

CITIZEN

24-Pin Printer Emulation

Command Reference Manual

Rev 0.1

Trademark Acknowledgements

Citizen: Citizen Watch Co. Ltd. Japan

Epson: Seiko Epson Corporation

Epson LQ: Seiko Epson Corporation

IBM Personal Computer, IBM PC, IBM Proprinter: International Business Machines Corporation

Microsoft, Windows: Microsoft Corporation

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any mean, mechanical, photocopying, recording or otherwise, without the prior written permission of Citizen Europe Limited. No liability is assumed with respect to the use of the information contained herein. While every precaution has been taken in the preparation of this manual, Citizen Europe Limited assumes no responsibility for errors or omissions. Neither is any liability assumed for any damages resulting from the use of the information contained herein.

EPSON 24 PIN LQ EMULATION INTRODUCTION	8
GRAPHICS COMMANDS	10
<i>Bit image graphics (single-density)</i>	10
<i>Bit image graphics (double-density)</i>	10
<i>Bit image graphics (hi-speed dbl-density)</i>	11
<i>Bit image graphics (quadruple-density)</i>	12
<i>Bit image graphics (graphics mode)</i>	13
<i>Reassign graphics mode</i>	13
<i>Select graphics mode</i>	14
<i>Print raster graphics</i>	14
DOWNLOAD CHARACTER COMMANDS	15
<i>Define download character</i>	15
<i>Copy ROM to RAM</i>	16
<i>Select/Cancel download characters</i>	17
CHARACTER TABLE COMMANDS	18
<i>Select character set</i>	18
<i>Assign character table</i>	19
<i>Characters 128-159</i>	20
<i>Select international character set</i>	20
<i>Print data as characters</i>	21
PRINT ENHANCEMENT COMMANDS	21
<i>Emphasized print</i>	21
<i>Doublestrike print</i>	21
<i>Italic print</i>	22
<i>Underlining</i>	22
<i>Scoring</i>	23
<i>Superscript</i>	24
<i>Subscript</i>	24
<i>Select colour</i>	24
<i>Justification</i>	25
<i>Set intercharacter spacing</i>	26
PRINT SIZE COMMANDS	26
<i>Select font by pitch and point</i>	26
<i>Select pitch (Pica)</i>	27
<i>Select pitch (Elite)</i>	28
<i>Select pitch (15-pitch)</i>	28
<i>Expanded print</i>	29
<i>Expanded print (one-line)</i>	29
<i>Condensed print</i>	30
<i>Proportional spacing</i>	31
<i>Double-high print</i>	31
PRINT STYLE COMMANDS	32
<i>Select print quality</i>	32
<i>Select font</i>	33
<i>Select special effect</i>	33

<i>Select print style</i>	34
HORIZONTAL MOTION COMMANDS	35
<i>Move printhead (To left margin)</i>	35
<i>Move printhead (Backspace)</i>	36
<i>Move printhead (To next horizontal tab position)</i>	36
<i>Move printhead (Absolute position)</i>	37
<i>Move printhead (Relative position)</i>	37
<i>Margins (Left)</i>	38
<i>Margins (Right)</i>	38
<i>Set horizontal tabs</i>	38
VERTICAL MOTION COMMANDS	40
<i>Advance paper (One line)</i>	40
<i>Advance paper (To next top-of-form)</i>	40
<i>Advance paper (n/180 inch)</i>	40
<i>Advance paper (To next vertical tab position)</i>	41
<i>Set absolute vertical position</i>	41
<i>Set relative vertical position</i>	42
<i>Retract paper</i>	42
<i>Set page length (n lines)</i>	42
<i>Set page length (n inches)</i>	43
<i>Set page length (n defined units)</i>	43
<i>Set top and bottom margins</i>	44
<i>Skip-over-perforation</i>	44
<i>Line spacing (1/6 inch)</i>	45
<i>Line spacing (1/8 inch)</i>	45
<i>Line spacing (n/60 inch)</i>	46
<i>Line spacing (n/180 inch)</i>	46
<i>Line spacing (n/360 inch)</i>	46
<i>Set vertical tabs in channel 0</i>	47
<i>Set vertical tabs in channel c</i>	47
<i>Select vertical tab channel</i>	48
PRINTER CONTROL COMMANDS	48
<i>Master reset</i>	48
<i>Delete character</i>	49
<i>Cancel line</i>	49
<i>Unidirectional print</i>	49
<i>Unidirectional print (one-line)</i>	50
<i>Half speed mode</i>	50
<i>Automatic sheet feeder</i>	51
<i>Suspend/Resume</i>	51
<i>MSB Control (MSB=1)</i>	52
<i>MSB Control (MSB=0)</i>	52
<i>MSB Control (Cancel)</i>	53
<i>Define unit</i>	53
CITIZEN 24PIN EMULATION COMMANDS	Error! Bookmark not defined.
<i>Select control panel language ESC ~ L</i>	Error! Bookmark not defined.
<i>Select elite print speed ESC ~ B</i>	Error! Bookmark not defined.
<i>Select high-speed printing ESC ~ 8</i>	Error! Bookmark not defined.
<i>Select quarter-page printing ESC ~ c</i>	Error! Bookmark not defined.
<i>Top-of-form position ESC ~ B</i>	Error! Bookmark not defined.
<i>Top-of-form adjustment ESC ~ V</i>	Error! Bookmark not defined.
<i>Paper tear-off ESC ~ C</i>	Error! Bookmark not defined.
<i>Emulation ESC ~ 5</i>	Error! Bookmark not defined.
<i>Line spacing (n/120 inch) ESC ~ 0</i>	Error! Bookmark not defined.
<i>Select font ESC ~ x</i>	Error! Bookmark not defined.
<i>Select pitch ESC ~ 3</i>	Error! Bookmark not defined.
<i>Enlarged print ESC ~ 1</i>	Error! Bookmark not defined.
<i>Reverse print ESC ~ 2</i>	Error! Bookmark not defined.

