



# Impressora Epson TM-T20

A TM-T20 é a impressora térmica de cupom não fiscal com o melhor custo benefício da Epson. Com guilhotina a impressora Epson TM-T20 é capaz de realizar mais de um milhão e meio de cortes. Conheça a Epson TM-T20.

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# TM-T20

## ESC/POS Quick Reference

### ESC/POS® Command System

EPSON ESC/POS is a proprietary POS printer command system based on the escape sequence and includes patented or patent pending commands. ESC/POS is compatible with most type of EPSON POS printers and displays.

ESC/POS is designed to reduce the processing load on the host computer in POS environments. It comprises a set of highly functional and efficient commands and also offers the flexibility to easily make future upgrades.

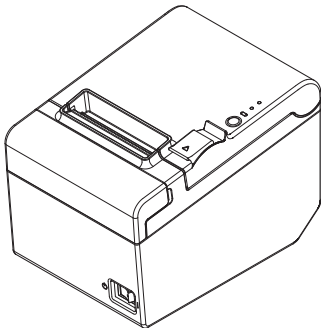
### Aim of the Quick Reference

Quick Reference is a guide to using ESC/POS command to control the printer.

### Command Notation

- RT** : real-time command (executed as soon as received)
- fn=** : function number of the command
- Numbers are written in decimal numeral.
- n** specifies 1 byte parameter in the range 0–255.
- nL, nH** specify 1 word (2 bytes) parameter as (**nL**+ **n**×256) in the range 0–65,535.
- pL, pH** specify the number of parameters after **pH** as (**pL**+**pH**×256) in the range 1–65,535
- p1, p2, p3, p4** specify the number of parameters after **p4** as (**p1**+**p2**×256+**p3**×65,536+**p4**×16,777,216) in the range 1–4,294,967,295.
- kc1, kc2** specify key code (2 bytes) of NV graphics or download graphics. Each range of **kc1** and **kc2** is 32–126.
- Control codes are as follows:

name	code
NUL	0
EOT	4
ENQ	5
HT	9
LF	10
FF	12
CR	13
DLE	16
DC4	20
CAN	24
ESC	27
FS	28
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### Print Commands

- In page mode, these commands only move the print position and do not execute actual printing.

- LF** Prints data and feeds one line.
- CR** Functions the same as **LF** when auto line feed is enabled. **CR** is ignored when auto line feed is disabled or when the serial interface model is used.
- ESC J n** Prints data and feeds paper **n** dots.
- ESC d n** Prints data and feeds paper **n** lines.

### Line Spacing Commands

- ESC 2** Selects default line spacing.
- ESC 3 n** Sets line spacing to **n** dots.

### Character Commands

- ESC SP n** Sets right-side character spacing to **n** dots.
- ESC - n** Selects underline.  
**n** = 0: underline off, **n** = 1: 1-dot width, **n** = 2: 2-dot width
- ESC E n** Turns emphasized character On or Off.  
**n** = odd: On, **n** = even: Off
- ESC G n** Turns double-strike character On or Off.  
**n** = odd: On, **n** = even: Off
- ESC M n** Selects a character font.  
**n** = 0, "0": Font A, **n** = 1, "1": Font B
- GS ! n** Selects character size (height/width magnification).  
Upper 4 bits of **n**: width magnification  
Lower 4 bits of **n**: height magnification  
The both can be set 0(×1) to 7(×8)
- GS b n** Turns smoothing On or Off for magnified characters.  
**n** = odd: On, **n** = even: Off
- GS B n** Turns white/black reverse print On or Off for characters.  
**n** = odd: On, **n** = even: Off
- ESC { n** Turns upside-down print mode On or Off in standard mode.  
**n** = odd: On, **n** = even: Off
- ESC V n** Turns 90° clockwise rotation On or Off for characters in standard mode.  
**n** = 1, 2, "1", "2": On, **n** = 0, "0": Off
- ESC & 3 c1 c2 [x1 d1...d(3 × x1)]...[xk d1...d(3 × xk)]**  
Defines user-defined characters for character code: **c1** to **c2** of the current font.  
**x** = width of the defined pattern  
**d1...d(3×x)** = pattern data for a character
- ESC % n** Selects or cancels user-defined character set.  
**n** = odd: Select, **n** = even: Cancel

### Character Commands (continued)

- ESC ? n** Cancel the user-defined character and return the font pattern to the resident one for the current font.  
**n** = character code to be cleared the user-defined font

- ESC t n** Selects page **n** from the character code table.

