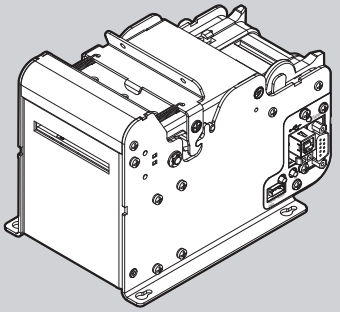
COMMAND REFERENCE



KPM150

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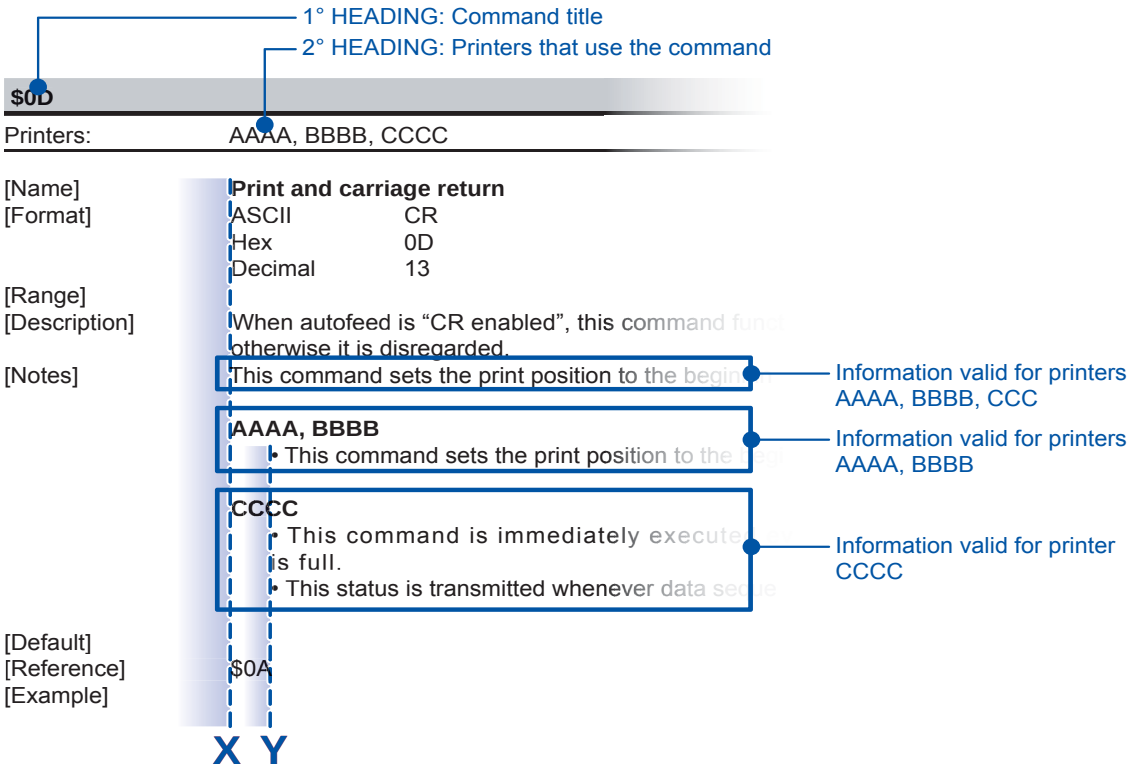
1 INTRODUCTION

1.1 Command description

Each command reported in this manual is described as shown in the following picture. In the first heading line (grey colour) is reported the hexadecimal command value. In the second heading line are listed the printers on which it is possible to use the command (for example printer AAAA).
The next fields give all the information useful to use the command.

[Name]	Command title
[Format]	ASCII, hexadecimal and decimal command value.
[Range]	Limits of the values the command and its variables can take
[Description]	Description of command function
[Notes]	Additional information about command use and settings .
[Default]	Default value of the command and its variables.
[Reference]	Pertaining commands related to described command.
[Example]	

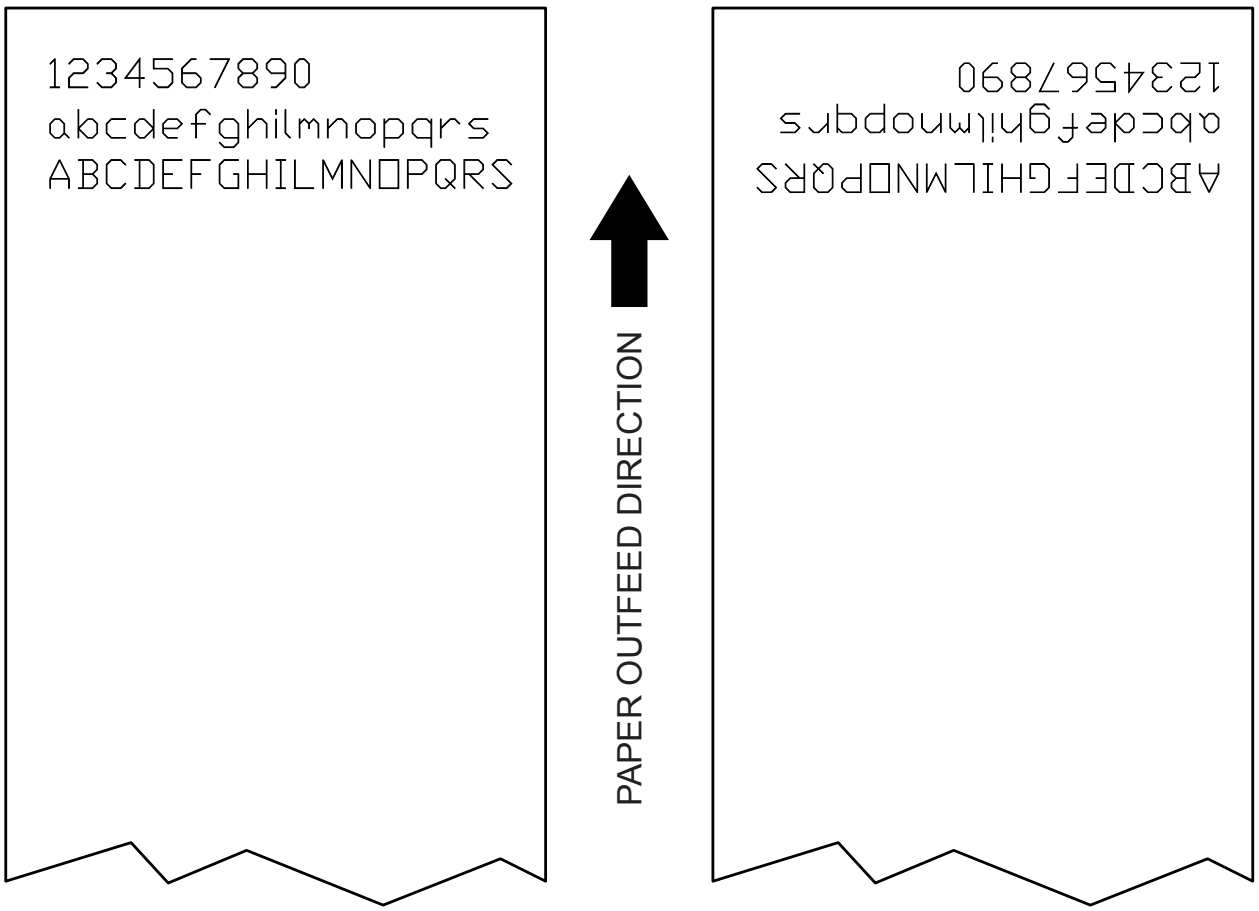


The information reported in the picture are aligned with line X or line Y:	
LINE X	Description valid for all the printers listed in the second heading line.
LINE Y	Description valid for a specific printer (written in bold).

LEGEND	
$	indicates the representation of the command hexadecimal value (for example $40 means HEX 40).
{ }	indicates an ASCII character not performable.
n, m, t, x, y	are optional parameters that can have different values.

1.2 Print direction

The printer has two printing direction which can be selected by means of the control characters: normal and reverse.



2 ESC/POS™ EMULATION

The following table lists all the commands for function management in ESC/POS Emulation of the printer. The commands can be transmitted to the printer at any moment, but they will only be carried out when the commands ahead of them have been executed. The commands are carried out when the circular buffer is free to do so.

COMMAND DESCRIPTION TABLE

Tab.1

Com. HEX	Com. ASCII	Description
PRINT COMMANDS		
$0A	LF	Print and line feed
$0D	CR	Print and carriage return
$1B $4A	ESC J	Print and feed paper
$1B $64	ESC d	Print and feed paper n lines
LINE SPACING COMMANDS		
$1B $32	ESC 2	Select 1/6-inch line spacing
$1B $33	ESC 3	Set line spacing using minimum units
CHARACTER COMMANDS		
$1B $20	ESC SP	Set right-side character spacing
$1B $21	ESC !	Set print mode
$1B $2D	ESC -	Turn underline mode on/off
$1B $34	ESC 4	Set/reset script mode
$1B $45	ESC E	Select emphasized mode
$1B $47	ESC G	Select double-strike mode
$1B $4D	ESC M	Select character font
$1B $52	ESC R	Select international character set
$1B $56	ESC V	Select print mode 90° turned
$1B $74	ESC t	Select character code table
$1B $7B	ESC {	Set/cancel upside-down character printing
$1B $C1	ESC { }	Set/cancel cpi mode
$1D $21	GS !	Select character size
$1D $42	GS B	Turn white/black reverse printing mode on/off
PRINT POSITION COMMANDS		
$08	BS	Back space
$09	HT	Horizontal tab
$1B $24	ESC $	Set absolute print position
$1B $44	ESC D	Set horizontal tab position
$1B $5C	ESC \	Set relative print position
$1B $61	ESC a	Select justification
$1D $4C	GS L	Set left margin
$1D $57	GS W	Set printing area width
BIT-IMAGE COMMANDS		
$1B $2A	ESC *	Select image print mode
$1D $2A	GS *	Logo extra storage
STATUS COMMANDS		
$10 $04	DLE EOT	Real-time status transmission
$1B $76	ESC v	Transmit printer status

$1D $72	GS r	Transmit status
$1D $E0	GS { }	Enable / disable automatic FULL STATUS back
$1D $E1	GS { }	Reading of length paper (cm) available before virtual paper end
$1D $E2	GS { }	Reading number of cuts performed from the printer
$1D $E3	GS { }	Reading of length (cm) of printed paper
$1D $E4	GS { }	Reading number of retracting
$1D $E5	GS { }	Reading number of power up
BARCODE COMMANDS		
$1D $48	GS H	Select printing position of HRI characters
$1D $66	GS f	Select font for HRI characters
$1D $68	GS h	Select barcode height
$1D $6B	GS k	Print barcode
$1D $77	GS w	Select horizontal size (enlargement) of barcode
MECHANISM CONTROL COMMANDS		
$1B $69	ESC i	Total cut
$1C $C1	FS { }	Paper recovery after cut
$1D $56	GS V	Select cut mode
MISCELLANEOUS COMMANDS		
$1B $3D	ESC =	Select peripherals device
$1B $40	ESC @	Initialize printer
$1B $63 $35	ESC c 5	Enable/Disable front panel keys
$1B $78	ESC x	Select speed / quality mode
$1C $3C	FS <	Change printer emulation to SVELTA
$1C $C0	FS { }	Hardware reset
$1D $49	GS I	Transmit printer ID
$1D $50	GS P	Set horizontal and vertical motion units (mode 1)
$1D $70	GS p	Print logo
$1D $E6	GS { }	Virtual paper end limit
TICKET MANAGEMENT COMMANDS		
$1C $73	FS s	Enable / disable current ticket
$1D $7C	GS { }	Set printing density
$1D $E7	GS { }	Set notch distance
$1D $F0	GS { }	Set printing speed
$1D $F6	GS { }	Ticket align at print
$1D $F8	GS { }	Ticket align at cut

Given below are more detailed descriptions of each command.

$08

Printers: KPM150

[Name] **Back space**
[Format] ASCII BS
Hex 08
Decimal 8
[Range]
[Description] Moves print position to previous character.
[Notes] Can be used to put two characters at the same position.
[Default]
[Reference]
[Example]

$09

Printers: KPM150

[Name] **Horizontal tab**
[Format] ASCII HT
Hex 09
Decimal 9
[Range]
[Description] Moves the print position to the next horizontal tab position.
[Notes]
- Ignored unless the next horizontal tab position has been set..
- If the command is received when the printing position is at the right margin, the printer executes print buffer full printing and horizontal tab processing from the beginning of the next line.
- Horizontal tab positions are set using $1B $44.

[Default]
[Reference] $1B $44
[Example]

$0A

Printers: KPM150

[Name] **Print and line feed**
[Format] ASCII LF
Hex 0A
Decimal 10
[Range]
[Description] Prints the data in the buffer and feeds one line based on the current line spacing.
[Notes]
- Sets the print position to the beginning of the line.
- If the buffer is empty, the printing feeds of (character height + spacing gap) dot.(default 32 dot).

[Default]
[Reference] $0D
[Example]

$0D

Printers: KPM150

[Name] **Print and carriage return**

[Format]

ASCII	CR	
Hex	0D	
Decimal	13	

[Description] When autofeed is “CR enabled”, this command functions in the same way as $0A, otherwise it is disregarded.

[Notes] • Sets the print position to the beginning of the line.

[Default] See “Autofeed in setup” parameter.

[Reference] $0A

[Example]

$10 $04 n

Printers: KPM150

[Name] **Real-time status transmission**

[Format]

ASCII	DLE	EOT	n
Hex	10	04	n
Decimal	16	4	n

[Range] 1 ≤ n ≤ 4, n = 17, n = 20, n=21

[Description] Transmits the selected printer status specified by n in real time according to the following parameters:

n = 1	transmit printer status
n = 2	transmit off-line status
n = 3	transmit error status
n = 4	transmit paper roll sensor status
n = 17	transmit print status
n = 20	transmit FULL STATUS
n = 21	transmit printer ID

[Notes] • This command is executed when the data buffer is full.
• This status is transmitted whenever data sequence $10 $04 is received.

[Default]

[Reference] See tables below.

[Example] n=1: Printer status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	On	10	16	Not used. Fixed to On
5	-	-	-	RESERVED
6	Off	00	0-	LF key released
	On	40	64	LF key pressed
7	Off	00	0	FF key released
	On	80	128	FF key pressed

n=2: Off-line status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Cover closed
	On	04	4	Cover opened
3	Off	00	0	Paper isn't feeded by FEED. key
	On	08	8	Paper is feeded by FEED. key
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Printing stop due to paper end
6	Off	00	0	No error
	On	40	64	Error.
7	Off	00	0	Not used. Fixed to Off

n=3: Error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	-	-	-	RESERVED
3	Off	00	0	Cutter ok
	On	08	8	Cutter error
4	On	10	16	Not used. Fixed to On
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error
6	Off	00	0	No auto-recoverable error
	On	40	64	Auto-recoverable error
7	Off	00	0	Not used. Fixed to Off

n=4: Paper roll sensor status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2, 3	Off	00	0	Paper present
	On	0C	12	Near paper end
4	On	10	16	Not used. Fixed to On
5, 6	Off	00	0	Paper present
	On	60	96	Paper not present
7	Off	00	0	Not used. Fixed to Off

n=17: Print status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	-	-	-	RESERVED.
1	-	-	-	RESERVED.
2	Off	00	0	Paper drag motor off
	On	04	4	Paper drag motor on
3	-	-	-	RESERVED.
4	-	-	-	RESERVED.
5	Off	00	0	Paper present
	On	20	32	Paper absent

6	-	-	-	RESERVED.
7	-	-	-	RESERVED.

n=20: FULL status (6 bytes)

1st Byte = $10 (DLE);

2nd Byte = $0F

3rd Byte = Paper status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED.
2	Off	00	0	Paper present in abundance
	On	04	4	Near paper end
3	-	-	-	RESERVED.
4	-	-	-	RESERVED.
5	Off	00	0	Ticket not present in output.
	On	20	32	Ticket present in output.
6	Off	00	0	Not virtual paper end (*)
	On	40	64	Virtual paper end (*)
7	Off	00	0	Notch not found
	On	80	128	Notch found

(*) Virtual paper end is set when the paper length available, read by $1D $E1, is 0.

4th Byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	No error printing head down
	On	01	1	Printing head up error
1	Off	00	00	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED.
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED.

5th Byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	00	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED.
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error

4	-	-	-	RESERVED.
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

6th Byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EPROM error
4	-	-	-	RESERVED.
5	-	-	-	RESERVED.
6	-	-	-	RESERVED.
7	-	-	-	RESERVED.

n=21: transmit printer ID1st byte= (refer to command $1D $49)

$1B $20 n

Printers: KPM150

[Name] **Set right-side character spacing**

[Format]

ASCII	ESC	SP	n
Hex	1B	20	n
Decimal	27	32	n

[Range] 0 ≤ n ≤ 255

[Description] Sets the character spacing for the right side of the character to [n x horizontal or vertical motion units].

[Notes]
- The right character spacing for double-width mode is twice the normal value. When the characters are enlarged, the right side character spacing is m (2 or 4) times the normal value.
- The horizontal and vertical motion units are specified by $1D $50. Changing the horizontal or vertical motion units does not affect the current right side spacing.
- The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
- In standard mode, the horizontal motion unit is used.
- The maximum right side spacing is 255/200 inches.

[Default] n = 0

[Reference] $1D $50

[Example]

$1B $21 n

Printers: KPM150

[Name] **Select print modes**

[Format]

ASCII	ESC	!	n
Hex	1B	21	n
Decimal	27	33	n

[Range] 0 ≤ n ≤ 255

[Description] Selects print modes using n (see table below):

BIT	OFF/ON	HEX	Decimal	FUNCTION	11/15 cpi	15/20 cpi
0	Off	00	0	Character font A selected.	18 x 24	14 x 24
	On	01	1	Character font B selected	14 x 24	10 x 24
1	-	-	-	Undefined.		
2	-	-	-	Undefined.		
3	Off	00	0	Expanded mode not selected.		
	On	08	8	Expanded mode selected.		
4	Off	00	0	Double-height mode not selected.		
	On	10	16	Double-height mode selected.		
5	Off	00	0	Double-width mode not selected.		
	On	20	32	Double-width mode selected.		
6	Off	00	0	Italic mode not selected.		
	On	40	64	Italic mode selected.		
7	Off	00	0	Underline mode not selected.		
	On	80	128	Underline mode selected.		

[Notes]

• The printer can underline all characters, but cannot underline the spaces set by $09, $1B $24, $1B $5C and 90°/270° rotated characters.

• This command resets the left and right margin at default value (see $1D $4C, $1D $57).
• $1B $45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one.
• $1B $2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one.
• $1D $21 can also be used to select character height/width. However, the last-received setting command is the effective one.
• $1B $34 can also be used to turn the italic mode on/off. However, the last-received setting command is the effective one.

[Default] n = 0

[Reference] $1B $2D, $1B $34, $1B $45, $1D $21

[Example]

$1B $24 nL nH

Printers: KPM150

[Name] **Set absolute print position**

[Format]

ASCII	ESC	$	nL	nH
Hex	1B	24	nL	nH
Decimal	27	36	nL	nH

[Range] 0 ≤ nL ≤ 255
0 ≤ nH ≤ 255

[Description] Sets the distance from the beginning of the line to the position at which subsequent characters are to be printed.
The distance from the beginning of the line to the print position is [(nL + nH × 256) × (vertical or horizontal motion unit)] inches.

[Notes]
- Settings outside the specified printable area are ignored.
- The horizontal and vertical motion unit are specified by $1D $50.
- $1D $50 can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
- In standard mode, the horizontal motion unit (x) is used.
- If the setting is outside the printing area width, it sets the absolute print position, but the left or right margin is set at default value.

