

CONTROL CODES

Before investigating the various print modes, consider how the computer communicates with the printer.

All the information is sent to the printer as numbers between 0 and 255 decimal (90-FF in hexadecimal). The printer interprets numbers according to the American Standard Code for Information Interchange, commonly referred to as the ASCII code. Most numbers (or codes) are printed as letters, numbers or symbols. However, the numbers 0-31, as well as some special sequences of code numbers, are used to "control" various functions of the printer. These control codes allow you to change character sets, select print modes, underline, superscript, subscript, and perform other special features.

The control codes have different meanings, depending on the current print mode. If a code is not recognized by the printer, it is ignored. The next few sections demonstrate how some of the control codes activate various printer functions.

TANDY CODE SET

For Models I, II, III, 4, 4D, 4P, 12, 16, and 16B, set the printer to Tandy mode and character set, and designate the correct line feed. Refer to the "Menu Selection" section.

IBM CODE SET

When you select the code set for IBM, the printer emulates the IBM Proprinter XL24 code set. If you select this operation mode, you can use the printer with the Tandy MS-DOS personal computer system or MS-DOS-compatible systems without code conversion and get the same results as you would with an IBM Proprinter XL24. Detailed information is in chapter 7, "Selecting a Code Set and a Character Set."

SELECTING THE PRINTER DRIVE IN YOUR SOFTWARE

When you install most applications software, you are prompted to enter the type of printer that you are using. Usually you select the appropriate file, known as a "printer driver," from a list of choices that appear on the screen. The printer driver provides important data about your printer so that it operates correctly with the software.

For best results, choose one of the following printer drivers, if they are available in your software.

- * IBM PROPRINTER II
- * IBM GRAPHICS PRINTER
- * EPSON LQ
- * TANDY DMP 2110
- * TANDY DMP 2100P

* NOTE: (Epson LQ printer drivers only) These drivers are for graphics only and not for text mode application. Be sure to use the built-in menu setting feature to set up your printer to select the IBM emulation mode, and set "IBM Processing" to "AGM" (alternated graphics mode). Your printer can then operate correctly with your software for graphic applications.

For the proper menu settings, refer to the chart below:

PRINTER DRIVER
SET PRINTER MENU TO

IBM PROPRINTER X 24/XL 24 TANDY DMP 2102	IBM emulation, IBM processing Tandy emulation or IBM emulation, as the printer driver calls for
IBM PROPRINTER II IBM GRAPHICS PRINTER Epson LQ	IBM emulation, IBM processing IBM emulation, IBM processing See note above
TANDY DMP 2110	Tandy emulation or IBM emulation, as the printer driver calls for
TANDY DMP 2100P	Tandy emulation or IBM emulation, as the printer drives calls for

If you do not get proper results when you print, be sure you to have installed your software correctly. If you still have problems, contact your software supplier for further instruction.

TANDY CONTROL CODES

Code Dec.	Hex	Symbol	DP Mode	WP Mode	Graphics Mode
8 n	(08) n	BS n	Backspace (n=Binary) n:BS Point NO.	Backspace (n=Binary) n:BS Point NO.	-----
10	(0A)	LF	Line Feed	Line Feed (Full LF)	Line Feed (7/60 inch LF)
12	(0C)	FF	Form Feed	Form Feed	Form Feed
13	(0D)	CR	Carriage Return (Latched Data)	Carriage Return (1/6 inch)	Carriage Return (7/60)
14	(0E)	SO	End Underlined	End Underlined	-----
15	(0F)	SI	Start Underlined	Start Underlined	-----
18	(12)	DC2	Select Graphics Mode	Select Graphic Mode	-----
19	(13)	DC3	-----	Select Data Processing Mode	-----
20	(14)	DC4	Select Word Processing Mode	-----	-----
27 1	(1B) (01)	ESC 01	Proportional	Proportional	-----
			Spacing	Spacing	