<b>n</b>	code table	<b>n</b>	code table
0	PC437: USA, Standard Europe	34	PC855: Cyrillic
1	Katakana	35	PC861: Icelandic
2	PC850: Multilingual	36	PC862: Hebrew
3	PC860: Portuguese	37	PC864: Arabic
4	PC863: Canadian-French	38	PC869: Greek
5	PC865: Nordic	39	ISO8859-2: Latin2
11	PC851: Greek	40	ISO8859-15: Latin9
12	PC853: Turkish	41	PC1098: Farsi
13	PC857: Turkish	42	PC1118: Lithuanian
14	PC737: Greek	43	PC1119: Lithuanian
15	ISO8859-7: Greek	44	PC1125: Ukrainian
16	WPC1252	45	WPC1250: Latin2
17	PC866: Cyrillic #2	46	WPC1251: Cyrillic
18	PC852: Latin2	47	WPC1253: Greek
19	PC858: Euro	48	WPC1254: Turkish
20	KU42: Thai	49	WPC1255: Hebrew
21	TIS11: Thai	50	WPC1256: Arabic
26	TIS18: Thai	51	WPC1257: Baltic Rim
30	TCVN-3: Vietnamese	52	WPC1258: Vietnamese
31	TCVN-3: Vietnamese	53	KZ-1048: Kazakhstan
32	PC720: Arabic	255	User-defined page
33	WPC775: Baltic Rim		

- ESC R n** Selects an international character set by **n**.

<b>n</b>	country	<b>n</b>	country
0	USA	9	Norway
1	France	10	Denmark II
2	Germany	11	Spain II
3	U.K.	12	Latin America
4	Denmark I	13	Korea
5	Sweden	14	Slovenia/ Croatia
6	Italy	15	China
7	Spain I	16	Vietnam
8	Japan	17	Arabia

### Print Position Commands

- HT** Moves print position to the next horizontal tab position.
- ESC D n1...nk NUL**  
Sets tab stops at **n1** to **nk** character columns.
- GS L nL nH**  
Sets left margin in standard mode.  
**nL** + **nH**×256: number of dots for left margin
- GS W nL nH**  
Sets print area width in standard mode.  
**nL** + **nH**×256: number of dots for print area width
- ESC a n** Aligns all data in one line to the selected layout in standard mode.  
**n** = 0, "0": Left justification  
**n** = 1, "1": Centering  
**n** = 2, "2": Right justification

## Print Position Commands (continued)

### ESC \$ nL nH

Moves print position from the left edge of print area.

*nL* + *nH*×256: absolute print position

### ESC \ nL nH

Moves the print position from current position.

*nL* + *nH*×256: relative print position (-32,768–32,767)

## Panel Button Commands

**ESC c 5 n** Enables or disables the panel buttons.

*n* = odd: Disable, *n* = even: Enable

## Mechanism Control Commands

**GS V m** Executes paper cut.

*m* = 0, "0", 1, "1"

**GS V m n** Executes paper cut after feeding *n* dots.

*m* = "A" or "B"

## Bit Image Commands

### ESC \* m nL nH d1...dk

Stores bit image data in the print buffer.