Select code page ESC ~ R.....	<i>Error! Bookmark not defined.</i>
Select Windows ANSI character set ESC ~ s	<i>Error! Bookmark not defined.</i>
Slashed zero ESC ~ 4.....	<i>Error! Bookmark not defined.</i>
24 PIN EMULATION REFERENCE COMMAND SUMMARY	Error! Bookmark not defined.
Vertical Motion Commands.....	<i>Error! Bookmark not defined.</i>
Horizontal Motion Commands	<i>Error! Bookmark not defined.</i>
Print Style Commands.....	<i>Error! Bookmark not defined.</i>
Print Size Commands.....	<i>Error! Bookmark not defined.</i>
Print Enhancement Commands	<i>Error! Bookmark not defined.</i>
Character Table Commands.....	<i>Error! Bookmark not defined.</i>
Download Character Commands.....	<i>Error! Bookmark not defined.</i>
Graphics Commands.....	<i>Error! Bookmark not defined.</i>
Printer Control Commands.....	<i>Error! Bookmark not defined.</i>
Vertical Motion Commands.....	<i>Error! Bookmark not defined.</i>
Horizontal Motion Commands	<i>Error! Bookmark not defined.</i>
Print Style Commands.....	<i>Error! Bookmark not defined.</i>
Print Size Commands.....	<i>Error! Bookmark not defined.</i>
Print Enhancement Commands	<i>Error! Bookmark not defined.</i>
Character Table Commands.....	<i>Error! Bookmark not defined.</i>
Download Character Commands.....	<i>Error! Bookmark not defined.</i>
Graphics Commands.....	<i>Error! Bookmark not defined.</i>

EPSON 24 PIN LQ EMULATION INTRODUCTION

This section provides a complete description of the commands for the **Epson LQ-series Emulation** in the following Citizen printers:

124D/224	Swift 200/C	Swift 24
Swift 240/C	Swift 24e	Swift 240x
Swift 24X	Notebook Printer II	ABC-24
PN48 Notebook Printer		

All commands shown in this command reference include some or all of the following elements:

- ESC These letters represent the ASCII **Escape code** (27 decimal, 1B hexadecimal).
- n1 Highlighted lowercase letters (sometimes followed by a number) represent **variable data**.
- {0} A number enclosed in parenthesis represents the decimal code for a **nonprinting** command code.
- ... An ellipsis indicates that you can place additional data in its place.

Other characters--such as letters, numbers not enclosed in braces, and punctuation marks--included in command format statements should be sent just as shown. For instance, the command shown as ESC 5 should be sent as two characters: ASCII 27 followed by ASCII 53.eg 27 53 However, a command such as ESC {14}, which also consists of two characters, should be sent as: ASCII 27 followed by ASCII 14.

In addition, the decimal and hexadecimal **ASCII codes** are shown for each command sequence. Some application programs require you to enter the ASCII codes instead of the characters those codes represent.

Nonprinting codes

Nonprinting codes (**ASCII codes** from 0 to 31) are shown as a number enclosed in braces. For instance, the line feed code (ASCII code 10) is shown as {10}. The one exception to this convention is the escape code (ASCII code 27). Because it is used in so many commands, it deserves special treatment: in this manual it appears as ESC.

Variable data

Variable parameters are characters in the command format that should be replaced with another character that varies depending on what you want the command to do. The command to set the page length (ESC C n) is an example. You should replace n with the code for the number of lines that you want to use as a page length. You need to send the single character that has the value you want to use--don't use the ASCII value of the number you require.

For example, let's suppose you want to set the page length to 33 lines. To do so, send three codes to the printer, which can be represented in any of the following ways:

ASCII characters	ESC	C	!
Decimal codes	27	67	33
Hexadecimal codes	1B	43	21

In the Remarks section of descriptions of commands that use variables, allowable values are shown using the same **format** used for the commands themselves: nonprinting codes are shown as decimal values enclosed in braces, and other characters should be sent exactly as shown.

Strictly speaking, commands that use 1 and 0 as on and off switches use {1} and {0}. However, the printer also accepts the characters 1 and 0 (ASCII 49 and 48) in most cases.

Using BASIC

In all versions of BASIC, including GW-BASIC and QuickBASIC, the CHR\$ function can be used to send **ASCII codes** to the printer--particularly the codes that are shown in this manual enclosed in braces. For example, {10} is expressed in BASIC as CHR\$(10).

The Escape code is shown in this manual as ESC, and is usually expressed in BASIC as CHR\$(27). Normal printing characters, such as letters, numbers, and punctuation, should be enclosed in double quotes in LPRINT statements. For example, ESC P is expressed in BASIC as CHR\$(27) "P".

GRAPHICS COMMANDS

Bit image graphics (single-density)

<i>Format:</i>	ESC	K	<u>n1</u>	<u>n2</u>	<u>data</u>
Decimal	27	75	<u>n1</u>	<u>n2</u>	<u>data</u>
Hexadecimal	1B	4B	<u>n1</u>	<u>n2</u>	<u>data</u>

Remarks:

Prints 8-bit single-density bit image graphics (60 dots per inch horizontal, 72 dots per inch vertical). The values for n1 and n2 set the image width in dots according to the formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{dots}$$

The number of data characters following the command is the same as the image width. The least significant bit controls the bottom dot; the most significant bit controls the top dot. A value of {1} prints a dot; {0} does not print.

ESC K command can be redefined by **ESC ?**. 8-bit single-density image graphics can also be selected with the master graphics command **ESC ***.

Compatibility:

124D/224 Swift 24	Swift 24e	Swift 24X	ABC-24
Swift 200/C	Swift 240/C	Swift 240x	PN48

Bit image graphics (double-density)

<i>Format:</i>	ESC	L	<u>n1</u>	<u>n2</u>	<u>data</u>
Decimal	27	76	<u>n1</u>	<u>n2</u>	<u>data</u>
Hexadecimal	1B	59	<u>n1</u>	<u>n2</u>	<u>data</u>

Remarks:

Prints 8-bit double-density bit image graphics (120 dots per inch horizontal, 72 dots per inch vertical). The values for n1 and n2 set the image width in dots according to the formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{dots}$$

The number of data characters following the command is the same as the image width. The least significant bit controls the bottom dot; the most significant bit controls the top dot. A value of {1} prints a dot; {0} does not print.

ESC L command can be redefined by **ESC ?**. 8-bit double-density bit image graphics can also be selected with the master graphics command **ESC ***.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24
Swift 200/C	Swift 240/C	Swift 240x	PN48	

Bit image graphics (hi-speed dbl-density)

<i>Format:</i>	ESC	Y	<u>n1</u>	<u>n2</u>	<u>data</u>
Decimal	27	89	<u>n1</u>	<u>n2</u>	<u>data</u>
Hexadecimal	1B	59	<u>n1</u>	<u>n2</u>	<u>data</u>

Remarks:

Prints 8-bit high-speed double-density bit image graphics (120 dots per inch horizontal, 72 dots per inch vertical). The values for n1 and n2 set the image width in dots according to the formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{dots}$$

The number of data characters following the command is the same as the image width. In high-speed graphics horizontally adjacent dots will not print; the second dot will be eliminated. The least significant bit controls the bottom dot; the most significant bit controls the top dot. A value of {1} prints a dot; {0} does not print.

ESC Y command can be redefined by **ESC ?**. 8-bit high-speed double-density image graphics can also be selected with the master graphics command **ESC ***.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24
Swift 200/C	Swift 240/C	Swift 240x	PN48	

Bit image graphics (quadruple-density)

<i>Format:</i>	ESC	Z	<u>n1</u>	<u>n2</u>	data
Decimal	27	90	<u>n1</u>	<u>n2</u>	<u>data</u>
Hexadecimal	1B	5A	<u>n1</u>	<u>n2</u>	<u>data</u>

Remarks:

Prints 8-bit quadruple-density bit image graphics (240 dots per inch horizontal, 72 dots per inch vertical). The values for n1 and n2 set the image width in dots according to the formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{dots}$$

The number of data characters following the command is the same as the image width. In quadruple-density graphics horizontally adjacent dots will not print; the second dot will be eliminated. The least significant bit controls the bottom dot; the most significant bit controls the top dot. A value of {1} prints a dot; {0} does not print.

