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† Command shown for primary only, reverse parenthesis for secondary command.

Job Control

Universal Exit Language

Causes the printer to exit the current language and return control to PjL.

E_C-12345X

Printer Reset

Restores the User Default Environment, deletes temporary fonts and macros, and prints any remaining data.

E_C E

Number of Copies

Prints the specified number (#) of copies of each page.

E_C & l # X

= Number of copies (1 to 99 for III/III; 1 to 32,767 for IIISi, 4)

Simplex/Duplex Print*

Prints front side of a page or both sides (front and back - in either of two binding modes).

E_C & l # S

= 0 - Single side (Simplex)
1 - Duplex, long-edge binding
2 - Duplex, short-edge binding

Left (Long-Edge) Offset Registration

Adjusts the position of the logical page across the width of the page.

E_C & l # U

= Number of decipoints (1/720 inch)
[+ or - specifies the plus or minus move direction (for example, # = -10).]

Top (Short-Edge) Offset Registration

Adjusts the position of the logical page across the length of the page.

E_C & l # Z

= Number of decipoints (1/720 inch)
[+ or - specifies the plus or minus move direction (for example, # = -10).]

Duplex Page Side Selection**

Prints the logical page on the specified physical page side.

E_C & a # G

= 0 - Select next side
1 - Select front side
2 - Select back side

Job Separation

Toggles the printer's job separation mechanism.

E_C&l1T

Output Bin

Selects the output paper bin for paper output.

E_C & l # G

= 1 - Upper Output Bin
2 - Lower (rear) Output Bin

Unit of Measure

Establishes the unit of measure for the PCL unit.

E_C&u#D

= Number of units/inch (96, 100, 120, 144, 150, 160, 180, 200, 225, 240, 288, 300, 360, 400, 450, 480, 600, 720, 800, 900, 1200, 1440, 1800, 2400, 3600, 7200)

**If this command is received by a nonduplex printer, the printer will perform a page eject.

*This feature is not available in some HP LaserJet printers (models). If a feature is not available, the command (parameter) will be ignored if received.

Page Control

Page Size

Designates the physical size of the paper which in turn defines the logical page.

E_C & l # A

- # = 1 - Executive (7.25" x 10.5")
- 2 - Letter (8.5" x 11")
- 3 - Legal (8.5" x 14")
- 80 - Commercial Envelope 7 3/4 (Monarch)
(3 7/8" X 7 1/2")
- 81 - Commercial Envelope 10 (4 1/8" X 9 1/2")
- 90 - International DL (110mm X 220mm)
- 91 - International C5 (162mm X 229mm)
- 100 - International B5 (176mm X 250mm)

Correct paper tray must be installed for selected paper size.

Page Length (Obsolete see Paper Size)

Selects the logical page length in lines (one logical page per physical page)

E_C & l # P

= Number of Lines

Paper Source

Designates one of four paper sources for paper feed.

E_C & l # H

- # = 0 - Print current page (paper source remains unchanged)
- 1 - Feed paper from main paper source
- 2 - Feed paper from manual input
- 3 - Feed envelope from manual input
- 4 - Feed paper from alternate paper source*
- 5 - Feed from optional large paper source*
- 6 - Feed envelope from envelope feeder**

Page Orientation

Designates the position of the logical page with respect to the physical page

E_C & l # O

- # = 0 - Portrait
- 1 - Landscape
- 2 - Reverse Portrait
- 3 - Reverse Landscape

*This feature is not available in some HP LaserJet printers (models). If a feature is not available, the command (parameter) will be ignored if received.

**Must be used in conjunction with Paper Size.

Page Control Continued

Print Direction

Rotates the logical page coordinate system counterclockwise in 90 degree increments with respect to the orientation of the current logical page.

E_C & a # P

= Degrees of rotation (0, 90, 180, 270)

Left Margin

Sets the left margin to the left edge of the specified column.

E_C & a # L

= Column number

Right Margin

Sets the right margin to the right edge of the specified column.

E_C & a # M

= Column number

Top Margin

Designates the number of lines between the top of the logical page to the top of the text area.