9	(09)	(09)				
27 10	(1B) (0A)	ESC LF	Full Reverse Line Feed (Set)	Full Reverse Line Feed (Executive)	-----	
27 14	(1B) (0E)	ESC SO	Start Elongation	Start Elongation	Start Elongation	
27 15	(1B) (0F)	ESC SI	End Elongation	End Elongation	End Elongation	
27 16 n1 n2	(1B) (10) n1 n2	ESC DEL n1 n2	Positioning (2 pitches are available) (n: Binary)	Positioning (2 pitches are available) (n: Binary)	Positioning (2 pitches are available) (n: Binary)	
27 17	(1B) (11)	ESC DC1	Select Proportional Character	Select Proportional Character	-----	
27 18	(1B) (12)	ESC DC2	Select Correspondence-10 Character	Select Correspondence-10 Character	-----	
27 19	(1B) (13)	ESC DC3	Select Standard-10 Character	Select Standard-10 Character	-----	
27 20	(1B) (14)	ESC DC4	Select Condensed Character	Select Condensed Character	-----	
27 21	(1B) (15)	ESC NAK	Select CR Only	Select CR Only	Select CR Only	
27 22	(1B) (16)	ESC SYN	Select CR=NL (LF)	Select CR=NL (LF)	Select CR=NL (LF)	
27 23	(1B) (17)	ESC ETB	Select Standard-12 Character	Select Standard-12 Character	-----	
27 28	(1B) (1C)	FSC FS	Half Forward Line Feed (Set)	Half Forward Line Feed (Executive)	-----	
27 29	(1B) (1D)	ESC GS	Select Correspondence-12 Character	Select Correspondence-12 Character	-----	
27 30	(1B) (1E)	ESC RS	Half Reverse Line Feed (Set)	Half Reverse Line Feed (Executive)	-----	
27 31	(1B) (1F)	ESC US	Start Bold	Start Bold	-----	

27	(1B)	ESC	End Bold	End Bold	-----
32	(20)	SP			
27	(1B)	ESC	Enter IBM	Enter IBM	Enter IBM
33	(21)	!	Emulation Mode	Emulation Mode	Emulation Mode
27	(1B)	ESC	Load User Font	Load User Font	-----
38	(26)	&			
27	(1B)	ESC	1/20	1/20	1/20
49	(31)	1	Forward Line Feed	Forward Line Feed	Forward Line Fd
27	(1B)	ESC			
52	(34)	4	Form Length Set	Form Length Set	Form Length Set
n	n	n			
27	(1B)	ESC	Set Full Forward		
54	(36)	6	Line Feed (No motion)	-----	-----
27	(1B)	ESC	3/4 Forward Line	3/4 Forward Line	
56	(38)	8	Feed (Set)	Feed (Executive)	-----
27	(1B)	ESC	Select IBM	Select Tandy	
58	(3A)	:	Character Set 1	Character Set 1	-----
27	(1B)	ESC	Select Tandy	Select Tandy	
59	(3B)	;	Character Set	Character Set	-----
27	(1B)	ESC	Font Assign	Font Assign	
61	(3D)	=	Correspondence-10	Correspondence-10	-----
n	n	n	Character	Character	
27	(1B)	ESC	Font Assign	Font Assign	
62	(3E)	>	Correspondence-12	Correspondence-12	-----
n	n	n	Character	Character	
27	(1B)	ESC	Font Assign	Font Assign	
63	(3F)	?	Proportional	Proportional	-----
n	n	n	Character	Character	
27	(1B)	ESC	End Italic	End Italic	
66	(42)	B	Character	Character	-----
48	(30)	O			
27	(1B)	ESC	Select Italic	Select Italic	
66	(42)	B	Character	Character	-----
49	(31)	1			
27	(1B)	ESC	4/5 Forward Line	4/5 Forward Line	4/5 Forward Line
71	(47)	G	Feed (Executive)	Feed (Executive)	Feed (Executive)
27	(1B)	ESC	Perforation	Perforation	
72	(48)	H	Skip Set	Skip Set	-----
n	n	n			

27	(1B)	ESC			
73	(49)	I	High-Resolution	High-Resolution	High-Resolution
n1	n1	n1	Graphics	Graphics	Graphics
n2	n2	n2	(n1n2:	(n1n2:	(n1n2:
d1	d1	d1	Column length)	Column length)	Column length
			(d1 -- dk:	(d1--dk:	(d1--dk:
dk	dk	dk	Image cut)	Image cut)	Image cut)
27	(1B)	ESC	Select Microfont	Select Microfont	-----
77	(4D)	M			
27	(1B)	ESC			
81	51	Q	Set Left Margin	Set Left Margin	-----
n	n	n			
27	(1B)	ESC			
82	(52)	R	Set Right Margin	Set Right Margin	-----
n	n	n			
27	(1B)	ESC	Select Superscript	Select Superscript	
83	(53)	S	Character	Character	-----
n	n	n	(n=0)	(n=0)	
27	(1B)	ESC	Select Superscript	Select Superscript	
83	(55)	S	Character	Character	-----
n	n	n	(n=1)	(n=1)	
27	(1B)	ESC	Select Bidirec-	Select Bidirec-	Select Bidirec-
85	(55)	U	tional printing	tional printing	tional printing
n	n	n	(n=0)	(n=0)	(n=0)
27	(1B)	ESC	Select	Select	Select
85	55	U	Unidirectional	Unidirectional	Unidirectional
n	n	n	Printing	Printing	Printing
			(n=1)	(n=1)	(n=1)
27	(1B)	ESC	Select Double-	Select Double-	-----
87	57	W	Height Character	Height Character	
27	(1B)	ESC	End Super-/ Subscript	End Super-/ Subscript	-----
88	(58)	X	Character	Character	
27	(1B)	ESC			
89	(59)	Y	International	International	-----
n	n	n	Character Set	Character Set	
27	(1B)	ESC			
90	(5A)	Z	Enhanced	Enhanced	-----
n	n	n			
28	(1C)	FS	Repeat Printable	Repeat Printable	Repeat Printable
n1 n2	n1 n2	n1 n2	Character	Character	Character