[Default]

[Reference] $1B $5C, $1D $50

[Example]

$1B $2A m nL nH d1...dk

Printers: KPM150

[Name] **Select bit image mode**

[Format]

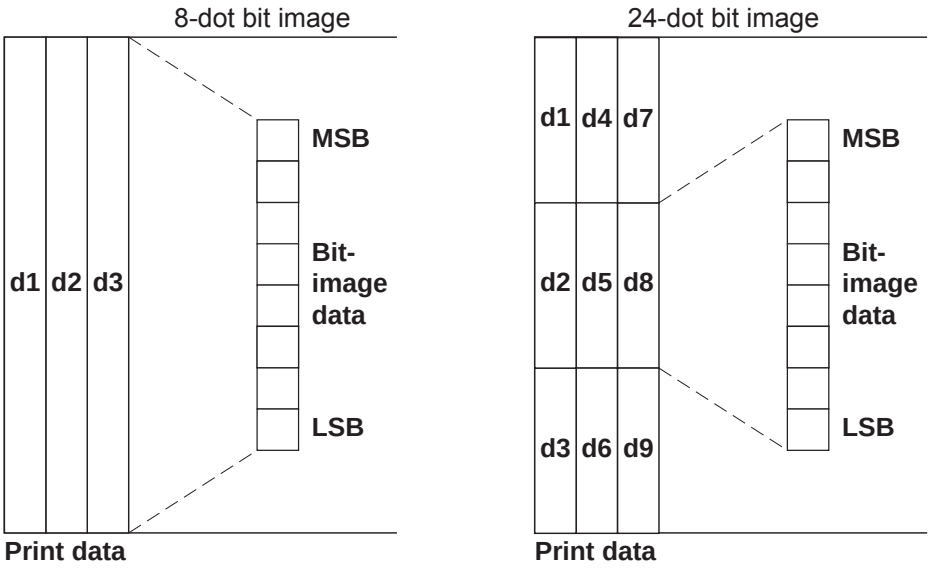
ASCII	ESC	*	m	nL	nH	d1...dk
Hex	1B	2A	m	nL	nH	d1...dk
Decimal	27	42	m	nL	nH	d1...dk

[Range]
m = 0, 1, 32, 33
0 ≤ nL ≤ 255
0 ≤ nH ≤ 3
0 ≤ d ≤ 255

[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION	
		N° dots	DPI	DPI	N° of data (k)
0	8 dot single density	8	67	100	nL + nH x 256
1	8 dot double density	8	67	200	nL + nH x 256
32	24 dot single density	24	200	100	(nL + nH x 256) x 3
33	24 dot double density	24	200	200	(nL + nH x 256) x 3

[Notes]
- The nL and nH parameters indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH x 256.
- If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
- d indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot.
- If the value of m is outside the specified range, nL and data following it are processed as normal data.
- If the width of the printing area set by $1D $4C and $1D $57 is less than the width required by the data set using $1B $2A, the excess data are ignored.
- To print the bit image use $0A, $0D, $1B $4A or $1B $64.
- After printing a bit image, the printer returns to normal data processing mode.
- This command is not affected by the emphasized, double-strike, underline (etc.) print modes, except for the upside-down mode.
- The relationship between the image data and the dots to be printed is as follows:



[Default]
[Reference]
[Example]

$1B $2D n

Printers: KPM150

[Name] **Turn underline mode on/off**

[Format]

ASCII	ESC	-	n
Hex	1B	2D	n
Decimal	27	45	n

[Range] 0 ≤ n ≤ 2, 48 ≤ n ≤ 50

[Description] Turns underline mode on or off, based on the following values of n:

n = 0, 48	Turns off underline mode
n = 1, 49	Turns on underline mode (1-dot thick)
n = 2, 50	Turns on underline mode (2-dot thick)

[Notes]
- The printer can underline all characters, but cannot underline the space and right-side character spacing (command $09).
- The printer cannot underline 90°/270° rotated characters and white/black inverted characters.
- When underline mode is turned off by setting the value of n to 0 or 48, the data which follows is not underlined.
- Underline mode can also be turned on or off by using $1B $21. Note, however, that the last received command is the effective one.

[Default] n=0
[Reference] $1B $21
[Example]

$1B $32

Printers: KPM150

[Name] **Select 1/6-inch line spacing**

[Format]

ASCII	ESC	2
Hex	1B	32
Decimal	27	50

[Description] Selects 1/6-inch line spacing.
[Notes]

[Default]
[Reference] $1B $33
[Example]

$1B $33 n

Printers: KPM150

[Name] **Set line spacing**

[Format]

ASCII	ESC	3	n
Hex	1B	33	n
Decimal	27	51	n

[Range] 0 ≤ n ≤ 255
[Description] Sets line spacing to [n × (vertical or horizontal motion unit)] inches.
[Notes]
• The horizontal and vertical motion unit are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current line spacing.
• The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.
• In standard mode, the vertical motion unit is used.
[Default] n = 64 (1/6 inch)
[Reference] $1B $32, $1D $50
[Example]

$1B $34 n

Printers: KPM150

[Name] **Set / reset italic mode**

[Format]

ASCII	ESC	4	n
Hex	1B	34	n
Decimal	27	52	n

[Range] 0 ≤ n ≤ 1, 48 ≤ n ≤ 49
[Description] Turns italic mode on or off, based on the following values of n:

n	Function
0, 48	Turns off italic mode
1, 49	Turns on italic mode

[Notes]
• The printer can print any character in italic mode.
• When italic mode is turned off by setting the value of n to 0 or 48, the data which follows is printed in normal mode.
• Italic mode can also be turned on or off using $1B $21. Note, however, that the last received command is the effective one.
[Default] n = 0
[Reference] $1B $21
[Example]

$1B $3D n

Printers: KPM150

[Name] **Select peripheral device**

[Format]

ASCII	ESC	=	n
Hex	1B	3D	n
Decimal	27	61	n

[Range] 1 ≤ n ≤ 3

[Description] Select the device to which the host computer sends data, using *n* as follows:

n	Function
1	Printer enabled
2	Printer disabled
3	Printer enabled

[Notes] • When the printer is disabled, it ignores all transmitted data until the printer is enabled through this command.

[Default] n = 1

[Reference]

[Example]

$1B $40

Printers: KPM150

[Name] **Initialize printer**

[Format]

ASCII	ESC	@
Hex	1B	40
Decimal	27	64

[Description] Clears the data in the print buffer and resets the printer mode to that in effect when power was turned on.

[Notes]

[Default]

[Reference]

[Example]

$1B $44 [n1...nk] $00

Printers: KPM150

[Name] **Set horizontal tab position**

[Format]

ASCII	ESC	D	n1...nk	NUL
Hex	1B	44	n1...nk	00
Decimal	27	68	n1...nk	0

[Range] 1 ≤ n ≤ 255
0 ≤ k ≤ 32

[Description] Sets horizontal tab positions
• n specifies the column number for setting a horizontal tab position calculated from the beginning of the line.
• k indicates the total number of horizontal tab positions to be set.

[Notes] • The horizontal tab position is stored as a value of [character width x n] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters.
• This command cancels previous tab settings.
• When setting n = 8, the print position is moved to column 9 sending $09.
• Up to 32 tab positions (k = 32) can be set. Data exceeding 32 tab positions is processed as normal data.
• Send [n] k in ascending order and place a 0 NUL code at the end. When [n] k is less than or equal to the preceding value [n] k-1, the setting is complete and the data which follows is processed as normal data.
• $1B $44 00 cancels all horizontal tab positions.
• The previously specified horizontal tab position does not change, even if the character width is modified.

[Default] Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, …) for Font A when the right-side character spacing is 0.

[Reference] $09
[Example]

$1B $45 n

Printers: KPM150

[Name] **Select emphasized mode**

[Format]

ASCII	ESC	E	n
Hex	1B	45	n
Decimal	27	69	n

[Range] 0 ≤ n ≤ 255
[Description] Turns emphasized mode on/off.
• When the LSB of n is 0, the emphasized mode is off.
• When the LSB of n is 1, the emphasized mode is on.
[Notes] • Only the LSB of n is effective.
• $1B $21 also turns on and off the emphasized mode. However, the last received command is the effective one.
[Default] n = 0
[Reference] $1B $21
[Example]

$1B $47 n

Printers: KPM150

[Name] **Select double-strike mode**

[Format]

ASCII	ESC	G	n
Hex	1B	47	n
Decimal	27	71	n

[Range] 0 ≤ n ≤ 255
[Description] Turns double-strike mode on or off.
• When the LSB of n is 0, the double-strike mode is off.
• When the LSB of n is 1, the double-strike mode is on.
[Notes] • Only the LSB of n is effective.
• Printer output is the same in double-strike and emphasized mode.
[Default] n = 0
[Reference] $1B $45
[Example]

$1B $4A n

Printers: KPM150

[Name] **Print and fedd paper**

[Format]

ASCII	ESC	J	n
Hex	1B	4A	n
Decimal	27	74	n

[Range] 0 ≤ n ≤ 255
[Description] Prints the data in the print buffer and feeds the paper [n × (vertical or horizontal motion unit)] inches.
[Notes] • After printing has been completed, this command sets the print starting position to the beginning of the line.
• The paper feed amount set by this command does not affect the values set by $1B $32 or $1B $33.
• The horizontal and vertical motion units are specified by $1D $50.

• $1D $50 can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.
• In standard mode, the vertical motion unit is used.
• The maximum paper feed amount is 520 mm.

[Default]
[Reference] $1D $50
[Example]

$1B $4D

Printers: KPM150

[Name] **Select character font**
[Format]

ASCII	ESC	M	n
Hex	1B	4D	n
Decimal	27	77	n

[Range] n = 0, 1, 48, 49
[Description] Selects characters font depending of cpi value set (Char/Inch) as follows :

CHAR/INCH.	n	FUNCTION
A=11 cpi B=15 cpi	0, 48	Font 11 cpi (18 × 24)
	1, 49	Font 15 cpi (14 × 24)
A=15 cpi B=20 cpi	0, 48	Font 15 cpi (14 × 24)
	1, 49	Font 20 cpi (10 × 24)

[Notes]
[Default]
[Reference] $1B $C1
[Example]

$1B $52 n

Printers: KPM150

[Name] **Select international character set**
[Format]

ASCII	ESC	R	n
Hex	1B	52	n
Decimal	27	82	n

[Range] 0 ≤ n ≤ 10
[Description] Selects the international character set n according to the table below:

	HEX	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
n	CHARACTER SER												
0	U.S.A.	#	$	@	[	\	]	^	`	{	|	}	~
1	France	#	$	à	°	ç	§	^	`	é	ù	è	“
2	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	b
3	United Kingdom	£	$	@	[	\	]	^	`	{	|	}	~
4	Denmark I	#	$	@	Æ	Æ	Å	^	`	æ	f	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain 1	Pt	$	@	i	Ñ	¿	^	`	“	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	`	{	|	}	~
9	Norway	#	¤	É	Æ	Æ	Å	Ü	é	æ	f	å	ü
10	Denmark II	#	$	É	Æ	Æ	Å	Ü	é	æ	f	å	ü

[Notes]
[Default] n = 0
[Reference]
[Example]

$1B $56 n

Printers: KPM150

[Name] **Select print mode 90° turned**
[Format]

ASCII	ESC	V	n
Hex	1B	56	n
Decimal	27	86	n

[Range] 0 ≤ n ≤ 1, 48 ≤ n ≤ 49
[Description] Turns 90° rotation mode on/off. n is used as follows:

n	FUNCTION
0, 48	Turns off 90° rotation mode
1, 49	Turns on 90° rotation mode

[Notes] • When underlined mode is turned on, the printer does not underline 90° rotated characters. All the same it's possible select the underline mode.
• Double-width and double-height commands in 90° rotation mode enlarge characters in the opposite directions from double-height and double-width commands in normal mode.
[Default] n = 0
[Reference] $1B $21 , $1B $2D
[Example]

$1B $5C nL nH

Printers: KPM150

[Name] **Set relative print position**
[Format]

ASCII	ESC	\	nL	nH
Hex	1B	5C	nL	nH
Decimal	27	92	nL	nH

[Range] 0 ≤ nL ≤ 255
0 ≤ nH ≤ 255
[Description] Sets the print starting position based on the current position by using the horizontal or vertical motion unit.
This command sets the distance from the current position to [(nL+ nH × 256) × (horizontal or vertical motion unit)].
[Notes] • When the starting position is specified by n motion units to the right : nL + nH × 256 = N
When the starting position is specified by n motion units to the left (negative direction) use the complementof di 65536 : nL + nH × 256 = 65536 – N
• If setting exceeds the printing area width, the left or right margin is set to the default value.
• The horizontal and vertical motion unit are specified by $1D $50.
• $1D $50 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.
• In standard mode, the horizontal motion unit is used.
• It's possible to print further on the right margin set for every font. In this case the printing continues up to the maximum border of the printer mechanism and then begins a new row.
[Default]
[Reference] $1B $24, $1D $50
[Example]

$1B $61 n

Printers: KPM150

[Name] **Select justification**

[Format]

ASCII	ESC	a	n
Hex	1B	61	n
Decimal	27	97	n

[Range] 0 ≤ n ≤ 2, 48 ≤ n ≤ 50

[Description] Aligns all data in one line to the specified position. n selects the type of justification as follows:

n	JUSTIFICATION
0, 48	Flush left
1, 49	Centered
2, 50	Flush right

[Notes]
- This command is only enabled when inserted at the beginning of a line.
- Lines are justified within the specified printing area.
- Spaces set by$09, $1B $24 and $1B $5C will be justified according to the previously-entered mode.

[Default] n = 0

[Reference]

[Example]

Flush left	Centred	Flush right
ABC ABCD ABCDE	ABC ABCD ABCDE	ABC ABCD ABCDE

$1B $63 $35 n

Printers: KPM150

[Name] **Enable/Disable front panel keys**

[Format]

ASCII	ESC	c	5	n
Hex	1B	63	35	n
Decimal	27	99	53	n

[Range] n = 0, 1

[Description] Enables/disables the keys of the front panel:

n	FUNCTION
0	Disables front panel keys
1	Enables front panel keys

[Notes]

[Default] n = 1

[Reference]

[Example]

$1B $64 n

Printers: KPM150

[Name] **Print and feed paper n rows**

[Format]

ASCII	ESC	d	n
Hex	1B	64	n
Decimal	27	100	n

[Range] 0 ≤ n ≤ 255

[Description] Prints the data in the print buffer and feeds the paper *n* rows.
[Notes]
- n rows paper feed is equivalent to (n × char height + line spacing set).
- Sets the print starting position at the beginning of the line.
- This command does not affect the line spacing set by $1B $32 or $1B $33.
- The maximum paper feed amount is 254 rows. Even if a paper feed amount of more than 254 rows is set, the printer feeds the paper only 254 rows.

[Default]
[Reference] $1B $32, $1B $33
[Example]

$1B $69

Printers: KPM150

[Name] **Total cut**
[Format]

ASCII	ESC	i
Hex	1B	69
Decimal	27	105

[Description] This command enables cutter operation. If there is no cutter, a disabling flag is set and any subsequent cut commands will be ignored.
[Notes]
- The printer waits to complete all paper movement commands before it executes a total cut.

[Default]
[Reference]
[Example]

$1B $74 n

Printers: KPM150

[Name] **Select character code table**
[Format]

ASCII	ESC	t	n
Hex	1B	74	n
Decimal	27	116	n

[Range] n = 0, 2, 3, 4, 5, 17, 18, 19, 255
[Description] Selects a page n from the character code table, as follows:

n	PAGE
0	0 (PC437 [U.S.A., Standard Europe])
2	2 (PC850 [Multilingual])
3	3 (PC860 [Portuguese])
4	4 (PC863 [Canadian-French])
5	5 (PC865 [Nordic])
17	17 (PC866 [Cyrillic])
18	18 (VISCII [Vietnamese Standard Code])
19	19 (PC858 for Euro symbol at position 213)
255	Space page

[Notes]
[Default] n = 0
[Reference] See character code table.
[Example] For printing Euro symbol (€), the command sequence is: 1B, 74, 13, D5

$1B $76

Printers: KPM150

[Name] **Transmit paper sensor status**

[Format]

ASCII	ESC	v
Hex	1B	76
Decimal	27	118

[Description] When this command is received, transmit the current status of the paper sensor. The status to be transmitted is shown in the table below:

BIT	OFF/ON	HEX	Decimal	FUNCTION
0,1	Off	00	0	Near paper-end sensor: paper present.
	On	03	3	Near paper-end sensor: paper not present.
2,3	Off	00	0	Paper-end sensor: paper present.
	On	0C	12	Paper-end sensor: paper not present.
4	Off	00	0	Not used. Fixed to Off.
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off.

[Note] • This command is executed immediately, even when the data buffer is full (Busy).

[Default]

[Reference] $10 $04 n

[Example]

$1B $78

Printers: KPM150

[Name] **Select speed / quality mode**

[Format]

ASCII	ESC	x	n
Hex	1B	78	n
Decimal	27	120	n

[Description] Selects speed / quality mode based on the following values of n:

n	FUNCTION
0	Normal mode
1	High speed

[Default] n=0

[Reference]

[Example]

$1B $7B n

Printers: KPM150

[Name] **Set/cancel upside-down character printing**

[Format]

ASCII	ESC	{	n
Hex	1B	7B	n
Decimal	27	123	n

[Range] 0 ≤ n ≤ 255

[Description] Turns upside-down printing mode on or off.

• When the LSB of n is 0, the upside-down printing mode is off.

• When the LSB of n is 1, the upside-down printing mode is on.

[Notes] • Only the LSB of n is effective.
• This command is valid only if entered at the beginning of a line.
• In upside-down printing mode, the printer rotates the line to be printed 180° and then prints it.

[Default] n = 0

[Reference]

[Example]

Upside-down printing Off

ABCDEFG
123456

Upside-down printing On

123456
ABCDEFG

Printing direction

$1B $C1 n

Printers: KPM150

[Name] **Set/cancel cpi mode**

[Format]

ASCII	ESC	{ }	n
Hex	1B	C1	n
Decimal	27	193	n

[Range] 0 ≤ n ≤ 1, 48 ≤ n ≤ 50

[Description] Sets cpi mode based on the following values of n:

n	PRINTING MODE	
0, 48	Font A = 11 cpi	Font B = 15 cpi
1, 49	Font A = 15 cpi	Font B = 20 cpi

[Default] n = 0

[Reference] $1B $21

[Example]

$1C $3C

Printers: KPM150

[Name] **Change printer emulation to SVELTA**

[Format]

ASCII	FS	<	S	V	E	L	>
Hex	1C	3C	53	56	45	4C	3E
Decimal	28	60	83	86	69	76	62

[Range]

[Description] Change the printer emulation to SVELTA emulation.

[Notes]

[Default]

[Reference]

[Example]

$1C $73 n

Printers: KPM150

[Name] **Enable/disable current ticket**

[Format]

ASCII	FS	s	n
Hex	1C	73	n
Decimal	28	115	n

[Range] 0 ≤ n ≤ 255

[Description] Enables / disables current ticket.
• When the LSB of n is 0, validate the ticket.
• When the LSB of n is 1, the current ticket is invalid.
[Notes] • Only the LSB of n is effective.
[Default] n = 0
[Reference]
[Example]

$1C $C0

Printers: KPM150

[Name] **Hardware reset**
[Format]

❶	ASCII	FS	{ }	$18	$10	$14	$1A
	Hex	1C	C0	18	10	14	1A
	Decimal		28	192	16	20	26
❷	ASCII	FS	{ }	$18	$10	$14	$1B
	Hex	1C	C0	18	10	14	1B
	Decimal		28	192	16	20	27

[Range]
[Description] When this command is received, the printer perform an hardware reset (like a printer power-up).
[Notes] • This command is executed immediately, even when the data buffer is full (Busy).
• ❶ The command execution stop the communication with HOST;
• ❷ The command execution keep the communication with HOST active.
[Default]
[Reference]
[Example]

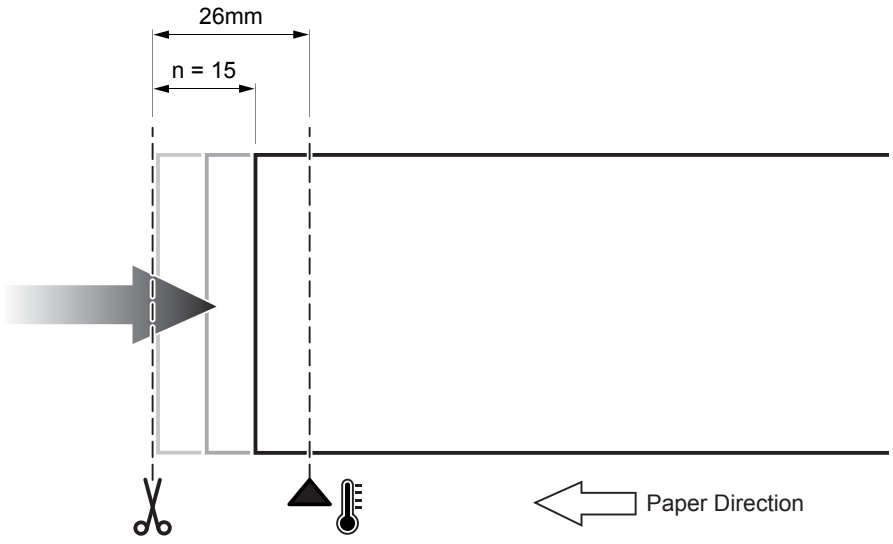
$1C $C1

Printers: KPM150

[Name] **Paper recovery after cut**
[Format]

ASCII	FS	{ }	n
Hex	1C	C1	n
Decimal	28	193	n

[Range] 0 ≤ n ≤ 26
[Description] Set the paper moving (in mm) toward the print head after the paper cut.