*nL* + *nH*×256: number of horizontal dots

*d*: image data (column format)

<i>m</i>	vertical density	horizontal density	vertical dots	number of <i>d</i> (= <i>k</i> )
0	203/3 dpi	203/2 dpi	8 dots	<i>nL</i> + <i>nH</i> ×256
1		203 dpi		
32	203 dpi	203/2 dpi	24 dots	3×( <i>nL</i> + <i>nH</i> ×256)
33		203 dpi		

## Graphics Commands

**GS ( L pL pH 48 112 48 bx by 49 xL xH yL yH d1...dk** fn=112

**GS 8 L p1 p2 p3 p4 48 112 48 bx by 49 xL xH yL yH d1...dk**

Stores graphics data in the print buffer to the magnified size specified by *bx*, *by*.

*bx* = 1 or 2: horizontal magnification

*by* = 1 or 2: vertical magnification

*xL* + *xH*×256: number of horizontal dots

*yL* + *yH*×256: number of vertical dots

**GS ( L 2 0 48 50** or **GS ( L 2 0 48 2** fn=50

Prints graphics data in standard mode.

## NV Graphics Commands

**GS D 48 67 48 kc1 kc2 48 49 d1...dk** fn=67

Converts Windows BMP data and defines NV graphics data to key code (*kc1*, *kc2*).

## NV Graphics Commands (continued)

**GS ( L pL pH 48 67 48 kc1 kc2 1 xL xH yL yH 49 d1...dk** or fn=67

**GS 8 L p1 p2 p3 p4 48 67 48 kc1 kc2 1 xL xH yL yH 49 d1...dk**

Defines NV graphics data to key code (*kc1*, *kc2*).

*xL* + *xH*×256: number of horizontal dots

*yL* + *yH*×256: number of vertical dots

**GS ( L 6 0 48 69 kc1 kc2 x y** fn=69

Prints NV graphics of key code (*kc1*, *kc2*) to the magnified size specified by *x*, *y*.

*x* = 1 or 2: horizontal magnification

*y* = 1 or 2: vertical magnification

**GS ( L 2 0 48 48** or **GS ( L 2 0 48 0** fn=48

Transmits the entire capacity of NV graphics area.

Send data: "70" + *Size* + NUL

*Size*: "0"–"99999999" [bytes]

**GS ( L 2 0 48 51** or **GS ( L 2 0 48 3** fn=51

Transmits the unused capacity of NV graphics area.

Send data: "71" + *Size* + NUL

*Size*: "0"–"99999999" [bytes]

**GS ( L 4 0 48 64 "KC"** fn=64

Transmits the key code list for defined NV graphics.

Send data: "7r" + *Is* + [*kc1*,*kc2*]... + NUL

*Is* = 65: following send data group exists, *Is* = 64: not exist

[*kc1*,*kc2*]...: strings of key codes (0–80 bytes length)

**GS ( L 5 0 48 65 "CLR"** fn=65

Deletes all NV graphics data.

**GS ( L 4 0 48 66 kc1 kc2** fn=66

Deletes NV graphics data of key code (*kc1*, *kc2*).

## Download Graphics Commands

**GS D 48 83 48 kc1 kc2 48 49 d1...dk** fn=83

Converts Windows BMP data and defines download graphics data to key code (*kc1*, *kc2*).

**GS ( L pL pH 48 83 48 kc1 kc2 1 xL xH yL yH 49 d1...dk** or fn=83

**GS 8 L p1 p2 p3 p4 48 83 48 kc1 kc2 1 xL xH yL yH 49 d1...dk**

Defines download graphics data to key code (*kc1*, *kc2*).

*xL* + *xH*×256: number of horizontal dots

*yL* + *yH*×256: number of vertical dots

**GS ( L 6 0 48 85 kc1 kc2 x y** fn=85

Prints download graphics of key code (*kc1*, *kc2*) to the magnified size specified by *x*, *y*.

*x* = 1 or 2: horizontal magnification

*y* = 1 or 2: vertical magnification

**GS ( L 2 0 48 52** or **GS ( L 2 0 48 4** fn=52

Transmits the unused capacity of download graphics area.

