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┌─────────────────────────────────────────────┐
│ PRINTER OPERATION/DATA CONTROL SEQUENCE       │
└─────────────────────────────────────────────┘
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DEC.	HEX.	MNEMONIC
13	0D	CR

Carriage return -- tell the printer to print the current buffer contents
and then do a carriage return with or without line feed (Function Switch
#1, CR). A carriage return moves the print head to the left margin of the
same line.

| 17 | 11 | DC1 * |

Select printer -- set the printer to accept data from a computer after the
DC3 command has deselected the printer.

| 19 | 13 | DC3 * |

Print suppress mode -- set the printer so it does not accept data from the
computer.

| 24 | 18 | CAN |

Cancel -- clear all print information in the internal buffer.

| 27 35 | 1B 23 | ESC # |

Cancels the MSB control set by the ESC = or ESC > command.

| 27 60 | 1B 3C | ESC < |

One-line unidirectional -- moves the print head to left-most position, then
prints from left to right.

| 27 61 | 1B 3D | ESC = |

Set the MSB (Most significant bit) of all incoming data to 0.

| 27 62 | 1B 3E | ESC > |

Set the MSB of all incoming data to 1.

| 27 64 | 1B 40 | ESC @ |

Initialize the printer.

| 27 85 n | 1B 55 n | ESC U n |

Selects/deselects unidirectional printing mode.

n = 1 Unidirectional
n = 0 Bidirectional

| 127 | 7F | DEL |

Deletes a character just input before the DEL code.

| 27 114 n | 1B 72 n | ESC r n |

Selects a print color from seven colors.

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

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* To enable these codes, turn the power on while pressing FONT.

┌─────────────────────────────────────┐
│ VERTICAL MOTION CONTROL SEQUENCES   │
└─────────────────────────────────────┘

| DEC. | HEX. | MNEMONIC |

| 10 | 0A | LF |

Line feed -- does a line feed with or without carriage return (Function switch #2 LF).

| 11 | 0B | VT |

Vertical tab -- feeds the paper to the next vertical tab stop set by the ESC B and ESC b commands and does a carriage return.

| 12 | 0C | FF |

Form feed -- feeds paper to the top of next page after printing.

| 27 43 n | 1B 2B n | ESC + n |

Selects n/250 inch line spacing. (0<n<255)

| 27 47 n | 1B 2F n | ESC / n |

Selects the vertical tab channel used by VT. (0<n<7)

| 27 48 | 1B 30 | ESC 0 |

Sets 1/8-inch line feed.

| 27 50 | 1B 32 | ESC 2 |

Sets 1/6-inch line feed.

| 27 51 n | 1B 33 n | ESC 3 |

Selects n/180 inch line spacing. (0<n<255)

| 27 65 n | 1B 41 n | ESC A |

Selects n/60 inch line spacing. (0<n<127)

DEC.	HEX.	MNEMONIC
27 66 n1 ... n16 0	1B 42 n1 ... n16 00	ESC B n1 ... n16 NUL

Sets vertical tab stops in channel 0. (0<n<255)

27 67 n	1B 43 n	ESC C n

Sets the page length in lines. (0<n<127)

27 67 00 n	1B 43 00 n	ESC C NUL n

Sets the page length in inches. (0<n<22)

27 74 n	1B 4A n	ESC J n

Performs n/180 inch line feed.

27 78 n	1B 4E n	ESC N n

Sets skip over perforation. (1<n<127)

27 79	1B 4F	ESC O

Cancels skip over perforation.

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

Sets vertical tab stops in each channel. m = channel number
(0<m<7) (1<n<127)

27 106 n	1B 6A n	ESC j n

Performs reverse line feed for n/180 inch.

HORIZONTAL MOTION CONTROL SEQUENCES

DEC.	HEX.	MNEMONIC
8	08	BS

Backspace -- moves the print head to the left one character space.

9	O9	HT

Horizontal tab -- moves to next horizontal tab position.

27 36 n1 n2	1B 24 n1 n2	ESC $ n1 n2

Sets absolute print position.
Distance from left margin = (n1 + (n2 x 256)) x 1/60 inch

27 68 n1 ... n32 0	1B 44 n1 ... n32 00	ESC D n1 ... n32 NUL

Sets horizontal tab stops. (1<n<255)

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27 81 n                  1B 51 n               ESC Q n

Sets the right margin.
_____

27 92 n1 n2              1B 5C n1 n2           ESC \ n

Sets relative print position.  If the MSB of n2 is 0, move the print
position to the right. If it is 1, move print position to the left.
_____