ESC Z command can be redefined by **ESC ?**. 8-bit quadruple-density image graphics can also be selected with the master graphics command **ESC ***.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24
Swift 200/C	Swift 240/C	Swift 240x	PN48	

Bit image graphics (graphics mode)

Format:	ESC	*	<u>m</u>	<u>n1</u>	<u>n2</u>	<u>data</u>
Decimal	27	42	<u>m</u>	<u>n1</u>	<u>n2</u>	<u>data</u>
Hexadecimal	1B	2A	<u>m</u>	<u>n1</u>	<u>n2</u>	<u>data</u>

Remarks:

This command selects graphics densities according to the value of m as shown in the table below.

<i>m</i>	<i>Horizontal density</i>	<i>Wires</i>	<i>Graphics Mode</i>
{0}	60	8	Same as ESC K
{1}	120	8	Same as ESC L
{2}	120	8	*Same as ESC Y
{3}	240	8	*Same as ESC Z
{4}	80	8	CRT graphics I
{6}	90	8	CRT graphics II
{32}	60	24	High resolution single-density
{33}	120	24	High resolution double-density
{38}	90	24	CRT graphics III
{39}	180	24	High resolution triple-density
{40}	360	24	*High resolution hex-density

* In modes 2, 3, and 40, horizontally adjacent dots cannot be printed; the second dot is eliminated.

The values for n1 and n2 set the image width in dot columns according to the formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{dots}$$

The number of data characters following the command is the same as the image width for 8-wire graphic modes. Three bytes are required for each column of 24-wire graphics.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift 200/C
Swift 240/C	Swift 240x	PN48			

Reassign graphics mode

Format:	ESC	?	<u>n</u>	<u>m</u>
Decimal	27	63	<u>n</u>	<u>m</u>
Hexadecimal	1B	3F	<u>n</u>	<u>m</u>

Remarks:

This command changes one graphics mode to another. Any of the four graphics commands, **ESC K**, **ESC L**, **ESC Y**, or **ESC Z** can be changed to any available density.

Put the letter of the command that you want to change (K, L, Y or Z) in place of the variable n, and the value of the bit image mode ({0}-{6} only) in m as shown in the previous table (see **ESC ***).

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Select graphics mode

<i>Format:</i>	ESC	(	G	{1}	{0}	n
Decimal	27	40	71	1	0	<u>n</u>
Hexadecimal	1B	28	47	01	00	<u>n</u>

Compatibility:

ABC-24	Swift 240/C	Swift 240x
--------	-------------	------------

Print raster graphics

<i>Format:</i>	ESC	.	<u>c</u>	<u>v</u>	<u>h</u>	<u>m</u>	<u>n1</u>	<u>n2</u>	<u>dat</u>
Decimal	27	46	<u>c</u>	<u>v</u>	<u>h</u>	<u>m</u>	<u>n1</u>	<u>n2</u>	<u>dat</u>
Hexadecimal	1B	2E	<u>c</u>	<u>v</u>	<u>h</u>	<u>m</u>	<u>n1</u>	<u>n2</u>	<u>dat</u>

Remarks:

The value of v specifies the vertical dot density as 3600/v dots per inch. v can be {10} (360 dpi) or {20} (180 dpi). Similarly, h specifies the horizontal dot density; h can be {10} (360 dpi) or {20} (180 dpi). One combination is not allowed: v={10} and h={20}.

c=0 Full graphics mode
c=1 Compressed mode

m specifies the number of vertical dots. n1 and n2 specify the total number of dots according to the formula n1+(n2*256)=total dots.

Compatibility:

ABC-24 Swift 240/C Swift 240x

DOWNLOAD CHARACTER COMMANDS

Define download character

<i>Format:</i>	ESC	&	{0}	<u>n</u>	<u>m</u>	<u>d0</u>	<u>d1</u>	<u>d2</u>	<u>data</u>
Decimal	27	38	0	<u>n</u>	<u>m</u>	<u>d0</u>	<u>d1</u>	<u>d2</u>	<u>data</u>
Hexadecimal	1B	26	00	<u>n</u>	<u>m</u>	<u>d0</u>	<u>d1</u>	<u>d2</u>	<u>data</u>

Remarks:

This command is used to define your own characters. The values for n and m specify the **ASCII codes** of the first and last defined characters (characters with codes from {0} to {127} can be re-defined). n and m are the same when only one character is defined.

<u>n</u>	ASCII code of first defined character
<u>m</u>	ASCII code of last defined character
<u>d0</u>	Space in dots on the left of the character
<u>d1</u>	Number of dot columns in the body of the character
<u>d2</u>	Space in dots on the right of the character

The character matrix for all characters is 24 dots high. The maximum width is 9 dots for **draft** characters, 29 dots for **letter quality**, and 37 dots for **proportional** characters. The vertical dot spacing is always 1/180". Horizontal spacing is 1/120" for draft characters, 1/360" for letter quality and proportional characters. The maximum values for d0, d1, and d2 for each character type are shown in the following table.

<i>Print style</i>	<i>d1 (maximum)</i>	<i>d0+d1+d2 (maximum)</i>
Draft	9	12
Letter quality 10 cpi	29	36
Letter quality 12 cpi	23	30
Proportional	37	42

It takes three data bytes to define each vertical column of 24 dots. The most significant bit of the first byte controls the top pin; the least significant bit of the third byte controls the bottom pin.

Compatibility:

124D/224 Swift 24	Swift 24e	Swift 24X	ABC-24	Swift 200/C
Swift 240/C	Swift 240x	PN48		

Copy ROM to RAM

<i>Format:</i>	ESC	:	{0}	<u>n</u>	{0}
Decimal	27	58	0	<u>n</u>	0
Hexadecimal	1B	3A	00	<u>n</u>	00

Remarks:

Characters are loaded to the download character set area (RAM) from the internal character set area (ROM). n is the number of the ROM font:

<i>n</i>	<i>Font</i>	<i>n</i>	<i>Font</i>
{0}	LQ Roman	{2}	LQ Courier
{1}	LQ Sanserif	{3}	LQ Prestige

This command will wipe out any existing character definitions and replace them with one of the standard character sets.

