

Epson LQ-850, Epson LQ-500/510/570, Epson LQ-2500/2550/860 (color printing)
Citizen GSX-140/140plus/240

Printer Operation/Data Control Commands

DEC.	HEX.	MNEMONIC
27 64	1B 40	ESC @
Initializes the printer to the default condition.		
27 126 53 n	1B 7E 35 n	ESC ~ 5 n
Selects emulation. n=0 selects Epson LQ-series emulation. n=1 selects IBM Proprinter X24E emulation.		
17	11	DC1
Selects printer.		
19	13	DC3
Deselects printer.		
127	7F	DEL
Delete character.		
27 60	1B 3C	ESC <
One-line unidirectional -- moves the print head to left-most position, then prints from left to right.		
27 85 n	1B 55 n	ESC U n
Selects/deselects unidirectional printing mode. n=1 unidirectional n=0 bidirectional		
27 61	1B 3D	ESC =
Sets the MSB (most significant bit) of all incoming data to 0.		
27 62	1B 3E	ESC >
Sets the MSB of all incoming data to 1.		
27 35	1B 23	ESC #
Cancels the MSB control by ESC = or ESC >.		
13	0D	CR
Carriage return -- brings the print head to the left margin.		

24	18	CAN
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Cancel -- clears all print information in the internal buffer.

Vertical Motion Commands

DEC.	HEX.	MNEMONIC
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12	0C	FF
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Form feed -- advances the paper to the next page.

27 67 n	1B 43 n	ESC C n
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Sets the page length to n lines.

27 67 0 n	1B 43 00 n	ESC C NUL n
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Sets the page length to n inches.

27 79 n	1B 4E n	ESC N n
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Sets skip over perforation for n lines.

27 80	1B 4F	ESC O
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Cancel skip over perforation.

10	0A	
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Advances the paper one line.

27 48	1B 30	ESC 0
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Sets line spacing to 1/8 inch.

27 50	1B 32	ESC 2
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Sets line spacing to 1/6 inch.

27 51 n	1B 33 n	ESC 3 n
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Sets line spacing to n/180 inch.
0=<n=<255.

27 65 n	1B 41 n	ESC A n
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Sets line spacing to n/60 inch.
0=<n=<85.

27 43 n	1B 2B n	ESC + n
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Sets line spacing to n/360 inch.
0=<n=<255.

27 126 48 n 1B 7E 30 n ESC ~ 0 n

Sets line spacing to n/120 inch.
0=<n=<125

27 74 n 1B 4A n ESC J n

Advances paper by n/180 inch.

27 66 n1 ... n16 0 1B 42 n1 ... n16 00 ESC B n1 ... n16

Sets a maximum of 16 vertical tab stops in the current line spacing.
0=<n1,...n16=<255

27 98 c n1 ... n16 0 1B 62 c n1 ... n16 00 ESC b c n1 ... n16

Sets a maximum of 16 vertical tab stops per channel in a maximum of 8 channels. c is the channel number (0 to 7).
0=<n1,...n16=<255

27 47 c 1B 2F c ESC / c

Selects a vertical tab channel. c is the channel number (0 to 7).

11 0B VT

Vertical tab -- advances the paper to the next tab stop set in the channel selected by ESC / c.

27 40 85 1 0 n 1B 28 55 01 00 n ESC (U NUL 1 n

Sets the vertical measuring unit to n/3600 inch. n must be one of the following values: 10, 20, 30, 40, 50, or 60.

27 40 86 2 0 n1 n2 1B 28 56 02 00 n1 n2 ESC (V 2 NUL n1 n2

Sets absolute vertical print position -- moves the print head to n1 + n2 + 256 units set by ESC (U from the top margin.

27 40 118 2 0 n1 n2 1B 28 76 02 00 n1 n2 ESC (v 2 NUL n1 n2

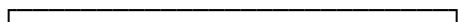
Sets relative vertical print position -- moves the print head to n1 + n2 + 256 units set by ESC (U from current position.
0=<n1=<255.
0=<n2=<127.