27 108 n                 1B 6C n               ESC | n

Sets left margin. (0<n<255)
_____


 ┌─────────────────────────────────┐
 │ PRINTING STYLE CONTROL SEQUENCES │
 └─────────────────────────────────┘

DEC.                     HEX.                  MNEMONIC
_____

27 33 n                  1B 21 n               ESC ! n

Selects a combination of printing characteristics.
         Feature                 Equivalent Command

n =   0  10 cpi                  ESC P
n =   1  12 cpi                  ESC M
n =   2  Proportional spacing    ESC p
n =   4  Condensed printing      SI/DC2
n =   8  Emphasized printing     ESC E/ESC F
n =  16  Double-strike printing  ESC G/ESC H
n =  32  Double-width printing   ESC W
n =  64  Italic printing         ESC 4/ESC 5
n = 128  Underline               ESC -
_____

27 107 n                 1B 6B n               ESC k n

Selects LQ font.

n = 0 Roman
n = 1 Sans serif
n = 2 Courier
n = 3 Prestige
_____

27 120 n                 1B 78 n               ESC x n

Selects the LQ or the draft mode.

n = 0 Draft mode
n = 1 LQ mode
_____

NOTES:

    ° You must use the CODE setting on the front panel method for these
      control codes to become effective.

    ° You can select SSD mode only by using the front panel method.  There
      is no control code to select SSD.
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 ┌─────────────────────┐
 │ PRINT SIZE COMMANDS │
 └─────────────────────┘
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DEC.	HEX.	MNEMONIC
14	0E	SO

Selects double-width mode (one line).

15	0F	SI

Selects condensed mode (10 cpi to 17.1 cpi, 12 cpi to 20 cpi).

18	12	DC2

Cancels condensed mode.

20	14	DC4

Cancels double-width mode set by SO.

27 77	1B 4D	ESC M

Selects 12 cpi.

27 80	1B 50	ESC P

Selects 10 cpi.

27 87 n	1B 57 n	ESC W n

Selects or deselects double-width mde.

n = 1 Start double-width mode
n = 0 End double-width mode

27 103	1B 67	ESC g

Selects 15 cpi.

27 112 n	1B 70 n	ESC p n

Sets proportional mode.

n = 1 Select proportional mode.
n = 0 Cancel proportional mode.

27 119 n	1B 77 n	ESC w n

Selects or deselects double-height.

n = 1 Start double-height.
n = 0 End double-height.

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 ┌──────────────────────────────────────┐
 │ PRINT ENHANCEMENT CONTROL SEQUENCES  │
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└──────────────────────────────────────┘
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DEC.	HEX.	MNEMONIC
27 32 n	1B 20 n	ESC SP n

Sets inter-character space (0<n<127).

Normal Spacing:

Print Mode:	Draft (10/12/15cpi)	LQ (10/12/15 cpi)	Proportional
Dot Space:	1/120 inch	1/180 inch	1/180 inch

DEC.	HEX.	MNEMONIC
27 40 45 n1 n2 m d1 d2	1B 28 2D n1 n2 m d1 d2	ESC (- n1 n2 m d1 d2

Selects line.

n1 = 3   n2 = 0   m = 1

d1 = 1 Underline   d2 = 0 Cancel line.
d1 = 2 Strike-through   d2 = 1 Set single line.
d1 = 3 Overscore   d2 = 2 Set double line.
                           d2 = 5 Set single broken line.
                           d2 = 6 Set double broken line.

DEC.	HEX.	MNEMONIC
27 45 n	1B 2D n	ESC - n

Underline.

n = 1 Start underline
n = 2 End underline

DEC.	HEX.	MNEMONIC
27 52	1B 34	ESC 4

Selects italic mode.

DEC.	HEX.	MNEMONIC
27 53	1B 35	ESC 5

Cancels italic mode.

DEC.	HEX.	MNEMONIC
27 54	1B 36	ESC 6

Enables printing of codes 128 through 159 as characters.

DEC.	HEX.	MNEMONIC
27 55	1B 37	ESC 7

Enables printing of codes 128 through 159 as control codes.

DEC.	HEX.	MNEMONIC
27 69	1B 45	ESC E

Selects emphasized mode.

DEC.	HEX.	MNEMONIC
27 70	1B 46	ESC F

Cancels emphasized mode.

DEC.	HEX.	MNEMONIC
27 71	1B 47	ESC G

Selects double-strike mode.

27 72	1B 48	ESC H

Cancels double-strike mode.

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27 83 n	1B 53 n	ESC S n

Sets superscript/subscript mode.

n = 1 Select subscript printing
n = 0 Select superscript printing

---

27 84	1B 54	ESC T n

Ends superscript/subscript mode.

---

27 97 n	1B 61 n	ESC a n

Selects justification.