Compatibility:

124D/224 Swift 24	Swift 24e	Swift 24X	ABC-24	Swift 200/C
Swift 240/C	Swift 240x	PN48		

Select/Cancel download characters

	Select			Cancel		
<i>Format:</i>	ESC	%	{1}	ESC	%	{0}
Decimal	27	37	1	27	37	0
Hexadecimal	1B	25	01	1B	25	00

Remarks:

The download character set is selected with ESC % {1} and the standard character set is selected with ESC % {0}. Download characters can be printed in all **print styles** available in the print quality (**draft** or **letter quality**) that the characters were defined in. Therefore, characters defined in draft can only be printed in draft quality; characters defined in letter quality can only be printed in letter quality. It is possible to combine download and standard characters on one line.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

CHARACTER TABLE COMMANDS

Select character set

<i>Format:</i>	ESC	t	n
Decimal	27	116	<u>n</u>
Hexadecimal	1B	74	<u>n</u>

Remarks:

Selects a character set to be used by **codes 128-255**, depending upon the value of n.

n Characters 128-255
 {0} Italic character table
 {1} Epson graphic character table
 {2} **Downloaded** characters assigned to codes 0-127

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
 200/C
 Swift 240/C Swift 240x PN48

Assign character table

Format:	ESC	(	t	{3}	{0}	<u>n1</u>	<u>n2</u>	<u>n3</u>
Decimal	27	40	116	3	0	<u>n1</u>	<u>n2</u>	<u>n3</u>
Hexadecimal	1B	28	74	03	00	<u>n1</u>	<u>n2</u>	<u>n3</u>

Remarks:

Assigns the character table set by n2 and n3 to character set n1. n1 can be 0, 1, 2, or 3. You can select which of these sets to use with **ESC t**.

<i>n2</i>	<i>n3</i>	Country
{0}	{0}	Italic
{1}	{0}	Code page 437 (USA)
{1}	{16}	Code page 437 (Greek)
{3}	{0}	Code page 850 (Multilingual)
{6}	{0}	Code page 855 (Cyrillic)
{7}	{0}	Code page 860 (Portugal)
{8}	{0}	Code page 863 (Canada-French)
{9}	{0}	Code page 865 (Norway)
{10}	{0}	Code page 852 (Latin 2)
{13}	{0}	Code page 864 (Arabic)
{14}	{0}	Code page 866 (Russian)
{24}	{0}	Code page 861 (Icelandic)
{25}	{0}	BRASCI (Brazilian)
{26}	{0}	ABICOMP (Brazilian)

For a complete list of characters in each international character set, refer to your DOS manual.

Compatibility:

ABC-24 Swift 240/C Swift 240x

Characters 128-159

<i>Format:</i>	<i>Control codes</i>		<i>Characters</i>	
	ESC	7	ESC	6
Decimal	27	55	27	54
Hexadecimal	1B	37	1B	36

Remarks:

When the graphic character table is selected with **ESC t**, high-bit ASCII codes 128 to 159 are normally control codes identical to **ASCII 0 to 31**. When ESC 6 is selected, **ASCII codes 128 to 159** are interpreted as printable characters.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Select international character set

<i>Format:</i>	ESC	R	<u>n</u>
Decimal	27	82	<u>n</u>
Hexadecimal	1B	52	<u>n</u>

Remarks:

Selects international character set n:

<i>n</i>	<i>Country</i>	<i>n</i>	<i>Country</i>
{0}	U.S.A.	{8}	Japan
{1}	France	{9}	Norway
{2}	Germany	{10}	Denmark II
{3}	U.K.	{11}	Spain II
{4}	Denmark I	{12}	Latin America
{5}	Sweden	{13}	Korea
{6}	Italy	{64}	Legal
{7}	Spain I		

International character sets can be selected with the setup menu.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Print data as characters

<i>Format:</i>	ESC	(	^	<u>n1</u>	<u>n2</u>	data
Decimal	27	40	94	<u>n1</u>	<u>n2</u>	data
Hexadecimal	1B	28	5E	<u>n1</u>	<u>n2</u>	data

Remarks:

Characters following n2 will be printed from the **IBM All Characters Set**. The number of characters affected is n1 + (n2 x 256). This allows you to print the characters in positions 0-31 and 127, which are normally interpreted as non-printing control codes.

Compatibility:

ABC-24 Swift 240/C Swift 240x

PRINT ENHANCEMENT COMMANDS

Emphasized print

	<i>On</i>		<i>Off</i>	
<i>Format:</i>	ESC	E	ESC	F
Decimal	27	69	27	70
Hexadecimal	1B	45	1B	46

Remarks:

Emphasized print increases character density by striking each dot twice, with the second dot offset horizontally. Emphasized print can be used in combination with all **print style commands**, including **doublestrike**.

Emphasized print can also be selected with the master print mode command **ESC !**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Doublestrike print

	<i>On</i>		<i>Off</i>	
<i>Format:</i>	ESC	G	ESC	H
Decimal	27	71	27	72
Hexadecimal	1B	47	1B	48

Remarks:

Doublestrike print increases character density by striking each dot twice, with the second dot offset vertically. Doublestrike print reduces the print speed.

Doublestrike can be used in combination with all **print style commands**. Doublestrike print can also be selected with the master print mode command **ESC !**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Italic print

	<i>On</i>		<i>Off</i>	
<i>Format:</i>	ESC	4	ESC	5
Decimal	27	52	27	53
Hexadecimal	1B	34	1B	35

Remarks:

Italics can be used with all **print styles**. This command can be used even if graphic characters have been selected with **ESC t**.

Italic characters can also be selected with the master print mode command **ESC !**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Underlining

	<i>On</i>			<i>Off</i>		
<i>Format:</i>	ESC	-	{1}	ESC	-	{0}
Decimal	27	45	1	27	45	0
Hexadecimal	1B	2D	01	1B	2D	00

Remarks:

Underlines everything--including spaces, but not **tabs**--from the point that underlining is turned on to the point that underlining is turned off.

Underlining can also be selected with the master print mode command **ESC !**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Scoring

Format:	ESC	(	-	{3}	{0}	{1}	<u>n1</u>	<u>n2</u>
Decimal	27	40	45	3	0	1	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	28	2D	03	00	01	<u>n1</u>	<u>n2</u>

Remarks:

This command is a "master select" command for the various scoring (line) styles. It can be used for **underlining**, strikethrough, or overscoring, depending upon the value of n1:

<i>n1</i>	<i>Line position</i>
{1}	Underline
{2}	Strikethrough
{3}	Overscore

The value of n2 determines the line style:

<i>n2</i>	<i>Line style</i>
{0}	Cancel score at position <u>n1</u>
{1}	Single continuous line
{2}	Double continuous line
{5}	Single broken line
{6}	Double broken line

By sending multiple commands, you can have more than one line through text. However, single and double lines cannot be combined at the same position.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Superscript

		<i>On</i>			<i>Off</i>	
<i>Format:</i>	ESC	S	{0}	ESC	T	
Decimal	27	83	0	27	84	
Hexadecimal	1B	53	00	1B	54	

Remarks:

Superscript characters print at 2/3 normal height in the upper half of the character space.

If you also select **underlining**, superscript characters are underlined with the line in the normal position.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Subscript

		<i>On</i>			<i>Off</i>	
<i>Format:</i>	ESC	S	{1}	ESC	T	
Decimal	27	83	1	27	84	
Hexadecimal	1B	53	01	1B	54	

Remarks:

Subscript characters print at 2/3 normal height in the lower half of the character space.