Send data: "72" + *Size* + NUL

*Size*: "0"–"99999999" [bytes]

## Download Graphics Commands (continued)

**GS ( L 4 0 48 80 "KC"** fn=80

Transmits the key code list for download graphics.

Send data: "7s" + *Is* + [*kc1*,*kc2*]... + NUL

*Is* = 65: following send data group exists, *Is* = 64: not exist

[*kc1*,*kc2*]...: strings of key codes (0–80 bytes length)

**GS ( L 5 0 48 81 "CLR"** fn=81

Deletes all download graphics data.

**GS ( L 4 0 48 82 kc1 kc2** fn=82

Deletes download graphics data of key code (*kc1*, *kc2*).

## Logo Print Commands

- User-defined NV graphics can be set to top or bottom logo.
- Top logo is printed in the events enabled by **FS ( E fn=64)**.
- Bottom logo is printed when paper cut command is executed.

**FS ( E 6 0 62 2 kc1 kc2 a n** fn=62

Sets for top logo printing in NV memory.

*kc1*, *kc2*: user-defined key code for the logo

*a*: logo position ("0"=left, "1"=center, "2"=right)

*n*: number of lines to be removed after the logo print

**FS ( E 5 0 63 2 kc1 kc2 a** fn=63

Sets for bottom logo printing in NV memory.

*kc1*, *kc2*: user-defined key code for the logo

*a*: logo position ("0"=left, "1"=center, "2"=right)

**FS ( E pL pH 64 2 [a1 n1]...[ak nk]** fn=64

Enables or disables auto top logo printing.

*a* function

48 Prints while feeding paper to cut position

64 Prints at power-on

65 Prints when Roll paper cover is closed

66 Prints when buffers are cleared in recovery from error

67 Prints after fed paper with Feed button

*n* = "0": Disables, *n* = "1": Enables

**FS ( E 4 0 65 2 a n** fn=65

Enables or disables logo printing temporarily.

*a* = "0": Top logo *n* = "0": Enable

*a* = "1": Bottom logo *n* = "1": Disable

**FS ( E 3 0 61 2 c** fn=61

Transmits set values for top or bottom logo printing.

*c* = "0": Set values for top logo

*c* = "1": Set values for bottom logo

*c* = "2": Extended set values for top logo

*c* send data

"0" "7H202" + *kc1* + *kc2* + *pos* + *line* + NUL

"1" "7H212" + *kc1* + *kc2* + *pos* + NUL

"2" "7H222" + *fa* + *fp* + *fc* + *fe* + *ff* + NUL

*kc1*, *kc2*: user-defined key code for the logo

*pos*: logo position ("0"=left, "1"=center, "2"=right)

*line*: number of removed lines after logo print ("0"–"255")

*fa*, *fp*, *fc*, *fe*, *ff*: flag for top logo print ("0"=disabled, "1"=enabled)

*fa*: while feeding to cut position

*fp*: at power-on

*fc*: when cover closed

*fe*: when recovered from error with buffer clear

*ff*: when fed paper by switch

## Logo Print Commands (continued)

### FS (E 6 0 60 2 c "CLR"

fn=60

Clears set values in NV memory for top or bottom logo printing.

c = "0": Top logo, c = "1": Bottom logo

## Bar Code Commands

### GS k m d1...dk NUL

Prints bar code. **NUL** terminates the data.

m	bar code system	number of d (=k)
0	UPC-A	11 or 12
1	UPC-E	6, 7, 8, 11 or 12
2	JAN13 / EAN13	12 or 13
3	JAN8 / EAN8	7 or 8
4	CODE39	1 or more
5	ITF	even
6	CODABAR (NW-7)	2 or more

### GS k m n d1...dn

Prints bar code. **n** specifies the data length.