E_C & l # E

= Number of lines

Clear Horizontal Margins

Resets left and right margins to their default settings.

E_C 9

Text Length

Designates the length of the text area in lines.

E_C & l # F

= Number of lines

Perforation Skip

Causes printing to skip from the end of the text area to the top of the next text area (top margin of new page).

E_C & l # L

- # = 0 - Disabled
- 1 - Enabled

Horizontal Motion Index (HMI)

Designates the distance between columns. (The value field # is valid to 4 decimal places.)

E_C & k # H

= Number of 1/120 inch increments

Vertical Motion Index (VMI)

Designates the distance between rows. (The value field # is valid to 4 decimal places.)

E_C & l # C

= Number of 1/48 inch increments between rows

Line Spacing

Sets the number of lines printed per inch (an alternate method for designating VMI).

E_C & l # D

- # = 1 - 1 line/inch
- 2 - 2 lines/inch
- 3 - 3 lines/inch
- 4 - 4 lines/inch
- 6 - 6 lines/inch
- 8 - 8 lines/inch
- 12 - 12 lines/inch
- 16 - 16 lines/inch
- 24 - 24 lines/inch
- 48 - 48 lines/inch

Cursor positioning can be either absolute or relative. Absolute positioning specifies the cursor move distances referenced from the left edge of the logical page and the top margin. Relative positioning specifies cursor move distances referenced from the current cursor position. Relative moves are indicated by using signed numbers (e.g. # = +15 or -122); absolute moves are indicated by unsigned numbers (e.g. # = 15 or 122).

Horizontal Cursor Positioning (in Columns)

Moves the cursor to a new column on the current line (column width determined by current HMI setting).

E_C & a # C

= Column number

Horizontal Cursor Positioning (in Decipoints)

Moves the cursor to a new position along the x-axis.

E_C & a # H

= Decipoint position (1/720 inch), valid to 2 decimal places.

Horizontal Cursor Positioning (PCL units)

Moves the cursor to a new position along the x-axis.

E_C * p # X

= Number of PCL units

Horizontal Cursor Positioning Control Codes

CR - Carriage-Return

Moves the cursor to the left margin on the current line. (Operation of CR may be modified, see Line Termination command.)

SP - Space

Moves the cursor one column right on the current line for fixed-space font or moves the cursor the HMI distance for proportional fonts when space is a non-printing character.

BS - Backspace

Moves the cursor left, the distance of the last printed character, on the current line for fixed-space fonts. For proportionally-spaced fonts, backspace moves the cursor back along the current line the distance required to center the overstrike character over the last printed character. Subsequent BS command moves the width of the last printed character.

HT - Horizontal Tab

Moves the cursor to the next tab stop on the current line. (Tab stops are set every 8th column.)

Cursor Positioning Continued

Vertical Cursor Positioning (Rows)

Moves the cursor to a new row in the same column (row distances are determined by the VMI setting).

E_C & a # R

= Row number

Vertical Cursor Positioning (Decipoints)

Moves the cursor to a new vertical position along the y-axis.

E_C & a # V

= Decipoint position (1/720 inch), valid to 4 decimal places.

Vertical Cursor Positioning (PCL units)

Moves the cursor to a new dot position along the y-axis.

E_C * p # Y

= Number of PCL units

Half Line-Feed

Moves the cursor to the same character position one-half line down (distance moved depends on current VMI).

E_C =

Vertical Cursor Positioning Control Codes

LF - Line Feed

Moves the cursor to the same horizontal position on the next line.

FF - Form Feed

Moves the cursor to the same horizontal position at the top of the next text area.

Line Termination

Controls the way the printer interprets CR, LF, and FF control codes.

E_C & k # G

= 0 - CR→CR, LF→LF, FF→FF
1 - CR→CR+LF, LF→LF, FF→FF
2 - CR→CR, LF→CR+LF, FF→CR+FF
3 - CR→CR+LF, LF→CR+LF, FF→CR+FF

Push/Pop Cursor Position

Allows the cursor position to be stored and recalled for later use. (Up to 20 positions may be pushed onto the stack)

E_C & f # S

= 0 - Push (Store cursor position)
1 - Pop (Recall a cursor position)

Font Selection

Any number of fonts may be printed per page, limited only by memory.