27 40 67 2 0 n1 n2 1B 28 43 02 00 n1 n2 ESC (C 2 NUL n1 n2

Sets page length to n1 + n2 x 256 units set by ESC (U n.

27 40 99 4 0 1B 28 63 04 00 ESC (c 4 NUL
t1 t2 b1 b2 t1 t2 b1 b2 t1 t2 b1 b2

Sets top margin to t1 + t2 x 256 units set by ESC (U n, bottom margin to b1 + b2 x 256 units.



Horizontal Motion Commands

DEC.	HEX.	MNEMONIC
27 188 n	1B 6C n	ESC I n
Sets the left margin at column n.		
27 81 n	1B 51 n	ESC Q n
Sets the right margin at column n.		
8	08	BS
Backspace -- moves the print head one character to the left.		
27 36 n1 n2	1B 24 n1 n2	ESC \$ n1 n2
Absolute dot tab -- moves the print head $n1 + (n2 \times 256)$ columns from the left margin.		
27 92 n1 n2	1B 5C n1 n2	ESC \ n1 n2
Relative dot tab -- moves the print head $n1 + (n2 \times 256)$ columns from the current position.		
27 68 n1 ... n32	1B 44 n1 ... n32	ESC D n1 ... n32
Sets a maximum of 32 horizontal tab stops.		
9	09	HT
Horizontal tab -- advances the print head to the next horizontal tab setting.		
27 99 n1 n2	1B 63 n1 n1	ESC c n1 n2
Sets HMI (horizontal motion index) to $(n1 + (n2 \times 256))/360$ inch.		

Printing Style Commands

DEC.	HEX.	MNEMONIC
27 120 N	1B 78 n	ESC x n
Selects (n=1) or cancels (n=0) the letter quality mode.		
27 107 n	1B 6B n	ESC k n
Selects a font in the letter quality mode.		

n = 0 Times Roman
n = 1 Sans Serif
n = 2 Courier 10
n = 3 Prestige Elite
n = 4 Script

n = 5 OCR-B
n = 7 Orator
n = 8 Orator-S
n = 9 Script C

27 33 n	1B 21 n	ESC ! n
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Selects a combination of printing characteristics.

n = 0 10 cpi (characters per inch)
n = 1 12 cpi
n = 2 Proportional
n = 4 Condensed
n = 8 Emphasized
n = 16 Double-strike
n = 32 Double-width
n = 64 Italic
n = 128 Underline

Printing Size Commands

DEC.	HEX.	MNEMONIC
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27 80	1B 50	ESC P
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Selects 10 cpi (characters per inch)

27 77	1B 4D	ESC M
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Selects 12 cpi.

27 126 66 n	1B 7E 42 n	ESC ~ B n
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Selects between high-speed 12-cpi printing (n=0) and high-density 12-cpi printing (n=1).

27 101	1B 67	ESC g
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Selects 15 cpi.

15	0F	SI
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Selects condensed mode.

18	12	DC2
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Cancels condensed mode.

27 126 51 n	1B 7E 33 n	ESC ~ 3 n
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Selects the pitch.

n = 0 10 cpi
n = 1 12 cpi
n = 2 17.1 cpi
n = 6 15 cpi

n = 7 20 cpi

27 112 n	1B 70 n	ESC p n
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Selects (n=1) or cancels (n=0) proportional printing mode.

14	0E	SO
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Sets the character width to double for one line.

20	14	DC4
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Cancels one-line double-width setting with SO.

27 87 n	1B 57 n	ESC W n
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Selects (n=1) or cancels (n=0) the double-width mode.

27 126 49 n	1B 7E 31 n	ESC ~ 1 n
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Sets the character width/height to quadruple.

n = 0 Normal width, normal height
n = 1 Double height
n = 2 Quadruple height
n = 3 Double width
n = 4 Quadruple width
n = 5 Double height, double width
n = 6 Quadruple height, quadruple width

27 199 n	1B 77 n	ESC w n
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Selects (n=1) or cancels (n=0) double-height mode.

27 88 m n 0	1B 58 m n 00	ESC X m n NUL
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Sets character pitch and points.

m = 0 No change
m = 1 Proportional
m = 5-127 360/m cpi

The point size is set to n/2. The available point sizes are 8, 10, 10.5, 12, 14, 16, 18, 20, 21, 22, 24, 26, 28, 30, 32.

