

COMMANDS MANUAL

TPTCM60III

TPTCM112III

PRT80III

TPTCM60IIIL

TPTCM112IIIL

CUSTOM[®]

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UNLESS OTHERWISE SPECIFIED, THE INFORMATION GIVEN IN THIS MANUAL ARE REFERRED TO ALL MODELS IN PRODUCTION AT THE ISSUE DATE OF THIS DOCUMENT.

GENERAL SAFETY INFORMATION

Your attention is drawn to the following actions that could compromise the characteristics of the product:

- Read and retain the instructions which follow.
- Follow all indications and instructions given on the device.
- Make sure that the surface on which the device rests is stable. If it is not, the device could fall, seriously damaging it.
- Make sure that the device rests on a hard (non-padded) surface and that there is sufficient ventilation.
- When positioning the device, make sure cables do not get damaged.
- Use the type of electrical power supply indicated on the device label. If uncertain, contact your dealer.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Do not block the ventilation openings.
- Do not insert objects inside the device as this could cause short-circuiting or damage components that could jeopardize printer functioning.
- Do not carry out repairs on the device yourself, except for the normal maintenance operations given in the user manual.
- Make sure that there is an easily-accessible outlet with a capacity of no less than 10A closely to where the device is to be installed.
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- Before any type of work is done on the machine, disconnect the power supply.
- Do not touch the head heating line with bare hands or metal objects. Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

GENERAL INSTRUCTIONS

CUSTOM S.p.A. declines all responsibility for accidents or damage to persons or property occurring as a result of tampering, structural or functional modifications, unsuitable or incorrect installations, environments not in keeping with the equipment's protection degree or with the required temperature and humidity conditions, failure to carry out maintenance and periodical inspections and poor repair work.



THE CE MARK AFFIXED TO THE PRODUCT CERTIFY THAT THE PRODUCT SATISFIES THE BASIC SAFETY REQUIREMENTS.

The device is in conformity with the essential Electromagnetic Compatibility and Electric Safety requirements laid down in Directives 2006/95/CE and 2004/108/CE inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55022 Class B (*Limits and methods of measurements of radio disturbance characteristics of Information Technology Equipment*)
- EN 55024 (*Information Technology Equipment – Immunity characteristics – Limits and methods of measurement*)
- EN 60950-1 (*Safety of information equipment including electrical business equipment*)



GUIDELINES FOR THE DISPOSAL OF THE PRODUCT

The crossed-out rubbish bin logo means that used electrical and electronic products shall NOT be mixed with unsorted municipal waste. For more detailed information about recycling of this product, refer to the instructions of your country for the disposal of these products.

- Do not dispose of this equipment as miscellaneous solid municipal waste, but arrange to have it collected separately.
- The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the wellbeing of humans.
- In accordance with European Directive WEEE 2002/96/EC, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type.
- The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.
- Unauthorised disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.



The format used for this manual improves use of natural resources reducing the quantity of necessary paper to print this copy.

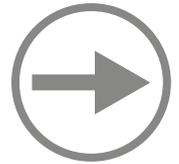
INTRODUCTION



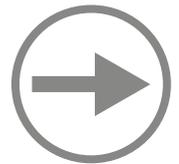
TPTCMII / PRT80 EMULATION



CUSTOM/POS EMULATION



ALIGNMENT





INTRODUCTION

Each command reported in this manual is described as shown in the following picture. In the first heading field is reported the hexadecimal command value and the ASCII command value. In the second heading field reported the command function. In the third heading field are listed the devices on which it is possible to use the command (for example, device AAAA).

0x0D

<CR>

Print and carriage return

Valid for	AAAA
	BBBB
	CCCC

Command value

Command function

Devices that use the command

[Format]	ASCII	CR
	Hex	0D
	Decimal	13

[Range]

[Description] When autofeed is "CR enabled", this command function otherwise it is disregarded.

[Notes] This command sets the print position to the beginning of the line.

Information valid for devices AAAA, BBBB, CCC

AAAA

BBBB

- This command sets the print position to the beginning of the line.

Information valid for devices AAAA, BBBB

CCCC

- This command is immediately executed when the buffer is full.
- This status is transmitted whenever data sent.

Information valid for device CCCC

[Default]

[Reference] 0x0A

[Example]

Information valid only for the devices marked in bold

Information valid for all the devices listed in the third heading field



The fields shown in the scheme of the previous figure have the following meaning:

[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]	Example of using the command

Listed below are the meanings of some of symbols that may be found in the command description:

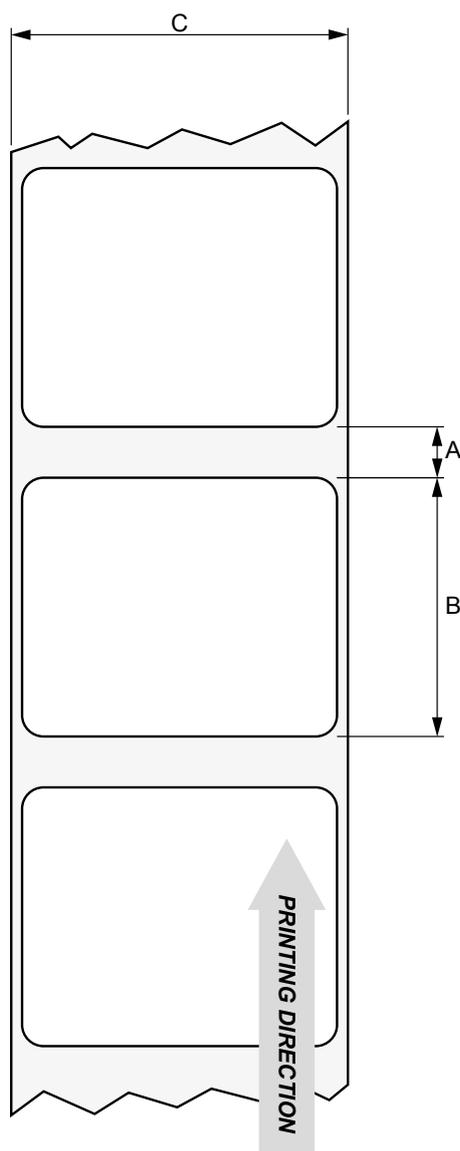
0x	indicates the representation of the command hexadecimal value (for example 0x40 means HEX 40).
n, m, t, x, y	are optional parameters that can have different values.

PAPER SPECIFICATIONS

NOTE: All the dimensions shown in the following figures are in millimetres.

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Paper with labels is permitted. To properly use the alignment commands it is necessary to use labels that comply with the following dimensions:



