 7890..
```

APPENDIX C

Anhang C / Appendice C / Apéndice C / Appendice C

Font IDs
Schrifttypen-ID
ID de police
Identificación de fonts
Identificativi di font

Typeface	Symbol Set	Orient.	Pitch	Point Size	Typestyle Number
----------	------------	---------	-------	------------	------------------

Resident

Courier	R-8	P/L	10	12	11
Courier Bold	R-8	P/L	10	12	46
Line Printer	R-8	P/L	13.3	8.5	201
Line Printer	R-8	P/L	15	8.5	223
Line Printer	R-8	P/L	17.1	8.5	254
Line Printer	R-8	P/L	19	8.5	282

Epson Cartridges

5410

Time	R-8	P	Prop.	8	157
Time	R-8	P	Prop.	10	158
Time Bold	R-8	P	Prop.	10	159
Time Italic	R-8	P	Prop.	10	155
Helvetica Bold	R-8	P	Prop.	14.4	34126

5411

Courier Bold	R-8	P/L	10	12	46
Courier Italic	R-8	P/L	10	12	18

5412

Prestige	R-8	P/L	12	10	86
Prestige Bold	R-8	P/L	12	10	111
Prestige Italic	R-8	P/L	12	10	112

5413

Letter Gothic	R-8	P/L	12	12	87
Letter Gothic Bold	R-8	P/L	12	12	110
Letter Gothic Italic	R-8	P/L	12	10	109

Typeface	Symbol Set	Orient.	Pitch	Point Size	Typestyle Number
5414					
Helvetica	ASCII	P	Prop.	6	181
Helvetica	ASCII	P	Prop.	8	183
Helvetica Bold	ASCII	P	Prop.	8	182
Helvetica Bold	ASCII	P	Prop.	10	185
Helvetica Bold	ASCII	P	Prop.	12	188
Helvetica Bold	ASCII	P	Prop.	14	190
Tax Line Draw	LnDrw-7	P	10	12	34

5430

Letter Gothic	R-8	P	10	14.4	40
Letter Gothic	R-8	P	17.1	9.4	255
OCR-A 10N	OCR-A	P	10	12	19
OCR-B 10N	OCR-B	P	10	12	3
Code 3-9 4.6N	3 of 9	P	4.6	12	240
Code 3-9 9.3N	3 of 9	P	9.3	12	61
EAN/UPC Bold Bar Code	UPC	P	Prop.	12	171
EAN/UPC Bar Code	UPC	P	Prop.	12	170

HP Cartridges

Procollection

Line Printer	ASCII	P/L	17.1	8.5	253
Courier Bold	ASCII	P/L	10	12	45
Courier Italic	ASCII	P/L	10	12	17
Courier	ASCII	P/L	12	10	85
Courier Bold	ASCII	P/L	12	10	108
Courier Italic	ASCII	P/L	12	10	92
Courier	Legal	P	10	12	51
Courier Bold	Legal	P	10	12	52
Courier Italic	Legal	P	10	12	53
Courier	Legal	P	12	10	93
Courier Bold	Legal	P	12	10	94
Courier Italic	Legal	P	12	10	95
Prestige Elite	ASCII	P/L	15	7	220
Prestige Elite	ASCII	P/L	12	10	83
Prestige Elite Bold	ASCII	P/L	12	10	113
Prestige Elite Italic	ASCII	P/L	12	10	114
Prestige Elite	Legal	P	15	7	219
Prestige Elite	Legal	P	12	10	97
Prestige Elite Bold	Legal	P	12	10	98
Prestige Elite Italic	Legal	P	12	10	99
Letter Gothic	ASCII	P/L	27	3.6	291
Letter Gothic	ASCII	P/L	19	6	281
Letter Gothic	ASCII	P/L	17.1	9.5	257
Letter Gothic	ASCII	P/L	12	12	66

Typeface	Symbol Set	Orient.	Pitch	Point Size	Typestyle Number
Letter Gothic Bold	ASCII	P/L	12	12	69
Letter Gothic Italic	ASCII	P/L	12	12	68
Times Roman	ASCII	P	Prop.	8	163