Symbol Set

Designates the set of symbols or characters contained in a font.

E_C (ID Primary

E_C) ID Secondary

ID = Two character Symbol Set identifiers

Common examples:

ID = 8M - HP Math-8	0U - ASCII
8U - HP Roman-8	0N - ECMA-94 Latin 1
10U - PC-8 (USA)	0O - OCR A
0A - HP Math	1E - ISO 4: United Kingdom
0B - HP Line Draw	1U - HP US Legal
1G - ISO 21: German	

(Refer to the HP PCL 5 Comparison Guide Table C-1 for additional symbol sets.)

Spacing

Designates either a fixed or proportional spaced font.

E_C (s # P - Primary

E_C) s # P - Secondary

= 0 - Fixed spacing
1 - Proportional spacing

Pitch

Designates the horizontal spacing of a fixed spaced font in terms of the number of characters per inch.

E_C (s # H - Primary

E_C) s # H - Secondary

= Pitch in characters/inch

Height (Point Size)

Designates the height of the font in points.

E_C (s # V - Primary

E_C) s # V - Secondary

= Height in points

Font Selection Continued

Style

Designates the font style.

E_c (s#S - Primary

E_c) s#S - Secondary

- # = 0 - Upright
1 - Italic
4 - Condensed
5 - Condensed Italic
8 - Compressed, Extra Condensed
24 - Expanded
32 - Outline
64 - Inline
128 - Shadowed
160 - Outline Shadowed

Stroke Weight

Designates the thickness or weight of the stroke that composes the characters of a font.

E_c (s#B - Primary

E_c) s#B - Secondary

- | | |
|---------------------|-----------------|
| # = -7 - Ultra thin | 1 - Semi Bold |
| -6 - Extra Thin | 2 - Demi Bold |
| -5 - Thin | 3 - Bold |
| -4 - Extra Light | 4 - Extra Bold |
| -3 - Light | 5 - Black |
| -2 - Demi Light | 6 - Extra Black |
| -1 - Semi Light | 7 - Ultra Black |
| 0 - Medium | |

Typeface Selection

Designates the design of the font.

E_c (s#T - Primary

E_c) s#T - Secondary

- | | |
|----------------------|--------------------|
| # = 0 - Line Printer | 7 - Script |
| 1 - Pica | 8 - Prestige |
| 2 - Elite | 4101 - Times Roman |
| 3 - Courier | 4148 - Univers |
| 4 - Helvetica | 16602 - Arial |
| 6 - Gothic | |

For additional typeface values refer to the HP PCL 5 Comparison Guide, Table C-2 and Table C-3.

Font Selection by ID

Selects a soft font using its specific ID #.

E_c (#X - Designates soft font as primary

E_c) #X - Designates soft font as secondary

= Font Identification number (ID #; 0 through 32767)

Font Selection Continued

Select Default Font

Sets all font characteristics (except orientation) to those of the default font.

E_c (3@ - Default primary font characteristics

E_c) 3@ - Default secondary font characteristics

Transparent Print Data

Provides printing access to all characters in a font including those defined as unprintable.

E_c & p#X [transparent data]

= Number of bytes of transparent print data.

Underline

Controls automatic text underlining.

E_c & d#D

= 0 - Underline On

3 - Floating Underline On

E_c & d@ - Underline Off

Font Management

Note, refer to the technical reference manual for additional information about the Font Descriptor command and the Character Descriptor command data fields.

Font ID

Specifies an identification number (ID #) for use in subsequent font management commands.

E_c * c#D

= ID # (0 through 32767)

Font Control

Provides the means for manipulating soft fonts within the printer.

E_c * c#F

= 0 - Delete all soft fonts

1 - Delete all temporary soft fonts

2 - Delete soft font (last ID specified)

3 - Delete Character Code (last ID and character code)

4 - Make soft font temporary (last ID specified)

5 - Make soft font permanent (last ID specified)

6 - Copy/Assign current invoked font as temporary

User-Defined Symbol Set

Symbol Set ID Code

Assigns an identification code to a user-defined symbol set.