If you also select **underlining**, subscript characters are underlined with the line in the normal position.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Select colour

<i>Format:</i>	ESC	r	n
Decimal	27	114	<u>n</u>
Hexadecimal	1B	72	<u>n</u>

Remarks:

When the optional colour unit and colour ribbon cartridge is installed, this command selects the print colour according to the value of n. Valid values are {0} to {6}, corresponding to the seven available colours as shown in the following table. The default print colour at power-on is black.

<i>n</i>	<i>Colour</i>	<i>n</i>	<i>Colour</i>
{0}	Black	{4}	Yellow
{1}	Magenta (red)	{5}	Orange
{2}	Cyan (blue)	{6}	Green
{3}	Violet		

Colour can also be selected with the quick menu or the setup menu. Colour is not available for the PN48 printer.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x

Justification

<i>Format:</i>	ESC	a	n
Decimal	27	97	<u>n</u>
Hexadecimal	1B	61	<u>n</u>

Remarks:

Prints lines that are justified in one of four ways specified by the value of n:

<i>n</i>	<i>Justification style</i>
{0}	Flush against the left margin (default)
{1}	Centered between the left and right margins
{2}	Flush against the right margin
{3}	Flush against both margins (fully justified)

Justification is performed whenever a carriage return {13}, line feed {10}, form feed {12}, or vertical tab {11} is sent, or when the print buffer is full. Justified printing is available in **draft**, **letter quality**, and **proportional** modes.

Justified printing will not perform correctly if text is combined with bit image printing. Also, you should not use horizontal **tabs**, **backspaces**, or **intercharacter spacing** when full justification is selected.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Set intercharacter spacing

<i>Format:</i>	ESC	(space)	n
Decimal	27	32	<u>n</u>
Hexadecimal	1B	20	<u>n</u>

Remarks:

Sets proportional spacing by adding n dots of extra space between each character (n can range from {0} to {127}). Intercharacter spacing for **draft** fonts is increased in units of 1/120 of an inch by this command; spacing on **letter quality** and **proportional** fonts is increased in units of 1/180 inch.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift 200/C	Swift 240/C
Swift 240x	PN48					

PRINT SIZE COMMANDS

Select font by pitch and point

<i>Format:</i>	ESC	X	p	n1	n2
Decimal	27	88	<u>p</u>	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	58	<u>p</u>	<u>n1</u>	<u>n2</u>

Remarks:

Sets the size of a scalable font by specifying the pitch and the point size. The pitch (width) is set to $360/p$ characters per inch.

The height is set to $n/2$ points; that is, you can specify font size in 0.5-point increments. (A point is $1/72$ inch.) n is calculated according to the following formula:

$$\underline{n1} + (256 \times \underline{n2}) = n$$

Compatibility:

ABC-24 Swift 240/C Swift 240x

Select pitch (Pica)

<i>Format:</i>	ESC	P
Decimal	27	80
Hexadecimal	1B	50

Remarks:

Selects 10-pitch (or pica), printing 10 characters per inch. This command cancels **12-pitch** and **15-pitch** printing.

Pica pitch can also be selected with the master print mode command **ESC !**, with the quick menu or with the setup menu.

<i>Pitch</i>	<i>Characters Per Inch</i>
Normal Pica	10
Expanded Pica	5
Condensed Pica	17
Condensed Expanded Pica	8.5

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift 200/C

Swift 240/C Swift 240x PN48

Select pitch (Elite)

<i>Format:</i>	ESC	M
Decimal	27	77
Hexadecimal	1B	4D

Remarks:

Selects 12-pitch (or elite), printing 12 characters per inch. This command cancels **10-pitch** and **15-pitch** printing.

Elite pitch can also be selected with the master print mode command **ESC !**, with the quick menu or with the setup menu.

Pitch	Characters Per Inch
Normal Elite	12
Expanded Elite	6
Condensed Elite	20
Condensed Expanded Elite	10

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Select pitch (15-pitch)

<i>Format:</i>	ESC	g
Decimal	27	103
Hexadecimal	1B	67

Remarks:

Selects 15-pitch, printing 15 characters per inch. This command cancels **10-pitch** and **12-pitch** printing. 15-pitch cannot be combined with **condensed** print.

15-pitch can also be selected with the master print mode command **ESC !**, with the quick menu or with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Expanded print

	<i>On</i>			<i>Off</i>		
<i>Format:</i>	ESC	W	{1}	ESC	W	{0}
Decimal	27	87	1	27	87	0
Hexadecimal	1B	57	01	1B	57	00

Remarks:

Sets the **character width** to double whatever width is in effect when the command is sent. The table below compares the characters per inch (cpi) between normal and expanded print.

	<i>Normal</i>	<i>Expanded</i>
Pica	10 cpi	5 cpi
Elite	12 cpi	6 cpi
Condensed Pica	17 cpi	8.5 cpi
Condensed Elite	20 cpi	10 cpi

Expanded print can also be selected with the master print mode command **ESC !**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Expanded print (one-line)

	<i>On</i>	<i>Off</i>
<i>Format:</i>	{14}	{20}
Decimal	14	20
Hexadecimal	0E	14

Remarks:

Sets the **character width** to double whatever width is in effect when the command is sent. Expanded print is automatically canceled at the end of the line. It can be canceled before the end of the line with {20}. Expanded print set by **ESC !** and **ESC W** are not canceled by {20}.

The use of ESC with {14} is optional; ESC {14} and the single code {14} are equivalent commands.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Condensed print

	<i>On</i>	<i>Off</i>
<i>Format:</i>	{15}	{18}
Decimal	15	18
Hexadecimal	0F	12

Remarks:

Compresses the **character width** to 60% of the width in effect when the command is sent. Condensed print cannot be combined with **15-pitch**. The table below compares the characters per inch (cpi) between normal and condensed print.

	<i>Normal</i>	<i>Condensed</i>
Pica	10 cpi	17 cpi
Elite	12 cpi	20 cpi
Expanded Pica	5 cpi	8.5 cpi
Expanded Elite	6 cpi	10 cpi

Condensed print can also be selected with the master print mode command **ESC !**.

The use of ESC with {15} is optional; the command ESC {15} and the single code {15} are equivalent.

Compatibility:

124D/224 Swift 24 200/C	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48		

Proportional spacing

		On				Off		
Format:	ESC	p	{1}	ESC	p	{0}		
Decimal	27	112	1	27	112	0		
Hexadecimal	1B	70	01	1B	70	00		

Remarks:

The width each printed character occupies is proportional to its shape. (With fixed spacing, the width is the same for all characters, regardless of size.) Characters printed with proportional spacing are always printed in **letter quality** and are compatible with all print styles. If the current font is **Draft** when proportional spacing is selected, the font will automatically change to the previously selected LQ font. This command will override the previous pitch setting.

