

CONTROL CODES

This printer has three emulation modes:

- * HP LaserJet III
- * Epson FX-850
- * IBM Proprinter XL24e

The LP 410 has different responses to software codes from the computer one set for each emulation. The response patterns, or modes, have many similarities, but each has its own unique features.

HP Laser Jet 3 PCL5 Mode:

DEC.	HEX.	MNEMONIC	FUNCTION
7	07	BEL	Bell
8	08	BS	Backspace
9	09	HT	Horizontal Tab
10	0A	LF	Line Feed
12	0C	FF	Form Feed
13	0D	CR	Carriage Return
14	0E	SO	Shift Out
15	0F	SI	Shift In
27	1B	ESC	Escape
32	20	SP	Space

Job Control :

27 122	1B 7A	ESC z	Self Test
27 69	1B 45	ESC E	Reset Printer
27 38 108 n 88	1B 26 6C n 58	ESC &InX	Number of Copies

Line and Page Control:

27 38 108 n 72	1B 26 6C n 48	ESC &InH	Paper Input Control
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Page Length and Size:

27 38 108 n 65	1B 26 6C n 41	ESC &InA	Page Size
27 38 108 n 80	1B 26 6C n 50	ESC &InP	Set Page Length
27 38 108 n 79	1B 26 6C n 4F	ESC &InO	Select Page Orientation

Margins and Text Length:

27 38 108 n 69	1B 26 6C n 45	ESC &InE	Set Top Margin
27 38 108 n 70	1B 26 6C n 46	ESC &InF	Set Text Margin
27 38 97 n 76	1B 26 61 n 4C	ESC &anL	Set Left Margin
27 38 97 n 77	1B 26 61 n 4D	ESC &anM	Set Right Margin
27 57	1B 39	ESC 9	Clear Side Margins

Perforation Skip Mode:

27 38 108 n76	1B 26 6C n 4C	ESC &InL	Perforation Skip Mode On/Off
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Horizontal Column Spacing:

27 38 108 n 72	1B 26 6B n 48	ESC &knH	Set Horizontal Motion
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Vertical Line Spacing:

27 38 108 n 67	1B 26 6C n 43	ESC &InC	Set Vertical Motion Index (VMI)
27 38 108 n 68	1B 26 6C n 43	ESC &InD	Set Lines per inch

Cursor Control:

Horizontal and Vertical:

DEC.	HEX.	MNEMONIC	FUNCTION
27 38 97 n 67	1B 26 61 n 48	ESC &anC	Horizontal Cursor Positioning (Columns)
27 42 112 n 88	1B 2A 70 n 58	ESC *pnX	Horizontal Cursor Positioning (Dots)
27 38 97 n 72	1B 26 61 n 48	ESC &anH	Horizontal Cursor Positioning (Decipoints)
27 38 97 n 82	1B 26 61 n 52	ESC &anR	Vertical Cursor Positioning (Lines)
27 42 112 n 89	1B 2A 70 n 59	ESC *pnY	Vertical Cursor Positioning (Dots)
27 38 97 n 86	1B 26 61 n 56	ESC &anV	Vertical Cursor Positioning (Decipoints)
27 61	1B 3D	ESC =	Half Line Feed

Line Termination:

27 38 107 n 71	1B 26 6B n 47	ESC &knG	Line Termination
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Push/Pop Position:

27 38 102 n 83	1B 26 66 n 53	ESC &fnS	Push/Pop Position
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Character and Font Control:

Symbol Set Selection:

DEC.	HEX.	MNEMONIC	FUNCTION
27 40 n ID	1B 28 n ID	ESC (nID	Symbol Set Selection (Primary)
27 41 n ID	1B 29 n ID	ESC)nID	Symbol Set Selection (Secondary)

Spacing:

27 40 115 n 80	1B 28 73 n 50	ESC (snP	Select Character Spacing (Primary)
27 41 115 n 80	1B 29 73 n 50	ESC)snP	Select Character Spacing (Secondary)

Pitch:

27 40 115 n 72	1B 28 73 n 48	ESC (snH	Select Font Pitch (Primary)
27 41 115 n 73	1B 29 73 n 48	ESC)snH	Select Font Pitch (Secondary)

Point Size:

27 40 115 n 86	1B 28 73 n 48	ESC (snV	Character Height Selection (Primary)
27 41 115 n 86	1B 29 73 n 48	ESC)snV	Character Height Selection (Secondary)

Style:

27 40 115 n 83	1B 28 73 n 53	ESC (snS	Select Character Style (Primary)
27 41 115 n 83	1B 29 73 n 53	ESC)snS	Select Character Style (Secondary)

Character Thickness:

27 40 115 n 66	1B 28 73 n 42	ESC (snB	Select Thickness (Primary)
27 41 115 n 66	1B 29 73 n 42	ESC)snB	Select Thickness (Secondary)

Typeface:

27 40 115 n 84	1B 28 73 n 54	ESC (snT	Select Font Typeface (Primary)
27 41 115 n 84	1B 29 73 n 54	ESC)snT	Select Font Typeface (Secondary)

Font Pitch:

27 38 107 n 83	1B 26 6B n 53	ESC &knS	Select Print Pitch
27 40 n 64	1B 28 n 40	ESC (n@	Default Primary Font
27 41 n 64	1B 29 n 40	ESC)n@	Default Secondary Font

Underline:

27 38 100 n 68	1B 26 64 n 44	ESC &dnD	Enable Auto-Underlining
27 38 100 64	1B 26 64 40	ESC &d@	Disable Auto-Underlining

Font Management:

27 42 99 n 68	1B 2A 63 n 44	ESC *cnD	Specify Font ID
27 42 99 n 70	1B 2A 63 n 46	ESC *cnF	Font and Character Control

Font Selection by ID Number:

27 40 n 88	1B 28 n 58	ESC (nX	Designate Download Font as Primary
27 41 n 88	1B 29 n 58	ESC)nX	Designate Download Font as Secondary

Soft Font Creation:

27 40 115 n 87	1B 28 73 n 57	ESC (snW	Download Character [DATA]
27 41 115 n 87	1B 29 73 n 57	ESC)snW	Download Font (Font Descriptor) [FONT]
27 42 99 n 69	1B 2A 63 n 45	ESC *cnE	Specify Character Code

Graphics Control:

Raster Graphics:

DEC.	HEX.	MNEMONIC	FUNCTION
27 42 116 n 83	1B 2A 74 n 52	ESC *tnR	Raster Graphics Resolution
27 42 114 n 65	1B 2A 72 n 41	ESC *rnA	Start Raster Graphics
27 42 98 n 87	1B 2A 62 n 57	ESC *bnW	Transfer Raster Graphics [DATA]
27 42 114 66	1B 2A 72 42	ESC *rB	End Raster Graphics
27 42 114 n 70	1B 2A 72 n 46	ESC *rnF	Raster Graphics Presentation Mode
27 42 98 n 77	1B 2A 62 n 4D	ESC *bnM	Set Compression Mode
27 38 108 n 85	1B 26 6C n 55	ESC &InU	Long-edge Offset Registration
27 38 108 n 90	1B 26 6C n 5A	ESC &InZ	Short-edge Offset Registration
27 38 97 n 71	1B 26 61 n 47	ESC &anG	Duplex Page Side Selection
27 42 114 n 84	1B 2A 72 n 54	ESC *rnT	Raster Height
27 42 114 n 83	1B 2A 72 n 53	ESC *rnS	Raster Width
27 42 98 n 89	1B 2A 62 n 59	ESC *bnY	Raster Y Offset

Rectangle Dimensions:

27 42 99 n 65	1B 2A 63 n 41	ESC *cnA	Horizontal Rule/Pattern Size (Dots)
27 42 99 n 72	1B 2A 63 n 48	ESC *cnH	Horizontal Rule/Pattern Size (Points)
27 42 99 n 66	1B 2A 63 n 42	ESC *cnB	Vertical Rule/Pattern Size (Dots)
27 42 99 n 86	1B 2A 63 n 56	ESC *cnV	Vertical Rule/Pattern Size (Points)

Rectangle Area Fill:

27 42 99 n 80	1B 2A 63 n 50	ESC *cnP	Print Rule/Pattern
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27 42 99 n 71	1B 2A 63 n 47	ESC *cnG	Pattern ID
Print Model:			
27 42 118 n 84	1B 2A 76 n 54	ESC *vnT	Select Pattern
27 42 118 n 78	1B 2A 76 n 4E	ESC *vnN	Select Source
			Transparency Mode
27 42 118 n 79	1B 2A 76 n 4F	ESC *vnO	Select Pattern
			Transparent Mode

Picture Frame:

27 37 n 66	1B 25 n 42	ESC %nB	Enter HPGL/2 Mode
27 42 99 n 88	1B 2A 63 n 58	ESC *cnX	Horizontal Picture Frame Size
27 42 99 n 89	1B 2A 63 n 59	ESC *cnY	Vertical Picture Frame Size
27 42 99 48 84	1B 2A 63 30 54	ESC *cOT	Set Picture Frame Anchor Point
27 42 99 n 75	1B 2A 63 n 4B	ESC *cnK	HPGL/2 Plot Horizontal Size
27 42 99 n 76	1B 2A 63 n 4C	ESC *cnL	HPGL/2 Plot Vertical Size

Macro Control:

Macro ID and Control:

DEC.	HEX.	MNEMONIC	FUNCTION
27 38 102 n 89	1B 26 66 n 59	ESC &fnY	Macro ID
27 38 102 n 88	1B 26 66 n 58	ESC &fnX	Macro Control

Other Control:

27 89	1B 59	ESC Y	Enter Display Functions Mode
27 90	1B 5A	ESC Z	Exit Display Functions Mode
27 38 112 n 88	1B 26 70 n 58	ESC &pnX	Wrap Around Mode [DATA]
27 28 n	1B 1C n	ESC FSn	Set Emulation

HPGL/2 Mode:

DEC.	HEX.	MNEMONIC	FUNCTION
27 37 n 65	1B 25 n 41	ESC %nA	Enter PCL Mode
27 45	1B 69	ESC E	Reset
68 70	44 46	DF	Default Values
73 78	49 4E	IN	Initialize
73 80	49 50	IP	Input P1 and P2
73 82	49 52	IR	Input Relative P1 and P2
73 87	49 57	IW	Input Window

82 79	52 4F	RO	Rotate Coordinate
80 71	50 47	PG	Advance Full Page
82 80	52 50	RP	Replot
83 67	53 43	SC	Scale

Vector Group:

65 65	41 41	AA	Arc Absolute
65 82	41 52	AR	Arc Relative
65 84	41 54	AT	Absolute Arc Three Point
82 84	52 54	RT	Relative Arc Three Point
80 65	50 41	PA	Plot Absolute
80 82	50 52	PR	Plot Relative
80 68	50 44	PD	Pen Down
80 85	50 55	PU	Pen Up
80 69	50 45	PE	Polyline Encoded
67 73	43 49	CI	Circle
78 80	4E 50	NP	Number of Pens

Olygon Group:

69 65	45 41	EA	Edge Rectangle Absolute
69 82	45 52	ER	Edge Rectangle Relative
70 80	46 50	FP	Full Polygon
69 80	45 50	EP	Edge Polygon
87 71	57 47	WG	Full Wedge
69 87	45 57	EW	Edge Wedge
80 77	50 4D	PM	Polygon Mode
82 65	52 41	RA	Fill Rectangle Absolute
82 82	52 52	RR	Fill Rectangle Relative

Character Group:

83 68	53 44	SD	Standard Font Definition
65 68	41 44	AD	Alternate Font Definition
67 70	43 46	CF	Character Fill MOde
67 80	43 50	CP	Character Plot
84 68	54 44	TD	Transparent Data
68 86	44 56	DV	Define Variable Text Path
68 73	44 49	DI	Absolute Direction
68 82	44 52	DR	Relative Direction
68 84	44 54	DT	Define Label Terminator
69 83	45 53	ES	Extra Space
70 73	46 49	FI	Primary Font Selection
70 78	46 4E	FN	Secondary Font Selection
83 66	53 42	SB	Scalable or Bitmap Font
76 79	4C 4F	LO	Label Origin
76 66	4C 42	LB	Label
83 83	53 53	SS	Select Standard Font
83 65	53 41	SA	Select Alternate Font
83 73	53 49	SI	Absolute Character Size
83 82	53 52	SR	Relative Character Size
83 76	53 4C	SL	Character Slant

Line and Fill Attributes Group:

84 82	54 52	TR	Transparency Mode
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83	86	53	56	SV	Screened Vectors
76	84	4C	54	LT	Line Type
76	65	4C	41	LA	Line Attributes
80	87	50	57	PW	Pen Width
87	85	57	55	WU	Pen Width Unit Selection
83	80	53	50	SP	Select Pen
83	77	53	4D	SM	Symbol Mode
70	84	46	54	FT	Fill Type
65	67	41	43	AC	Anchor Corner
82	70	52	46	RF	Raster Fill Definition
85	76	55	4C	UL	Creates Line Type

(smc-09/14/93)