m	bar code system	number of d (=k)
"A"	UPC-A	11 or 12
"B"	UPC-E	6, 7, 8, 11 or 12
"C"	JAN13 / EAN13	12 or 13
"D"	JAN8 / EAN8	7 or 8
"E"	CODE39	1 or more
"F"	ITF	even
"G"	CODABAR (NW-7)	2 or more
"H"	CODE93	1-255
"I"	CODE128	2-255
"J"	GS1-128	2-255
"K"	GS1 DataBar Omnidirectional	13
"L"	GS1 DataBar Truncated	13
"M"	GS1 DataBar Limited	13
"N"	GS1 DataBar Expanded	2-255

**GS h n** Sets bar code height to **n** dots.

**GS w n** Sets bar width of bar code.

n = 2-6 (thin-thick)

**GS H n** Selects print position of HRI characters.

n = 0, "0": Not printed  
 n = 1, "1": Above the bar code  
 n = 2, "2": Below the bar code  
 n = 3, "3": Both above and below the bar code

**GS f n** Selects font for the HRI characters.

n = 0, "0": Font A, n = 1, "1": Font B

## Two-Dimensional Code Commands

### GS ( k pL pH cn fn [parameters]

Stores, prints symbol data, or configure the settings.

cn = 48: PDF417  
 49: QR Code  
 50: MaxiCode  
 51: 2-dimensional GS1 DataBar  
 52: composite symbology

## Two-Dimensional Code Commands (continued)

function	fn	cn				
		48	49	50	51	52
Store symbol data in memory	80	m d1...dk		m n d1...dk		m a b d1...dk
		(m=48)				
Print 2D symbol	81	m (m=48)				
Send 2D symbol size	82	m (m=48)				
Setting	columns	65	n	n1 n2	n	
	rows	66	n			
	module	67	n	n		n n
	row height	68	n			
	error correction	69	m n	n		
	options	70	m			
	maximum width	71				nL nH nL nH
	font	72				

[parameters] (blank = invalid command) ←

Send data of **GS ( k (fn=82):**

"7" + Id + X + 31 + Y + 31 + "1" + 31 + Fl + Ec + NUL

	number of bytes	cn				
		48	49	50	51	52
Id	1	"I"	"6"	"7"	"O"	"P"
X: horizontal dots	1-5	"0"- "99999"				
Y: vertical dots	1-5	"0"- "99999"				
Fl: flag	1	"0" = printable, "1" = not printable				
Ec: error code	0 or 4	N/A (0 byte)		"0000"- "9999"		

## Status Commands

### DLE EOT n

RT

Transmits real-time status as 1 byte.

n = 1: Printer status (binary: 0000xx00)  
 bit 2 = 1: Drawer kick-out connector pin 3: High  
 = 0: Drawer kick-out connector pin 3: Low  
 bit 3 = 1: in Offline, 0: in Online  
 n = 2: Offline cause status (0xx0xx00)  
 bit 2 = 1: Cover is open, 0: closed  
 bit 3 = 1: on feeding paper by switch, 0: not  
 bit 5 = 1: Printing stopped due to paper end, 0: not  
 bit 6 = 1: in Error state, 0: not  
 n = 3: Error cause status (0xx0x000)  
 bit 3 = 1: Autocutter error, 0: not  
 bit 5 = 1: Unrecoverable error, 0: not  
 bit 6 = 1: Automatically recoverable error, 0: not  
 n = 4: Paper end sensor status (0xx00000)  
 bit 5, 6 = 1: Paper end, 0: paper present

## Status Commands (continued)

### GS r n

Transmits status specified by **n** as 1 byte after completion of prior print or command.

n = 1, "1": Paper sensor status  
 Status = 0: Paper end sensor: paper present  
 Status = 12: Paper end sensor: not present  
 n = 2, "2": Drawer kick-out connector status  
 Status = 0: Drawer kick-out connector pin 3: Low  
 Status = 1: Drawer kick-out connector pin 3: High

### GS a n

Enables or disables basic ASB (Automatic Status Back).

bit of n Status (1: enable, 0: disable)