Times Roman	ASCII	P	Prop.	10	164
Times Roman Bold	ASCII	P	Prop.	10	165
Times Roman Italic	ASCII	P	Prop.	10	166
Times Roman	ASCII	P	Prop.	12	167
Times Roman Bold	ASCII	P	Prop.	12	168
Times Roman Italic	ASCII	P	Prop.	12	169
Times Roman	Legal	P	Prop.	8	173
Times Roman	Legal	P	Prop.	10	174
Times Roman Bold	Legal	P	Prop.	10	175
Times Roman Italic	Legal	P	Prop.	10	176
Times Roman	Legal	P	Prop.	12	177
Times Roman Bold	Legal	P	Prop.	12	178
Times Roman Italic	Legal	P	Prop.	12	179
Helvetica	ASCII	P	Prop.	8	183
Helvetica	ASCII	P	Prop.	10	184
Helvetica Bold	ASCII	P	Prop.	10	185
Helvetica Italic	ASCII	P	Prop.	10	186
Helvetica	ASCII	P	Prop.	12	187
Helvetica Bold	ASCII	P	Prop.	12	188
Helvetica Italic	ASCII	P	Prop.	12	189
Helvetica Bold	ASCII	P	Prop.	14	190
Helvetica Bold	Legal	P	Prop.	14	191

WordPerfect

CG Times	DskTop	P	Prop.	6	4685
CG Times	DskTop	P	Prop.	8	4686
CG Times Bold	DskTop	P	Prop.	8	4706
CG Times Italic	DskTop	P	Prop.	8	4814
CG Times	DskTop	P	Prop.	10	4687
CG Times Bold	DskTop	P	Prop.	10	4707
CG Times Italic	DskTop	P	Prop.	10	4815
CG Times	DskTop	P	Prop.	12	4688
CG Times Bold	DskTop	P	Prop.	12	4708
CG Times Italic	DskTop	P	Prop.	12	4816
CG Times	DskTop	P	Prop.	14	4689
CG Times Bold	DskTop	P	Prop.	14	4709
CG Times Italic	DskTop	P	Prop.	14	4817
CG Times Bold	DskTop	P	Prop.	18	4711
CG Times Bold	DskTop	P	Prop.	24	4714
Univers	DskTop	P	Prop.	14	4789
Univers	DskTop	P	Prop.	18	4791
Univers	DskTop	P	Prop.	24	4794

Typeface	Symbol Set	Orient.	Pitch	Point Size	Typestyle Number
Microsoft					
Helv	R-8	P	Prop.	8	34102
Helv	R-8	P	Prop.	10	34103
Helv Bold	R-8	P	Prop.	10	34123
Helv Italic	R-8	P	Prop.	10	34231
Helv	R-8	P	Prop.	12	34104
Helv Bold	R-8	P	Prop.	12	34124
Helv Italic	R-8	P	Prop.	12	34232
Helv Bold	R-8	P	Prop.	14	34125
TmsRmn	R-8	P	Prop.	8	5686
TmsRmn	R-8	P	Prop.	10	5687
TmsRmn Bold	R-8	P	Prop.	10	5707
TmsRmn Italic	R-8	P	Prop.	10	5815
TmsRmn	R-8	P	Prop.	12	5688
TmsRmn Bold	R-8	P	Prop.	12	5708
TmsRmn Italic	R-8	P	Prop.	12	5816
TmsRmn Bold	R-8	P	Prop.	14	5709
Line Printer	R-8	P/L	15	8.5	223

Polished Worksheets

Prestige Elite	R-8	P/L	15	7	221
Prestige Elite	R-8	P/L	12	10	86
Prestige Elite Bold	R-8	P/L	12	10	111
Prestige Elite Italic	R-8	P/L	12	10	112
Prestige Elite	Legal	P/L	15	7	219
Prestige Elite	Legal	P/L	12	10	97
Prestige Elite Bold	Legal	P/L	12	10	98
Prestige Elite Italic	Legal	P/L	12	10	99
Letter Gothic	R-8	P/L	27	3.6	290
Letter Gothic	R-8	P/L	12	12	87
Letter Gothic Bold	R-8	P/L	12	12	110
Letter Gothic Italic	R-8	P/L	12	12	109
Letter Gothic	Legal	P/L	27	3.6	292
Letter Gothic	Legal	P/L	12	12	90