$\text{E}_C * c \# R$

= Symbol set ID code.

Define Symbol Set

Used to download symbol set definition data for a user-defined symbol set.

$\text{E}_C (f \# W [\text{symbol set definition data}]$

= Number of symbol set definition bytes.

Symbol Set Control

Provides a means for manipulating user-defined symbol sets.

$\text{E}_C * c \# S$

= 0 - Delete user-defined symbol sets (temporary and permanent)

1 - Delete all temporary symbol sets

2 - Delete symbol set

4 - Make symbol set temporary (last symbol set ID code specified)

5 - Make symbol set permanent (last symbol set ID code specified)

Soft Font Creation

Font Descriptor

Downloads the font descriptor to the printer.

$\text{E}_C) s \# W [\text{font descriptor data}]$

= Number of font descriptor data bytes

Character Code

Establishes the decimal character code that will be associated with the next character downloaded or deleted.

$\text{E}_C * c \# E$

= Decimal character code

Character Descriptor/Data

Downloads the character descriptor and character data.

$\text{E}_C (s \# W [\text{binary data bytes}]$

= Number of binary data bytes

Macros

Macro ID

Specifies an ID # for a macro for use in subsequent macro commands.

$\text{E}_C \& f \# Y$

= Macro ID # (0 through 32767)

Macro Control

Provides the mechanism for definition, invocation, and deletion of macros.

$\text{E}_C \& f \# X$

= 0 - Start macro definition (for last ID specified)

1 - Stop macro definition

2 - Execute macro (for last ID specified)

3 - Call macro (for last ID specified)

4 - Enable macro for automatic overlay

(for last ID specified)

5 - Disable automatic overlay

6 - Delete all macros

7 - Delete all temporary macros

8 - Delete macro (for last ID specified)

9 - Make macro temporary (for last ID specified)

10 - Make macro permanent (for last ID specified)

Print Model

Source Transparency Mode

Sets the source image's transparency mode to transparent or opaque.

$\text{E}_C * v \# N$

= 0 - Transparent

1 - Opaque

Pattern Transparency Mode

Sets the pattern's transparency mode to transparent or opaque.

$\text{E}_C * v \# O$

= 0 - Transparent

1 - Opaque

Pattern (Area Fill) ID

Specifies the level of shading, type of cross-hatch, or user-defined pattern to select via Select Pattern command. See the following page for command description.

Select Current Pattern

Identifies the type of pattern to be applied to the source.

$\text{E}_C * v \# T$

= 0 - Solid Black (default)

1 - Solid White

2 - Shading Pattern

3 - Cross-Hatch Pattern

4 - User-Defined Pattern

Rectangular Area Fill Graphics

Horizontal Rectangle Size (Decipoints or Dots)

Specifies the rectangular fill area width in decipoints or dots.

$\text{E}_C * c \# H$ - Decipoints

= Number of decipoints (1/720 inch)

$\text{E}_C * c \# A$ - Dots

= Number of dots (1/300 inch)

Vertical Rectangle Size (Decipoints or Dots)

Specifies the rectangular fill area height in decipoints or dots.

$\text{E}_C * c \# V$ - Decipoints

= Number of decipoints (1/720 inch)

$\text{E}_C * c \# B$ - Dots

= Number of dots (1/300 inch)

Set Pattern Reference Point

Sets pattern reference point to cursor position and will either keep pattern fixed or rotate with print direction changes.

$\text{E}_C * p \# R$

= 0 - Rotate patterns with print direction
1 - Keep patterns fixed

Pattern (Area Fill) ID (Pattern ID)

Specifies the level of shading or type of cross-hatch to select via Fill Rectangular Area command.

$\text{E}_C * c \# G$

If Shading fill is selected: OR,

= 1 thru 2 = 1-2% shade
2 thru 10 = 2-10% shade
11 thru 20 = 11-20% shade
21 thru 35 = 21-35% shade
36 thru 55 = 36-55% shade
56 thru 80 = 56-80% shade
81 thru 99 = 81-99% shade
100 = 100% shade

if Cross-Hatch Pattern fill is selected:

= 1 - Pattern #1

2 - Pattern #2

3 - Pattern #3

4 - Pattern #4

5 - Pattern #5

6 - Pattern #6



OR, if User-Defined Pattern

= # of Pattern
Range = 0-32767

Rectangular Area Fill Graphics Continued

Fill Rectangular Area

Causes the defined rectangular area to be filled with the specified rule pattern.