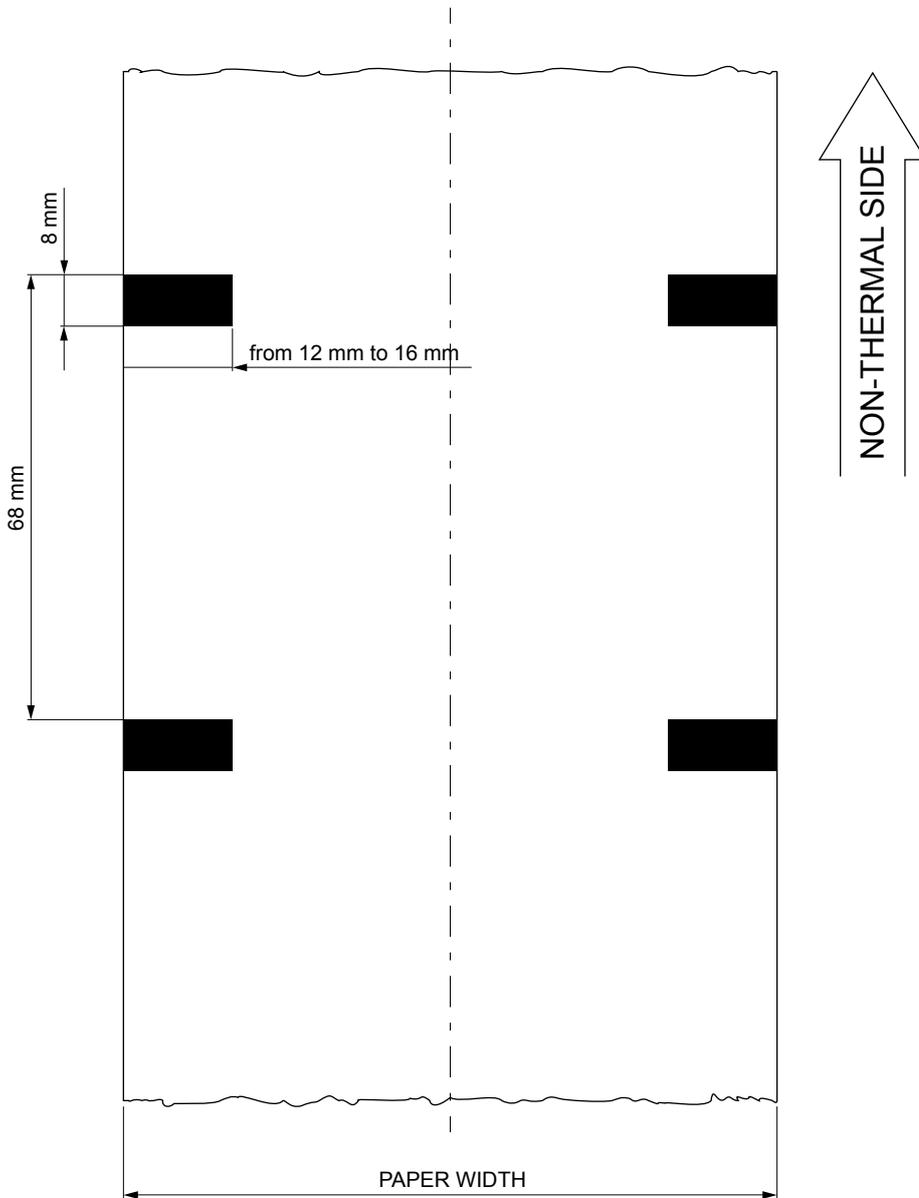
$A \geq 10 \text{ mm}$
 $B \geq 25,4 \text{ mm (1 inch)}$
 $C = 60 \text{ mm}$



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Paper with alignment notch

The notch must be positioned on the non-thermal side of the paper as shown in following figure.



TPTCMII / PRT80 EMULATION



COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	46
0x09	<HT>	47
0x0A	<LF>	19
0x0C	<FF>	20
0x0D	<CR>	21
0x10 0x04	<DLE EOT>	60
0x18	<CAN>	48
0x1B 0x20	<ESC SP>	27
0x1B 0x21	<ESC !>	28
0x1B 0x24	<ESC \$>	49
0x1B 0x25	<ESC %>	30
0x1B 0x26	<ESC &>	31
0x1B 0x28 0x76	<ESC (v>	50
0x1B 0x2A	<ESC *>	58
0x1B 0x2D	<ESC ->	33
0x1B 0x30	<ESC 0>	24
0x1B 0x32	<ESC 2>	25
0x1B 0x33	<ESC 3>	26
0x1B 0x34	<ESC 4>	34
0x1B 0x3D	<ESC =>	86
0x1B 0x3F	<ESC ?>	35
0x1B 0x40	<ESC @>	87
0x1B 0x44	<ESC D>	51
0x1B 0x45	<ESC E>	36
0x1B 0x47	<ESC G>	37
0x1B 0x4A	<ESC J>	22



0x1B 0x52	<ESC R>	38
0x1B 0x56	<ESC V>	39
0x1B 0x5C	<ESC T>	52
0x1B 0x61	<ESC a>	53
0x1B 0x63 0x34	<ESC c>	88
0x1B 0x63 0x35	<ESC c>	89
0x1B 0x64	<ESC d>	23
0x1B 0x69	<ESC i>	84
0x1B 0x6D	<ESC m>	85
0x1B 0x74	<ESC t>	40
0x1B 0x76	<ESC v>	65
0x1B 0x78	<ESC x>	90
0x1B 0x7B	<ESC {>	42
0x1B 0xFA		91
0x1B 0xFB		93
0x1B 0xFC		94
0x1B 0xFD		95
0x1B 0xFE		96
0x1D 0x21	<GS !>	43
0x1D 0x3A	<GS :>	82
0x1D 0x42	<GS B>	44
0x1D 0x43 0x30	<GS C>	97
0x1D 0x43 0x31	<GS C>	98
0x1D 0x43 0x32	<GS C>	99
0x1D 0x43 0x3B	<GS C>	100
0x1D 0x48	<GS H>	75
0x1D 0x49	<GS I>	101
0x1D 0x4C	<GS L>	54



0x1D 0x50	<GS P>	103
0x1D 0x57	<GS W>	56
0x1D 0x5E	<GS ^>	83
0x1D 0x63	<GS c>	104
0x1D 0x65	<GS e>	106
0x1D 0x66	<GS f>	76
0x1D 0x68	<GS h>	77
0x1D 0x6B	<GS k>	78
0x1D 0x72	<GS r>	66
0x1D 0x76	<GS r>	67
0x1D 0x77	<GS w>	81
0x1D 0x7C	<GS |>	105
0x1D 0x7E		45
0x1D 0xE0		69
0x1D 0xE1		70
0x1D 0xE2		71
0x1D 0xE3		72
0x1D 0xE5		73
0x1D 0xE6		74
0x1D 0xF4		108
0x1D 0xF5		109
0x1D 0xF6		110
0x1D 0xF7		111
0x1D 0xFA		112
0x1D 0xFB		113



COMMANDS LISTED BY FUNCTION

PRINT COMMANDS

0x0A	<LF>	19
Print and line feed		
0x0C	<FF>	20
Form Feed		
0x0D	<CR>	21
Print and carriage return		
0x1B 0x4A	<ESC J>	22
Print and feed paper		
0x1B 0x64	<ESC d>	23
Print and feed paper n lines		

LINE SPACING COMMANDS

0x1B 0x30	<ESC 0>	24
Select 1/8-inch line spacing		
0x1B 0x32	<ESC 2>	25
Select 1/6-inch line spacing		
0x1B 0x33	<ESC 3>	26
Set line spacing using minimum units		

CHARACTER COMMANDS

0x1B 0x20	<ESC SP>	27
Set right-side character spacing		
0x1B 0x21	<ESC !>	28
Set print mode		
0x1B 0x25	<ESC %>	30
Select/cancel user-defined character set		
0x1B 0x26	<ESC &>	31
Defines user-defined characters		
0x1B 0x2D	<ESC ->	33
Turn underline mode on/off		
0x1B 0x34	<ESC 4>	34
Set/reset italic mode		



0x1B 0x3F	<ESC ?>	35
Cancel user-defined characters		
0x1B 0x45	<ESC E>	36
Select emphasized mode		
0x1B 0x47	<ESC G>	37
Select double-strike mode		
0x1B 0x52	<ESC R>	38
Select international character set		
0x1B 0x56	<ESC V>	39
Select print mode 90° turned		
0x1B 0x74	<ESC t>	40
Select character code table		
0x1B 0x7B	<ESC {>	42
Set/cancel upside-down character printing		
0x1D 0x21	<GS !>	43
Select character size		
0x1D 0x42	<GS B>	44
Turn white/black reverse printing mode on/off		
0x1D 0x7E		45
Set superscript/subscript		

PRINT POSITION COMMANDS

0x08	<BS>	46
Back space		
0x09	<HT>	47
Horizontal tab		
0x18	<CAN>	48
Cancel print data buffer		
0x1B 0x24	<ESC \$>	49
Set absolute print position		
0x1B 0x28 0x76	<ESC (v>	50
Set relative vertical print position		
0x1B 0x44	<ESC D>	51
Set horizontal tab position		
0x1B 0x5C	<ESC T>	52
Set relative print position		
0x1B 0x61	<ESC a>	53
Select justification		



0x1D 0x4C	<GS L>	54
Set left margin		
0x1D 0x57	<GS W>	56
Set printing area width		

BIT IMAGE COMMANDS

0x1B 0x2A	<ESC *>	58
Select image print mode		

STATUS COMMANDS

0x10 0x04	<DLE EOT>	60
Real-time status transmission		
0x1B 0x76	<ESC v>	65
Transmit printer status		
0x1D 0x72	<GS r>	66
Transmit status		
0x1D 0x76	<GS r>	67
Request expanded status		
0x1D 0xE0		69
Enable / Disable automatic FULL STATUS BACK		
0x1D 0xE1		70
Reading of length paper (cm) available before virtual paper end		
0x1D 0xE2		71
Reading number of cuts performed from the printer		
0x1D 0xE3		72
Reading of length (cm) of printed paper		
0x1D 0xE5		73
Reading number of power up		
0x1D 0xE6		74
Virtual paper end limit		