[Notes] • Set n = 26 to complete recover the paper.
• WARNING: setting n = 26 is not recommended for paper roll with low weight.
[Default] n = 15 mm
[Reference]
[Example]

$1D $21 n

Printers: KPM150

[Name] **Select character size**
[Format]

ASCII	GS	!	n
Hex	1D	21	n
Decimal	29	33	n

[Range] 0 ≤ n ≤ 7, 16 ≤ n ≤ 23, 32 ≤ n ≤ 39,
48 ≤ n ≤ 55, 64 ≤ n ≤ 71, 80 ≤ n ≤ 87,
96 ≤ n ≤ 103, 112 ≤ n ≤ 119
[Description] Selects character height and width, as follows:
• Bits 0 to 3: to select character height (see table 2).
• Bits 4 to 7: to select character width (see table 1).

Table 1 Select character width

HEX	Decimal	Width
00	0	1 (normal)
10	16	2 (width = 2x)
20	32	3 (width = 3x)
30	48	4 (width = 4x)
40	64	5 (width = 5x)
50	80	6 (width = 6x)
60	96	7 (width = 7x)
70	112	8 (width = 8x)

Table 2 Select character height

HEX	Decimal	Height
00	0	1 (normal)
01	1	2 (height = 2x)
02	2	3 (height = 3x)
03	3	4 (height = 4x)
04	4	5 (height = 5x)
05	5	6 (height = 6x)
06	6	7 (height = 7x)
07	7	8 (height = 8x)

[Notes] • This command is effective for all characters (except HRI characters).
• If n falls outside the defined range, this command is ignored.
• Characters enlarged to different heights on the same line are aligned at the baseline or topline.
• $1B $21 can also be used to select character size. However, the setting of the last received command is the effective one.
[Default] n = 0
[Reference] $1B $21
[Example]

$1D $2A m Bit image width BMP file

Printers: KPM150

[Name] **Dowload logo extra**
[Format]

ASCII	GS	*	m	monochromatic BMP
Hex	1D	2A	m	monochromatic BMP
Decimal	29	42	m	monochromatic BMP

[Range] 0 ≤ m ≤ 1
[Description] Storages a logo in memory place specified by m. The following table contains a description of the contents of a BMP file.

OFFSET	FIELD	SIZE	CONTENTS
0000h	Identified	2 bytes	The characters identifying the bitmap. The following entries are possible : **'BM' - Windows 2K3, XP, VISTA**
0002h	File size	1 dword	Complete file size of BMP image in bytes.
0006h	Reserved	1 dword	Reserved for later use.
000Ah	Bitmap Data Offset	1 dword	Offset from the beginning of the file until the beginning of the graphics.
000Eh	Bitmap Header Size	1 dword	Length of the bitmap Info header used to describe the bitmap colours, compression, etc... The following sizes are possible : **3Eh - Windows 2K3, XP, VISTA**
0012h	Width	1 dword	Horizontal width of bitmap in pixels.
0016h	Height	1 dword	Vertical height of bitmap in pixels.
001Ah	Planes	1 dword	Number of planes in this bitmap **1 - single plane**
001Ch	Bits per Pixel	1 dword	Bits per pixel used to store palette entry information. This also identifies in an indirect way the number of possible colours. Possible values are: **1 - Monochrome bitmap** 4 - 16 bitmap color 8 - 256 bitmap color 16 - 16bit (high color) bitmap 24 - 24bit (true color) bitmap 32 - 32bit (true color) bitmap
001Eh	Compression	1 dword	Compression specifications. The following values are possible: **0 - none (Also identified by BI_RGB)** 1 - RLE 8-bit / pixel (Also identified by BI_RLE4) 2 - RLE 4-bit / pixel (Also identified by BI_RLE8) 3 - Bitfields (Also identified by BI_BITFIELDS)
0022h	Bitmap data Size	1 dword	Size of the bitmap data in bytes. This number must be rounded to the next 4 byte boundary.
0026h	HResolution	1 dword	Horizontal resolution expressed in pixel per meter.
002Ah	VResolution	1 dword	Vertical resolution expressed in pixels per meter.
002Eh	Colors	1 dword	Number of colours used by this bitmap. For a 8-bit / pixel bitmap this will be 100h or 256.
0032h	Important Colorsi	1 dword	Number of important colors. This number will be equal to the number of colors when every color is important.
0036h	Palette	N*4 bytes	The palette specification. For every entry in the palette four bytes are used to describe the RGB values of the colour in the following way: 1 byte for blue component 1 byte for green component 1 byte for red component 1 byte filler which is set to 0 (zero)
0436h	Bitmap Data	x bytes	Depending on the compression specifications, this field contains all the bitmap data bytes which represent indices in the colour palette.

[Notes]

- Simple monochrome images must be used.
- Maximum BMP size is 32 kbytes
- The following sizes were used in the specification above:

SIZE	BYTES	SIGN
char	1	signed
word	2	unsigned
dword	4	unsigned

[Default]

[Reference]

[Example]

$1D $42 n

Printers: KPM150

[Name] **Turn white/black reverse printing mode on/off**

[Format]

ASCII	GS	B	n
Hex	1D	42	n
Decimal	29	66	n

[Range] 0 ≤ n ≤ 255

[Description] Turns white/black reverse printing mode on or off.
- When the LSB of n is 0, white/black reverse printing is turned off.
- When the LSB of n is 1, white/black reverse printing is turned on.

[Notes]
- Only the LSB of n is effective.
- This command is available for both built-in and user-defined characters.
- This command does not affect bit image, downloaded bit image, bar code, HRI characters and spacing skipped by $09, $1B $24 and $1B $5C.
- This command does not affect white space between lines.
- White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it will be disabled (but not cancelled) when white/black reverse mode is selected.

[Default] n = 0

[Reference]

[Example]

$1D $48 n

Printers: KPM150

[Name] **Select printing position of Human Readable Interpretation (HRI) characters**

[Format]

ASCII	GS	H	n
Hex	1D	48	n
Decimal	29	72	n

[Range] 0 ≤ n ≤ 3, 48 ≤ n ≤ 51

[Description] Selects the printing position of HRI characters when printing bar codes. n selects the printing positions as follows::

n	FUNCTION
0, 48	Not printed
1, 49	Above the bar code
2, 50	Below the bar code
3, 51	Both above the below the bar code

[Notes]
- HRI characters are printed using the font specified by $1D $66.

[Default] n = 0

[Reference] $1D $66, $1D $68

[Example]

$1D $49 n

Printers: KPM150

[Name] **Transmit printer ID**

[Format]

ASCII	GS	I	n
Hex	1D	49	n
Decimal	29	73	n

[Range] 1 ≤ n ≤ 3, 49 ≤ n ≤ 51

[Description] Transmits the printer ID specified by n follows:

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID	$A9
2, 50	Type ID	Undefined
3, 51	ROM version ID	Depends on ROM version (4 character)
5, 53	Printer model ID	(see value for n=1)

[Notes]
- The printer only transmits 1 byte (printer ID) without confi rmation that the host is ready to receive data.
- This command is executed when the data is processed in the data buffer. Therefore, there could be a time lag between command reception and data transmission, depending on data buffer status.

[Default]
[Reference]
[Example]

$1D $4C nL nH

Printers: KPM150

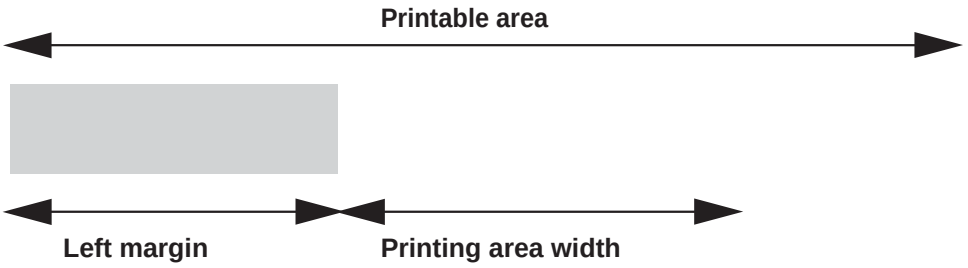
[Name] **Set left margin**

[Format]

ASCII	GS	L	nL	nH
Hex	1D	4C	nL	nH
Decimal	29	76	nL	nH

[Range] 0 ≤ nL, nH ≤ 255

[Description] Sets the left margin.
- The left margin is set to [(nL + nH × 256) × (horizontal motion unit)] inches.



[Notes]
- This command is enabled only if set at the beginning of the line.
- If the setting exceeds the printable area, the maximum value of the printable area is used.
- If the left margin + printing area width is greater than the printable area, the printing area width is set at maximum value.
- The horizontal and vertical motion unit are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current left margin.
- The $1D $50 command can change the horizontal (and vertical) motion unit.
- However, the value cannot be less than the minimum horizontal movement amount and it must be in even units of the minimum horizontal movement amount.

[Default]
[Reference] $1D $50, $1D $57
[Example]

$1D $50 x y

Printers: KPM150

[Name] **Set horizontal and vertical motion units**

[Format]

ASCII	GS	P	x	y
Hex	1D	50	x	y
Decimal	29	80	x	y

[Range] 0 ≤ x, y ≤ 255

[Description] Sets the horizontal and vertical motion units to 1/x inch and 1/y inch respectively.
When x is set to 0, the default setting value is used.
When y is set to 0, the default setting value is used.

[Notes]
• The horizontal direction is perpendicular to the paper feed direction.
• In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):
❶ Commands using x : $1B $20, $1B $24, $1B $5C, $1D $4C, $1D $57.
❷ Commands using y : $1B $33, $1B $4A.
• This command does not affect the previously specified values.
• The calculated result from combining this command with others is truncated to the minimum value of the mechanical pitch or an exact multiple of that value.

[Default] x = 204, y = 408

[Reference] $1B $20, $1B $24, $1B $5C, $1B $33, $1B $4A, $1D $4C, $1D $57

[Example]

❶ $1D $56, ❷ $1D $56

Printers: KPM150

[Name] **Select cut mode**

[Format]

❶	ASCII	GS	V	m		
	Hex	1D	56	m		
	Decimal	29	86	m		
❷	ASCII	GS	V	m	n	
	Hex	1D	56	m	n	
	Decimal	29	86	m	n	

[Range]
❶ m = 0, 48
❷ m = 65, 0 ≤ n ≤ 255

[Description] Selects cut mode and executes the cut command. *m* selects cut mode as follows:

m	FUNCTION
0, 48	Total cut.
65, 66	Form feed (cut position + [n × vertical motion unit]) and total cut

[Notes]
• This command is only enabled if set at the beginning of the line.
• The horizontal and vertical motion units are specified by $1D $50.

[Default]

[Reference] $1B $69

[Example]

$1D $57 nL nH

Printers: KPM150

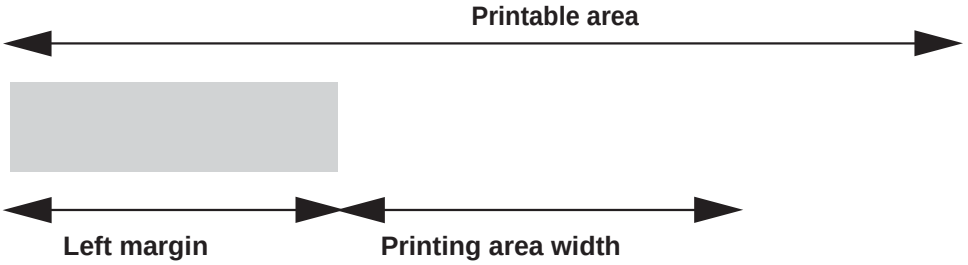
[Name] **Set printing area width**

[Format]

ASCII	GS	W	nL	nH
Hex	1D	57	nL	nH
Decimal	29	87	nL	nH

[Range] 0 ≤ nL, nH ≤ 255
0 ≤ nL + nH × 256) ≤ 640

[Description] Sets the printing area width to the area specified by nL and nH.
• The left margin is set to [(nL+nH×256) × (horizontal motion unit)] inches.



[Notes]
• This command is only enabled if set at the beginning of the line.
• If the right margin is greater than the printable area, the printing area width is set at maximum value.
• If the printing area width = 0, it is set at the maximum value.
• The horizontal and vertical motion units are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current left margin.
• The $1D $50 command can change the horizontal (and vertical) motion unit.
• However, the value cannot be less than the minimum horizontal movement amount and it must be in even units of the minimum horizontal movement amount.

[Default]

[Reference] $1D $4C, $1D $50

[Example]

$1D $66

Printers: KPM150

[Name] **Select font for HRI characters**

[Format]

ASCII	GS	f	n
Hex	1D	66	n
Decimal	29	102	n

[Range] n = 0, 1, 48, 49

[Description] Selects a font for the HRI characters used when printing a bar code. *n* selects a font from the following table:

n	FONT
0, 48	Font A
1, 49	Font B

[Notes] HRI characters are printed at the position specified by $1D $48.

[Default] n = 0

[Reference] $1D $48, $1D $6B

[Example]

$1D $68 n

Printers: KPM150

[Name] **Set bar code height**

[Format]

ASCII	GS	h	n
Hex	1D	68	n
Decimal	29	104	n

[Range] 1 ≤ n ≤ 255

[Description] Sets the height of the bar code. n specifies the number of vertical dots.

[Notes]

[Default] n = 162

[Reference] $1D $6B

[Example]

❶ $1D $6B m [d1...dk] $00, ❷ $1D $6B m [d1...dn]

Printers: KPM150

[Name] **Print barcode**

[Format]

❶	ASCII	GS	k	m	NUL
	Hex	1D	6B	m	00
	Decimal	29	107	m	0
❷	ASCII	GS	k	m	n
	Hex	1D	6B	m	n
	Decimal	29	107	m	n

[Range]

❶ 0 ≤ m ≤ 20

❷ 65 ≤ m ≤ 90

[Description] Selects a bar code system and prints the bar code. m selects a bar code system as follows:

	m	BARCODE SYSTEM	No. OF CHARACTERS	REMARKS
❶	0	UPC-A	11≤ k ≤12	48≤ d ≤ 57
	1	UPC-E	11≤ k ≤12	48≤ d ≤ 57
	2	EAN13 (JAN)	12≤ k ≤13	48≤ d ≤ 57
	3	EAN8 (JAN)	7≤ k ≤8	48≤ d ≤ 57
	4	CODE39	1≤ k	48 ≤ d ≤ 57,65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	5	ITF	1≤ k (even number)	48 ≤ d ≤ 57
	6	CODABAR	1≤ k	48 ≤ d ≤ 57, 65 ≤ d1 ≤ 68, 36, 43, 45, 46, 47, 58
	7	CODE93	1≤ k ≤255	1≤ d ≤ 127
	8	CODE128	2≤ k ≤255	1≤ d ≤ 127
	20	CODE32	8≤ k ≤9	48≤ d ≤ 57

❷	65	UPC-A	11≤ n ≤12	48≤ d ≤ 57
	66	UPC-E	11≤ n ≤12	48≤ d ≤ 57
	67	EAN13 (JAN)	12≤ n ≤13	48≤ d ≤ 57
	68	EAN8 (JAN)	7≤ n ≤8	48≤ d ≤ 57
	69	CODE39	1≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	70	ITF	1≤ n ≤255	48≤ d ≤ 57
	71	CODABAR	1≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d1 ≤ 68, 36, 43, 45, 46, 47, 58
	72	CODE93	1≤ n ≤255	0≤ d ≤ 127
	73	CODE128	2≤ n ≤255	0≤ d ≤ 127
	90	CODE32	8≤ n ≤9	48≤ d ≤ 57

[Notes]

• If d is outside of the specified range, the printer prints the following message: “BAR CODE GENERATOR IS NOT OK!” and processes the data which follows as normal data.
• If the horizontal size exceeds the printing area, the printer only feeds the paper.
• This command feeds as much paper as is required to print the bar code, regardless of the line spacing.
• After printing the bar code, this command sets the print position to the beginning of the line.
• This command is not affected by print modes (emphasized, double-strike, underline or character size), except for upside-down and justification mode.

[Note per ❶]

• This command ends with a NUL code.
• When the bar code system used is UPC-A or UPC-E, the printer prints the bar code data after receiving 11 (without check digit) or 12 (with check digit) bytes bar code data.
• When the bar code system used is EAN13, the printer prints the bar code data after receiving 12 (without check digit) or 13 (with check digit) bytes bar code data.
• When the bar code system used is EAN8, the printer prints the bar code data after receiving 7 (without check digit) or 8 (with check digit) bytes bar code data.
• The number of data for ITF bar code must be even numbers. When an odd number of data is input, the printer ignores the last received data.

[Note per ❷]

• If n is outside of the specified range, the printer stops command processing and processes the following data as normal data.

When CODE93 is used the printer :

• prints an HRI character (o) as a start character at the beginning of the HRI character string
• prints an HRI character (o) as a stop character at the end of the HRI character string.
• the printer prints an HRI character (n) as a control character ($00 to $1F and $7F).

When CODE128 is used the printer :

• please note the following regarding data transmission:
• The top part of the bar code data string must be a code set selection character (CODE A, CODE B or CODE C) which selects the first code set.
• Special characters are defined by combining two characters “{“ and one character. ASCII character “{” is defined by transmitting “{“ twice, consecutively.

SPECIFIC CHARACTER	DATA TRANSMISSION		
	ASCII	HEX	DECIMAL
SHIFT	{S	7B, 53	123, 83
CODE A	{A	7B, 41	123, 65
CODE B	{B	7B, 42	123, 66
CODE C	{C	7B, 43	123, 67
FNC1	{1	7B, 31	123, 49

FNC2	{2	7B, 32	123, 50
FNC3	{3	7B, 33	123, 51
FNC4	{4	7B, 34	123, 52
'{'	{{	7B, 7B	123, 123

[Default]
[Reference] $1D $48, $1D $66, $1D $68, $1D $77
[Example]

$1D $70 m n

Printers: KPM150

[Name] **Print logo**
[Format]

ASCII	GS	p	m	n
Hex	1D	70	m	n
Decimal	29	47	m	n

[Range] 0 ≤ m ≤ 1 (No. logo)
n = 0, n = 1, n = 2, n = 3
[Description] Print bit image specified by m if stored in flash :

n	PRINT MODE
0	Normal
1	Double width
2	Double height
3	Double width and Double height

[Notes]
[Default]
[Reference]
[Example]

$1D $72 n

Printers: KPM150

[Name] **Transmit status**
[Format]

ASCII	GS	r	n
Hex	1D	72	n
Decimale	29	114	n

[Range] n =1, 49
[Description] Transmits the status specified by n as follows:

n	FUNCTION
1, 49	Transmits paper sensor status (as for $1B $76).

Paper sensor status (n = 1, 49)

BIT	OFF/ON	HEX	Decimal	FUNCTION
0,1	Off	00	0	Near paper-end sensor: Paper present
	On	03	3	Near paper-end sensor: Paper not present
2,3	Off	00	0	Paper-end sensor: Paper present
	On	0C	12	Paper-end sensor: Paper not present
4	Off	00	0	Not used. Fixed to Off.
5	-	-	-	Undefined.

6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed to Off.

[Notes] • This command is executed when the data is processed in the data buffer. Therefore, there may be a time lag between receiving the command and transmitting the status, depending on data buffer status.