$\text{E}_C * c \# P$

= 0 - Solid area fill
1 - Solid white area fill
2 - Shading fill
3 - Cross-hatch pattern fill
4 - User-defined pattern
5 - Current pattern

User-Defined Pattern

Used to download binary data that defines a user-defined pattern.

$\text{E}_C * c \# W$ [pattern data]

= 0 - Number of pattern data bytes

Pattern Control

Provides a means for manipulating user-defined (soft) patterns.

$\text{E}_C * c \# Q$

= 0 - Delete all patterns (temporary and permanent)
1 - Delete all temporary patterns
2 - Delete pattern (last pattern ID specified)
3 - Reserved
4 - Make pattern temporary (last pattern ID specified)
5 - Make pattern permanent (last pattern ID specified)

Raster Graphics

Raster Graphics Resolution

Designates the graphics resolution for raster data operations.

$\text{E}_C * t \# R$

= 75 - 75 dots-per-inch
100 - 100 dots-per-inch
150 - 150 dots-per-inch
200 - 200 dots-per-inch
300 - 300 dots-per-inch
600 - 600 dots-per-inch

Raster Graphics Presentation Mode

Specifies the presentation of the raster image on the logical page

$\text{E}_C * r \# F$

= 0 - image printed in the current print direction.
3 - image printed along the width of physical page.

Raster Height

Specifies the height in raster rows of the raster picture area.

$\text{E}_C * r \# T$

= Height in raster rows

Raster Graphics Continued

Raster Width

Specifies the width in pixels of the raster picture area.

$E_C * r \# S$

= width in pixels of the specified resolution

Start Raster Graphics

Specifies the left raster graphics margin.

$E_C * r \# A$

= 0 - sets left graphics margin at X-position 0.
1 - sets left graphics margin to the current column (current X-position).

Y Offset

Advances the cursor vertically the number of raster lines from the current line of the picture area down, the specified number (#) of lines.

$E_C * b \# Y$

= Number of raster lines of vertical movement.

Set Compression Mode

Determine how the printer interprets (decodes) the binary data in the Transfer Raster Data command.

$E_C * b \# M$

= 0 - Unencoded
1 - Run-length encoding
2 - Tagged Image File Format (TIFF) revision 4.0
3 - Delta Row
5 - Adaptive Compression

Transfer Raster Data

Transfers a row of raster graphics to the printer.

$E_C * b \# W$ [binary data bytes]

= Number of bytes in the raster row

End Raster Graphics

Signifies the end of a raster graphic image transfer.

$E_C * r B$ - LaserJet III, IIID, IIISi, IIP, and 4

$E_C * r C$ - LaserJet IIISi, IIP, and 4 (Preferred)

Status Readback

Set Status Readback Location Type

Sets the location type for an inquire entity status request

$E_C * s \# T$

= 0 - Invalid Location
1 - Currently Selected
2 - All Locations
3 - Internal
4 - Download entity
5 - Cartridge
7 - SIMMs

Set Status Readback Location Unit

Sets the location unit for an inquire entity status request.

$E_C * s \# U$

Location Type	Location Unit
0	# = * Invalid location
1	= * Currently selected
2	= * All Locations
3	= 0 All internal
4	= 0 All downloaded
	= 1 Temporary downloaded
	= 2 Permanent downloaded
5	= 0 All cartridge
	= 1 Highest priority cartridge
	n Lowest priority cartridge
7	= 0 All SIMMs
	= 1 Highest priority SIMM
	n Lowest priority SIMM

Inquire Status Readback Entity

Identifies the entity type and causes the printer to create a status response.

$E_C * s \# I$

= 0 - Font
1 - Macro
2 - User-defined pattern
3 - Symbol set
4 - Font extended

Free Space

Returns the amount of total available user memory and the largest block available.

$E_C * s 1 M$