BARCODE COMMANDS

0x1D 0x48	<GS H>	75
Select printing position of Human Readable Interpretation (HRI) characters		
0x1D 0x66	<GS f>	76
Select font for HRI characters		



0x1D 0x68	.....<GS h>.....	77
Set barcode height		
0x1D 0x6B	.....<GS k>.....	78
Print barcode		
0x1D 0x77	.....<GS w>.....	81
Set barcode width		

MACRO FUNCTIONS

0x1D 0x3A	.....<GS :>.....	82
Set start/end of macro definition		
0x1D 0x5E	.....<GS ^>.....	83
Execute macro		

MECHANISM CONTROL

0x1B 0x69	.....<ESC i>.....	84
Total cut		
0x1B 0x6D	.....<ESC m>.....	85
Partial cut		

MISCELLANEOUS COMMANDS

0x1B 0x3D	.....<ESC =>.....	86
Select peripherals device		
0x1B 0x40	.....<ESC @>.....	87
Initialize printer		
0x1B 0x63 0x34	.....<ESC c>.....	88
Select paper sensor to stop printing		
0x1B 0x63 0x35	.....<ESC c>.....	89
Enable/disable panel key		
0x1B 0x78	.....<ESC x>.....	90
Select speed/quality mode		
0x1B 0xFA	.....	91
Print graphic		
0x1B 0xFB	.....	93
Transmit RAM bank to communication port		
0x1B 0xFC	.....	94
Transfer flash bank into RAM		



0x1B 0xFD	95
Receive RAM bank from communication port	
0x1B 0xFE	96
Transfer RAM into flash bank	
0x1D 0x43 0x30	97
Select counter print mode	
0x1D 0x43 0x31	98
Select count mode (A)	
0x1D 0x43 0x32	99
Set counter	
0x1D 0x43 0x3B	100
Select count mode (B)	
0x1D 0x49	101
Transmit printer ID	
0x1D 0x50	103
Set horizontal and vertical motion units	
0x1D 0x63	104
Print counter	
0x1D 0x7C	105
Set printing density	

LABEL MANAGEMENT COMMANDS

0x1D 0x65	106
Ejector commands	
0x1D 0xF4	108
Label management with cut	
0x1D 0xF5	109
Presentation of the label	
0x1D 0xF6	110
Align the label with the first printing line	
0x1D 0xF7	111
Align with the cut line	
0x1D 0xFA	112
Presentation of the label	
0x1D 0xFB	113
Retrieve the print position	





PRINT COMMANDS

0x0A

<LF>

Print and line feed

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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.

[Default]

[Reference] 0x1B 0x32, 0x1B 0x33, 0x0D

[Example]



0x0C

<FF>

Form Feed

Valid for	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	FF
	Hex	0C
	Decimal	12

[Range]

[Description] If the buffer contains any characters, these are printed and the paper forward feeds until the detection of a reference mark on the paper, signalled by the photocell.

[Notes] The buffer data is deleted after being printed.

[Default]

[Reference]

[Example]



0x0D

<CR>

Print and carriage return

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	CR
	Hex	0D
	Decimal	13

[Range]

[Description] When Autofeed parameter (printer setup) is “CR enabled”, this command functions in the same way as 0x0A, otherwise it is disregarded.

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

[Default] See “Autofeed” parameter in setup.

[Reference] 0x0A

[Example]



0x1B 0x4A

<ESC J>

Print and feed paper

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq n \leq 255$

[Description] Prints the data in the print buffer and feeds the paper [$n \times$ (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 0x1B 0x32 or 0x1B 0x33.
 - The horizontal and vertical motion units are specified by 0x1D 0x50.
 - 0x1D 0x50 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.

[Default]

[Reference] 0x1D 0x50

[Example]



0x1B 0x64

<ESC d>

Print and feed paper n lines

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	d	n
	Hex	1B	64	n
	Decimal	27	100	n

[Range] $0 \leq n \leq 255$

[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 0x1B 0x32 or 0x1B 0x33.
- 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] 0x1B 0x32, 0x1B 0x33

[Example]



LINE SPACING COMMANDS

0x1B 0x30

<ESC 0>

Select 1/8-inch line spacing

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0
	Hex	1B	30
	Decimal	27	48

[Range]

[Description] Selects 1/8-inch line spacing.

[Notes]

[Default]

[Reference] 0x1B 0x32, 0x1B 0x33

[Example]



0x1B 0x32

<ESC 2>

Select 1/6-inch line spacing

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	2
	Hex	1B	32
	Decimal	27	50

[Range]

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

[Notes]

[Default]

[Reference] 0x1B 0x30, 0x1B 0x33

[Example]



0x1B 0x33

<ESC 3>

Set line spacing using minimum units

Valid for	TPTCM60III			
	TPTCM112III			
	PRT80III			
	TPTCM60IIIL			
	TPTCM112IIIL			
[Format]	ASCII	ESC	3	n
	Hex	1B	33	n
	Decimal	27	51	n
[Range]	$0 \leq n \leq 255$			
[Description]	Sets line spacing to [n × (vertical or horizontal motion unit)] inches.			
[Notes]	<ul style="list-style-type: none"> • The horizontal and vertical motion unit are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current line spacing. • The 0x1D 0x50 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]	0x1B 0x30, 0x1B 0x32, 0x1D 0x50			
[Example]				



CHARACTER COMMANDS

0x1B 0x20

<ESC SP>

Set right-side character spacing

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0xD 0x50. Changing the horizontal or vertical motion units does not affect the current right side spacing.
 - The 0x1D 0x50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
 - The maximum right side character spacing is 255/200 inches.
 - In standard mode, the horizontal motion unit is used.

[Default] n = 0

[Reference] 0x1D 0x50

[Example]



0x1B 0x21

<ESC !>

Set print mode

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII ESC ! n
 Hex 1B 21 n
 Decimal 27 33 n

[Range] $0 \leq n \leq 255$

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

BIT	OFF/ON	HEX	Decimal	FUNCTION	11/15 cpi	15/20 cpi	20/25 cpi
0	Off	00	0	Character font A selected.	18 x 24	14 x 24	14 x 24
	On	01	1	Character font B selected.	14 x 24	10 x 24	8 x 24
1	-	-	-	RESERVED			
2	-	-	-	RESERVED			
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 0x09, 0x1B 0x24, 0x1B 0x5C and 90°/270° rotated characters.
 - When characters are enlarged to different heights on one line, the characters are aligned at the baseline or topline (see 0x1D 0x7E).
 - This command resets the left and right margin at default value (see 0x1D 0x4C, 0x1D 0x57).
 - 0x1B 0x45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one.
 - 0x1B 0x2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one.



- 0x1B 0x34 can also be used to turn the italic mode on/off. However, the last-received setting command is the effective one.
- 0x1D 0x21 can also be used to select character height/width. However, the last-received setting command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x2D, 0x1B 0x34, 0x1B 0x45, 0x1D 0x21

[Example]



0x1B 0x25

<ESC %>

Select/cancel user-defined character set

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	%	n
	Hex	1B	25	n
	Decimal	27	37	n

[Range] $0 \leq n \leq 255$

[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] 0x1B 0x26, 0x1B 0x3F

[Example]