[Default]

[Reference] $10 $04, $1B $76

[Example]

$1D $77 n

Printers: KPM150

[Name] **Set bar code width**

[Format]

ASCII	GS	w	n
Hex	1D	77	n
Decimal	29	119	n

[Range] $1 ≤ n ≤ $6, $81 ≤ n ≤ $86

[Description] Sets the horizontal size of the bar code. n specifies the bar code width (referred to the narrow bar) as follows:

n	MODULE WIDTH (mm)
$1, $81	0.125
$2, $82	0.25
$3, $83	0.375
$4, $84	0.5
$5, $85	0.625
$6, $86	0.75

• If barcode ≠ CODE128 the wide and narrow bar ratio is the following:

n		Wide bar / narrow bar ratio
If n<$80	$1, $2, $3, $4, $5, $6	3:1
If n>$80	$81	3:1
	$82	2,5:1
	$83	2,33:1
	$84	2,25:1
	$85	3:1
	$86	3:1

[Notes]

[Default] n = 3

[Reference] $1D $6B

[Example]

$1D $7C n

Printers: KPM150

[Name] **Set printing density**

[Format]

ASCII	GS	{ }	n
Hex	1D	7C	n
Decimal	29	124	n

[Range] 0 ≤ n ≤ 8, 48 ≤ n ≤ 56

[Description] Sets printing density. *n* specifies printing density as follows:

n	PRINTING DENSITY
0, 48	- 50%
1, 49	- 37%
2, 50	- 25%
3, 51	- 12%
4, 52	0%
5, 53	+ 12%
6, 54	+ 25%
7, 55	+ 37%
8,56	+ 50%

[Notes] • Printing density reverts to the default value when the printer is reset or turned off.
[Default] n = 4
[Reference]
[Example]

$1D $E0

Printers: KPM150

[Name] **Enable / disable automatic FULL STATUS back**
[Format]

ASCII	GS	{ }	n
Hex	1D	E0	n
Decimal	29	224	n

[Range] 0 ≤ n ≤ 255
[Description] Enable / disable automatic full status back. n specifies the composition of FULL STATUS as follows :

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Disable paper status
	On	01	1	Enable paper status
1	Off	00	0	Disable user status
	On	02	2	Enable user status
2	Off	00	0	Disable Recoverable Error Status
	On	04	4	Enable Recoverable Error Status
3	Off	00	0	Disable Unrecoverable Error Status
	On	08	8	Enable Unrecoverable Error Status
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Notes] • Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in automatic from the printer will be so composed as follows:
1° Byte = 0x10 (DLE)
2° Byte = n
Next bytes (depends how many bits are active in n)
[Default]
[Reference] $10 $04
[Example]

$1D $E1

Printers: KPM150

[Name] **Reading of length paper (cm) available before virtual paper-end**

[Format]

ASCII	GS	{ }
Hex	1D	E1
Decimal	29	225

[Range]

[Description] Reading of length (cm) paper available before virtual paper-end.
The command return a string pointing out how much paper is available, for example if there are 5.1 m before the paper end, it will be: '510cm'

[Notes]
• The lenght of residual paper reported is just as an indication because tolerances and other factors are not taken into consideration (paper thickness, roll core diameter, roll core thickness). The virtual paper-end limit is set by the command $1D $E6.
• To set virtual paper-end limit, measure the length of the paper from near paper end to the end of the roll, using several of them.

[Default]

[Reference] $1D $E6

[Example]

$1D $E2

Printers: KPM150

[Name] **Reading number of cuts performed from the printer**

[Format]

ASCII	GS	{ }
Hex	1D	E2
Decimal	29	226

[Range]

[Description] Reading the number of cuts performed from the printer.

[Notes] The command return a string that points out how many cuts are performed by the printer, for example if there are performed 2376 cuts, it will be: '2376 cuts'

[Default]

[Reference]

[Example]

$1D $E3

Printers: KPM150

[Name] **Reading of length (cm) of printed paper**

[Format]

ASCII	GS	{ }
Hex	1D	E3
Decimal	29	227

[Range]

[Description] Reading of length (cm) of printed paper.

[Notes] The command return a string pointing out how much paper is printed, for example if the printer has print about 2515,5 m, it will be: '251550cm'

[Default]

[Reference]

[Example]

1D $E4

Printers: KPM150

[Name] **Reading number of retracting**

[Format]

ASCII	GS	{ }	
Hex	1D	E4	
Decimal	29	228	

[Range]

[Description] Reading number of retracting of the printer.

[Notes] • The command return a string pointing out the number of retracting of the printer, for example if the printer has retracted the paper 512 times, it will be: '512ret'

[Default]

[Reference]

[Example]

$1D $E5

Printers: KPM150

[Name] **Reading number of power up**

[Format]

ASCII	GS	{ }	
Hex	1D	E5	
Decimal	29	229	

[Range]

[Description] Reading number of power up of the printer.

[Notes] The command return a string pointing out the number of turning on of the printer, for example if the printer is turned on 512 times, it will be: '512on'

[Default]

[Reference]

[Example]

$1D $E6

Printers: KPM150

[Name] **Virtual paper-end limit**

[Format]

ASCII	GS	{ }	nH	nL
Hex	1D	E6	nH	nL
Decimal	29	230	nH	nL

[Range] 0 ≤ nH≤ 255
0 ≤ nL ≤ 255

[Description] This command sets the limit after which is pointed out the virtual paper-end.

[Notes] • The calculation limit of the near paper-end is in centimetres.
• This value is expressed as [(nH x 256)+nL]

[Default] nH = 0×00
nL = 0×F0

[Reference]

[Example] To see the virtual paper-end is pointed out after 15 metres from the first detection of near paper end, it's necessary convert 15 metres in 1500 centimetres and then, calculate nH and nL value in the following mode:
nH = 1500 / 256 = 5
nL = 1500 - (nH x 256) = 1500 - (5 x 256) = 220
and then send the following command:

HEX:	$1D	$E6	$05	$DC
DECIMAL:	29	230	5	220

$1D $E7

Printers: KPM150

[Name] **Set notch distance**

[Format]

ASCII	GS	{ }	nL	nH
Hex	1D	E7	nL	nH
Decimal	29	231	nL	nH

[Range] 0 ≤ nH ≤ 255
0 ≤ nL ≤ 255

[Description] Sets notch distance in tenth mm from the beginning of the document.

[Notes]
- This value is expressed as [(nH x 256)+nL]
- The maximum value is 199,9 mm.

[Default] nH = $00
nL = $00

[Reference]

[Example]

$1D $F0

Printers: KPM150

[Name] **Set printing speed**

[Format]

ASCII	GS	{ }	n
Hex	1D	F0	n
Decimal	29	240	n

[Range] 0 ≤ n ≤ 2

[Description] Sets printing speed. *n* specifies the printing speed as follows:

n	PRINTING SPEED
0	High quality
1	Normal
2	High speed

[Notes]
- Printing speed reverts to the default value when the printer is reset or turned off.

[Default] n = 1

[Reference]

[Example]

$1D $F6

Printers: KPM150

Name] **Align the print head with the notch**

[Format]

ASCII	GS	{ }
Hex	1D	F6
Decimal	29	246

[Range]

[Description] Set the print head notch alignment (as $1D $E7 command setting).

[Notes]

[Default]

[Reference] $1D $E7, $1D $F8

[Example]

$1D $F8

Printers:	KPM150

[Name]	**Align the autocutter with the notch**		
[Format]	ASCII	GS	{ }
	Hex	1D	F8
	Decimal	29	248
[Range]			
[Description]	Set the autocutter notch alignment (as $1D $E7 command setting).		
[Notes]			
[Default]			
[Reference]	$1D $E7, $1D $F6		
[Example]			

3 SVELTA EMULATION

The following table lists all the commands for function management. The commands must be transmitted to the printer as command string enclosed between '<' character and '>' character.

COMMAND DESCRIPTION TABLE

Tab.2

Com. ASCII	Description
PRINT COMMANDS	
<p>	Printing command (cut and buffer cleaning) in reverse
<P>	Printing command (cut and buffer cleaning) in normal
<PP n, x, y, sp>	Print image in graphic page
<PR n, x, y, sp>	Print rotated image
<q>	Printing command (only buffer cleaning) in reverse
<Q>	Printing command (only buffer cleaning) in normal
CHARACTERS COMMANDS	
<F n>	Select the font
<HW height, width>	Set height and width of the current font
<NR>	Restore the text horizontal
<RL>	Rotate test 90° counter-clockwise
<RR>	Rotate test 90° clockwise
<RU>	Rotate test 180°
PRINT POSITION COMMANDS	
<LHTlength, width, notch, dimnotch>	Set the ticket dimension to print
<MM n>	Feed the paper of n step
<OXY x, y>	Set printing offset
<RC row, column>	Position the cursor
<T>	Get the ticket dimension to print
BIT-IMAGE COMMANDS	
<CB>	Clear data in the print buffer
<BF x1, y1, x2, y2>	Command to create filled BOX
<BV x1, y1, x2, y2>	Command to create empty BOX
<BX x1, y1, x2, y2, s, t>	Command to create parametric BOX
STATUS COMMANDS	
<AFSB x>	Enable / Disable auto FULL STATUS back
<S n>	Status request
<SB x>	FULL STATUS request
BARCODE COMMANDS	
<NCL x,y>	Print an horizontal code 128 barcode
<NCP x,y>	Print a vertical code 128 barcode

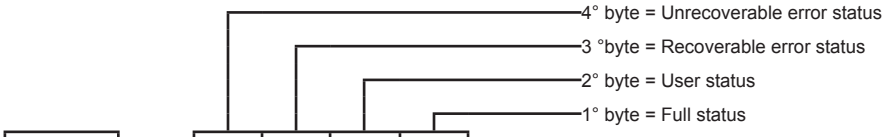
<NFL s>	Print horizontal ITF barcode
<NFP s>	Print a vertical ITF barcode
<NL s>	Print an horizontal code 39 barcode
<NP s>	Print a vertical code 39 barcode
<X n, M>	Define the barcode lines dimension
MISCELLANEOUS COMMANDS	
<EPOS>	Change printer emulation to ESC/ POS
<KEYS x>	Enable/Disable keys panel
<LOAD>	Reload paper
<SVEL>	Change printer emulation to SVELTA
TICKET MANAGEMENT COMMANDS	
<BA n>	Change the ticket print intensity
<IT>	Invalidate the ticket
<SP n>	Change speed
<VT>	Validate the ticket

Given below are more detailed descriptions of each command.

<AFSB x>

Printers: KPM150

[Name] **Enable / Disable auto FULL STATUS back**
[Format] ASCII <AFSB x >
[Range] '0' ≤ x ≤ '9', 'A' ≤ x ≤ 'F'
[Description] • Enable/disable auto FULL STATUS back.
• x specify the request for FULL STATUS. where x identify the bitmask with the following table:



x		*BIT3*	*BIT2*	*BIT1*	*BIT0*
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

[Notes] • Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in automatic from the printer will be so composed as follows:
<SB x, *CHR1 ..... CHRn*>
where:

SB	=	fixed characters
x	=	is the bitmask to identify the request.
CHR1..CHRn	=	response bytes referred to the following tables:

1° byte = Full status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end
	On	40	64	Virtual paper end
7	Off	00	0	Notch found
	On	80	128	Notch not found

2° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

3° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

4° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Default]

[Reference]

[Example] To request the Full status (1° byte) and the User status (2°byte) proceed as follow:
see bitmask:
*BIT*3 = 0 *BIT*2 = 0 *BIT*1 = 1 *BIT*0 =1 quindi 0011 = 3

Send the command: <AFSB3>
Possible answer: <SB3,0504>

where:
1°byte

0 = 0000	bit7 = 0 (notch found)	bit6 = 0 (not virtual paper end)	bit5 = 0 (ticket not present)	bit4 =0 (RESERVED)
5 = 0101	bit3 = 0 (RESERVED)	bit2 = 1 (near paper end)	bit1 = 0 (RESERVED)	bit0 =1 (Paper not present)

2°byte

0 = 0000	bit7 = 0 (RESERVED)	bit6 = 0 (FF key released)	bit5 = 0 (LF key released)	bit4 =0 (RESERVED)
4 = 0100	bit3 = 0 (drag motor off)	bit2 = 1 (spooling)	bit1 = 0 (cover closed)	bit0 =0 (print head down)

<BA> n

Printers: KPM150

[Name] **Change the ticket print intensity**
[Format] ASCII <BA n>
[Range]
[Description] Changes the ticket print intensity where n indicates the print mode. The possible values of n are as follows :

n	PRINT MODE
0	Black/white printing at 100% of maximum intensity
8	Black/white printing at 50% of maximum intensity
16	Black/white printing at 25% of maximum intensity
24	Black/white printing at 12% of maximum intensity
32	Black/white printing at 7% of maximum intensity
40	Black/white printing at 5% of maximum intensity

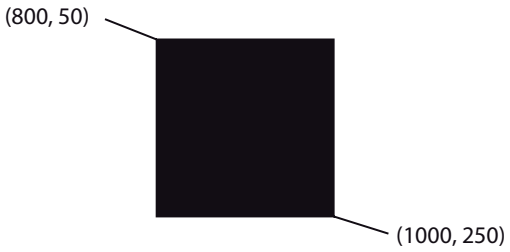
[Notes]
[Default]
[Reference]
[Example]

<BF x1 y1, x2, y2>

Printers: KPM150

[Name] **Command to create filled Box**
[Format] ASCII <BF x1,y1,x2,y2>
[Range]
[Description] Create a filled box on the basis of x1, y1, x2, y2 coordinates where :
x1 -> minimum horizontal coordinate
y1 -> minimum vertical coordinate
x2 -> maximum horizontal coordinate
y2 -> maximum vertical coordinate
[Notes] • If the coordinates are reversed, the printer automatically turns the points to create in any case the box.
• If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
• If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
[Default]

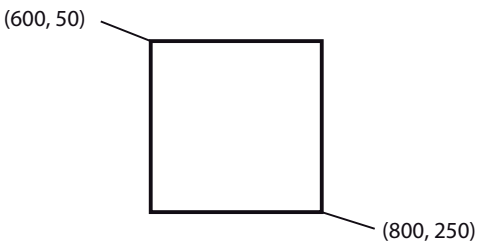
[Reference] <OXY x, y>
[Example] Ticket example that use a filled box
<CB><BA8>
<BF800,50,1000,250>
<q>



<BV x1, y1, x2, y2>

Printers: KPM150

[Name] **Command to create empty Box**
[Format] ASCII <BF x1,y1,x2,y2>
[Range]
[Description] Create an empty box on the basis of x1, y1, x2, y2 coordinates where :
x1 -> minimum horizontal coordinate
y1 -> minimum vertical coordinate
x2 -> maximum horizontal coordinate
y2 -> maximum vertical coordinate
[Notes] • The box border is fixed to 1mm (8 dots)
• If the coordinates are reversed, the printer automatically turns the points to create in any case the box.
• If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
• If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
[Default]
[Reference] <OXY x, y>
[Example] Ticket example that use an empty box
<CB><BA8>
<BV600,50,800,250>



<BX x1, y1, x2, y2, s, t>

Printers: KPM150

[Name] **Command to create parametric Box**

[Format] ASCII <BX x1,y1,x2,y2, s, t >

[Range]

[Description] Create a box defined by the following parameters where :
x1 -> minimum horizontal coordinate
y1 -> minimum vertical coordinate
x2 -> maximum horizontal coordinate
y2 -> maximum vertical coordinate
s -> border thickness in dot (8 dot = 1mm)s ≤ 255
t -> Fill mode 0 ≤ t ≤ 9

t	FILL MODE
0	Deletes area
1	Fills area
2..8	Fills area with specific pattern
9	The area leaves unchanged (only for rectangle border)

[Notes]
• If t > 9 the fill mode is set to 9
• If the coordinates are reversed, the printer automatically turns the points to create in any case the box.
• If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
• If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
• If the defined thickness is greater than the half of box width, then the thickness is set to the half of box width to print (filled box).

[Default]

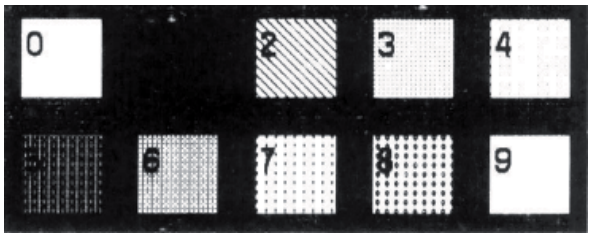
[Reference] <OXY x, y>

[Example]

Command sequence to generate a demo ticket with differents kinds of box

```
<CB><BA8><BS0,0>
<NR>
<BX200,100,300,200,16,0><RC120,220><F3><HW1,1>0
<BX300,100,400,200,16,1><RC120,320><F3><HW1,1>1
<BX400,100,500,200,16,2><RC120,420><F3><HW1,1>2
<BX500,100,600,200,16,3><RC120,520><F3><HW1,1>3
<BX600,100,700,200,16,4><RC120,620><F3><HW1,1>4
<BX200,200,300,300,16,5><RC220,220><F3><HW1,1>5
<BX300,200,400,300,16,6><RC220,320><F3><HW1,1>6
<BX400,200,500,300,16,7><RC220,420><F3><HW1,1>7
<BX500,200,600,300,16,8><RC220,520><F3><HW1,1>8
<BX600,200,700,300,16,9><RC220,620><F3><HW1,1>9
<q>
```

Example of what will be printed on ticket



<CB>

Printers: KPM150

[Name] **Clear data in the print buffer**
[Format] ASCII <CB>
[Range]
[Description] Clear data in the print buffer, move the cursor to column 0, row 0, resets the text rotation, set the deault font as current and disables the Box Size function during the character writing.
[Notes]
[Default]
[Reference]
[Example]

<EPOS>

Printers: KPM150

[Name] **Change printer emulation to ESC/ POS**
[Format] ASCII <EPOS>
[Range]
[Description] Set the ESC/ POS emulation.
[Notes]
[Default]
[Reference]
[Example]

<F n>

Printers: KPM150

[Name] **Select the font**
[Format] ASCII <F n>
[Range]
[Description] Selects the current font where n indicates the font to use.
[Notes]
[Default]
[Reference]
[Example]

<HW height, width>

Printers: KPM216H-II, KPM300H, KPM300H-TF, TK200, TK300, TK300II

[Name] **Set height and width of the current font**
[Format] ASCII <HW height, widht>
[Range]
[Description] Modifies the height and width of the current font where height and width are the multiplier coefficients of heigth and width of how enlarge the font.Both values can be:

1: Font dimension ×1
2: Font dimension ×2
3: Font dimension ×3
4: Font dimension ×4
5: Font dimension ×5
6: Font dimension ×6

7: Font dimension ×7
8: Font dimension ×8

[Notes] The command is ignored if height or width has different value from that reported above.
[Default]
[Reference]
[Example]

<IT>

Printers: KPM150

[Name] **Invalidate the ticket**
[Format] ASCII <IT>
[Range]
[Description] When this command is received, the current ticket is invalid.
[Notes]
[Default]
[Reference] <VT>
[Example]

<KEYS x>

Printers: KPM150

[Name] **Enable/Disable keys panel**
[Format] ASCII <KEYS x>
[Range] x = 0, 1
[Description] Enables / disables the keys panel.
• When x = 0, the keys panel is enabled.
• When x = 1, the keys panel is disabled.
[Notes] • When the keys panel is disabled, the keys may only be used after the printer has been reset.
[Default] n = 0
[Reference]
[Example]

<LHT length, height, notch, dimnotch>

Printers: KPM150

[Name] **Set ticket dimension to print**
[Format] ASCII <LHT *length, height, notch, dimnotch*>
[Range]
[Description] Sets the ticket dimension to print in the following mode:
lenght is the ticket length (in dot);
height is the ticket height (in dot);
notch is the distance (in dot) between the ticket upper edge and strobe backside preprinted black mark;
dimnotch is the notch dimension (in dot).
[Notes] • If using the point (.) character as decimal separator instead of commas then the passed value are stored in EEProm.
• 1mm = 8 dot.
[Default]
[Reference]
[Example]

<LOAD>

Printers: KPM150

[Name] **Reload paper**
[Format] ASCII <LOAD>
[Range]
[Description] When this command is received, the printer performs a paper reloading.
[Notes] During the execution of the command, the printer indicates the paper end
[Default]
[Reference]
[Example]

<MM n>

Printers: KPM150

[Name] **Feed the paper of n step**
[Format] ASCII <MM n>
[Range]
[Description] When this command is received, the paper feed of n STEP.
[Notes] 1 STEP = 0,125 mm (1/8 mm)
[Default]
[Reference]
[Example]

<NCL x,y>Data

Printers: KPM150

[Name] **Print horizontal CODE 128 barcode**
[Format] ASCII <NCL x, y>Data
[Range]
[Description] Print a CODE 128 barcode type in horizontal, where:
x = barcode height in millimetres;
y = byte number of the string to encode.
[Notes] • The top part of the bar code data string must be a code set selection character (CODE A, CODE B or CODE C) which selects the first code set.
• Special characters are defined by combining two characters "{" and one character. ASCII character "{" is defined by transmitting "{" twice, consecutively.