30	(1E)	RS	End Graphics Mode	End Graphics Mode	End Graphics Mode
----	------	----	-------------------	-------------------	-------------------

CODE SET FOR IBM PROPRINTER XL24 MODE

Code Dec.	Hex	Symbol	Function	
			PPR (ASCII)	AGM
8	(08)	BS	Backspace	Backspace
9	(09)	HT	Horizontal Tab	Horizontal Tab
10	(0A)	LF	Line Feed	Line Feed
11	(0B)	VT	Vertical Tab	Vertical Tab
12	(0C)	FF	Form Feed	Form Feed
13	(0D)	CR	Carriage Return	Carriage Return
14	(0E)	SO	Double Wide By Line	Double Wide By Line
15	(0F)	SI	Set Condensed Print 17.1 cpi	Set Condensed Print 17.1 cpi
17	(11)	DC1	Select Printer	Select Printer
18	(12)	DC2	Set 10 CPI	Set 10 CPI
20	(14)	DC4	Cancel Double Wide	Cancel Double Wide
24	(18)	CAN	Cancel Data	Cancel Data
27	(12)	ESC	Return to Tandy Mode	Return to Tandy Mode
33	(21)	!		
27	(1B)	ESC		Select Graphic Mode
42	(2A)	.		(m: Graphics mode)
m		m	-----	(n1 n2 Column length)
n1		n1		See page 116
n2		n2		
27	(1B)	ESC		
45	(2D)	-	Set/Reset Underline	Set/Reset Underline
n		n	(n=1: Set,n=0: Reset)	(n=1: Set,n=0: Reset)
27	(1B)	ESC		
48	(30)	0	Set 1/8" Line Spacing	Set 1/8" Line Spacing
27	(1B)	ESC		
49	(31)	1	Set 7/72" Line Spacing	Set 7/72" Line Spacing

27 50	(1B) (32)	ESC 2	Activate LF Pitch That Was Set by ESC A	Activated LF Pitch That Was Set by ESC A
27 51 n	(1B) (33) (n)	ESC 3 n	Set n/216" Line Spacing	Set n/180" Line Spacing (n:Binary, 1 < n < 255) = =
27 52	(1B) (34)	ESC 4	Set Top of Form	Set Top of Form
27 53	(1B) (35)	ESC 5 n	Set/Reset Auto LF (n=1: Set,n=0:Reset)	Set/Reset Auto LF (n=1: Set,n=0:Reset)
27 54	(1B) (36)	ESC 6	Select Character Set 2	Select Character Set 2
27 55	(1B) (37)	ESC 7	Select Character Set 1	Select Character Set 1
27 58	(1B) (3A)	ESC :	Set 12 CPI	Set 12 CPI
27 61	(1B) (3D)	ESC =	Down Line Loading	Down Line Loading
27 65 n	(1B) (41)	ESC A n	-----	Set n/60" Line Spacing (n: Binary, 1 < n < 255) = =
27 65 n	(1B) (41)	ESC A n	Set n/72" Line Spacing (n: Binary, 1 < n < 255) = =	-----
27 66 n1 nk	(1B) (42)	ESC B n1 nk	Set Vertical Tab (n: Tab position 1 <k<64>> = =	Set Vertical Tab
27 67 n	(1B) (43)	ESC C n	Set from Length (n lines (s)) (n: Binary)	Set from length (n line(s)) (n:Binary)
27 67 48 n	(1B) (43) (30)	ESC C O n	Set from Length (n inch(es)) (n:Binary)	Set from Length (n inch(es)) (n:Binary)
27	(1B)	ESC		