Proportional spacing can also be set with the quick menu or the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C
Swift 240/C Swift 240x PN48

Double-high print

		On				Off		
Format:	ESC	w	{1}	ESC	w	{0}		
Decimal	27	119	1	27	119	0		
Hexadecimal	1B	77	01	1B	77	00		

Remarks:

This command doubles the height of all characters. Remember to adjust the **line spacing** to allow for the additional height.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C
Swift 240/C Swift 240x PN48

PRINT STYLE COMMANDS

Select print quality

	<i>Letter Quality</i>			<i>Draft</i>		
<i>Format:</i>	ESC	x	{1}	ESC	x	{0}
Decimal	27	120	1	27	120	0
Hexadecimal	1B	78	01	1B	78	00

Remarks:

Print quality for printers with a Command-Vue control panel can also be set using the quick menu; Command-Vue II printers can be set with the install menu. Letter quality is compatible with all print styles.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C

Swift 240x

PN48

Select font

Format:	ESC	k	n
Decimal	27	107	<u>n</u>
Hexadecimal	1B	6B	<u>n</u>

Remarks:

Selects the font (type style). These fonts are available only when letter quality printing is selected. The value of n specifies the font as follows:

<i>n</i>	Font selected	<i>n</i>	Font selected
{0}	Roman	{3}	Prestige*
{1}	Sanserif*	{4}	Script**
{2}	Courier	{7}	Orator***

The font can also be selected with the quick menu or with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift 200/C

Swift 240/C Swift 240x PN48

*Sanserif and Prestige are available only on the Swift-series printers.

**Script is available only on the Swift 24e, ABC-24, Swift 200/C , Swift 240/C , and Swift 240x .

***Orator is available only on the Swift 24e, Swift 200/C , Swift 240/C , and Swift 240x .

Select special effect

Format:	ESC	q	n
Decimal	27	113	<u>n</u>
Hexadecimal	1B	71	<u>n</u>

Remarks:

Selects a special print style depending on the value of n:

<i>n</i>	Effect	<i>n</i>	Effect
{0}	Normal	{2}	Shadow
{1}	Outline	{3}	Outline with shadow

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift 200/C

Swift 240/C Swift 240x PN48

Select print style

<i>Format:</i>	ESC	!	n
Decimal	27	33	<u>n</u>
Hexadecimal	1B	21	<u>n</u>

Remarks:

Selects the print style and size, determined by the value of n. The **draft** or **letter quality** and **superscript** or **subscript** settings are not affected by this command.

Each bit controls one attribute, as shown in the following table. To select a style, simply add up the values of the attributes you want, and substitute the sum for n in the format statement.

<i>Bit</i>	<i>Feature</i>	<i>Value</i>
0	Pica/Elite	{0}/{1}
1	Proportional	{2}
2	Condensed	{4}
3	Emphasized	{8}
4	Doublestrike	{16}
5	Expanded	{32}
6	Italic	{64}
7	Underline	{128}

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Move printhead (Backspace)

Format: {8}
Decimal 8
Hexadecimal 08

Remarks:

Moves the printhead left one character. The printhead can be moved as far as the **left margin** with multiple backspaces.

The backspace command is ignored if the printhead is at the extreme left, the previous command was the horizontal tab {9} command, or if the **absolute** or **relative print position** commands were given.

The backspace command will also be ignored if **ESC a** is selected, for all modes except left alignment.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Move printhead (To next horizontal tab position)

Format: {9}
Decimal 9
Hexadecimal 09

Remarks:

Moves the printhead to the next tab setting. At power-on, tabs are set at every eighth column in the default character pitch. The tabs can be reset as desired with **ESC D**. Tab settings are not affected by changes in character width.

This command is ignored if a justification style other than left alignment is selected with **ESC a**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Move printhead (Absolute position)

<i>Format:</i>	ESC	\$	n1	n2
Decimal	27	36	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	24	<u>n1</u>	<u>n2</u>

Remarks:

The values for n1 and n2 set the dot column to tab according to the following formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{dot column}$$

The value of n1 can range from {0} to {255}; n2 can range from {0} to {3}. This is an absolute tab; no matter what the current position of the printhead, it will tab to the specified column measured from the **left margin**.

There are 60 columns of dots per inch with a maximum of 480 dots per line. If the specified print position is beyond the **right margin**, the command is ignored.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Move printhead (Relative position)

<i>Format:</i>	ESC	\	n1	n2
Decimal	27	92	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	5C	<u>n1</u>	<u>n2</u>

Remarks:

Moves the printhead to the right or left the specified number of units (a unit is 1/120 inch in **draft**, or 1/180 inch in **letter quality** or **proportional** fonts). This is a relative tab; the printhead will move the specified distance counting from the current position. The values for n1 and n2 set the column to tab to according to the following formula:

$$\underline{n1} + (256 \times \underline{n2}) = \text{column}$$

If the movement is to the left, subtract the number of units from 65536 and then calculate the values of n1 and n2 in the same manner.

If the specified print position is beyond the **right** or **left margin**, the command is ignored.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C

Swift 240x

PN48

Margins (Left)

Format:	ESC	I	n
Decimal	27	108	<u>n</u>
Hexadecimal	1B	6C	<u>n</u>

Remarks:

Sets a left margin of n columns (n can range from {0} to {255}). The actual width of the margin is determined by the **character width** in effect when the margin is set (10 pitch is used if **proportional spacing** is selected). Later changes in character width do not affect the width of the margin. If the margin setting exceeds eight inches, the setting is ignored.

There must be at least .2 inches between the left and **right margins**.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift 200/C

Swift 240/C

Swift 240x

PN48

Margins (Right)

Format:	ESC	Q	n
Decimal	27	81	<u>n</u>
Hexadecimal	1B	51	<u>n</u>

Remarks:

This command sets the right margin at column n (n = {1} to {255}). This means that characters will print up to (and including) column n. The actual width of the margin is determined by the **character width** in effect when the margin is set (10 pitch is used if **proportional spacing** is selected). Later changes in character width do not affect the width of the margin. The setting is ignored if the right margin exceeds the maximum number of columns for the character width in effect.

There must be at least .2 inches between the **left** and right margins.

An automatic line feed **{10}** and carriage return **{13}** are executed when the specified right margin is reached.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift 200/C

Swift 240/C

Swift 240x

PN48

Set horizontal tabs

Format:	ESC	D	n1	n2	...	{0}
Decimal	27	68	<u>n1</u>	<u>n2</u>	...	0
Hexadecimal	1B	44	<u>n1</u>	<u>n2</u>	...	00

Remarks:

Default horizontal **tabs** are cleared and tabs are set at column n1, n2, and so on. Column numbers must be in ascending numeric order, and can range from {1} to {255}. Any column number less than the preceding one acts as an ending code for the sequence. Up to 32 tabs can be set.

Tab positions are determined by the **character width** in effect when they are set. Later changes in character width do not affect their positions.