SPECIFIC CHARACTER	DATA TRANSMISSION		
	ASCII	HEX	Decimal
SHIFT	{S	7B, 53	123, 83
CODE A	{A	7B, 41	123, 65
CODE B	{B	7B, 42	123, 66
CODE C	{C	7B, 43	123, 67
FNC1	{1	7B, 31	123, 49
FNC2	{2	7B, 32	123, 50
FNC3	{3	7B, 33	123, 51
FNC4	{4	7B, 34	123, 52
'{'	{{	7B, 7B	123, 123

[Default]
[Reference]
[Example]

<NCP x,y>Data

Printers: KPM150

[Name] **Print vertical CODE 128 barcode**
[Format] ASCII <NCP x, y>Data
[Range]
[Description] Print a CODE 128 barcode type in vertical, where:
x = barcode height in millimetres;
y = byte number of the string to encode.
[Notes] • The top part of the bar code data string must be a code set selection character (CODE A, CODE B or CODE C) which selects the first code set.
• Special characters are defined by combining two characters "{" and one character. ASCII character "{" is defined by transmitting "{" twice, consecutively.

SPECIFIC CHARACTER	DATA TRANSMISSION		
	ASCII	HEX	Decimal
SHIFT	{S	7B, 53	123, 83
CODE A	{A	7B, 41	123, 65
CODE B	{B	7B, 42	123, 66
CODE C	{C	7B, 43	123, 67
FNC1	{1	7B, 31	123, 49
FNC2	{2	7B, 32	123, 50
FNC3	{3	7B, 33	123, 51
FNC4	{4	7B, 34	123, 52
'{'	{{	7B, 7B	123, 123

[Default]
[Reference]
[Example]

<NFL s>Data

Printers: KPM150

[Name] **Print horizontal ITF barbode**
[Format] ASCII <NFL s>Data
[Range]
[Description] Print an ITF barcode type in horizontal. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]
[Default]
[Reference]
[Example]

<NFP s>Data

Printers: KPM150

[Name] **Print vertical ITF barcode**
[Format] ASCII <NFP s>Data
[Range]
[Description] Print an ITF barcode type in vertical. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.

[Notes]
[Default]
[Reference]
[Example]

<NL s>Data

Printers: KPM150

[Name] **Print an horizontal CODE 39 barcode**
[Format] ASCII <NL s>Data
[Range]
[Description] Print a CODE 39 barcode type in horizontal. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]
[Default]
[Reference]
[Example]

<NP s>Data

Printers: KPM150

[Name] **Print a vertical CODE 39 barcode**
[Format] ASCII <NP s>Data
[Range]
[Description] Print a CODE 39 barcode type in vertical. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]
[Default]
[Reference]
[Example]

<NR>

Printers: KPM150

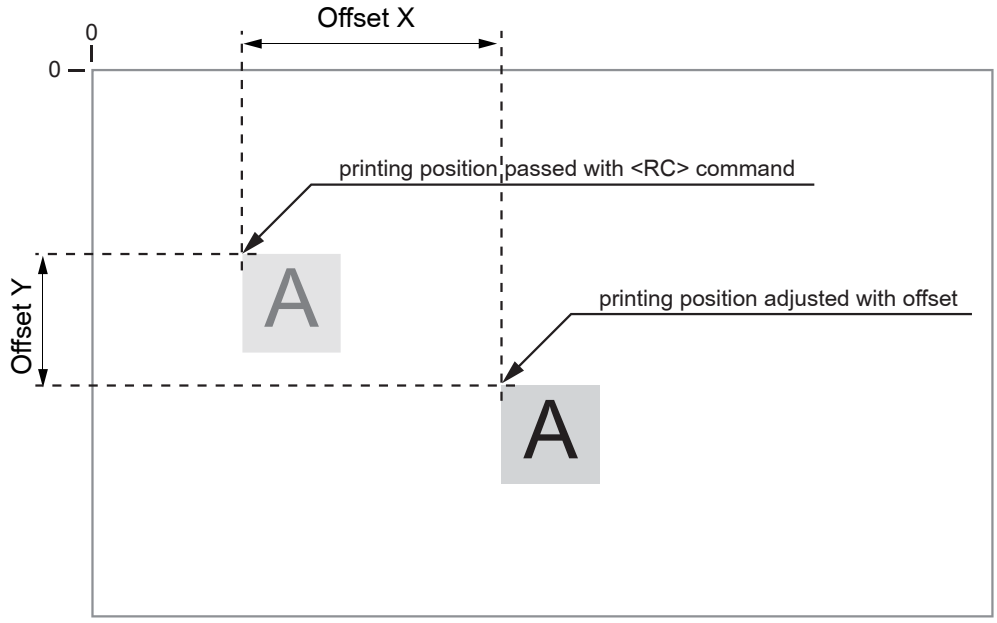
[Name] **Restore the text in horizontal**
[Format] ASCII <NR>
[Range]
[Description] Restore the text in horizontal, without rotation.
[Notes]
[Default]
[Reference]
[Example]

<OXY x, y>

Printers: KPM150

[Name] **Set printing offset**
[Format] ASCII <OXY x, y>

[Range]
[Description] Sets an offset that will be added to all the transmitted positions. This command is useful to adjusting the printout positions, without having to modify all the transmitted positions.
x is the distance (in dot) between the ticket upper edge and the starting point of printing;
y is the distance (in dot) between the ticket lateral edge and the starting point of printing.
[Notes] • If using the point (.) character as decimal separator instead of commas then the passed value are stored in EEProm.
• It's possible to set negative values of offset.
• If you get negative values after adding the offset, (the printing position is outside the ticket), the printing position is set to 0.
• 1mm = 11,8 dot.
[Default]
[Reference]
[Example]



<p>

Printers: KPM150

[Name] **Printing command (cut and buffer cleaning) in reverse**
[Format] ASCII <p>
[Range]
[Description] This command executes the following operations :
- align the ticket to notch;
- prints ticket;
- clear the data in the print buffer;
- align the ticket to cut;
- executes a ticket cut.

[Notes] • Print ticket in reverse
[Default]
[Reference] <CB>
[Example]

<P>

Printers: KPM150

[Name] **Printing command (cut and buffer cleaning) in normal**
[Format] ASCII <P>
[Range]
[Description] This command executes the following operations :
- align the ticket to notch;
- prints ticket;
- clear the data in the print buffer;
- align the ticket to cut;
- executes a ticket cut.

[Notes] • Print ticket in normal
[Default]
[Reference] <CB>
[Example]

<PP n, x, y, sp>

Printers: KPM150

[Name] **Print image in graphic page**
[Format] ASCII <PP n, x, y, sp>
[Range]
[Description] Prints image in graphic page where
• *n* is the number of image to print;
• *x* indicates the horizontal position inside the graphic page
• *y* indicates the vertical position inside the graphic page
• *sp* indicates the thickness value of the image border (express in dot).

[Notes] • if *n* is a negative number the image is printed as a background image, without deleting the area below.
[Default]
[Reference] <OXY x, y>
[Example] Several printing commands in graphic page; in the first printing command the image no. 2 is printed with border, instead the other images are printed without border:

<CB><n><BA8><HW1,1><BS0,0>
<PP2,10,10,8> *(image printed with border)*
<PP1,10,200,0> *(image printed without border)*
<PP3,210,200,0> *(image printed without border)*
<PP4,620,200,0> *(image printed without border)*
<q>

<PR n, x, y, sp>

Printers: KPM150

[Name] **Print rotated image**
[Format] ASCII <PR n, x, y, sp>
[Range]
[Description] Prints rotated image in graphic page where
• *n* is the number of image to print;
• *x* indicates the horizontal position inside the graphic page

• *y* indicates the vertical position inside the graphic page
• *sp* indicates the thickness value of the image border (express in dot).

[Notes] • if *n* is a negative number the image is printed as a background image, without deleting the area below.

[Default]

[Reference] <OXY x, y>

[Example] Several printing commands in graphic page; in the first printing command the image no. 2 is printed with border, instead the other images are printed without border:

```
<CB><n><BA8><HW1,1><BS0,0>
<PR2,10,10,8>                 (image printed with border)
<PR1,10,200,0>                (image printed without border)
<PR3,210,200,0>               (image printed without border)
<PR4,620,200,0>               (image printed without border)
<q>
```

<q>

Printers: KPM150

[Name] **Printing command (only buffer cleaning) in reverse**

[Format] ASCII <q>

[Range]

[Description] This command executes the following operations :
- align the ticket to notch;
- prints ticket;
- clear the data in the print buffer;

[Notes] • Print ticket in reverse

[Default]

[Reference] <CB>

[Example]

<Q>

Printers: KPM150

[Name] **Printing command (only buffer cleaning) in normal**

[Format] ASCII <Q>

[Range]

[Description] This command executes the following operations :
- align the ticket to notch;
- prints ticket;
- clear the data in the print buffer;

[Notes] • Print ticket in normal

[Default]

[Reference] <CB>

[Example]

<RC row, column>

Printers: KPM150

[Name] **Position the cursor**
[Format] ASCII <RC row, column>
[Range]
[Description] Moves the cursor at the position specified by row and column parameters.
[Notes] • The row and column values must be a number with four digit at most, otherwise the command will be ignored.
[Default]
[Reference] <OXY x, y>
[Example] To move the cursor at row (dot) 10, column (dot) 30 the command sequence is :
<RC 10,30>

<RL>

Printers: KPM150

[Name] **Rotate text 90° counter-clockwise**
[Format] ASCII <RL>
[Range]
[Description] Rotate text 90° counter-clockwise, (to the left).
[Notes]
[Default]
[Reference]
[Example]

<RR>

Printers: KPM150

[Name] **Rotate text 90° clockwise**
[Format] ASCII <RR>
[Range]
[Description] Rotate text 90° clockwise, (to the right).
[Notes]
[Default]
[Reference]
[Example]

<RU>

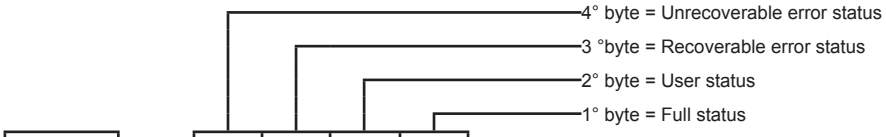
Printers: KPM150

[Name] **Rotate text 180°**
[Format] ASCII <RU>
[Range]
[Description] Rotate text 180°.
[Notes]
[Default]
[Reference]
[Example]

<SB x>

Printers: KPM150

[Name] **FULL STATUS back request**
[Format] ASCII <SB x y>
[Range] '0' ≤ x ≤ '9', 'A' ≤ x ≤ 'F'
[Description] • FULL STATUS back request.
• x specify the request for FULL STATUS. where x identify the bitmask with the following table:



x		*BIT3*	*BIT2*	*BIT1*	*BIT0*
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

[Notes] • The status sent from the printer will be so composed as follows:
<SB x, *CHR1 ..... CHRn*>

where:
SB = fixed characters
x = is the bitmask to identify the request.
CHR1..CHRn = response bytes referred to the following tables:

1st byte = Full status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end
	On	40	64	Virtual paper end
7	Off	00	0	Notch found
	On	80	128	Notch not found

2nd byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

3rd byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

4th byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Default]
[Reference]
[Example] <SBF, 00000000> no errors
<SBF, 04000000> near paper end
<SBF, 01030000> paper not present, printing head up, cover open

To request the Full status (1° byte) and the User status (2°byte) proceed as follow:
see bitmask:
*BIT*3 = 0 *BIT*2 = 0 *BIT*1 = 1 *BIT*0 =1 quindi 0011 = 3
Send the command: <AFSB3>
Possible answer: <SB3,0504>
where:
1st byte

0 = 0000	bit7 = 0 (notch found)	bit6 = 0 (not virtual paper end)	bit5 = 0 (ticket not present)	bit4 =0 (RESERVED)
5 = 0101	bit3 = 0 (RESERVED)	bit2 = 1 (near paper end)	bit1 = 0 (RESERVED)	bit0 =1 (Paper not present)

2nd byte

0 = 0000	bit7 = 0 (RESERVED)	bit6 = 0 (FF key released)	bit5 = 0 (LF key released)	bit4 =0 (RESERVED)
4 = 0100	bit3 = 0 (drag motor off)	bit2 = 1 (spooling)	bit1 = 0 (cover closed)	bit0 =0 (print head down)

<Sn>

Printers: KPM150

[Name] **Status request**
[Format] ASCII <Sn>
[Range]
[Description] The host can ask to the printer many differents status infos; the n parameter indicates which type of request :
• If n = 1 the printer return a byte that represent the status:
$10: Paper end
$11: No error
$18: Cover open
$19: Wrong command
$20: Notch error
$21: Heading over temperature error
$22: Power supply voltage error
$23: Cutter error
• If n=3 the printer return ACK ($06) if printing is properly finished, otherwise return NACK ($15). If the request will be transmitted during printing phase, it waits the end of the process and then is sent the answer.
[Notes]
[Default]
[Reference]
[Example]

<SP n>

Printers: KPM150

[Name] **Change speed**
[Format] ASCII <SP n>
[Range]
[Description] Sets printing speed using n as follows :

n	PRINTING SPEED
0	High quality
1	Normal
2	High speed

[Notes] • With n = 0 and n = 1 is set to the same speed.
[Default]
[Reference]
[Example]

<SVEL>

Printers: KPM150

[Name] **Change printer emulation to SVELTA**
[Format] ASCII <SVEL>
[Range]
[Description] Set the SVELTA emulation.
[Notes]
[Default]
[Reference]
[Example]

<T>

Printers: KPM150

[Name] **Get the ticket dimension to print**
[Format] ASCII <T>
[Range]
[Description] Get the ticket dimensions to print, in the Ticket Size format.
[Notes]
[Default]
[Reference]
[Example]

<VT>

Printers: KPM150

[Name] **Validate the ticket**
[Format] ASCII <VT>
[Range]
[Description] When this command is received, the current ticket is validate.
[Notes]
[Default]
[Reference] <IT>
[Example]

[Reference] <z>, <Z>, <zr>
[Example]

<X n, m>

Printers: KPM150

[Name] **Define the barcode lines dimension**
[Format] ASCII <X n, M>
[Range]
[Description] n defines the thins lines dimension (in dot) of barcode. The M parameter defines the barcode printing speed if it must be printed rotated.
[Notes] If the M parameter = 'H' as ASCII value, the barcodes will be printed in high speed. Otherwise if if the M parameter = 'L' as ASCII value the barcodes will be printed at reduced speed (only if n is less than 4).
[Default]
[Reference]
[Example]

4 KPM54 EMULATION

The following table lists all the commands for function management in KPM54 Emulation of the printer. The commands can be transmitted to the printer at any moment, but they will only be carried out when the commands ahead of them have been executed. The commands are carried out when the circular buffer is free to do so.

COMMAND DESCRIPTION TABLE

Tab.3

Com. HEX	Com. ASCII	Description
PRINT COMMANDS		
$0A	LF	Print and line feed
$0D	CR	Print and carriage return
$1B $4A	ESC J	Print and feed paper
$1B $64	ESC d	Print and feed paper n lines
LINE SPACING COMMANDS		
$1B $30	ESC 0	Select 1/8-inch line spacing
$1B $32	ESC 2	Select 1/6-inch line spacing
$1B $33	ESC 3	Set line spacing
CHARACTER COMMANDS		
$1B $20	ESC SP	Set right-side character spacing
$1B $21	ESC !	Set print mode
$1B $25	ESC %	Select/cancel user-defined character set
$1B $26	ESC &	Define user-defined characters
$1B $2D	ESC -	Turn underline mode on/off
$1B $34	ESC 4	Set/reset script mode
$1B $3F	ESC ?	Cancel user-defined characters
$1B $45	ESC E	Select emphasized mode
$1B $47	ESC G	Select double-strike mode
$1B $52	ESC R	Select international character set
$1B $56	ESC V	Select print mode rotated 90° clockwise
$1B $74	ESC t	Select character code table
$1B $7B	ESC {	Set/cancel upside-down character printing
$1D $21	GS !	Select character size
$1D $42	GS B	Turn white/black reverse printing mode on/off
$1D $7E	GS { }	Set superscript/subscript
PRINT POSITION COMMANDS		
$08	BS	Back space
$09	HT	Horizontal tab
$18	CAN	Cancel print data buffer
$1B $24	ESC $	Set absolute print position
$1B $28 $76	ESC (v	Set relative vertical print position
$1B $44	ESC D	Set horizontal tab position
$1B $5C	ESC \	Set relative print position
$1B $61	ESC a	Select justification
$1D $4C	GS L	Set left margin
$1D $57	GS W	Set printing area width
BIT-IMAGE COMMANDS		

$1B $2A	ESC *	Select image print mode
STATUS COMMANDS		
$10 $04	DLE EOT	Real-time status transmission
$1B $76	ESC v	Transmit paper sensor status
$1D $72	GS r	Transmit status
$1D $E1	GS { }	Reading of length paper (cm) available before virtual paper end
$1D $E2	GS { }	Reading number of cuts performed from the printer
$1D $E3	GS { }	Reading of length (cm) of printed paper
$1D $E5	GS { }	Reading number of power up
BARCODE COMMANDS		
$1D $48	GS H	Select printing position of HRI characters
$1D $66	GS f	Select font for HRI characters
$1D $68	GS h	Select barcode height
$1D $6B	GS k	Print barcode
$1D $77	GS w	Select barcode width
MACRO FUNCTION COMMANDS		
$1D $3A	GS :	Set start/end of macro definition
$1D $5E	GS ^	Execute macro
MECHANISM CONTROL COMMANDS		
$1B $69	ESC i	Total cut
MISCELLANEOUS COMMANDS		
$1B $3D	ESC = n	Select peripheral device
$1B $40	ESC @	Initialize printer
$1B $63 $35	ESC c 5	Enable/Disable front panel keys
$1B $78	ESC x	Select speed / current mode
$1D $43 $30	GS C 0	Select counter print mode
$1D $43 $31	GS C 1	Select count print mode (A)
$1D $43 $32	GS C 2	Set counter
$1D $43 $3B	GS C ;	Select count print mode (B)
$1D $49	GS I	Transmit printer ID
$1D $50	GS P	Set horizontal and vertical motion units
$1D $63	GS c	Print counter
$1D $E6	GS { }	Virtual paper end limit
TICKET MANAGEMENT COMMANDS		
$1D $7C	GS { }	Set printing density
$1D $F2	GS { }	Set the discrimination level of the alignment notch
$1D $F3	GS { }	Return the discrimination levels of the notch
$1D $F6	GS { }	Ticket align at notch
$1D $F7	GS { }	Set the shifting of the motor after the alignment

Given below are more detailed descriptions of each command.

$08

Printers:	KPM150	
[Name]	**Back space**	
[Format]	ASCII	BS
	Hex	08
	Decimal	8
[Range]		
[Description]	Moves print position to previous character.	
[Notes]	Can be used to put two characters at the same position.	
[Default]		
[Reference]		
[Example]		

$09

Printers:	KPM150	
[Name]	**Horizontal tab**	
[Format]	ASCII	HT
	Hex	09
	Decimal	9
[Range]		
[Description]	Moves the print position to the next horizontal tab position.	
[Notes]	• Ignored unless the next horizontal tab position has been set. • If the command is received when the printing position is at the right margin, the printer executes print buffer full printing and horizontal tab processing from the beginning of the next line. • Horizontal tab position are set using $1B $44	
[Default]		
[Reference]	$1B $44	
[Example]		

$0A

Printers:	KPM150	
[Name]	**Print and line feed**	
[Format]	ASCII	LF
	Hex	0A
	Decimal	10
[Range]		
[Description]	Prints the data in the buffer and feeds one line based on the current line spacing.	
[Notes]	• Sets the print position to the beginning of the line. • If the buffer is empty, the printing feeds of (character height + spacing gap) dot.	
[Default]		
[Reference]	$1B $32, $1B $33	
[Example]		

$0D

Printers: KPM150

[Name] **Print and carriage return**

[Format]

ASCII	CR	
Hex	0D	
Decimal	13	

[Range]

[Description] When autofeed is “CR enabled”, this command functions in the same way as $0A, otherwise it is disregarded.