Printing Enhancement Commands

DEC.	HEX.	MNEMONIC
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27 69	1B 45	ESC E
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Selects emphasized printing.

27 70	1B 46	ESC F
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Cancels emphasized printing.

27 71	1B 47	ESC G
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Selects double-strike printing.

27 72	1B 48	ESC H
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Cancel double-strike printing.

27 83 n	1B 53 n	ESC S n
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Selects superscript (n=0) or subscript (n=1)

27 84	1B 54	ESC T
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Cancel superscript/subscript.

27 45 n	1B 2D n	ESC - n
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Selects (n=1) or cancels (n=0) underline.

27 40 45 03 00 01 n1 n2	1B 28 2D 03 00 01 n1 n2	ESC (-3 NUL 1 n1 n2
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Starts or stops underline, overscore, or strike through with continuous or broken, single or double line.

n1 = 1 Starts underline	n2 = 0 Stops underline, strike through, or
n1 = 2 Starts strike through	overscore
n1 = 3 Starts overscore	n2 = 1 Single continuous line
	n2 = 6 Double broken line

27 113 n	1B 71n	ESC q n
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Selects a character style.

n = 0 Normal
n = 1 Outline
n = 2 Shadow
n = 3 Outline with Shadow

27 52	1B 34	ESC 4
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Selects italic mode.

27 53	1B 35	ESC 5
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Cancel italic mode.

27 97 n	1B 61 n	ESC a n
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Selects a justification style.

n = 0 Left justification
n = 1 Centering
n = 2 Right justification
n = 3 Full justification

27 32 n	1B 20 n	ESC SP n
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Add n dots of space to the right of each character.

27 126 50 n	1B 7E 32 n	ESC ~ 2 n
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Selects (n=1) or cancels (n=0) the reverse printing mode (white letters on black background).

27 126 52 n	1B 7E 34 n	ESC ~ 4 n
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Selects (n=1) or cancels (n=0) slashed zero.

27 114 n	1B 72 n	ESC r n
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Selects print color.

n = 0 Black
n = 1 Magenta
n = 2 Cyan
n = 3 Violet
n = 4 Yellow
n = 5 Orange
n = 6 Green

Character Table Commands

DEC.	HEX.	MNEMONIC
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27 116 n	1B 74 n	ESC t n
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Selects graphics (n=1) or italics (n=0) mode for character set codes 128 to 255.

27 54	1B 36	ESC 6
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Sets codes 128 to 159 to be printed as characters.

27 55	1B 37	ESC 7
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Sets codes 128 to 159 as control codes.

27 82 n	1B 52 n	ESC R n
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Selects an international character set.

n = 0 USA
n = 1 France
n = 2 Germany
n = 3 UK
n = 4 Denmark I
n = 5 Sweden
n = 6 Italy
n = 7 Spain I
n = 8 Japan

n = 9 Norway
 n = 10 Denmark II
 n = 11 Spain II
 n = 12 Latin America
 n = 13 Korea
 n = 64 Legal

27 40 115 3 0 n1 n2 0 1B 28 74 03 00 n1 n2 00 ESC (t 3 NUL n1 n2

NUL assigns registered character table n2 to one of the four character tables (n1, 0=<n1=<3).

n2 = 0 Italic
 n2 = 1 PC437 (US)
 n2 = 3 PC850 (Multinational)
 n2 = 4 PC851 (Greek)
 n2 = 5 PC853 (Turkish)
 n2 = 6 PC855 (Cyrillic)
 n2 = 7 PC860 (Portuguese)
 n2 = 8 PC863 (Canadian French)
 n2 = 9 PC865 (Norwegian)
 n2 = 10 PC852 (East European)
 n2 = 11 PC857 (Turkish)
 n2 = 12 PC862 (Hebrew)
 n2 = 13 PC864 (Arabic)
 n2 = 14 PC866 (Russian)
 n2 = 15 PC869 (Greek)
 n2 = 16 USSR STD. (Russian)
 n2 = 17 ECMA-94-1
 n2 = 18 K.U. (Thai)
 n2 = 19 ISO-988 (Thai)
 n2 = 20 GENERAL (Thai)
 n2 = 21 SIC STD. (Thai)
 n2 = 22 IBM STD. (Thai)
 n2 = 23 SIC OLD (Thai)