ESC D {0} can be used to clear all tab settings.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

VERTICAL MOTION COMMANDS

Advance paper (One line)

Format: {10}
Decimal 10
Hexadecimal 0A

Remarks:

Returns the print head to the **left margin** and advances the paper to the next line after printing. Many computers automatically add a line feed to each carriage return **{13}**. If yours does not, you can add a line feed to each carriage return with this command or with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C
Swift 240/C Swift 240x PN48

Advance paper (To next top-of-form)

Format: {12}
Decimal 12
Hexadecimal 0C

Remarks:

A form feed advances the paper to the top of the next page. If you are using continuous paper with the tractor in the push position, and TEAR OFF is set "ON" in the setup menu, the paper will advance so that the perforation is under the tear bar. It will immediately retract to the **top-of-form position** when you send more data. It will also retract to the top-of-form as soon as the power is turned on if it has been turned off.

For form feeds to work properly, the paper must be at the desired "top of the page" when the printer is turned on (unless you are using TEAR OFF as described in the previous paragraph). The page length can be set with the setup menu or with **ESC C** or **ESC C {0}** commands.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C
Swift 240/C Swift 240x PN48

Advance paper (n/180 inch)

Format: ESC J n
Decimal 27 74 n
Hexadecimal 1B 4A n

Remarks:

Advances the paper n/180 inch without changing the print head position. n can range from {0} to {255}. This command does not change the line spacing for subsequent lines.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Advance paper (To next vertical tab position)

Format: {11}
Decimal 11
Hexadecimal 0B

Remarks:

This command will advance the paper to the next vertical tab position in the current **tab channel** after printing the contents of the print buffer. The paper advances one line when no vertical tabs are set.

No tabs are set at power-on. They must be set with the **tab-setting commands** before use.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Set absolute vertical position

<i>Format:</i>	ESC	(	V	{2}	{0}	n1	n2
Decimal	27	40	86	2	0	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	28	56	02	00	<u>n1</u>	<u>n2</u>

Remarks:

Sets the print position to *n* units from the top margin according to the following formula:

$$\underline{n1} + (256 \times \underline{n2}) = n$$

Units are defined in 1/3600-inch increments by **ESC (U**.

Compatibility:

ABC-24 Swift 240/C Swift 240x

Set relative vertical position

<i>Format:</i>	ESC	(	v	{2}	{0}	n1	n2
Decimal	27	40	118	2	0	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	28	76	02	00	<u>n1</u>	<u>n2</u>

Remarks:

Moves the print position *n* units from the current position according to the following formula:

$$\underline{n1} + (256 \times \underline{n2}) = n$$

Units are defined in 1/3600-inch increments by **ESC (U**.

Compatibility:

ABC-24 Swift 240/C Swift 240x

Retract paper

<i>Format:</i>	ESC	j	n
Decimal	27	106	<u>n</u>
Hexadecimal	1B	6A	<u>n</u>

Remarks:

Reverses the paper n/180 inch without changing the print head position. n can range from {0} to {255}. This command does not change the line spacing for subsequent lines.

The tractor should be installed in the push position to use this command.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Set page length (n lines)

<i>Format:</i>	ESC	C	n
Decimal	27	67	<u>n</u>
Hexadecimal	1B	43	<u>n</u>

Remarks:

Sets the page length to n lines (n can range from {1} to {127}). The actual page length is set internally in inches, determined by multiplying the lines per page by the line spacing in effect at the time. Later changes in line spacing, therefore, have no effect on the length of the page (they will change the number of lines per page, however).

The **top-of-form position** is set to the current line and the bottom margin set by **ESC N** is cleared.

Page length can also be set with the setup menu.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
200/C					
Swift 240/C	Swift 240x	PN48			

Set page length (n inches)

<i>Format:</i>	ESC	C	{0}	n
Decimal	27	67	0	<u>n</u>
Hexadecimal	1B	43	00	<u>n</u>

Remarks:

Sets the page length to n inches (n can range from {1} to {22}).

The **top-of-form position** is set to the current line and the bottom margin set by **ESC N** is cleared.

Page length can also be set with the setup menu.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
200/C					
Swift 240/C	Swift 240x	PN48			

Set page length (n defined units)

<i>Format:</i>	ESC	(	C	{2}	{0}	n1	n2
Decimal	27	40	67	2	0	<u>n1</u>	<u>n2</u>
Hexadecimal	1B	28	43	02	00	<u>n1</u>	<u>n2</u>

Remarks:

The values for n1 and n2 set the page length to *n* units according to the following formula:

$$\underline{n1} + (256 \times \underline{n2}) = n$$

Units are defined in 1/3600-inch increments by **ESC (U**.

Compatibility:

ABC-24

Swift 240/C

Swift 240x

Set top and bottom margins

Format:	ESC	(	c	{4}	{0}	t1	t2	b1	b2
Decimal	27	40	99	4	0	<u>t1</u>	<u>t2</u>	<u>b1</u>	<u>b2</u>
Hexadecimal	1B	28	63	04	00	<u>t1</u>	<u>t2</u>	<u>b1</u>	<u>b2</u>

Remarks:

The values for t1 and t2 set the top margin to *t* units according to the following formula:

$$\underline{t1} + (256 \times \underline{t2}) = t$$

The values for b1 and b2 set the top margin to *b* units according to the following formula:

$$\underline{b1} + (256 \times \underline{b2}) = b$$

Units are defined in 1/3600-inch increments by **ESC (U**.

Compatibility:

ABC-24

Swift 240/C

Swift 240x

Skip-over-perforation

Format:	ESC	On	n	ESC	Off
Decimal	27	N	<u>n</u>	27	O
Hexadecimal	1B	4E	<u>n</u>	1B	4F

Remarks:

Sets a skip-over-perforation (bottom margin) of n lines (n = {1} to {127}) at the bottom of the page (above the perforation on continuous paper).

The skip is canceled by changing the form length, **ESC @**, **ESC C**, **ESC C {0}**, or ESC O.

A 6-line perforation skip can be set with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Line spacing (1/6 inch)

<i>Format:</i>	ESC	2
Decimal	27	50
Hexadecimal	1B	32

Remarks:

Line spacing for future line feeds is set to 1/6 inch, printing 6 lines per inch (lpi). The default line spacing can be set to 6 lpi with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Line spacing (1/8 inch)

<i>Format:</i>	ESC	0
Decimal	27	48
Hexadecimal	1B	30

Remarks:

Line spacing for future line feeds is set to 1/8 inch, printing 8 lines per inch (lpi). The default line spacing can be set to 8 lpi with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Line spacing (n/60 inch)

Format:	ESC	A	n
Decimal	27	65	<u>n</u>
Hexadecimal	1B	41	<u>n</u>

Remarks:

Line spacing is adjusted to n/60 inch. n can range from {0} to {85}.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Line spacing (n/180 inch)

Format:	ESC	3	n
Decimal	27	51	<u>n</u>
Hexadecimal	1B	33	<u>n</u>

Remarks:

Line spacing is adjusted to n/180 inch. n can range from {0} to {255}.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Line spacing (n/360 inch)

Format:	ESC	+	n
Decimal	27	43	<u>n</u>
Hexadecimal	1B	2B	<u>n</u>

Remarks:

Line spacing is adjusted to n/360 inch. n can range from {0} to {255}.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Set vertical tabs in channel 0

<i>Format:</i>	ESC	B	n1	n2	...	{0}
Decimal	27	66	<u>n1</u>	<u>n2</u>	...	0
Hexadecimal	1B	42	<u>n1</u>	<u>n2</u>	...	00

Remarks:

This command sets vertical tabs in channel 0. Up to 16 tabs can be set. Line numbers must be in ascending numeric order, and can range from {1} to {255}. Any line number less than the preceding one acts as an ending code for the sequence.