0x1B 0x26

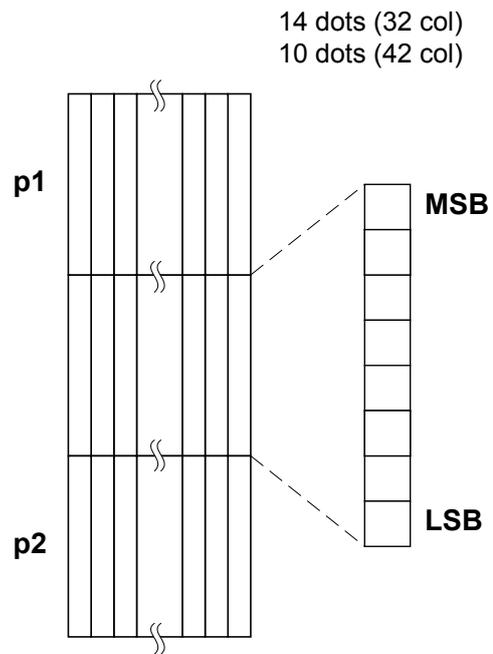
<ESC &>

Defines user-defined characters

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL					
[Format]	ASCII	ESC	&	y	c1	c2
	Hex	1B	26	y	c1	c2
	Decimal	27	37	y	c1	c2
[Range]	y = 3 $32 \leq c1 \leq c2 \leq 126$ $0 \leq x \leq 16$ (Font (18 × 24)) $0 \leq x \leq 13$ (Font (13 × 24)) $0 \leq x \leq 10$ (Font 10 × 24) $0 \leq d1 \dots d (y \times Xk) \leq 255$ $k = c2 - c1 + 1$					
[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]	<ul style="list-style-type: none"> The allowable character code range is from ASCII 0x20 (32) to 0x7E (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 × 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 0x1B 0x21. The user-defined character definitions are cleared when 0x1B 0x40, 0x1B 0x3F are executed. The printer is reset or the power shut off. 					
[Default]	Internal character set.					
[Reference]	0x1B 0x25, 0x1B 0x3F					



[Example]



0x1B 0x2D

<ESC ->

Turn underline mode on/off

Valid for	TPTCM60III			
	TPTCM112III			
	PRT80III			
	TPTCM60IIIL			
	TPTCM112IIIL			
[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]	<ul style="list-style-type: none"> • The printer can underline all characters, but cannot underline the space and right-side character spacing (command 0x09). • 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 0x1B 0x21. Note, however, that the last received command is the effective one. 			
[Default]	n=0			
[Reference]	0x1B 0x21			
[Example]				



0x1B 0x34

<ESC 4>

Set/reset italic mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	4	n
	Hex	1B	34	n
	Decimal	27	52	n

[Range]	$0 \leq n \leq 1$
	$48 \leq n \leq 49$

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

[Notes]	<ul style="list-style-type: none"> • 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 0x1B 0x21. • Note, however, that the last received command is the effective one.
---------	---

[Default]	n = 0
-----------	-------

[Reference]	0x1B 0x21
-------------	-----------

[Example]



0x1B 0x3F

<ESC ?>

Cancel user-defined characters

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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.
- This command deletes the pattern defined for the specified character code in the font selected by 0x1B 0x21.
- If the user-defined character has not been defined for the specified character code, the printer ignores this command.

[Default]

[Reference] 0x1B 0x21, 0x1B 0x25, 0x1B 0x26

[Example]



0x1B 0x45

<ESC E>

Select emphasized mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	E	n
	Hex	1B	45	n
	Decimal	27	69	n

[Range] $0 \leq n \leq 255$

[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.
- 0x1B 0x21 also turns on and off the emphasized mode. However, the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21

[Example]



0x1B 0x47

<ESC G>

Select double-strike mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	G	n
	Hex	1B	47	n
	Decimal	27	71	n

[Range] $0 \leq n \leq 255$

[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] 0x1B 0x45

[Example]



0x1B 0x52

<ESC R>

Select international character set

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	R	n
	Hex	1B	52	n
	Decimal	27	82	n

[Range] $0 \leq n \leq 10$

[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	CHARACTERS SET												
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	\$	@	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]



0x1B 0x56

<ESC V>

Select print mode 90° turned

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	V	n
	Hex	1B	56	n
	Decimal	27	86	n

[Range]	$0 \leq n \leq 1$
	$48 \leq n \leq 49$

[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.
 - This command is not available in Page mode.
 - If this command is entered in Page mode, the setting will still take effect in standard mode.

[Default] n = 0

[Reference] 0x1B 0x21 , 0x1B 0x2D

[Example]



0x1B 0x74

<ESC t>

Select character code table

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	t	n
	Hex	1B	74	n
	Decimal	27	116	n

[Range] 1 ≤ n ≤ 53
n = 255

[Description] Selects a page n from the character code table, as follows:

n	PAGE
0	PC437 - U.S.A., Standard Europe
1	Katakana
2	PC850 - Multilingual
3	PC860 - Portuguese
4	PC863 - Canadian/French
5	PC865 - Nordic
11	PC851 - Greek on request
12	PC853 - Turkish on request
13	PC857 - Turkish on request
14	PC737 - Greek on request
15	ISO8859-7 - Greek on request
16	WPC1252
17	PC866 - Cyrillic 2
18	PC852 - Latin 2 on request
19	PC858 for Euro symbol at position 213
20	KU42 - Thai on request
21	TIS11 - Thai on request
26	TIS18 - Thai on request
30	TCVN_3 - Vietnamese on request
31	TCVN_3 - Vietnamese on request
32	PC720 - Arabic on request
33	WPC775 - Baltic Rim on request



n	PAGE
34	PC855 - Cyrillic on request
35	PC861 - Icelandic on request
36	PC862 - Hebrew
37	PC864 - Arabic
38	PC869 - Greek on request
39	ISO8859-2 - Latin 2 on request
40	ISO8859-15 - Latin 9 on request
41	PC1098 - Farci on request
42	PC1118 - Lithuanian on request
43	PC1119 - Lithuanian on request
44	PC1125 - Ukranian on request
45	WPC1250 - Latin 2
46	WPC1251 - Cyrillic
47	WPC1253 - Greek
48	WPC1254 - Turkish
49	WPC1255 - Hebrew
50	WPC1256 - Arabic
51	WPC1257 - Baltic Rim
52	WPC1258 - Vientamese
53	KZ1048 - Kazakhstan on request
255	Space page

[Notes] The tables are selectable only if the code pages are present on the machine. By selecting a code page not present on the machine, the code page remains the one currently in use.

[Default] n = 0

[Reference] See character code table.

[Example] For printing Euro symbol (€), the command sequence is: 0x1B, 0x74, 0x13, 0xD5

0x1B 0x7B

<ESC {>

Set/cancel upside-down character printing

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII ESC { n
 Hex 1B 7B n
 Decimal 27 123 n

[Range] $0 \leq n \leq 255$

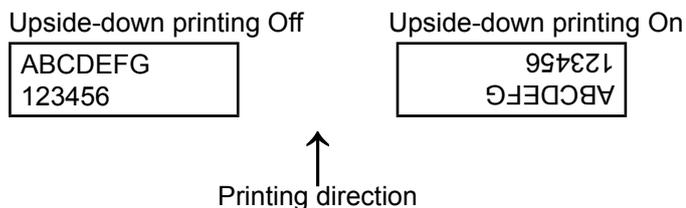
[Description] Turns upside-down printing mode on or off.
 • When the LSB of n is 0, the upside-down printing mode is off.
 • When the LSB of n is 1, the upside-down printing mode is on.

[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]



0x1D 0x21

<GS !>

Select character size

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	!	n
	Hex	1D	21	n
	Decimal	29	33	n

[Range] $0 \leq n \leq 255$

[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 (width = 2x)
20	32	3 (width = 3x)
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 (height = 2x)
02	2	3 (height = 3x)
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 0x1D 0x7E).
- 0x1B 0x21 can also be used to select character size. However, the setting of the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21, 0x1D 0x7E

[Example]



0x1D 0x42

<GS B>

Turn white/black reverse printing mode on/off

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	B	n
	Hex	1D	42	n
	Decimal	29	66	n

[Range] $0 \leq n \leq 255$

[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, barcode, HRI characters and spacing skipped by 0x09, 0x1B 0x24 and 0x1B 0x5C.
- 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] 0x09, 0x1B 0x24, 0x1B 0x5C

[Example]



0x1D 0x7E

Set superscript/subscript

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0x7E	n
	Hex	1D	7E	n
	Decimal	29	126	n

[Range]	$0 \leq n \leq 1$
	$48 \leq n \leq 49$

[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] 0x1B 0x21, 0x1D 0x21

[Example]



PRINT POSITION COMMANDS

0x08

<BS>

Back space

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	BS
	Hex	08
	Decimal	8

[Range]

[Description] Moves the print position to previous character.

[Notes] Can be used to put two characters at the same position.

[Default]

[Reference]

[Example]



0x09

<HT>

Horizontal tab

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0x1B 0x44.

[Default]

[Reference] 0x1B 0x44

[Example]



0x18

<CAN>

Cancel print data buffer

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[Format]

ASCII	CAN
Hex	18
Decimal	24

[Range]

[Description] Deletes all the print data in the current print buffer.