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

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27 113 n	1B 71 n	ESC q

Selects character style.

n = 0 Normal character
n = 1 Outline character
n = 2 Character with shadow
n = 3 Outline character with shadow

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┌─────────────────────────────────────┐
│ CHARACTER TABLE CONTROL SEQUENCES   │
└─────────────────────────────────────┘
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DEC.	HEX.	MNEMONIC

27 82 n	1B 52 n	ESC R n

Selects an international character set
n = 0 U.S.A.
n = 1 France
n = 2 Germany
n = 3 U.K.
n = 4 Denmark
n = 5 Sweden
n = 6 Italy
n = 7 Spain
n = 8 Japan
n = 9 Norway
n = 10 Denmark II
n = 11 Spain II
n = 12 Latin America
n = 64 Legal

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27 116 n	1B 74 n	ESC t n

Selects character code table.

n = 0   Italic character table
n = 1   Graphic character table
n = 2   Download character table.

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┌─────────────────────────────────────┐
│ FONT DOWNLOADING CONTROL SEQUENCE │
└─────────────────────────────────────┘

DEC.   HEX.   MNEMONIC
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27 37 n   1B 25 n   ESC % n

Selects/Deselects the downloaded character set defined with ESC &.

n = 0   Normal character set
n = 1   Download character set

───

27 38 0 n m a0 a1 a2   1B 26 00 n m a0 a1 a2   ESC & n m a0 a1 a2

Defines download character codes (Function switch 4 set to on).

n = Code for first character to download
m = Code for last character to download
a0 = Space before the character
a1 = Character width
a2 = Space after the character

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27 58 0 n 0   1B 00 n 00   ESC NUL n NUL

Copies the font in ROM to downloading area in RAM.

n = 0   Draft mode
0<n<8   LQ mode

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┌───┐
│ GRAPHIC IMAGE PRINTING CONTROL SEQUENCES │
└───┘

DEC.   HEX.   MNEMONIC
───

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

Selects graphic mode. Total number of dots equals n1 + (n2 x 256). In modes
2, 3, and 40, adjacent dots cannot be printed.

m = 0   60-dpi, 8-pin bit, Single-density mode
m = 1   120-dpi, 8-pin bit, Double-density mode
m = 2   120-dpi, 8-pin bit, Double-density, double-speed mode
m = 3   240-dpi, 8-pin bit, Quadruple-density mode
m = 4   80-dpi, 8-pin bit, CRT I mode
m = 6   90-dpi, 8-pin bit, CRT II mode
m = 32   60-dpi, 24-pin bit, Single-density mode
m = 33   120-dpi, 24-pin bit, Double-density mode
m = 38   90-dpi, 24-pin bit, CRT III mode
m = 39   180-dpi, 24-pin bit, Triple-density mode
m = 40   360-dpi, 24-pin bit, Hex-density mode

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

Reassigns graphics mode n to mode m.

n = "K", "L", "Y", or "Z".

m =  0   60-dpi, 8-pin bit, Single-density mode
m =  1  120-dpi, 8-pin bit, Double-density mode
m =  2  120-dpi, 8-pin bit, Double-density, double-speed mode
m =  3  240-dpi, 8-pin bit, Quadruple-density mode
m =  4   80-dpi, 8-pin bit, CRT I mode
m =  6   90-dpi, 8-pin bit, CRT II mode
m = 32   60-dpi, 24-pin bit, Single-density mode
m = 33  120-dpi, 24-pin bit, Double-density mode
m = 38   90-dpi, 24-pin bit, CRT III mode
m = 39  180-dpi, 24-pin bit, Triple-density mode
m = 40  360-dpi, 24-pin bit, Hex-density mode
_____
27 75 n1, n1 d1...dk    1B 4B n1, n1 d1...dk    ESC K n1, n1 d1...dk

Single-density 8-pin bit image mode.  60-dpi (dots per inch)

k = n1 + (256 x n2)
_____
27 76 n1, n1 d1...dk    1B 4C n1, n1 d1...dk    ESC L n1, n1 d1...dk

Double-density 8-pin bit image mode.  120-dpi
_____
27 89 n1, n1 d1...dk    1B 59 n1, n1 d1...dk    ESC Y n1, n1 d1...dk

Double-density, double-speed 8-pin bit image mode.  120-dpi
(horizontally adjacent dots cannot be printed)
_____
27 90 n1, n1 d1...dk    1B 5A n1, n1 d1...dk    ESC Z n1, n1 d1...dk

Quadruple-density 8-pin bit image mode.  240-dpi
(horizontally adjacent dots cannot be printed)
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(jlc-01/10/94)
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