[Notes] • Sets the print position to the beginning of the line.

[Default] See “Autofeed in setup” parameter.

[Reference] $0A

[Example]

$10 $04

Printers: KPM150

[Name] **Real-time status transmission**

[Format]

ASCII	DLE	EOT	n
Hex	10	04	n
Decimal	16	4	n

[Range] 1 ≤ n ≤ 4, n = 17, 32 ≤ n ≤ 34

[Description] Transmits the selected printer status specified by *n* in real time according to the following parameters:

n = 1	transmit printer status
n = 2	transmit off-line status
n = 3	transmit error status
n = 4	transmit paper roll sensor status
n = 17	transmit print status
n = 20	transmit FULL status
n = 21	transmit printer sensors status
n = 22	transmit buttons status
n = 23	transmit motors status

[Notes] • Immediately executed even when the data buffer is full.
• This status is transmitted whenever data sequence $10 $04 n is received.

[Default]

[Reference] See tables below.

[Example]

n=1: Printer status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	On	10	16	Not used. Fixed to On
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	Off	00	0	Not used. Fixed to Off

n=2: Off-line status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Paper isn't fed by FEED. key
	On	08	8	Paper is fed by FEED. key
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Printing stop due to paper end
6	Off	00	0	No error
	On	40	64	Error
7	Off	00	0	Not used. Fixed to Off

n=3: Error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Cutter ok
	On	08	8	Cutter error
4	On	10	16	Not used. Fixed to On
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error occurs (cutter, memory).
6	Off	00	0	No auto-recoverable error
	On	40	64	Auto-recoverable error
7	Off	00	0	Not used. Fixed to Off

n=4: Paper roll sensor status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2,3	Off	00	0	Paper present..
	On	0C	12	Near paper end.
4	On	10	16	Not used. Fixed to On
5, 6	On	60	96	Fixed to On. Paper end is detected by the paper end sensor.
7	Off	00	0	Not used. Fixed to Off

n=17: Print status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Paper drag motor off
	On	04	4	Paper drag motor on
3	Off	00	0	Alignment not in running.
	On	08	8	Ticket alignment in running.
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Printing is interrupted for paper-end.
6	Off	00	0	Alignment correct.
	On	40	64	Notch research timeout.

7	Off	00	0	Not used. Fixed to Off

n=20: FULL status (6 bytes

1st Byte = $10 (DLE)

2nd Byte = $0F

3rd Byte = Paper status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	Off	00	0	Not used. Fixed to Off
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	Off	00	0	Not used. Fixed to Off
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	RESERVED
6	Off	00	0	Not virtual paper end (*).
	On	40	64	Virtual paper end (*).
7	Off	00	0	Photocell busy by paper
	On	80	128	Photocell not busy by paper

(*) Virtual paper end is set when the paper length available, readed by $1D $E1, is 0.

4th byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	Off	00	0	Not used. Fixed to Off
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	Off	00	0	Not used. Fixed to Off
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	Off	00	0	Not used. Fixed to Off

5th byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	Not used. Fixed to Off
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	Off	00	0	Not used. Fixed to Off
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	-	-	-	RESERVED
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

6th byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Not used. Fixed to Off
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	Off	00	0	Not used. Fixed to Off
5	Off	00	0	Not used. Fixed to Off
6	Off	00	0	Flash ok
	On	40	64	Flash error
7	Off	00	0	Not used. Fixed to Off.

n=21: Printer sensors status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Paper not present on printing head.
	On	04	4	Paper present (PAP-PRE sensor).
3	Off	00	0	Paper not present on near paper-end sensor.
	On	08	8	Paper present on near paper-end sensor.
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Cutter not in home position.
	On	20	32	Cutter in home position.
6	Off	00	0	Notch sensor not above a notch.
	On	40	64	Notch sensor above a notch.
7	Off	00	0	Not used. Fixed to Off

n=22: Buttons status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Line Feed button released.
	On	04	4	Line Feed button pressed.
3	Off	00	0	Form Feed button released.
	On	08	8	Form Feed button pressed.
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Buttons not enabled.
	On	20	32	Buttons enabled.
6	Off	00	0	Paper present.
	On	40	64	Virtual paper end.
7	Off	00	0	Not used. Fixed to Off

n=23: Motors status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Drag paper motor off.
	On	04	4	Drag paper motor on.

3	Off	00	0	Cutter motor off.
	On	08	8	Cutter motor on.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Not used. Fixed to Off.
6	Off	00	0	Paper present.
	On	40	64	Virtual paper-end.
7	Off	00	0	Not used. Fixed to Off.

$18

Printers: KPM150

[Name] **Cancel print data buffer**
[Format] ASCII CAN
Hex 18
Decimal 24
[Description] Deletes all the print data in the current print buffer.
[Notes] This command set the print position to the beginning of the line
[Default]
[Reference]
[Example]

$1B $20

Printers: KPM150

[Name] **Set right-side character spacing**
[Format] ASCII ESC SP n
Hex 1B 20 n
Decimal 27 32 n
[Range] 0 ≤ n ≤ 255
[Description] Sets the character spacing for the right side of the character to [n x horizontal or vertical motion units].
[Notes] • The right character spacing for double-width mode is twice the normal value.
When the characters are enlarged, the right side character spacing is m (2 or 4) times the normal value.
• The horizontal and vertical motion units are specified by $1D $50. Changing the horizontal or vertical motion units does not affect the current right side spacing.
• The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
• In standard mode, the horizontal motion unit is used.
• The maximum right side spacing is 225/200 inches.
[Default] n = 0
[Reference] $1D $50
[Example]

$1B $21

Printers: KPM150

[Name] **Select print modes**

[Format]

ASCII	ESC	!	n
Hex	1B	21	n
Decimal	27	33	n

[Range] 0 ≤ n ≤ 255

[Description] Selects print modes using *n* (see table below):

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Character font A selected
	On	01	1	Character font B selected
1	-	-	-	Undefined
2	-	-	-	Undefined
3	Off	00	0	Expanded mode not selected
	On	08	8	Expanded mode selected
4	Off	00	0	Double-height mode not selected
	On	10	16	Double-height mode selected
5	Off	00	0	Double-width mode not selected
	On	20	32	Double-width mode selected
6	Off	00	0	Italic mode not selected
	On	40	64	Italic mode selected
7	Off	00	0	Underlined mode not selected
	On	80	128	Underlined mode selected

[Notes]
- The printer can underline all characters, but cannot underline the spaces set by $09, $1B $24, $1B $5C and 90° clockwise rotated characters.
- When characters are enlarged to different heights on one line, the characters are aligned at the baseline or topline (see $1D $7E).
- This command resets the left and right margin at default value (see $1D $4C, $1D $57).
- $1B $45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one.
- $1B $2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one.
- $1D $34 can also be used to turn the italic mode on/off. However, the last-received setting command is the effective one.
- $1D $21 can also be used to select character height/width. However, the last-received setting command is the effective one.

[Default] n = 0

[Reference] $1B $2D, $1B $45, $1B $34, $1D $21

[Example]

$1B $24

Printers: KPM150

[Name] **Set absolute print position**

[Format]

ASCII	ESC	$	nL	nH
Hex	1B	24	nL	nH
Decimal	27	36	nL	nH

[Range] 0 ≤ nL ≤ 255
0 ≤ nH ≤ 255

[Description] Sets the distance from the beginning of the line to the position at which subsequent characters are to be printed.
The distance from the beginning of the line to the print position is [(nL + nH × 256) × (vertical or horizontal motion unit)] inches.

[Notes]
- Settings outside the specified printable area are ignored.
- The horizontal and vertical motion unit are specified by $1D $50.
- $1D $50 can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
- In standard mode, the horizontal motion unit (x) is used.
- If the setting is outside the printing area width, it sets the absolute print position, but the left or right margin is set at default value.

[Default]

[Reference] $1B $5C, $1D $50

[Example]

$1B $25

Printers: KPM150

[Name] **Select/cancel user-defined characters**

[Format]

ASCII	ESC	%	n
Hex	1B	25	n
Decimal	27	37	n

[Range] 0 ≤ n ≤ 255

[Description] Selects or cancels the user-defined character set.
When the Least Significant Bit (LSB) of n is 0, the user-defined character set is cancelled.
When the LSB of n is 1, the user-defined character set is selected.

[Notes]
- Only the LSB of n is applicable.
- When the user-defined character set is cancelled, the internal character set is automatically selected.

[Default] n=0

[Reference] $1B $26, $1B $3F

[Example]

$1B $26

Printers: KPM150

[Name] **Defines user-defined characters**

[Format]

ASCII	ESC	&	y	c1	c2
Hex	1B	26	y	c1	c2
Decimal	27	37	y	c1	c2

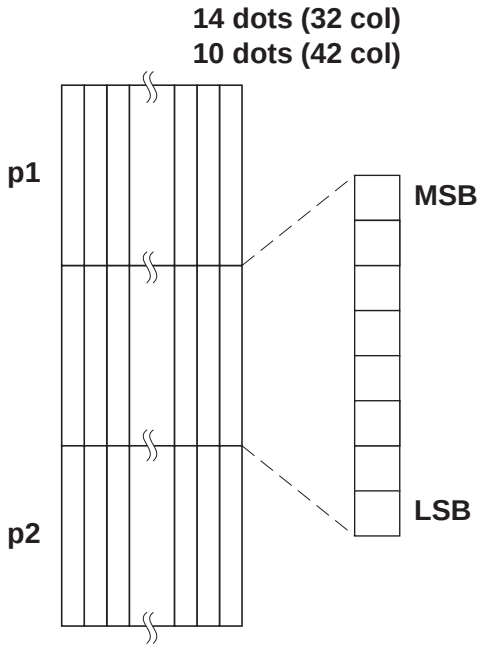
[Range]
y = 3
32 ≤ c1 ≤ c2 ≤ 126
0 ≤ x ≤ 14 (Font (14 × 24))
0 ≤ x ≤ 10 (Font 10 × 24)
0 ≤ d1 … d (y × xk) ≤ 255
k = c2 – c1 + 1

[Description] Defines user-defined characters.
- Y specifies the number of bytes in the vertical direction.
- C1 specifies the beginning character code for the definition, and C2 specifies the final code.
- X specifies the number of dots in the horizontal direction.

[Notes]
- The allowable character code range is from ASCII $20 (32) to $7E (126) (95 characters).
- It is possible to define multiple characters for consecutive character codes. If only one

character is desired, use c1 = c2.
• If c2 < c1, the command is not executed.
• d is the dot data for the characters. The dot pattern is in the horizontal direction starting from the left. Any remaining dots on the right remain blank.
• The data to define a user-defined character is (x x y) bytes.
• To print a dot, set the corresponding bit to 1; to not have it print, set to 0.
• This command can define different user-defined character patterns for each font. To select the font, use $1B $21.
• A user-defined character and a downloaded bit image cannot be defined simultaneously. When this command is executed, the downloaded bit image is cleared.
• The user-defined character definitions are cleared when: $1B $40 or $1D $2A or $1B $3F are executed or the printer is reset or the power shut off.

[Default] Internal character set.
[Reference] $1B $25, $1B $3F
[Example]



$1B $28 $76

Printers: KPM150

[Name] **Set relative vertical print position**

[Format]

ASCII	ESC	(	v	nL	nH
Hex	1B	28	76	nL	nH
Decimal	27	10	118	nL	nH

[Range] 0 ≤ nL ≤ 255
0 ≤ nH ≤ 255

[Description] Sets the print vertical position based on the current position by using the horizontal or vertical motion unit. This command sets the distance from the current position to [(*nL* + *nH* × 256) × (horizontal or vertical motion unit)].

[Notes]
• When the starting position is specified by N motion unit to the bottom: *nL* + *nH* × 256 = N
• When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536: *nL* + *nH* × 256 = 65536 - N
• The horizontal and vertical motion unit are specified by $1D $50.
• The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
• In standard mode, the vertical motion unit is used.

[Default]

[Reference] $1D $50
[Example]

$1B $2A

Printers: KPM150

[Name] **Select bit image mode**

[Format]

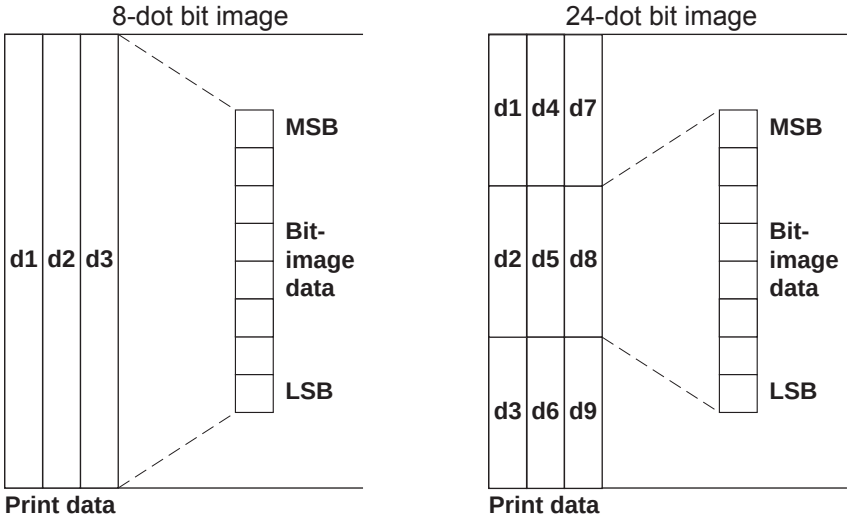
ASCII	ESC	*	m	nL	nH	d1...dk
Hex	1B	2A	m	nL	nH	d1...dk
Decimal	27	42	m	nL	nH	d1...dk

[Range] m = 0, 1, 32, 33
0 ≤ nL ≤ 255
0 ≤ nH ≤ 1
0 ≤ d ≤ 255

[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION (*1)	
		N° dots	DPI	DPI	N° of data (k)
0	8 dot single density	8	67	100	nL + nH × 256
1	8 dot double density	8	67	200	nL + nH × 256
32	24 dot single density	24	200	100	(nL + nH × 256) × 3
33	24 dot double density	24	200	200	(nL + nH × 256) × 3

[Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH x 256.
- If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
- d indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot.
- If the value of m is outside the specified range, nL and data following it are processed as normal data.
- If the width of the printing area set by $1D $4C and $1D $57 is less than the width required by the data set using $1B $2A, the excess data are ignored.
- To print the bit image use $0A, $0D, $1B $4A or $1B $64.
- After printing a bit image, the printer returns to normal data processing mode.
- This command is not affected by the emphasized, double-strike, underline (etc.) print modes, except for the upside-down mode.
- The relationship between the image data and the dots to be printed is as follows:



[Default]
[Reference]

[Example]

$1B $2D

Printers: KPM150

[Name] **Turn underline mode on/off**

[Format]

ASCII	ESC	-	n
Hex	1B	2D	n
Decimal	27	45	n

[Range] 0 ≤ n ≤ 2
48 ≤ n ≤ 50

[Description] Turns underline mode on or off, based on the following values of *n*:

n = 0, 48	Turns off underline mode
n = 1, 49	Turns on underline mode (1-dot thick)
n = 2, 50	Turns on underline mode (2-dot thick)

[Notes]
- The printer can underline all characters, but cannot underline the space and right-side character spacing.
- The printer cannot underline 90° clockwise rotated characters and white/black inverted characters.
- When underline mode is turned off by setting the value of n to 0 or 48, the data which follows is not underlined.
- Underline mode can also be turned on or off by using $1B $21. Note, however, that the last received command is the effective one.

[Default] n=0

[Reference] $1B $21

[Example]

$1B $30

Printers: KPM150

[Name] **Select 1/8-inch line spacing**

[Format]

ASCII	ESC	0
Hex	1B	30
Decimal	27	48

[Range]

[Description] Selects 1/8-inch line spacing

[Notes]

[Default]

[Reference] $1B $32, $1B $33

[Example]

$1B $32

Printers: KPM150

[Name] **Select 1/6-inch line spacing**

[Format]

ASCII	ESC	2
Hex	1B	32
Decimal	27	50

[Range]

[Description] Selects 1/6-inch line spacing.

[Notes]

[Default]

[Reference] $1B $30, $1B $33

[Example]

$1B $33

Printers: KPM150

[Name] **Set line spacing**

[Format]

ASCII	ESC	3	n
Hex	1B	33	n
Decimal	27	51	n

[Range] 0 ≤ n ≤ 255

[Description] Sets line spacing to [n × (vertical or horizontal motion unit)] inches.

[Notes]
- The horizontal and vertical motion unit are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current line spacing.
- The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.
- In standard mode, the vertical motion unit is used.
- The maximum spacing is n = 255 (~ 32 mm).

[Default] n = 32 (1/6 inch)

[Reference] $1B $30, $1B $32, $1D $50

[Example]

$1B $34

Printers: KPM150

[Name] **Set/reset italic mode**

[Format]

ASCII	ESC	4	n
Hex	1B	34	n
Decimal	27	52	n

[Range] 0 ≤ n ≤ 1, 48 ≤ n ≤ 49

[Description] Turns italic mode on or off, based on the following values of n:

n	FUNCTION
0, 48	Turns off italic mode
1, 49	Turns on italic mode

[Notes]
- The printer can print any character in italic mode.
- When italic mode is turned off by setting the value of n to 0 or 48, the data which follows is printed in normal mode.
- Italic mode can also be turned on or off using $1B $21. Note, however, that the last received command is the effective one.

[Default] n = 0

[Reference] $1B $21

[Example]

$1B $3D

Printers: KPM150

[Name] **Select peripheral device**

[Format]

ASCII	ESC	=	n
Hex	1B	3D	n
Decimal	27	61	n

[Range] 0 ≤ n ≤ 255

[Description] Select the device to which the host computer sends data, using *n* as follows:

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printer Disabled
	On	01	1	Printer Enabled
1	-	-	-	Undefined.
2	-	-	-	Undefined.
3	-	-	-	Undefined.
4	-	-	-	Undefined.
5	-	-	-	Undefined.
6	-	-	-	Undefined.
7	-	-	-	Undefined.

[Notes] • When the printer is disabled, it ignores all transmitted data until the printer is enabled through this command.
[Default] n = 1
[Reference]
[Example]

$1B $3F

Printers: KPM150

[Name] **Cancel user-defined characters**
[Format]

ASCII	ESC	?	n
Hex	1B	3F	n
Decimal	27	63	n

[Range] 32 ≤ n ≤ 126
[Description] Cancels user-defined characters.
[Notes] • This command cancels the pattern defined for the character code specified by n. After the user-defined character is cancelled, the corresponding pattern for the internal character is printed.
• This command deletes the pattern defined for the specified character code in the font selected by $1B $21.
• If the user-defined character has not been defined for the specified character code, the printer ignores this command.
[Default]
[Reference] $1B $26, $1B $25
[Example]

$1B $40

Printers: KPM150

[Name] **Initialize printer**
[Format]

ASCII	ESC	@
Hex	1B	40
Decimal	27	64

[Range]
[Description] Clears the data in the print buffer and resets the printer mode to that in effect when power was turned on.
[Notes] • The data in the receiver buffer is not cleared.
• The macro definitions are not cleared.
[Default]
[Reference]
[Example]

$1B $44

Printers: KPM150

[Name] **Set horizontal tab positions**

[Format]

ASCII	ESC	D	n1...nk	NUL
Hex	1B	44	n1...nk	$00
Decimal	27	68	n1...nk	0

[Range] 1 ≤ n ≤ 255
0 ≤ k ≤ 32

[Description] Sets horizontal tab positions
• *n* specifies the column number for setting a horizontal tab position calculated from the beginning of the line.
• *k* indicates the total number of horizontal tab positions to be set.