User Defined Control Characters

DEC.	HEX.	MNEMONIC
27 38 0 n1 n2	1B 26 00 n1 n2	ESC & NUL n1 n2
d0 d1 d2	d0 d1 d2	d0 d1 d2

Redefines characters.

n1,n2 First and last ASCII codes to define (0-127)
 d0 Space to the left of the character in dots
 d1 Character width in dots
 d2 Space to the right of the character in dots

27 37 n	1B 25 n	ESC % n
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Selects (n=1) or cancels (n=0) the user-defined character set.

27 58 n 0	1B 3A 00 N 00	ESC : NUL n NUL
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Copy character set in ROM to RAM. n specifies the font.

n = 0 Roman
n = 1 Sans Serif
n = 2 Courier
n = 3 Prestige

27 40 94 n1 n2	1B 28 5E n1 n2	ESC (^ n1 n2
d1 ... dk	d1 ... dk	d1 ... dk

Prints following n1 + (n2 x 256) bytes of data as characters instead of control codes.

d1 ... dk are data.

Graphics Commands

DEC.	HEX.	MNEMONICS
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27 75 n1 n2	1B 4B n1 n2	ESC K n1 n2
d1 ... dk	d1 ... dk	d1 ... dk

Selects the 8-wire normal graphics density mode.

k = n1 + (n2 x 256)

27 76 n1 n2	1B 4C n1 n2	ESC L n1 n2
d1 ... dk	d1 ... dk	d1 ... dk

Selects the 8-wire double density graphics mode.

k = n1 + (n2 x 256)

27 89 n1 n2	1B 59 n1 n2	ESC Y n1 n2
d1 ... dk	d1 ... dk	d1 ... dk

Selects the 8-wire high-speed double density graphics mode.

k = n1 + (n2 x 256)

27 90 n1 n2	1B 5A n1 n2	ESC Z n1 n2
d1 ... dk	d1 ... dk	d1 ... dk

Selects the 8-wire quadruple density graphics mode.

k = n1 + (n2 x 256)

27 42 m n1 n2	1B 2A m n1 n2	ESC * m n1 n2
d1 ... dk	d1 ... dk	d1 ... dk

Selects various graphics modes.

k = n1 + (n2 x 256)

m = 0 60-dpi 8-pin normal density
m = 1 120-dpi 8-pin double density
m = 2 120-dpi 8-pin high-speed double density
m = 3 240-dpi 8-pin quadruple density
m = 4 80-dpi 8-pin CRT I
m = 6 90-dpi 8-pin CRT II
m = 32 60-dpi 24-pin normal density
m = 33 120-dpi 24-pin double density

m = 38 90-dpi 24-pin CRT III
m = 39 180-dpi 24-pin triple density
m = 40 360-dpi 24-pin hex density

27 63 n m 1B 3F n m ESC ? n m

Reassign the density of the bit image mode specified by ESC K, L, Y or Z.
n = "K", "L", "Y", or "Z". m is a mode number selected from the table
shown in the ESC * command.

27 40 71 n1 n2 m 1B 28 47 n1 n2 m ESC (G n1 n2 m

Selects graphics mode. No character printing is possible in this mode. To
exit, send initialize printer (ESC @) command.

27 46 c v h m 1B 2E c v h m ESC . c v h m
n1 n2 d1 ... dk n1 n2 d1 ... dk n1 n2 d1 ... dk

Prints raster graphics.

c = 0 Full (no-compressed) v = 10 360 DPI (dots per inch)
c = 1 Compressed v = 20 180 DPI

h = 10 360 DPI
h = 20 180 DPI

m specifies vertical dot count (number of rows for dot graphics).

0=<m=<24

n1 and n2 specify the horizontal dot count (number of columns for dot
graphics) as n1 + (n2 x 256).

(rjs-06/30/93)