0 Drawer kick-out connector status  
 1 Online/offline status  
 2 Error status  
 3 Paper end sensor status

ASB status binary (x=0 or 1)

first byte 0xx1 xx00  
 bit 2 = 1: Drawer kick-out connector pin 3: High  
 = 0: Drawer kick-out connector pin 3: Low  
 bit 3 = 1: in Offline, 0: in Online  
 bit 5 = 1: Cover is open, 0: closed  
 bit 6 = 1: on feeding paper by switch, 0: not  
 2nd byte 0xx0 x000  
 bit 3 = 1: Autocutter error, 0: not  
 bit 5 = 1: Unrecoverable error, 0: not  
 bit 6 = 1: Automatically recoverable error, 0: not  
 3rd byte 0110 xx00  
 bit 2, 3 = 1: Paper end, 0: paper present  
 4th byte 0110 1111

## Macro Function Commands

### GS :

Starts or ends macro definition.

### GS ^ r t m

Executes defined macro.

r: repeat times  
 t: interval time (×100msec)  
 m = 0: repeat continuously  
 m = 1: repeat by pressing the Feed button

## Miscellaneous Commands

### ESC @

Initializes printer.

### DLE ENQ n

RT

Recovers from recoverable errors.

n = 1: Recovers and starts printing from the line where the error occurred  
 n = 2: Recovers after clearing both receive and print buffers

### GS ( D pL pH 20 [a1 b1]...[ak bk]

Enables or disables real-time command.

a = 1: **DLE DC4** (fn=1) b = 0, "0": Disable  
 a = 2: **DLE DC4** (fn=2) b = 1, "1": Enable

### ESC = n

Enables or disables the printer device.

n = 1, 3: Enable, n = 0: Disable

## Miscellaneous Commands (continued)

### ESC p m t1 t2

Outputs pulse to Drawer kick-out port.

$m = 0, "0"$ : connector pin 2,  $m = 1, "1"$ : connector pin 5  
 $t1$ : on time (×2ms),  $t2$ : off time (×2ms)

### DLE DC4 1 m t

Outputs pulse to Drawer kick-out port in real-time.

$m = 0$ : connector pin 2,  $m = 1$ : connector pin 5  
 $t = 1-8$ : On time / Off time (×100 ms)

### GS ( H 6 0 48 48 d1 d2 d3 d4

Transmits process ID specified by (**d1**, **d2**, **d3**, **d4**) after execution of prior print or command.

$d=32-126$ : visible character  
 Send data: 55 + 34 + **d1** + **d2** + **d3** + **d4** + NUL

### GS l n

Transmits printer ID or printer information.

n	information	send data
1, "1"	Printer model ID	99
2, "2"	Type ID	2: supported Multi-byte character 3: not supported
35	Column emulation mode	"=#0"+NUL: normal mode "=#1"+NUL: 42 column mode
65	Firmware version	95+strings+NUL ↳ depends on firmware
66	Manufacturer	95+"EPSON"+NUL
67	Printer name	95+"TM-T20"+NUL
68	Serial number	95+Serial number (10 bytes)+NUL
69	Type of mounted additional fonts	95+strings+NUL ↳ depends on printers ex.) "KANJI JAPANESE"

### GS g 0 0 nL nH

Initialize resettable maintenance counter.

nL + nH×256	counter	unit
20	Number of lines fed	lines
21	Number of head energizations	times
22	Number of lines fed (after the print head was replaced)	lines
50	Number of autocutter operations	times
70	Duration of printer operation	hours

### GS g 2 0 nL nH

Transmits value of resettable or cumulative maintenance counter.

counter	unit	nL + nH×256	
		resettable	cumulative
Number of lines fed	lines	20	148
Number of head energizations	times	21	149
Number of lines fed (after the print head was replaced)	lines	22	150
Number of autocutter operations	times	50	178
Duration of printer operation	hours	70	198

Send data: 95 + Value + NUL  
 Value: "0"- "999999999" (1-10 bytes length)

### GS ( K 2 0 50 m

Selects print speed.