[Notes]
• The horizontal tab position is stored as a value of [character width x *n*] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters.
• This command cancels previous tab settings.
• When setting n = 8, the print position is moved to column 9.
• Up to 32 tab positions (*k* = 32) can be set. Data exceeding 32 tab positions is processed as normal data.
• Send [n] k in ascending order and place a 0 NUL code at the end. When [n] k is less than or equal to the preceding value [n] k -1, the setting is complete and the data which follows is processed as normal data.
• $1B $44 $00 cancels all horizontal tab positions.
• The previously specified horizontal tab position does not change, even if the character width is modified.

[Default] Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, …) for Font A when the right-side character spacing is 0.

[Reference] $09

[Example]

$1B $45

Printers: KPM150

[Name] **Turn emphasized mode on/off**

[Format]

ASCII	ESC	E	n
Hex	1B	45	n
Decimal	27	69	n

[Range] 0 ≤ n ≤ 255

[Description] Turns emphasized mode on/off.
• When the LSB of *n* is 0, the emphasized mode is off.
• When the LSB of *n* is 1, the emphasized mode is on.

[Notes]
• Only the LSB of n is effective.
• $1B $21 also turns on and off the emphasized mode. However, the last received command is the effective one.

[Default] n = 0

[Reference] $1B $21

[Example]

$1B $47

Printers: KPM150

[Name] **Turn double-strike mode on/off**

[Format]

ASCII	ESC	G	n
Hex	1B	47	n
Decimal	27	71	n

[Range] 0 ≤ n ≤ 255

[Description] Turns double-strike mode on or off.
- When the LSB of *n* is 0, the double-strike mode is off.
- When the LSB of *n* is 1, the double-strike mode is on.

[Notes]
- Only the LSB of n is effective.
- Printer output is the same in double-strike and emphasized mode.

[Default] n = 0

[Reference] $1B $45

[Example]

$1B $4A

Printers: KPM150

[Name] **Print and paper feed**

[Format]

ASCII	ESC	J	n
Hex	1B	4A	n
Decimal	27	74	n

[Range] 0 ≤ n ≤ 255

[Description] Prints the data in the print buffer and feeds the paper [n × (vertical or horizontal motion unit)] inches.

[Notes]
- After printing has been completed, this command sets the print starting position to the beginning of the line.
- The paper feed amount set by this command does not affect the values set by $1B $32 or $1B $33.
- The horizontal and vertical motion units are specified by $1D $50.
- $1D $50 can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.
- In standard mode, the vertical motion unit is used.
- The maximum paper feed amount is 4095 mm (161 inches).

[Default]

[Reference] $1D $50

[Example]

$1B $52

Printers: KPM150

[Name] **Select an international character set**

[Format]

ASCII	ESC	R	n
Hex	1B	52	n
Decimal	27	82	n

[Range] 0 ≤ n ≤ 12

[Description] Selects the international character set *n* according to the table below:

	HEX	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
n	CHARACTER SER												
0	U.S.A.	#	$	@	[	\	]	^	`	{	|	}	~
1	France	#	$	à	°	ç	§	^	`	é	ù	è	"
2	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	b
3	United Kingdom	£	$	@	[	\	]	^	`	{	|	}	~
4	Denmark I	#	$	@	Æ	Æ	Å	^	`	æ	f	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	$	@	¡	Ñ	¿	^	`	"	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	`	{	|	}	~
9	Norway	#	¤	É	Æ	Æ	Å	Ü	é	æ	f	å	ü
10	Denmark II	#	$	É	Æ	Æ	Å	Ü	é	æ	f	å	ü
11	Spain 2	#	$	à	¡	Ñ	¿	è	`	í	ñ	ö	ü
12	South America	#	$	à	¡	Ñ	¿	è	ù	í	ñ	ö	ü

[Default] n = 0
[Reference]
[Example]

$1B $56

Printers: KPM150

[Name] **Turn 90° clockwise rotation mode**
[Format]

ASCII	ESC	V	n
Hex	1B	56	n
Decimal	27	86	n

[Range] 0 ≤ n ≤ 1, 48 ≤ n ≤ 49
[Description] Turns 90° rotation mode on/off. n is used as follows :

n	FUNCTION
0, 48	Turns off 90° rotation mode
1, 49	Turns on 90° rotation mode

[Notes] • When underlined mode is turned on, the printer does not underline 90° clockwise rotated characters. All the same it's possible select the underline mode.
Default] n = 0
[Reference] $1B $21, $1B $2D
[Example]

$1B $5C

Printers: KPM150

[Name] **Set relative print position**
[Format]

ASCII	ESC	\	nL	nH
Hex	1B	5C	nL	nH
Decimal	27	92	nL	nH

[Range] 0 ≤ nL ≤ 255
0 ≤ nH ≤ 255
[Description] Sets the print starting position based on the current position by using the horizontal or-vertical motion unit.
Sets the distance from the current position to [(nL+ nH × 256) × (horizontal or vertical motion unit)].

[Notes]
- Any setting that exceeds the printable area is ignored.
- When the starting position is specified by n motion units to the right: nL + nH × 256 = n
- When the starting position is specified by n motion units to the left (negative direction), use the complement of 65536: nL + nH × 256 = 65536 – n
- If setting exceeds the printing area width, the left or right margin is set to the default value.
- The horizontal and vertical motion unit are specified by $1D $50.
- $1D $50 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.
- In standard mode, the horizontal motion unit is used.
- Setting the right value, it's possible to print characters over the right edge.

[Default]
[Reference] $1B $24, $1D $50
[Example]

$1B $61

Printers: KPM150

[Name] **Select justification**

[Format]

ASCII	ESC	a	n
Hex	1B	61	n
Decimal	27	97	n

[Range] 0 ≤ n ≤ 2
48 ≤ n ≤ 50

[Description] Aligns all data in one line to the specified position. *n* selects the type of justification as follows:

n	JUSTIFICATION
0, 48	Flush left
1, 49	Centred
2, 50	Flush right

[Notes]
- This command is only enabled when inserted at the beginning of a line.
- Lines are justified within the specified printing area.
- Spaces set by $09, $1B $24 and $1B $5C will be justified according to the previously-entered mode.

[Default] n = 0
[Reference]
[Example]

Flush left

```
ABC
ABCD
ABCDE
```

Centered

```
 ABC
ABCD
ABCDE
```

Flush right

```
  ABC
 ABCD
ABCDE
```

$1B $63 $35

Printers: KPM150

[Name] **Enable/Disable keys panel**

[Format]

ASCII	ESC	c	5	n
Hex	1B	63	35	n
Decimal	27	99	53	n

[Range] 0 ≤ n ≤ 255

[Description] Enables / disables the keys panel.
- When the LSB of n is 0, the keys panel is enabled.
- When the LSB of n is 1, the keys panel is disabled.

[Notes]
- Only the LSB of n is effective.

• On the printer, the panel buttons are LINE FEED and FORM FEED.
• When the keys panel is disabled, the keys may only be used after the printer has been reset.
• When the panel buttons are disabled, is possible to know the status through the $10 $04 command.

[Default] n = 0
[Reference] $10 $04
[Example]

$1B $64

Printers: KPM150

[Name] **Print and feed paper n rows**
[Format]

ASCII	ESC	d	n
Hex	1B	64	n
Decimal	27	100	n

[Range] 0 ≤ n ≤ 255
[Description] Prints the data in the print buffer and feeds the paper *n* rows.
[Notes]
• Sets the print starting position at the beginning of the line.
• This command does not affect the line spacing set by $1B $32 or $1B $33.
• The maximum paper feed amount is 200 rows. Even if a paper feed amount of more than 254 rows is set, the printer feeds the paper only 200 rows.

[Default]
[Reference] $1B $32, $1B $33
[Example]

$1B $69

Printers: KPM150

[Name] **Total cut**
[Format]

ASCII	ESC	i
Hex	1B	69
Decimal	27	105

[Range]
[Description] This command prints the data in the buffer and enables cutter operation.
[Notes]
• The printer waits to complete all paper movement commands before it executes a total cut.

[Default]
[Reference]
[Example]

$1B $74

Printers: KPM150

[Name] **Select character code table**
[Format]

ASCII	ESC	t	n
Hex	1B	74	n
Decimal	27	116	n

[Range] n = 0, 255
[Description] Select a page n from the chatacter code table as follows:

n	PAGE
0	0 (PC437 [U.S.A., Standard Europe])
255	Space page

[Notes]
[Default] n = 0
[Reference] See character code tables, $1C $65, $1C, $66
[Example]

$1B $76

Printers: KPM150

[Name] **Transmit paper sensor status**
[Format]

ASCII	ESC	v
Hex	1B	76
Decimal	27	118

[Range]
[Description] When this command is received, transmit the current status of the paper sensor.
[Notes] • This command is executed immediately, even when the data buffer is full (Busy). The status to be transmitted is shown in the table below:

BIT	OFF/ON	HEX	Decimal	FUNCTION
0,1	Off	00	0	Not used.
	On	03	3	Not used.
2,3	Off	00	0	Paper-end sensor: paper present
	On	(0C)	(12)	Paper-end sensor: paper not present
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[Default]
[Reference] $10 $04
[Example]

$1B $78

Printers: KPM150

[Name] **Select speed /current mode**
[Format]

ASCII	ESC	x	n
Hex	1B	78	n
Decimal	27	120	n

[Range] 0 ≤ n ≤ 1
[Description] Selects printing speed / current mode.

n	FUNCTION
0	Low current
1	Normal mode

[Notes] • If the printer shows some problems while printing, select mode 0 (low current).
[Default] n = 1
[Reference]
[Example]

$1B $7B

Printers: KPM150

[Name] **Turn upside-down printing mode on/off**

[Format]

ASCII	ESC	{	n
Hex	1B	7B	n
Decimal	27	123	n

[Range] 0 ≤ n ≤ 255

[Description] Turns upside-down printing mode on or off.
- When the LSB of *n* is 0, the upside-down printing mode is off.
- When the LSB of *n* is 1, the upside-down printing mode is on.

[Notes]
- Only the LSB of *n* is effective.
- This command is valid only if entered at the beginning of a line.
- In upside-down printing mode, the printer rotates the line to be printed 180° and then prints it.

[Default] n = 0

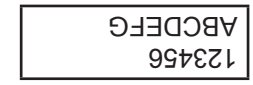
[Reference]

[Example]

Upside-down printing Off

ABCDEFG
123456

Upside-down printing On



Printing direction

$1D $21

Printers: KPM150

[Name] **Select character size**

[Format]

ASCII	GS	!	n
Hex	1D	21	n
Decimal	29	33	n

[Range] 0 ≤ n ≤ 255

[Description] Selects character height and width, as follows:
- Bits 0 to 3: to select character height (see table 2).
- Bits 4 to 7: to select character width (see table 1).

Table 1 Select character width

HEX	Decimal	WIDTH
00	0	1 (normal)
10	16	2 (double width)
20	32	3 (quadruple width)
30	48	
40	64	
50	80	
60	96	
70	112	

Table 2 Select character height

HEX	Decimal	HEIGHT
00	0	1 (normal)
01	1	2 (double height)
02	2	3 (quadruple height)
03	3	
04	4	
05	5	
06	6	
07	7	

[Notes]
- This command is effective for all characters (except HRI characters).
- If *n* falls outside the defined range, this command is ignored.
- Characters enlarged to different heights on the same line are aligned at the baseline or topline (see $1D $7E).
- $1B $21 can also be used to select character size. However, the setting of the last received command is the effective one.

[Default] n = 0

[Reference] $1B $21
[Example]

$1D $3A

Printers: KPM150

[Name] **Set start/end of macro definition**
[Format]

ASCII	GS	:
Hex	1D	3A
Decimal	29	58

[Range]
[Description] Starts or ends macro definition.
[Notes]
• Macro definition starts when this command is received during normal operation.
• When $1D $5E is received during macro definition, the printer ends macro definition and clears all definitions.
• Macros are not defined when power is turned on to the machine.
• Macro content is not cancelled by the $1B $40 command. Therefore, $1B $40 may be included in the content of macro definitions.
• If the printer receives $1D $3A a second time after previously receiving $1D $3A, the printer remains in macro undefined status.
• The contents of the macro can be defined up to 1024 bytes. If the macro definition exceeds 1024 bytes, excess data is not stored.
[Default]
[Reference] $1B $40, $1D $5E
[Example]

$1D $42

Printers: KPM150

[Name] **Turn white/black reverse printing mode on/off**
[Format]

ASCII	GS	B	n
Hex	1D	42	n
Decimal	29	66	n

[Range] 0 ≤ n ≤ 255
[Description] Turns white/black reverse printing mode on or off.
• When the LSB of *n* is 0, white/black reverse printing is turned off.
• When the LSB of *n* is 1, white/black reverse printing is turned on.
[Notes]
• Only the LSB di *n* is effective.
• This command is available for both built-in and user-defined characters.
• This command does not affect bit image, downloaded bit image, bar code, HRI characters and spacing skipped by $09, $1B $24 and $1B $5C.
• This command does not affect white space between lines.
• White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it will be disabled (but not cancelled) when white/black reverse mode is selected.
[Default] n = 0
[Reference]
[Example]

$1D $43 $30

Printers: KPM150

[Name] **Select counter print mode**

[Format]

ASCII	GS	C	0	n	m
Hex	1D	43	30	n	m
Decimal	29	67	48	n	m

[Range] 0 ≤ n ≤ 5
m = 0, 1, 2, 48, 49, 50

[Description] Selects a print mode for the serial number counter.
• n specifies the number of digits to be printed as follows:
when n = 0, the printer prints the actual digits indicated by the numeric value.
when n = 1 to 5, the command sets the number of digits to be printed.
• m specifies the printing position within the entire range of printed digits as follows:

m	PRINTING POSITION	PROCESSING OF DIGITS LESS THAN THOSE SPECIFIED
0, 48	Flush right	Adds spaces to the left
1, 49	Flush right	Adds a '0' to the left
2, 50	Flush left	Adds spaces to the right

[Notes] • If n or m is out of the defined range, the previously set print mode is not changed.
• If n = 0, m is not applicable

[Default] n = 0, m = 0

[Reference] $1D $43 $31, $1D $43 $32, $1D $43 $3B, $1D $63

[Example]

n = 3, m = 0	n = 3, m = 1	n = 3, m=2
□ □ 1	001	1 □ □

□ indicates a space

$1D $43 $31

Printers: KPM150

[Name] **Select count mode (A)**

[Format]

ASCII	GS	C	1	aL	aH	bL	bH	n	r
Hex	1D	43	31	aL	aH	bL	bH	n	r
Decimal	29	67	49	aL	aH	bL	bH	n	r

[Range] 0 ≤ aL, aH ≤ 255
0 ≤ bL, bH ≤ 255
0 ≤ n, r ≤ 255

[Description] Selects a count mode for the serial number counter.
• aL, aH or bL, bH specify the counter range.
• n indicates the unit amount when counting up or down.
• r indicates the repetition number when the counter value is fixed.

[Notes] • Count-up mode is specified when:
[aL + (aH × 256)] < [bL + (bH × 256)] and n ≠ 0 and r ≠ 0
• Count-down mode is specified when:
[aL + (aH × 256)] > [bL + (bH × 256)] and n ≠ 0 and r ≠ 0
• Counting stops when:
[aL + (aH × 256)] = [bL + (bH × 256)] or n = 0 or r = 0
• Setting the count-up mode, the minimum counter value is [aL + (aH × 256)] and the maximum value is [bL + (bH × 256)]. If the counting up reaches a value that exceeds the maximum, it resets to the minimum value.
• Setting the count-down mode, the maximum counter value is [aL + (aH × 256)] and the minimum value is [bL + (bH × 256)]. If the counting down reaches a value less than the minimum, it resets to the maximum value.

• When this command is executed, the internal count that indicates the repetition number specified by r is cleared.

[Default] aL = 1, aH = 0, bL = 255, bH = 255, n = 1, r = 1

[Reference] $1D $43 $30, $1D $43 $32, $1D $43 $3B, $1D $63

[Example]

$1D $43 $32

Printers: KPM150

[Name] **Set counter**

[Format]

ASCII	GS	C	2	nL	nH
Hex	1D	43	32	nL	nH
Decimal	29	67	50	nL	nH

[Range] 0 ≤ nL, nH ≤ 255

[Description] Sets the serial number counter value.
• nL and nH determine the value of the serial number counter set by [nL + (nH × 256)].

[Notes]
• In count-up mode, if the counter value specified by this command goes out of the counter operation range specified by $1D $43 $31 or $1D $43 $3B it is forced to convert to the minimum value through $1D $63.
• In count-down mode, if the counter value specified by this command goes out of the counter operation range specified by $1D $43 $31 or $1D $43 $3B it is forced to convert to the maximum value through $1D $63.

[Default] nL = 1, nH = 0

[Reference] $1D $43 $30, $1D $43 $31, $1D $43 $3B, $1D $63

[Example]

$1D $43 $3B

Printers: KPM150

[Name] **Select count mode (B)**

[Format]

ASCII	GS	C	;	sa	;	sb	;	sn	;	sr	;	sc	;
Hex	1D	43	3B	sa	3B	sb	3B	sn	3B	sr	3B	sc	3B
Decimal	29	67	59	sa	59	sb	59	sn	59	sr	59	sc	59

[Range] 0 ≤ sa, sb, sc ≤ 65535
0 ≤ sn, sr ≤ 255
These values are all character strings.

[Description] Selects a count mode for the serial number counter and specifies the value of the counter.
• sa, sb, sn, sr and sc are all displayed as ASCII characters using codes from ‘0’ to ‘9’.
• sa and sb specify the counter range.
• sn indicates the unit amount for counting up or down.
• sr indicates the repetition number when the counter value is fixed.
• sc indicates the counter value.

[Notes]
• Count-up mode is specified when:
sa < sb and sn ≠ 0 and sr ≠ 0
• Count-down mode is specified when:
sa > sb and sn ≠ 0 and sr ≠ 0
• Counting stops when:
sa = sb or sn = 0 or sr = 0
• In setting count-up mode, the minimum value of the counter is sa and the maximum value is sb. If counting up reaches a value exceeding the maximum, it resets to the minimum value. If the counter value set by sc is outside the counter operation range, the counter value is forced to convert to the minimum value by executing $1D $63.

• In setting count-down mode, the maximum value of the counter is sa and the minimum value is sb. If counting down reaches a value less than the minimum, it resets to the maximum value. If the counter value set by sc is outside the counter operation range, the counter value is forced to convert to the maximum value by executing $1D $63.
• Parameters sa to sc can be omitted. If omitted, they remain unchanged.
• Parameters sa to sc cannot contain characters other than '0' to '9'.

[Default] sa = 1, sb = 65535, sn = 1, sr = 1, sc = 1
[Reference] $1D $43 $30, $1D $43 $31, $1D $43 $32, $1D $63
[Example]

$1D $48

Printers: KPM150

[Name] **Select printing position of Human Readable Interpretation (HRI) characters**
[Format]

ASCII	GS	H	n
Hex	1D	48	n
Decimal	29	72	n

[Range] 0 ≤ n ≤ 3, 48 ≤ n ≤ 51
[Description] Selects the printing position of HRI characters when printing bar codes. *n* selects the printing positions as follows:

n	FUNCTION
0, 48	Not printed
1, 49	Above the barcode.
2, 50	Below the barcode.
3, 51	Both above and below the barcode.

[Notes] HRI characters are printed using the font specified by $1D $66.
[Default] n = 0
[Reference] $1D $66, $1D $6B
[Example]

$1D $49

Printers: KPM150

[Name] **Transmit printer ID**
[Format]

ASCII	GS	I	n
Hex	1D	49	n
Decimal	29	73	n

[Range] 1 ≤ n ≤ 3, 49 ≤ n ≤ 51

[Description] Transmits the printer ID specified by n follows:

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID	$41
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 characters)

n = 2, 50 Type ID

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	2-byte characters codes not supported
1	Off	00	0	Autocutter not supplied
	On	02	2	Autocutter supplied
2	Off	00	0	Thermal paper w/o label
	On	04	4	Thermal paper label
3	-	-	-	Undefined
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[Notes] • This command is executed when the data is processed in the data buffer. Therefore, there could be a time lag between command reception and data transmission, depending on data buffer status.