[Notes] This command sets the print position at the beginning of the line.

[Default]

[Reference]

[Example]



0x1B 0x24

<ESC \$>

Set absolute print position

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	\$	nL	nH
	Hex	1B	24	nL	nH
	Decimal	27	36	nL	nH

[Range]	$0 \leq nL \leq 255$
	$0 \leq nH \leq 255$

[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 $[(nL + nH \times 256) \times (\text{vertical or horizontal motion unit})]$ inches.

- [Notes]
- Settings outside the specified printable area are ignored.
 - The horizontal and vertical motion unit are specified by 0x1D 0x50.
 - 0x1D 0x50 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] 0x1B 0x5C, 0x1D 0x50

[Example]



0x1B 0x28 0x76

<ESC (v>

Set relative vertical print position

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL					
[Format]	ASCII	ESC	(	v	nL	nH
	Hex	1B	28	76	nL	nH
	Decimal	27	40	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]	<ul style="list-style-type: none"> • When the starting position is specified by N motion unit to the bottom: $nL + nH \times 256 = N$ • When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536: $nL + nH \times 256 = 65536 - N$ • The horizontal and vertical motion unit are specified by 0x1D 0x50. • The 0x1D 0x50 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]	0x1D 0x50					
[Example]						



0x1B 0x44

<ESC D>

Set horizontal tab position

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[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 <ul style="list-style-type: none"> • 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]	<ul style="list-style-type: none"> • 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 0x09. • 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. • 0x1B 0x44 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, ...) or Font A when the right-side character spacing is 0.				
[Reference]	0x09				
[Example]					



0x1B 0x5C

<ESC T>

Set relative print position

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[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]	<ul style="list-style-type: none"> • When the starting position is specified by n motion units to the right : $nL + nH \times 256 = N$ • When the starting position is specified by n motion units to the left (negative direction) use the complement of 65536 : $nL + nH \times 256 = 65536 - N$ • 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 0x1D 0x50. • 0x1D 0x50 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. • Any setting that exceeds the printable area is ignored. 				
[Default]					
[Reference]	0x1B 0x24, 0x1D 0x50				
[Example]					



0x1B 0x61

<ESC a>

Select justification

Valid for

TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format]

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

[Range]

$0 \leq n \leq 2$
 $48 \leq n \leq 50$

[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 0x09, 0x1B 0x24 and 0x1B 0x5C will be justified according to the previously-entered mode.

[Default]

n = 0

[Reference]

0x09, 0x1B 0x24, 0x1B 0x5C

[Example]

Flush left	Centered	Flush right
ABC ABCD ABCDE	ABC ABCD ABCDE	ABC ABCD ABCDE

0x1D 0x4C

<GS L>

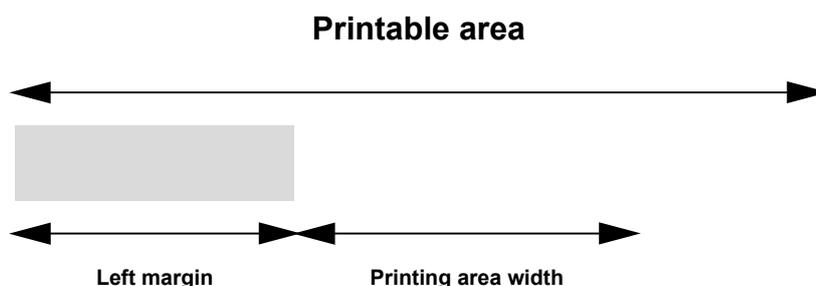
Set left margin

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq nL, nH \leq 255$

[Description] Sets the left margin.
The left margin is set to $[(nL + nH \times 256) \times (\text{horizontal motion unit})]$ 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 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 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] **TPTCM60III, TPTCM60IIIL**

If 32 and 56 col.	nL = nH = 0
If 42 col.	nL = 14 nH = 0



PRT80III

If 40 col.	nL = 8 nH = 0
If 56 col.	nL = 8 nH = 0
If 72 col.	nL = nH = 0

TPTCM112III, TPTCM112IIIL

If 104 col.	nL = nH = 0
If 80 col.	nL = 16 nH = 0
If 52 col.	nL = nH = 0

[Reference] 0x1D 0x50, 0x1D 0x57

[Example]

0x1D 0x57

<GS W>

Set printing area width

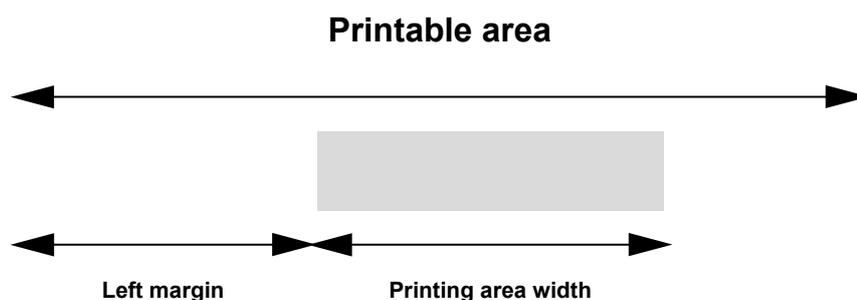
Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format]

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

[Range]
 $0 \leq nL, nH \leq 255$
 $0 \leq nL + nH \times 256 \leq 832$

[Description]
 Sets the printing area width to the area specified by nL and nH.
 The left margin is set to $[(nL + nH \times 256) \times (\text{horizontal motion unit})]$ 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 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 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]
TPTCM60III, TPTCM60IIIL

If 32 and 56 col.	nL = nH = 0
If 42 col.	nL = 14 nH = 0



PRT80III

If 40 col.	nL = 8 nH = 0
If 56 col.	nL = 8 nH = 0
If 72 col.	nL = nH = 0

TPTCM112III, TPTCM112IIIL

If 104 col.	nL = nH = 0
If 80 col.	nL = 16 nH = 0
If 52 col.	nL = nH = 0

[Reference] 0x1D 0x50

[Example]



BIT IMAGE COMMANDS

0x1B 0x2A

<ESC *>

Select image print mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 ≤ d ≤ 255

TPTCM60III, TPTCM60IIIL

0 ≤ nH ≤ 1

PRT80III

0 ≤ nH ≤ 2

TPTCM112III, TPTCM112IIIL

0 ≤ nH ≤ 3

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

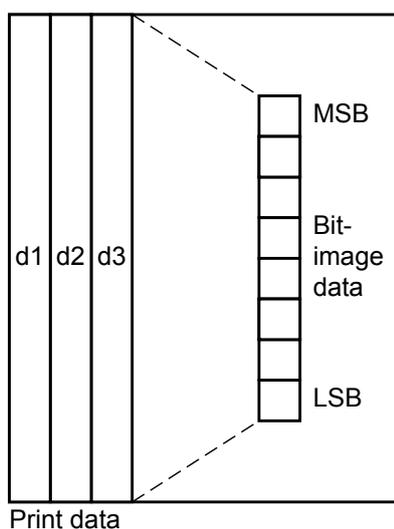
m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION	
		N. dots	DPI	DPI	N. data (k)
0	8 dot single density	8	67	100	nL + nH x 256
1	8 dot double density	8	67	200	nL + nH x 256
32	24 dot single density	24	200	100	(nL + nH x 256) x 3
33	24 dot double density	24	200	200	(nL + nH x 256) x 3

- [Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH × 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.