Letter Gothic Bold	Legal	P/L	12	12	107
Letter Gothic Itc	Legal	P/L	12	12	106
Presentation Bold	ASCII	P/L	8.1	16	434
Presentation Bold	Legal	P/L	8.1	16	431

Typeface	Symbol Set	Orient.	Pitch	Point Size	Typestyle Number
<u>Persuasive Presentations</u>					
Letter Gothic	ASCII	P/L	10	14	39
Letter Gothic	Legal	P/L	10	14	38
Presentation Bold	ASCII	P/L	10	14	6
Presentation Bold	Legal	P/L	10	14	7
Presentation Bold	ASCII	P/L	8.1	16	434
Presentation Bold	Legal	P/L	8.1	16	431
Presentation Bold	ASCII	P/L	6.5	18	435
Presentation Bold	Legal	P/L	6.5	18	432
Presentation Bold	ASCII	P/L	5.7	24	436
Presentation Bold	Legal	P/L	5.7	24	433
Helv Outline	ASCII	P/L	Prop.	24	34115
Helv Outline	Legal	P/L	Prop.	24	34116
Serifa	ASCII	P/L	Prop.	24	34215
Serifa	Legal	P/L	Prop.	24	34216
Line Draw	LinDrw	P/L	10	14	31
PC Line Bold	PCLin	P/L	10	14	32

Forms, Etc.

Univers	R-8	P/L	Prop.	6	33101
Univers	R-8	P/L	Prop.	8	33102
Univers Bold	R-8	P/L	Prop.	8	33122
Univers Bold	R-8	P/L	Prop.	10	33123
Univers Bold	R-8	P/L	Prop.	12	33124
Univers Bold	R-8	P/L	Prop.	14	33125
Helv Cond. Black Bold	TaxNum	P/L	Prop.	24	34128
OCR-A	OCR-A	P	10	12	19
Tax Line Draw	TaxLinDrw	P/L	10	12	30

Bar Codes & More

Letter Gothic	R-8	P/L	15	9.5	230
Letter Gothic	R-8	P/L	12	12	87
Letter Gothic	R-8	P/L	10	14	40
OCR-A	OCR-A	P	10	12	19
OCR-B	OCR-B	P	10	12	3
Code 3 of 9	3 of 9	P	8.1	12	60
Code 3 of 9	3 of 9	P	4.6	12	240
EAN/UPC 10 Mil	UPC	P	Prop.	12	170
EAN/UPC 13 Mil Bold	UPC	P	Prop.	12	171
USPS Zip	ZIP	P/L	Prop.	12	172
Line Draw	LinDrw	P/L	10	12	33

Typeface	Symbol Set	Orient.	Pitch	Point Size	Typestyle Number
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Text Equations

Prestige Elite	R-8	P	15	7	221
Prestige Elite	R-8	P	17.1	7	258
Prestige Elite	R-8	P	12	10	86
Prestige Elite Bold	R-8	P	12	10	111
Prestige Elite Italic	R-8	P	12	10	112
CG Times	R-8	P	Prop.	8	157
CG Times	R-8	P	Prop.	10	158
CG Times Bold	R-8	P	Prop.	10	159
CG Times Italic	R-8	P	Prop.	10	155

Global Text

CG Century Schoolbook	R-8	P/L	Prop.	8	16950
CG Century Schoolbook	R-8	P/L	Prop.	10	16951
CG Century Schlbk Bld	R-8	P/L	Prop.	10	16971
CG Century Schlbk It	R-8	P/L	Prop.	10	17079
CG Triumvirate	R-8	P/L	Prop.	10	33335
CG Triumvirate Bold	R-8	P/L	Prop.	14	33357

Pretty Faces

Microstyle	ASCII	P	Prop	18	5910
Microstyle Bold	ASCII	P	Prop.	36	5920
Hobo Medium	ASCII	P	Prop.	30	5930
Hobo Medium	ASCII	P	Prop.	14	5940
Thunderbird	ASCII	P	Prop.	54	5950
Signet Roundhand	ASCII	P	Prop.	18	5960
Signet Roundhand	ASCII	P	Prop.	14	5970
ITC Dingbats	ITC	P	Prop.	36	5980
ITC Dingbats	ITC	P	Prop.	18	5990

EPSON'