[Default]
[Reference]
[Example]

$1D $4C

Printers: KPM150

[Name] **Set left margin**

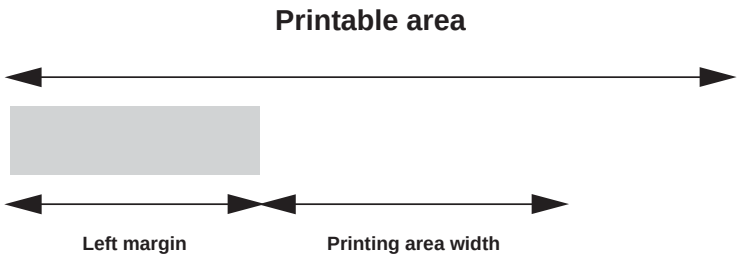
[Format]

ASCII	GS	L	nL	nH
Hex	1D	4C	nL	nH
Decimal	29	76	nL	nH

[Range] 0 ≤ nL, nH ≤ 255

[Description] Sets the left margin.

• The left margin is set to [(nL + nH × 256) × (horizontal motion unit)] inches.



[Notes]
• This command is enabled only if set at the beginning of the line.
• If the setting exceeds the printable area, the maximum value of the printable area is used.
• If the left margin + printing area width is greater than the printable area, the printing area width is set at maximum value.
• The horizontal and vertical motion unit are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current left margin.
• The $1D $50 command can change the horizontal (and vertical) motion unit.
• However, the value cannot be less than the minimum horizontal movement amount and it must be in even units of the minimum horizontal movement amount.

[Default] If Font A : nL = nH = 0
If Font B : nL = 14 nH = 0

[Reference] $1D $50, $1D $57

[Example]

$1D $50

Printers: KPM150

[Name] **Set horizontal and vertical motion units**

[Format]

ASCII	GS	P	x	y
Hex	1D	50	x	y
Decimal	29	80	x	y

[Range] 0 ≤ x, y ≤ 255

[Description] Sets the horizontal and vertical motion units to 1/x inch and 1/y inch respectively.
When x is set to 0, the default setting value is used.
When y is set to 0, the default setting value is used.

[Notes]
• The horizontal direction is perpendicular to the paper feed direction.
• In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):
❶ Commands using x : $1B $20, $1B $24, $1B $5C, $1D $4C, $1D $57.
❷ Commands using y : $1B $33, $1B $4A.
• This command does not affect the previously specified values.
• The calculated result from combining this command with others is truncated to the minimum value of the mechanical pitch or an exact multiple of that value.

[Default] x = 200, y = 200

[Reference] $1B $20, $1B $24, $1B $5C, $1B $33, $1B $4A, $1D $4C, $1D $57

[Example]

$1D $57

Printers: KPM150

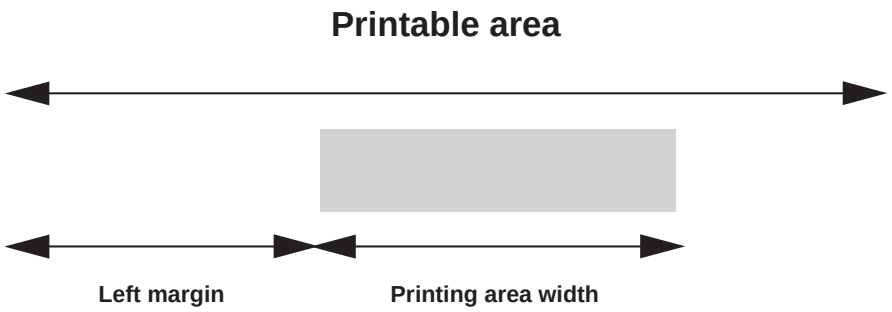
[Name] **Set printing area width**

[Format]

ASCII	GS	W	nL	nH
Hex	1D	57	nL	nH
Decimal	29	87	nL	nH

[Range] 0 ≤ nL, nH ≤ 255

[Description] Sets the printing area width to the area specified by *nL* and *nH*.
• The left margin is set to [(nL + nH × 256) × (horizontal motion unit)] inches.



[Notes]
• This command is only enabled if set at the beginning of the line.
• If the right margin is greater than the printable area, the printing area width is set at maximum value.
• If the printing area width = 0, it is set at the maximum value.
• The horizontal and vertical motion units are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current left margin.
• The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount and it must be in even units of the minimum horizontal movement amount.

[Default] If Font A : nL = 192 nH = 1
If Font B : nL = 164 nH = 1
[Reference] $1D $4C, $1D $50
[Example]

$1D $5E

Printers: KPM150

[Name] **Execute macro**

[Format]

ASCII	GS	^	r	t	m
Hex	1D	5E	r	t	m
Decimal	29	94	r	t	m

[Range] 0 ≤ r, t ≤ 255
0 ≤ m ≤ 1

[Description] Executes a macro.
• *r* specifies the number of times to execute the macro.
• *t* specifies the waiting time for executing the macro.
The waiting time is t × 100 msec. for each macro execution.
• m specifies macro executing mode:
When the LSB of *m* = 0, the macro is executed r times continuously at the interval specified by *t*.
When the LSB of *m* = 1, after waiting for the period specified by *t*, the LED indicator blinks and the printer waits for the FF FORM FEED button to be pressed. After the button is pressed, the printer executes the macro once. The printer repeats the operation *r* times.

[Notes] • This command has an interval of (t × 100 msec.) after a macro is executed by *t.*
• If this command is received while a macro is being defined, the macro definition is aborted and the definition is cleared.
• If the macro is not defined or if *r* is 0, nothing is executed.
• When the macro is executed by pressing the FF FORM FEED button (*m*=1), the paper cannot be fed using the FF FORM FEED button.

[Default]
[Reference] $1D $3A
[Example]

$1D $63

Printers: KPM150

[Name] **Print counter**

[Format]

ASCII	GS	c
Hex	1D	63
Decimal	29	99

[Range]

[Description] Sets the serial counter value in the print buffer and increments or decrements the counter value.

[Notes] • After setting the current counter value in the print buffer as print data (a character string), the printer counts up or down based on the count mode set. The counter value in the print buffer is printed when the printer receives a print command or the buffer is full.
• The counter print mode is set using $1D $43 $30.
• The counter mode is set using $1D $43 $31 or $1D $43 $3B.
• In count-up mode, if the counter value set by this command goes out of the counter operation range set by $1D $43 $31 or $1D $43 $3B; it is forced to revert to the minimum value.

• In count-down mode, if the counter value set by this command goes out of the counter operation range set by $1D $43 $31 or $1D $43 $3B; it is forced to revert to the maximum value.

[Default]
[Reference] $1D $43 $30, $1D $43 $31, $1D $43 $32, $1D $43 $3B
[Example]

$1D $66

Printers: KPM150

[Name] **Select font for HRI characters**

[Format]

ASCII	GS	f	n
Hex	1D	66	n
Decimal	29	102	n

[Range] n = 0, 1, 48, 49

[Description] Selects a font for the HRI characters used when printing a bar code. *n* selects a font from the following table:

n	FONT
0, 48	Font A (14x24)
1, 49	Font B (10x24)

[Notes] HRI characters are printed at the position specified by $1D $48.
[Default] n = 0
[Reference] $1D $48, $1D $6B
[Example]

$1D $68

Printers: KPM150

[Name] **Set barcode height**

[Format]

ASCII	GS	h	n
Hex	1D	68	n
Decimal	29	104	n

[Range] 1 ≤ n ≤ 255
[Description] Sets the height of the barcode. n specifies the number of vertical dots.
[Notes]
[Default] n = 96 (12 mm)
[Reference] $1D $6B
[Example]

❶ $1D $6B, ❷ $1D $6B

Printers: KPM150

[Name] **Print bar code**

[Format]

❶	ASCII	GS	k	m	NUL
	Hex	1D	6B	m	00
	Decimal	29	107	m	0
❷	ASCII	GS	k	m	n
	Hex	1D	6B	m	n
	Decimal	29	107	m	n

[Range] ❶ 0 ≤ m ≤ 6
, ❷ 65 ≤ m ≤ 73

[Description] Selects a bar code system and prints the bar code. *m* selects a bar code system as follows:

	m	BARCODE SYSTEM	No. OF CHARACTERS	REMARKS
❶	0	UPC-A	11≤ k ≤12	48≤ d ≤ 57
	1	UPC-E	11≤ k ≤12	48≤ d ≤ 57
	2	EAN13 (JAN)	12≤ k ≤13	48≤ d ≤ 57
	3	EAN8 (JAN)	7≤ k ≤8	48≤ d ≤ 57
	4	CODE39	1≤ k	48 ≤ d ≤ 57,65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	5	ITF	1≤ k (even number)	48 ≤ d ≤ 57
	6	CODABAR	1≤ k	48 ≤ d ≤ 57, 65 ≤ d1 ≤ 68, 36, 43, 45, 46, 47, 58
	7	CODE93	1≤ k ≤255	1≤ d ≤ 127
	8	CODE128	2≤ k ≤255	1≤ d ≤ 127
	20	CODE32	8≤ k ≤9	48≤ d ≤ 57

❷	65	UPC-A	11≤ n ≤12	48≤ d ≤ 57
	66	UPC-E	11≤ n ≤12	48≤ d ≤ 57
	67	EAN13 (JAN)	12≤ n ≤13	48≤ d ≤ 57
	68	EAN8 (JAN)	7≤ n ≤8	48≤ d ≤ 57
	69	CODE39	1≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	70	ITF	1≤ n ≤255	48≤ d ≤ 57
	71	CODABAR	1≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d1 ≤ 68, 36, 43, 45, 46, 47, 58
	72	CODE93	1≤ n ≤255	0≤ d ≤ 127
	73	CODE128	2≤ n ≤255	0≤ d ≤ 127
	90	CODE32	8≤ n ≤9	48≤ d ≤ 57

[Notes]
- If d is outside of the specified range, the printer prints the following message: “BAR CODE GENERATOR IS NOT OK!” and processes the data which follows as normal data.
- If the horizontal size exceeds the printing area, the printer only feeds the paper.
- This command feeds as much paper as is required to print the bar code, regardless of the line spacing specified by $1B $32 or $1B $33.
- After printing the bar code, this command sets the print position to the beginning of the line.
- This command is not affected by print modes (emphasized, double-strike, underline or character size), except for upside-down and justification mode.

[Notes per ❶]
- This command ends with a NUL code.
- When the bar code system used is UPC-A or UPC-E, the printer prints the bar code data after receiving 11 (without check digit) or 12 (with check digit) bytes bar code data.
- When the bar code system used is EAN13, the printer prints the bar code data after receiving 12 (without check digit) or 13 (with check digit) bytes bar code data.
- When the bar code system used is EAN8, the printer prints the bar code data after receiving 7 (without check digit) or 8 (with check digit) bytes bar code data.
- The number of data for ITF bar code must be even numbers. When an odd number of data is input, the printer ignores the last received data.

[Notes per ❷]
- If *n* is outside of the specified range, the printer stops command processing and processes the following data as normal data.

When CODE93 is used:
- The printer prints an HRI character (o) as a start character at the beginning of the HRI character string.
- The printer prints an HRI character (o) as a stop character at the end of the HRI character string.

• The printer prints an HRI character (n) as a control character ($00 to $1F and $7F).
When CODE128 is used:
• When using CODE128 in this printer, please note the following regarding data transmission:
• The top part of the bar code data string must be a code set selection character (CODE A, CODE B or CODE C) which selects the first code set.
• Special characters are defined by combining two characters "{" and one character. ASCII character "{" is defined by transmitting "{" twice, consecutively.

SPECIFIC CHARACTER	DATA TRANSMISSION		
	ASCII	HEX	Decimal
SHIFT	{S	7B, 53	123, 83
CODE A	{A	7B, 41	123, 65
CODE B	{B	7B, 42	123, 66
CODE C	{C	7B, 43	123, 67
FNC1	{1	7B, 31	123, 49
FNC2	{2	7B, 32	123, 50
FNC3	{3	7B, 33	123, 51
FNC4	{4	7B, 34	123, 52
'{'	{{	7B, 7B	123, 123

[Default]
[Reference] $1D $48, $1D $66, $1D $68, $1D $77
[Example]

$1D $72

Printers: KPM150

[Name] **Transmit status**
[Format]

ASCII	GS	r	n
Hex	1D	72	n
Decimal	29	114	n

[Range] n = 1, 49
[Description] Transmits the status specified by *n* as follows:

n	FUNCTION
1, 49	Transmits paper sensor status (as for $1B $76).

Paper sensor status (n = 1, 49):

BIT	OFF/ON	HEX	Decimal	FUNCTION
0, 1	Off	00	0	Near paper end sensor: paper present
	On	03	3	Near paper end sensor: paper not present
2,3	Off	00	0	Paper end sensor: paper present
	On	(0C)	(12)	Paper end sensor: paper not present
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[Notes] • This command is executed when the data is processed in the data buffer. Therefore, there may be a time lag between receiving the command and transmitting the status, depending on data buffer status.
[Default]
[Reference] $10 $04, $1B $76
[Example]

$1D $77

Printers: KPM150

[Name] **Set bar code width**

[Format]

ASCII	GS	w	n
Hex	1D	77	n
Decimal	29	119	n

[Range] 2 ≤ n ≤ 6

[Description] Sets the horizontal size of the bar code. *n* specifies the bar code width as follows:

n	MODULE WIDTH (mm)
2	0.25
3	0.375
4	0.5
5	0.625
6	0.75

[Notes]

[Default] n = 3

[Reference] $1D $6B

[Example]

$1D $7C

Printers: KPM150

[Name] **Set printing density**

[Format]

ASCII	GS	{ }	n
Hex	1D	7C	n
Decimal	29	124	n

[Range] 0 ≤ n ≤ 4, 48 ≤ n ≤ 52

[Description] Sets printing density. *n* specifies printing density as follows:

n	PRINTING DENSITY
0, 48	Very light
1, 49	Light
2, 50	Nornal
3, 51	Dark
4, 52	Very dark

[Notes] • Printing density reverts to the default value when the printer is reset or turned off.

[Default] n = 2

[Reference]

[Example]

$1D $7E

Printers: KPM150

[Name] **Set superscript/subscript**

[Format]

ASCII	GS	{ }	n
Hex	1D	7E	n
Decimal	29	126	n

[Range] n = 0, 1, 48, 49

[Description] Sets superscript or subscript character position.
n specifies the position as follows:

n	FUNCTION
0, 48	Subscript character position
1, 49	Superscript character position

[Notes] • This command is executed if there are characters of different height on the same line.
[Default] n = 0
[Reference] $1B $21, $1D $21
[Example]

$1D $E1

Printers: KPM150

[Name] **Reading of length paper (cm) available before virtual paper-end**
[Format] ASCII GS { }
Hex 1D E1
Decimal 29 225
[Range]
[Description] Reading of length (cm) paper available before virtual paper-end.
The command return a string pointing out how much paper is available, for example if there are 5.1 m before the paper end, it will be: '510cm'
[Notes] • The lenght of residual paper reported is just as an indication because tolerances and other factors are not taken into consideration (paper thickness, roll core diameter, roll core thickness). The virtual paper-end limit is set by the command $1D $E6.
• To set virtual paper-end limit, measure the length of the paper from near paper end to the end of the roll, using several of them.
[Default]
[Reference] $1D $E6
[Example]

$1D $E2

Printers: KPM150

[Name] **Reading number of cuts performed from the printer**
[Format] ASCII GS { }
Hex 1D E2
Decimal 29 226
[Range]
[Description] Reading the number of cuts performed from the printer.
[Notes] The command return a string that points out how many cuts are performed by the printer, for example if there are performed 623 cuts, it will be: '623 cuts'
[Default]
[Reference]
[Example]

$1D $E3

Printers: KPM150

[Name] **Reading of length (cm) of printed paper**
[Format] ASCII GS { }
Hex 1D E3
Decimal 29 227
[Range]

[Description] Reading of length (cm) of printed paper.
[Notes] The command return a string pointing out how much paper is printed, for example if the printer has print about 62,3 m, it will be: '6230cm'
[Default]
[Reference]
[Example]

$1D $E5

Printers: KPM150

[Name] **Reading number of power up**
[Format]

ASCII	GS	{ }
Hex	1D	E5
Decimal	29	229

[Range]
[Description] Reading number of power up of the printer.
[Notes] The command return a string pointing out the number of turning on of the printer, for example if the printer is turned on 512 times, it will be: '512on'
[Default]
[Reference]
[Example]

$1D $E6

Printers: KPM150

[Name] **Virtual paper-end limit**
[Format]

ASCII	GS	{ }	nH	nL
Hex	1D	E6	nH	nL
Decimal	29	230	nH	nL

[Range] 0 ≤ nH≤ 255
0 ≤ nL ≤ 255
[Description] This command sets the limit after which is pointed out the virtual paper-end.
[Notes] • The calculation limit of the near paper-end is in centimetres.
• This value is expressed as [(nH x 256)+nL]
[Default] nH = 0×00
nL = 0×F0
[Reference]
[Example] To see the virtual paper-end is pointed out after 15 metres from the first detection of near paper end, it's necessary convert 15 metres in 1500 centimetres and then, calculate nH and nL value in the following mode:

nH = 1500 / 256 = 5
nL = 1500 - (nH x 256) = 1500 - (5 x 256) = 220

and then send the following command:

HEX:	$1D	$E6	$05	$DC
DECIMAL:	29	230	5	220

$1D $F2

Printers: KPM150

[Name] **Set the discrimination level of the alignment notch**

[Format]

ASCII	GS	{ }	n	m
Hex	1D	F2	n	m
Decimal	29	242	n	m

[Range] 0 ≤ n ≤ 50
0 ≤ m ≤ 50

[Description] This command sets the discrimination level of the alignment notch as it follows:
n identifies the voltage level below which the sheet is considered blank from marker sensor in the auto-calibration phase
m identifies the voltage level above which the sensor identifies the marker.

[Notes]
- The levels are expressed in tenths of volt.
- The levels are always saved on Eeprom.

[Default] n = 15
m = 35

[Reference] $1D $F3

[Example] For to express a blank sensibility level of 1 volt and a notch sensibility level of 3.5 volt, send to the printer this command:

HEX:	$1D	$F2	$0A	$23
DECIMAL:	29	242	10	35

$1D $F3

Printers: KPM150

[Name] **Return the discrimination levels of the notch**

[Format]

ASCII	GS	{ }
Hex	1D	F3
Decimal	29	243

[Range]

[Description] This command returns two byte that identify the discrimination levels of the notch as it follows:
First byte: identifies the voltage level below which the sheet is considered blank from marker sensor in the autocalibration phase.
Second byte : identifies the voltage level above which the sensor identifies the marker.

[Notes]
- The levels are expressed in tenths of volt.

[Default]

[Reference] $1D $F2

[Example]

$1D $F6

Printers: KPM150

Name] **Align the ticket at the notch**

[Format]

ASCII	GS	{ }
Hex	1D	F6
Decimal	29	246

[Range]

[Description] This command aligns the ticket at the marker notch.

[Notes]
- If the marker fotocell is busy, then the sheet comes back until it isn't freed; if the marker fotocell is free, the sheet feeds until the marker.
- If the notch isn't encounterd after 150 mm, then the research is interrupted.

• In the $10 $04 n command, with n = 17, the fourth bit of the returned byte, identifies that the notch alignment procedure is in running, while the seventh bit points out a possible timeout error of marker research.
• Once the ticket is aligned at the notch, the motor performs m steps defined by $1D $F7 command.

[Default]
[Reference] $10 $04, $1D $F7
[Example]

$1D $F7

Printers: KPM150

[Name] **Set the shifting of the motor after the alignment**

[Format]

ASCII	GS	{ }	nH	nL
Hex	1D	F7	nH	nL
Decimal	29	247	nH	nL

[Range] 0 ≤ nH ≤ 255
0 ≤ nL ≤ 255
[Description] This command sets the shifting of the motor after the alignment at the notch.
[Notes] • The dotlines number to make performs at the motor is obtained from:
[nL + (nH × 256)]
• When the motor must turns is the opposite verse to the printing direction, use the complement of 65536 : nL + nH × 256 = 65536 – N
[Default] nH = nL = 0
[Reference]
[Example]

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ESC/POS™ EMULATION

SVELTA EMULATION

KPM54 EMULATION

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