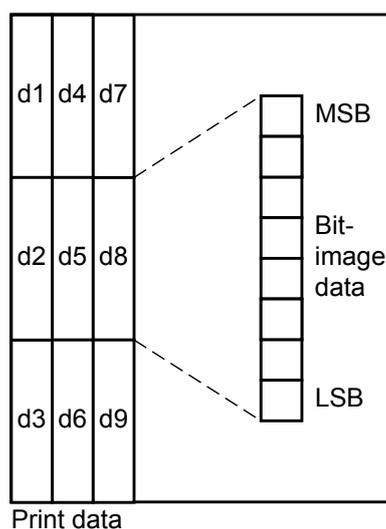
- If the width of the printing area set by 0x1D 0x4C and 0x1D 0x57 is less than the width required by the data set using 0x1B 0x2A , the excess data are ignored.
- To print the bit image use 0x0A, 0x0D, 0x1B 0x4A or 0x1B 0x64.
- After printing a bit image, the printer returns to normal data processing 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:

8-dot bit image



24-dot bit image



[Default]

[Reference]

0x0A, 0x0D, 0x1B 0x4A, 0x1B 0x64, 0x1D 0x4C, 0x1D 0x57

[Example]



STATUS COMMANDS

0x10 0x04

<DLE EOT>

Real-time status transmission

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	DLE	EOT	n
	Hex	10	04	n
	Decimal	16	4	n

[Range] $1 \leq n \leq 4$
n = 20

[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 = 20	transmit FULL STATUS

[Notes] • Immediately executed even when the data buffer is full.
• This status is transmitted whenever data sequence 0x10 0x04 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	Cover close
	On	04	4	Cover open
3	Off	00	0	Paper isn't fed by LINE FEED key
	On	08	8	Paper is fed by LINE 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	On	00	0	Not used. Fixed to Off
3	Off	00	0	Cutter ok (only for models with cutter)
	On	08	8	Cutter error (only for models with autocutter)
4	On	10	16	Not used. Fixed to On
5	-	-	-	RESERVED
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=20: FULL status (6 bytes)

1st Byte = 0x10 (DLE)

2nd Byte = 0x0F

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	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Paper virtually present (*)
	On	40	64	Virtual paper end (*)
7	Off	00	0	Label is not aligned with the print line (only for models TPTCM60IIIL and TPTCM112IIIL)
	On	80	128	Label is aligned with the print line (only for models TPTCM60IIIL and TPTCM112IIIL)

(*) Virtual paper end is set when the paper length available, read by 0x1D 0xE1, is 0.



4th byte = User status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Thermal head down / free paper route
	On	01	1	Printing head up / paper jam
1	-	-	-	RESERVED
2	-	-	-	RESERVED
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	-	-	-	RESERVED
2	Off	00	0	Not used. Fixed to Off
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper route (only for models with ejector)
	On	40	64	Paper jam (only for models with ejector)
7	-	-	-	RESERVED



6th byte = Unrecoverable error status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Cutter ok (only for models with cutter)
	On	01	1	Cutter error (only for models with cutter)
1	Off	00	0	Not used. Fixed to Off
2	-	-	-	RESERVED
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	Off	00	0	Not used. Fixed to Off



0x1B 0x76

<ESC v>

Transmit printer status

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[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. 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	-	-	-	RESERVED
6	-	-	-	RESERVED
7	Off	00	0	Not used. Fixed to Off

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

[Default]

[Reference] 0x10 0x04

[Example]



0x1D 0x72

<GS r>

Transmit status

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL
-----------	--

[Format]	ASCII	GS	r	n
	Hex	1D	72	n
	Decimal	29	114	n

[Range]	$1 \leq n \leq 2,$	$49 \leq n \leq 50$
---------	--------------------	---------------------

[Description] Transmits the status specified by n as follows:

n	FUNCTION
1, 49	Transmits paper sensor status

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	-	-	-	RESERVED
6	-	-	-	RESERVED
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] 0x10 0x04, 0x1B 0x76

[Example]



0x1D 0x76

<GS r>

Request expanded status

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	v
	Hex	1D	76
	Decimal	29	118

[Range]

[Description] This command transmits two bytes, each bit indicates the printer status to serial port.

First byte:

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Near paper end sensor: paper not present
	On	01	1	Near paper end sensor: paper present
1	Off	00	0	Notch not detected
	On	02	2	Notch detected from photocell
2	Off	00	0	Paper out
	On	04	4	Paper not present
3	Off	00	0	Line Feed key released
	On	08	8	Line Feed key pressed
4	Off	00	0	Form Feed key released
	On	10	16	Form Feed key pressed
5	Off	00	0	Head temperature correct
	On	20	32	Head temperature error
6	Off	00	0	Motor off
	On	40	64	Motor on
7	Off	00	0	No error
	On	80	128	Error due to paper end, Head up, etc.



Second byte:

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	On	01	1	Printing
1	On	02	2	Head up
2	On	04	4	Outside notch
3	On	08	8	Ticket on the exit mouth
4	On	10	16	Ejector motor ON
5	Off	00	0	Not used (if the ejector is not present) No Paper Jam (only if the ejector is present)
	On	20	32	Not used (if the ejector is not present) Paper Jam (only if the ejector is present)
6	-	-	-	RESERVED
7	-	-	-	RESERVED

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

[Default]

[Reference]

[Example]



0x1D 0xE0

Enable / Disable automatic FULL STATUS BACK

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL
-----------	--

[Format]	ASCII	GS	0xE0	n
	Hex	1D	E0	n
	Decimal	29	224	n

[Range] $0 \leq n \leq 255$

[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	04	4	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:

1st Byte = 0x10 (DLE)

2nd Byte = n

Next bytes (depends how many bits are active in n)

[Default]

[Reference] 0x10 0x04

[Example]



0x1D 0xE1

Reading of length paper (cm) available before virtual paper end

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE1
	Hex	1D	E1
	Decimal	29	225

[Range]

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

[Notes]

- The length 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 0x1D 0xE6.
- 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] 0x1D 0xE6

[Example]



0x1D 0xE2

Reading number of cuts performed from the printer

Valid for	TPTCM60III
	TPTCM112III

[Format]	ASCII	GS	0xE2
	Hex	1D	E2
	Decimal	29	226

[Range]

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

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

[Default]

[Reference]

[Example]



0x1D 0xE3

Reading of length (cm) of printed paper

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE3
	Hex	1D	E3
	Decimal	29	227

[Range]

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

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

[Default]

[Reference]

[Example]



0x1D 0xE5

Reading number of power up

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE5
	Hex	1D	E5
	Decimal	29	229

[Range]

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

[Notes] The command return a string indicating 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]



0x1D 0xE6

Virtual paper end limit

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE6	nL	nH
	Hex	1D	E6	nL	nH
	Decimal	29	230	nL	nH

[Range] $0 \leq nL, nH \leq 255$

[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 $[(nH \times 256) + nL]$

[Default] nH = 0x00
nL = 0xF0

[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:

$$nH = 1500 / 256 = 5$$

$$nL = 1500 - (nH \times 256) = 1500 - (5 \times 256) = 220$$

and then send the following command:

Hex: 0x1D 0xE6 0x05 0xDC

Decimal: 29 230 5 220



BARCODE COMMANDS

0x1D 0x48

<GS H>

Select printing position of Human Readable Interpretation (HRI) characters

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	H	n
	Hex	1D	48	n
	Decimal	29	72	n

[Range]	$0 \leq n \leq 3$
	$48 \leq n \leq 51$

[Description] Selects the printing position of HRI characters when printing barcodes. 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 the below the barcode

[Notes] HRI characters are printed using the font specified by 0x1D 0x66.

[Default] n = 0

[Reference] 0x1D 0x66, 0x1D 0x6B

[Example]



0x1D 0x66

<GS f>

Select font for HRI characters

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 barcode.
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 0x1D 0x48.

[Default] n = 0

[Reference] 0x1D 0x48, 0x1D 0x6B

[Example]



0x1D 0x68

<GS h>

Set barcode height

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	h	n
	Hex	1D	68	n
	Decimal	29	104	n

[Range] $1 \leq n \leq 255$

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

[Notes]

[Default] n = 162 (20.25 mm)

[Reference] 0x1D 0x6B

[Example]



0x1D 0x6B

<GS k>

Print barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format 1]	ASCII	GS	k	m	[d1..dk]	NUL
	Hex	1D	6B	m	[d1..dk]	00
	Decimal	29	107	m	[d1..dk]	0

[Format 2]	ASCII	GS	k	m	n	[d1..dn]
	Hex	1D	6B	m	n	[d1..dn]
	Decimal	29	107	m	n	[d1..dn]

[Range]	Format 1:	$0 \leq m \leq 8$ $m = 20$
	Format 2:	$65 \leq m \leq 73$ $m = 90$

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

Format 1:

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0	UPC-A	$11 \leq k \leq 12$	$48 \leq d \leq 57$
1	UPC-E	$11 \leq k \leq 12$	$48 \leq d \leq 57$
2	EAN13 (JAN)	$12 \leq k \leq 13$	$48 \leq d \leq 57$
3	EAN8 (JAN)	$7 \leq k \leq 8$	$48 \leq d \leq 57$
4	CODE39	$1 \leq k$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
5	ITF	$1 \leq k$ (even number)	$48 \leq d \leq 57$
6	CODABAR	$1 \leq k$	$48 \leq d \leq 57, 65 \leq d1 \leq 68, 36, 43, 45, 46, 47, 58$
7	CODE93	$1 \leq k \leq 255$	$1 \leq d \leq 127$
8	CODE128	$2 \leq k \leq 255$	$1 \leq d \leq 127$
20	CODE32	$8 \leq k \leq 9$	$48 \leq d \leq 57$



Format 2:

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
65	UPC-A	$11 \leq n \leq 12$	$48 \leq d \leq 57$
66	UPC-E	$11 \leq n \leq 12$	$48 \leq d \leq 57$
67	EAN13 (JAN)	$12 \leq n \leq 13$	$48 \leq d \leq 57$
68	EAN8 (JAN)	$7 \leq n \leq 8$	$48 \leq d \leq 57$
69	CODE39	$1 \leq n \leq 255$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
70	ITF	$1 \leq n \leq 255$	$48 \leq d \leq 57$
71	CODABAR	$1 \leq n \leq 255$	$48 \leq d \leq 57, 65 \leq d1 \leq 68, 36, 43, 45, 46, 47, 58$
72	CODE93	$1 \leq n \leq 255$	$1 \leq d \leq 127$
73	CODE128	$2 \leq n \leq 255$	$1 \leq d \leq 127$
90	CODE32	$8 \leq n \leq 9$	$48 \leq d \leq 57$

[Notes]

- If d is outside of the specified range, the printer prints the following message: “BARCODE 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 barcode, regardless of the line spacing specified by 0x1B 0x32 or 0x1B 0x33.
- After printing the barcode, 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.

Format 1:

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

Format 2:

- 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.
- prints an HRI character (n) as a control character (0x00 to 0x1F and 0x7F).



When CODE128 is used:

- When using CODE128 in this printer, please note the following regarding data transmission:
- The top part of the barcode 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] 0x1D 0x48, 0x1D 0x66, 0x1D 0x68, 0x1D 0x77

[Example] Format 1: Example of Barcode 39 printing
0x1D 0x6B 0x04 0x54 0x45 0x53 0x54 0x00

Format 2: Example of Barcode 39 printing
0x1D 0x6B 0x45 0x04 0x54 0x45 0x53 0x54



0x1D 0x77

<GS w>

Set barcode width

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	w	n
	Hex	1D	77	n
	Decimal	29	119	n

[Range] 0x1 ≤ n ≤ 0x6

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

n	MODULE WIDTH (mm)
0x1	0.125
0x2	0.25
0x3	0.375
0x4	0.5
0x5	0.625
0x6	0.75

[Notes]

[Default] n = 3

[Reference] 0x1D 0x6B

[Example]



MACRO FUNCTIONS

0x1D 0x3A

<GS :>

Set start/end of macro definition

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0x1D 0x5E 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 0x1B 0x40 command. Therefore, 0x1B 0x40 may be included in the content of macro definitions.
- If the printer receives 0x1D 0x3A a second time after previously receiving 0x1D 0x3A, the printer remains in macro undefined status.
- The contents of the macro can be defined up to 2048 bytes. If the macro definition exceeds 2048 bytes, excess data is not stored.

[Default]

[Reference] 0x1D 0x5E

[Example]



0x1D 0x5E

<GS ^>

Execute macro

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range]	$0 \leq r, t \leq 255$
	$0 \leq m \leq 1$

[Description]	<p>Executes a macro.</p> <ul style="list-style-type: none"> • r specifies the number of times to execute the macro. • t specifies the waiting time for executing the macro. The waiting time is $t \times 100$ msec. for each macro execution. • m specifies macro executing mode: <ul style="list-style-type: none"> 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]	<ul style="list-style-type: none"> • This command has an interval of $(t \times 100$ 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]	0x1D 0x3A
-------------	-----------

[Example]



MECHANISM CONTROL

0x1B 0x69

<ESC i>

Total cut

Valid for	TPTCM60III
	TPTCM112III
	TPTCM112IIIL

[Format]	ASCII	ESC	i
	Hex	1B	69
	Decimal	27	105

[Range]

[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]



0x1B 0x6D

<ESC m>

Partial cut

Valid for	TPTCM60III
	TPTCM112III
	TPTCM112IIIL

[Format]	ASCII	ESC	m
	Hex	1B	6D
	Decimal	27	109

[Range]

[Description] This command enables partial 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 partial cut.
 - This command is ignored in the models with ejector

[Default]

[Reference]

[Example]



MISCELLANEOUS COMMANDS

0x1B 0x3D

<ESC =>

Select peripherals device

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[Format]

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

[Range] $0 \leq n \leq 255$

[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	-	-	-	RESERVED
2	-	-	-	RESERVED
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

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

[Default] n = 1

[Reference]

[Example]



0x1B 0x40

<ESC @>

Initialize printer

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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]



0x1B 0x63 0x34

<ESC c>

Select paper sensor to stop printing

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	c	4	n
	Hex	1B	63	34	n
	Decimal	27	99	52	n

[Range] $0 \leq n \leq 255$

[Description] Selects the paper sensor used to stop printing when a near paper end is detected, using n as follows :

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper roll end sensor disabled
	On	01	1	Paper roll near-end sensor enabled
1	-	-	-	RESERVED
2	-	-	-	RESERVED
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

- [Notes]
- When a near paper end is detected, printing stops after printing the current line and feeding the paper.
 - The paper roll near-end sensor is enabled when either bit 0 is 1.
 - This setting is not cleared by printer resetting, because it is stored in the EEPROM.

[Default] n = 0

[Reference]

[Example]



0x1B 0x63 0x35

<ESC c>

Enable/disable panel key

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq n \leq 255$

[Description] Enables/disables the buttons on the front panel.

- When the LSB of n is 0, the panel buttons are enabled.
- When the LSB of n is 1, the panel buttons are disabled.

[Notes]

- Only the LSB of n is effective.
- On the printer, the panel buttons are LF LINE FEED and FF FORM FEED.
- When the panel buttons are disabled, the buttons may only be used after the printer has been reset.

[Default] n = 0

[Reference]

[Example]



0x1B 0x78

<ESC x>

Select speed/quality mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	x	n
	Hex	1B	78	n
	Decimal	27	120	n

[Range] $0 \leq n \leq 2$

[Description] Selects printing speed/quality mode.

n	FUNCTION
0	Draft mode (high speed)
1	Normal mode
2	High quality (low speed)

[Notes] In high quality mode (n=2), the printer may be noisy.

[Default] n = 2

[Reference]

[Example]



0x1B 0xFA

Print graphic

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0xFA	n	xH	xL	yH	yL
	Hex	1B	FA	n	xH	xL	yH	yL
	Decimal	27	250	n	xH	xL	yH	yL

[Range] $0 \leq n \leq 3$
 $0 \leq xH, xL, yH, yL \leq 255$

[Description] Prints graphic logo from flash or RAM. n selects the graphic source as follows:

n	FUNCTION
0	Print graphic page from ram (used at the moment)
1	Print logo 1 from flash
2	Print logo 2 from flash
3	Print logo 3 from flash

TPTCM60III, TPTCM60IIIL

The graphic bank dimension is 448 x 585 dots
 $xL + xH \times 256$ specifies the starting dotline (1 ÷ 585).
 $yL + yH \times 256$ specifies the number of lines to print.

PRT80III

The graphic bank dimension is 576 x 455 dots
 $xL + xH \times 256$ specifies the starting dotline (1 ÷ 455).
 $yL + yH \times 256$ specifies the number of lines to print.

TPTCM112III, TPTCM112IIIL

The graphic bank dimension is 832 x 315 dots
 $xL + xH \times 256$ specifies the starting dotline (1 ÷ 315).
 $yL + yH \times 256$ specifies the number of lines to print.

[Notes]

TPTCM60III, TPTCM60IIIL

- If $(xL + (xH \times 256)) > 585$ the printer does not execute the command.
- If $(xL + (xH \times 256) + yL + (yH \times 256)) > 585$ the printer prints only $585 - xL + (xH \times 256) + 1$ dotline.

PRT80III

- If $(xL + (xH \times 256)) > 455$ the printer does not execute the command.
- If $(xL + (xH \times 256) + yL + (yH \times 256)) > 455$ the printer prints only $455 - xL + (xH \times 256) + 1$ dotline.