Tab positions are determined by the line spacing in effect when they are set. Later changes in line spacing do not affect their positions.

This command sets tabs in channel 0. There are eight channels where vertical tabs can be set using **ESC b**.

ESC B {0} can be used to clear the tab settings.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C
Swift 240/C Swift 240x PN48

Set vertical tabs in channel c

<i>Format:</i>	ESC	b	c	n1	n2	...	{0}
Decimal	27	98	<u>c</u>	<u>n1</u>	<u>n2</u>	...	0
Hexadecimal	1B	62	<u>c</u>	<u>n1</u>	<u>n2</u>	...	00

Remarks:

Sets up to eight channels defined by the value of c, which can range from {0} to {7}. Up to 16 tabs can be set in each channel. Channel 0 is the power-on default. Tabs set with **ESC b** are placed in channel {0}. Channels are selected with the command **ESC /**.

ESC b c {0} can be used to clear the tab settings.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Select vertical tab channel

Format:	ESC	/	c
Decimal	27	47	<u>c</u>
Hexadecimal	1B	2F	<u>c</u>

Remarks:

Selects vertical tab channel c. The value of c can range from {0} to {7}. Tabs are set by **ESC b**.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

PRINTER CONTROL COMMANDS

Master reset

Format:	ESC	@
Decimal	27	64
Hexadecimal	1B	40

Remarks:

This command resets **print style**, **line spacing** and **page length** to the settings of the setup menu (for printers with a Command-Vue control panel) or the default switches. Master reset also clears any information in the print buffer. All **margins** and **tab settings** are cleared. The **top-of-form** is set to the current position. **Download characters** are not cleared.

If the reset command is in the same line as data, the preceding data will be deleted from the buffer without printing.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Delete character

Format: {127}
Decimal 127
Hexadecimal 7F

Remarks:

This command deletes the character previous to it in the print buffer. {127} must be received before any **paper movement command**, which starts printing and empties the print buffer.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Cancel line

Format: {24}
Decimal 24
Hexadecimal 18

Remarks:

This command clears the current line from the print buffer. The {24} command must be received before a **paper movement command**, which starts printing and empties the print buffer.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C	Swift 240x	PN48			

Unidirectional print

On

Off

<i>Format:</i>	ESC	U	{1}	ESC	U	{0}
Decimal	27	85	1	27	85	0
Hexadecimal	1B	55	01	1B	55	00

Remarks:

This command causes each line to be printed from left to right, allowing very fine vertical alignment between lines. This reduces printing speed. Unidirectional print is useful when printing line graphics. Printing unidirectionally improves the print quality.

Unidirectional or bidirectional graphics printing may be selected with the setup menu.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x

Unidirectional print (one-line)

<i>Format:</i>	ESC	<
Decimal	27	60
Hexadecimal	1B	3C

Remarks:

This command moves the print head to the leftmost position after the current line is printed. This has the same effect as using the **unidirectional print** command but only for the following line. Bidirectional printing resumes on the next line.

Unidirectional print is useful when printing **line graphics** which are normally printed bidirectionally. Printing unidirectionally improves the print quality, although there will be a loss of speed.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x

Half speed mode

<i>Format:</i>	ESC	On	{1}	ESC	Off	{0}
Decimal	27	s	1	27	s	0
Hexadecimal	1B	115	01	1B	73	00

Remarks:

Half speed mode reduces the noise of printing. It does this by printing characters in two passes (fewer pins fire on each pass) instead of one. Therefore, print speed is reduced to about one-half. Print quality is not affected.

Compatibility:

124D/224 Swift 24 Swift 24e Swift 24X ABC-24 Swift
200/C

Swift 240/C Swift 240x PN48

Automatic sheet feeder

<i>Format:</i>	ESC	{25}	n
Decimal	27	25	<u>n</u>
Hexadecimal	1B	19	<u>n</u>

Remarks:

This command should only be used when the optional automatic sheet feeder is installed on GSX printers. The following values can be used for n:

4	Turn on automatic sheet feeder
0	Turn off automatic sheet feeder
R	Ejects the sheet (without feeding a new sheet)

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
Swift 240/C		Swift 240x			

Suspend/Resume

<i>Format:</i>	<i>Deselect</i>	<i>Select</i>
	{19}	{17}
Decimal	19	17
Hexadecimal	13	11

Remarks:

When {19} is received, the printer ignores any further communication from the computer until the code {17} is received.

Compatibility:

124D/224 200/C	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
-------------------	----------	-----------	-----------	--------	-------

Swift 240/C

Swift 240x

PN48

MSB Control (MSB=1)

<i>Format:</i>	ESC	>
Decimal	27	62
Hexadecimal	1B	3E

Remarks:

Sets the most significant bit to 1 which forces the printer to interpret all codes received (including command codes and character codes) as high-bit codes (**ASCII 128 to 255**).

This command also sets the eighth bit for download characters or bit image print data.

Cancel MSB control with **ESC #**.

Compatibility:

124D/224 Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
200/C				

Swift 240/C

Swift 240x

PN48

MSB Control (MSB=0)

<i>Format:</i>	ESC	=
Decimal	27	61
Hexadecimal	1B	3D

Remarks:

Sets the most significant bit to 0 which forces the printer to interpret all codes received as low-bit codes (**ASCII 0 to 127**).

Cancel MSB control with **ESC #**.

Compatibility:

124D/224 Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
200/C				

Swift 240/C

Swift 240x

PN48

MSB Control (Cancel)

<i>Format:</i>	ESC	#
Decimal	27	35
Hexadecimal	1B	23

Remarks:

Cancels control of the most significant bit set by **ESC >** or **ESC =**.

Compatibility:

124D/224	Swift 24	Swift 24e	Swift 24X	ABC-24	Swift
200/C					
Swift 240/C	Swift 240x	PN48			

Define unit

<i>Format:</i>	ESC	(	U	{1}	{0}	n
Decimal	27	40	85	1	0	n
Hexadecimal	1B	28	55	01	00	n

Remarks:

Defines positioning unit used by **ESC (C**, **ESC (c**, **ESC (V**, and **ESC (v** to $n/3600$ inch. The default value is {10}, or 1/360 inch.