68 n1 nk	(44)	D n1 nk	Set Horizontal Tab (n:TAB Position, 1<k<28) = =	Set Horizontal Tab (n:TAB Position, 1<k<28) = =
27 69	(1B) (45)	ESC E	Set Emphasized Print	Set Emphasized Print
27 70	(1B) (46)	ESC F	Reset Emphasized Print	Reset Emphasized Print
27 71	(1B) (47)	ESC G	Set Enhanced Print	Set Enhanced Print
27 72	(1B) (48)	ESC H	Reset Enhanced Print	Reset Enhanced Print
27 73 n	(1B) (49) (n)	ESC I n	Select Print Mode See page 107	Select Print Mode See page 107
27 74 n	(1B) (4A)	ESC J	-----	n/180" Line Spacing (n: Binary, 1<n<255) = =
27 74 n	(1B) (4A)	ESC J n	n/216" Line Spacing (n: Binary, 1<n<255) = =	-----
27 75 n1 n2 d1 dk	(1B) (4B)	ESC K n1 n2	Single Density Graphic See page 118	Single Density Graphic See page 118
27 76 n1 n2 d1 dk	(1B) (4C)	ESC L n1 n2	Double Density Graphics See page 118	Double Density Graphics See page 118
27 78 n	(1B) (4E)	ESC N n	Set Auto Perforation	Set Auto Perforation
27 79 n	(1B) (4F)	ESC O	Reset Auto Perforation	Reset Auto Perforation

27	(1B)	ESC		
80	(50)	P	Proportional Spacing	Proportional Spacing
n		n	(n=1: Set, n=0: Reset)	(n=1: Set, n=0: Reset)
27	(1B)	ESC		
81	(51)	Q	Deselect Printer	Deselect Printer
36	24	\$		
27	(1B)	ESC		
82	(52)	R	Set Default Tab	Set Default Tab
27	(1B)	ESC	Set Super-/Subscript	Set Super-/Subscript
83	(53)	S	(n=1: Set superscript)	(n=1: Set superscript)
n		n	(n=0: Set subscript)	(n=1: Set superscript)
27	(1B)	ESC		
84	(54)	T	Reset Super-/Subscript	Reset Super-/Subscript
27	(1B)	ESC		
85	(55)	U	Unidirectional print	Unidirectional Print
n		n	(n=1: Set, n=0: Reset)	(n=1: Set, n=0: Reset)
27	(1B)	ESC	Set Double Wide	Set Double Wide
87	(57)	W	(n=1: Set, n=0: Reset)	(n=1: Set, n=0: Reset)
n		n		
27	(1B)	ESC		
88	(58)	X	Set Left/Right Margin	Set Left/Right Margin
n1		n1	(n1; left margin)	(n2; right margin)
n2		n2	(n:Binary)	(n:Binary)
27	(1B)	ESC		
89	(59)	Y	Double Density Graphic	Double Density Graphic
n1		n1	See page 118	See page 118
n2		n2		
d1				
dk				
27	(1B)	ESC		
90	(5A)	Z	Quadruple Density Graphic	Quadruple Density Graphic
n1		n1	See page 119	See page 119
n2		n2		
d1				
dk				
27	(1B)	ESC		
91	(5B)	[Set Double High	Set Double High
64	(40)	@		
27	(1B)	ESC		
91	(5B)	[
103	(67)	g		

n1			Select Graphics Mode	Select Graphics Mode
n2			See page 112	See page 112
m				
d1				
dk				
27	(1B)	ESC	Print Continuously from	Print Continuously from
92	(5C)	\	All Character Chart	All Character Chart
n1		n1	(n:Character number)	(n:Character number)
n2		n2		
27	(1B)	ESC		
93	(5D)]	Reverse Feed	Reverse Feed
27	(1B)	ESC	Print One Character from	Print One Character from
94	(5E)	^	All Character Chart	All Character Chart
27	(1B)	ESC		
95	(5F)	-	Set/Rest Overscore	Set/Reset Overscore
n		n	(n=1:Set,n=0:Reset)	(n=1:Set,n=0:Reset)
27	(1B)	ESC		
100	(64)	d	Move Print Position	Move Print Position
n1		n1	(1/120") (n:Binary)	(1/120") (n:Binary)
n2		n2		
27	(1B)	ESC		
106	(6A)	j	Stop Printing	Stop Printing

The following information supplements the "Font Downloading" instructions for the Tandy and IBM Emulation Mode sections of Part II, Technical Reference, and may be found in the DMP2102 Manual ADDENDUM.

USING THE CONTROL PANEL WITH DOWNLOADED FONTS

When you use downloaded fonts with the printer, the control panel's PRINT QUALITY and PITCH SELECT buttons function differently than with the resident fonts.

IBM MODE

After you download a font and select it with the ESC I command, the PRINT QUALITY and PITCH SELECT buttons allow only valid combinations for the downloaded font. For example, if you download a 10 cpi LQ italic font, you can select only LQ 10 and LQ 17 using the control panel. Both LQ 10 and LQ 17 enable the downloaded italic font.

To return to the resident fonts, press the MODE button twice or use the ESC I command.

TANDY MODE

After you download a font, the control panel operates in the normal manner except for the pitch assigned to the downloaded font. For example, if you download the Script font and assign it to the proportional font, press the LQ PROP buttons to select the downloaded Script font.

You can use other PRINT QUALITY and PITCH SELECT button combinations to select the resident fonts.

(jlc-07/26/93)