$m = 0, "0"$ : speed customized by **GS ( E (fn = 5, a = 6)**  
 $m = 1-13$  (slow-fast)

## Miscellaneous Commands (continued)

### ESC ( A 3 0 97 n c

Sounds optional external buzzer.

$n$  specifies the sound pattern. ( $n = 1-7$ )  
 $c$  specifies the repeat times. ( $c = 0$ : infinitely)

### DLE DC4 3 0 0 0 1 0

Stops sounding optional external buzzer and transmits 4 bytes: 55, 84, 64, 0.

### DLE DC4 2 1 8

Executes printer power-off sequence and transmits 3 bytes: 59, 48, 0.

### DLE DC4 8 1 3 20 1 6 2 8

Clears both receive and print buffers, and transmits 3 bytes: 55, 37, 0, as the Clear response.

## Page Mode Commands

- Page mode is a free layout mode. Any print data can be put in any place on the print area and be printed by **FF** or **ESC FF** command.

**ESC L** Switches from standard mode to page mode.

**ESC S** Switches from page mode to standard mode.

**FF** Prints all data and switches from page mode to standard mode.

**ESC FF** Prints all data in page mode. After printing, the printer does not clear the buffered data, the print position, and values set by other commands.

### ESC W xL xH yL yH dxL dxH dyL dyH

Sets the print area size and the logical origin in page mode.

$xL + xH×256, yL + yH×256$ : position of the logical origin

$dxL + dxH×256$ : width of the print area

$dyL + dyH×256$ : height of the print area

**ESC T n** Selects the print direction and the starting position in page mode.

n	print direction	starting position
0, "0"	left to right	upper left
1, "1"	bottom to top	lower left
2, "2"	right to left	lower right
3, "3"	top to bottom	upper right

### GS \$ nL nH

In page mode, moves the vertical print position from the starting position set by **ESC T**.

$nL + nH×256$ : absolute print position

### GS \ nL nH

In page mode, moves the vertical print position from the current position.

$nL + nH×256$ : relative print position (-32,768-32,767)

### CAN

Cancels print data in page mode.

## Other Commands

- For details, refer to *TM-T20 product specification* or *ESC/POS Application Programming Guide for Paper Roll Printers*.
- OC**: obsolete command

## Character Commands

**ESC !** Selects character font and styles.

## Miscellaneous Commands

**GS P** Sets horizontal and vertical motion units.

**GS ( A** Executes test print.

## Bit Image Commands

**GS v 0** Prints raster bit image **OC**

## NV Bit Image Commands

**FS q** Defines NV bit image in NV graphics area. **OC**

**FS p** Prints NV bit image defined by **FS q**. **OC**

## Downloaded Bit Image Commands

**GS \*** Defines downloaded bit image. **OC**

**GS /** Prints downloaded bit image defined by **GS \*** **OC**

## Status Commands

**ESC u** Transmits peripheral device status as 1 byte. **OC**

**ESC v** Transmits status of paper sensor as 1 byte. **OC**

## Mechanism Control Commands

**ESC i** Executes paper cut. **OC**

**ESC m** Executes paper cut. **OC**

## Customize Commands

**FS g 1** Writes data to NV user memory. **OC**

**FS g 2** Transmits data in NV user memory. **OC**

## User Setup Commands

**GS ( E (fn=1)** Enters User setting mode and transmits the mode change notice.

**GS ( E (fn=2)** Ends User setting mode and performs software reset.

**GS ( E (fn=3)** Sets memory switch setting values.

**GS ( E (fn=4)** Transmits memory switch setting values.

**GS ( E (fn=5)** Sets customized setting values.

**GS ( E (fn=6)** Transmits customized setting value.

**GS ( E (fn=11)** Sets configuration item for serial interface.

**GS ( E (fn=12)** Transmits configuration value.

**GS ( E (fn=15)** Selects configuration item: Class of USB interface.

**GS ( E (fn=16)** Transmits configuration value for Class of USB interface.