TPTCM112III, TPTCM112IIIL

- If $(xL + (xH \times 256)) > 315$ the printer does not execute the command.
- If $(xL + (xH \times 256) + yL + (yH \times 256)) > 315$ the printer prints only $315 - xL + (xH \times 256) + 1$ dotline.

[Default]

[Reference] 0x1B 0xFC, 0x1B 0xFD, 0x1B 0xFE

[Example] To print from RAM bank dotline 100 to dotline 299, send:
0x1B 0xFA 0x01 0x00 0x64 0x00 0xC7



0x1B 0xFB

Transmit RAM bank to communication port

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIIL
	TPTCM112IIIIL

[Format]	ASCII	ESC	0xFB	nL	nH
	Hex	1B	FB	nL	nH
	Decimal	27	251	nL	nH

[Range] $0 \leq nL, nH \leq 255$

[Description] Transmits $[nL + (nH \times 256)]$ bytes of RAM bank to the communication port.

[Notes]

TPTCM60III, TPTCM60IIIIL

The size of ram bank for graphic printing is: 448 horizontal dots (56 bytes/dotline) x 585 vertical dots (32760 bytes = 16380 words).

PRT80III

The size of ram bank for graphic printing is: 576 horizontal dots (72 bytes/dotline) x 455 vertical dots (32760 bytes = 16380 words).

TPTCM112III, TPTCM112IIIIL

The size of ram bank for graphic printing is: 832 horizontal dots (104 bytes/dotline) x 315 vertical dots (32760 bytes = 16380 words).

[Default]

[Reference] 0x1B 0xFC, 0x1B 0xFD, 0x1B 0xFE

[Example]



0x1B 0xFC

Transfer flash bank into RAM

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0xFC	n
	Hex	1B	FC	n
	Decimal	27	252	n

[Range] $1 \leq n \leq 3$

[Description] Transfers flash bank into RAM used at the moment (32768 bytes).
n selects the flash bank as follows:

n	FUNCTION
1	Transfers flash bank logo 1 into ram
2	Transfers flash bank logo 2 into ram
3	Transfers flash bank logo 3 into ram

[Notes]

[Default]

[Reference] 0x1B 0xFA, 0x1B 0xFD, 0x1B 0xFE

[Example]



0x1B 0xFD

Receive RAM bank from communication port

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[Format]	ASCII	ESC	0xFD	nL	nH
	Hex	1B	FD	nL	nH
	Decimal	27	253	nL	nH
[Range]	$0 \leq nL, nH \leq 255$				
[Description]	Receives $[nL + (nH \times 256)]$ words from the port and puts them into the RAM bank.				
[Notes]	<ul style="list-style-type: none"> • The number of data bytes received is $[nL + (nH \times 256)] \times 2$. • Each word is first received as MSByte and then as LSByte. • If $[nL + (nH \times 256)]$ is greater than 16384, the data which follows is processed as normal data. <p>TPTCM60III, TPTCM60IIIL</p> <ul style="list-style-type: none"> • An horizontal dotline is represented to 28 words. <p>PRT80III</p> <ul style="list-style-type: none"> • An horizontal dotline is represented to 36 words. <p>TPTCM112III, TPTCM112IIIL</p> <ul style="list-style-type: none"> • An horizontal dotline is represented to 52 words. 				
[Default]					
[Reference]	0x1B 0xFA, 0x1B 0xFC, 0x1B 0xFE				
[Example]					



0x1B 0xFE

Transfer RAM into flash bank

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0xFE	n
	Hex	1B	FE	n
	Decimal	27	254	n

[Range] $1 \leq n \leq 3$

[Description] Transfers the RAM used at the moment into the flash bank (32768 bytes).
n selects the bank as follows:

n	FUNCTION
1	Transfers RAM used at the moment into flash bank logo 1
2	Transfers RAM used at the moment into flash bank logo 2
3	Transfers RAM used at the moment into flash bank logo 3

[Notes]

[Default]

[Reference] 0x1B 0xFA, 0x1B 0xFC, 0x1B 0xFD

[Example]



0x1D 0x43 0x30

<GS C>

Select counter print mode

Valid for

TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[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	Align right	Adds spaces to the left
1, 49	Align right	Adds a '0' to the left
2, 50	Align 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]

0x1D 0x43 0x31, 0x1D 0x43 0x32, 0x1D 0x43 0x3B, 0x1D 0x63

[Example]

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

□ indicates a space



0x1D 0x43 0x31

<GS C>

Select count mode (A)

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL									
[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. <ul style="list-style-type: none"> • aL, aH or bL, bH specify the counter range. • n indicates the stepping amount when counting up or down. • r indicates the repetition number when the counter value is fixed. 									
[Notes]	<ul style="list-style-type: none"> • 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]	0x1D 0x43 0x30, 0x1D 0x43 0x32, 0x1D 0x43 0x3B, 0x1D 0x63									
[Example]										



0x1D 0x43 0x32

<GS C>

Set counter

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL					
[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]	<ul style="list-style-type: none"> • In count-up mode, if the counter value specified by this command goes out of the counter operation range specified by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B it is forced to convert to the minimum value through 0x1D 0x63. • In count-down mode, if the counter value specified by this command goes out of the counter operation range specified by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B it is forced to convert to the maximum value through 0x1D 0x63. 					
[Default]	nL = 1, nH = 0					
[Reference]	0x1D 0x43 0x30, 0x1D 0x43 0x31, 0x1D 0x43 0x3B, 0x1D 0x63					
[Example]						



Select count mode (B)

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL																																										
[Format]	<table border="0"> <tr> <td>ASCII</td> <td>GS</td> <td>C</td> <td>;</td> <td>sa</td> <td>;</td> <td>sb</td> <td>;</td> <td>sn</td> <td>;</td> <td>sr</td> <td>;</td> <td>sc</td> <td>:</td> </tr> <tr> <td>Hex</td> <td>1D</td> <td>43</td> <td>3B</td> <td>sa</td> <td>3B</td> <td>sb</td> <td>3B</td> <td>sn</td> <td>3B</td> <td>sr</td> <td>3B</td> <td>sc</td> <td>3B</td> </tr> <tr> <td>Decimal</td> <td>29</td> <td>67</td> <td>59</td> <td>sa</td> <td>59</td> <td>sb</td> <td>59</td> <td>sn</td> <td>59</td> <td>sr</td> <td>59</td> <td>sc</td> <td>59</td> </tr> </table>	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
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]	<p>$0 \leq sa, sb, sc \leq 65535$ $0 \leq sn, sr \leq 255$</p>																																										
[Description]	<p>Selects a count mode for the serial number counter and specifies the value of the counter.</p> <ul style="list-style-type: none"> • 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]	<ul style="list-style-type: none"> • 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 0x1D 0x63. • 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 0x1D 0x63. • 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]	0x1D 0x43 0x30, 0x1D 0x43 0x32, 0x1D 0x43 0x31, 0x1D 0x63																																										
[Example]																																											



0x1D 0x49

<GS I>

Transmit printer ID

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	I	n
	Hex	1D	49	n
	Decimal	29	73	n

[Range]	$1 \leq n \leq 3$
	$49 \leq n \leq 51$

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

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID (1 byte)	0x4A (all TPTCM60II) 0x4A (all TPTCM60L) 0x4B (PRT80II) 0x4C (all TPTCM112II) 0x4C (all TPTCM112L)
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 character)

n = 2, 50 Type ID

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	2-byte character 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 with label
3	-	-	-	Undefined
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	Off	00	0	Not used. Fixed to Off

- [Notes]
- When the DTR/DSR control is selected, the printer only transmits 1 byte (printer ID) without confirmation that the host is ready to receive data. If host is not ready, the printer waits until is ready.
 - When the XON/XOFF control is selected, the printer only transmits 1 byte (printer ID) without confirmation 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]



0x1D 0x50

<GS P>

Set horizontal and vertical motion units

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] x = 100, 200
y = 100, 200

[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):

Commands using x: 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1D 0x4C, 0x1D 0x57
Commands using y: 0x1B 0x33, 0x1B 0x4A

• 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] 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1B 0x33, 0x1B 0x4A, 0x1D 0x4C, 0x1D 0x57

[Example]



0x1D 0x63

<GS c>

Print counter

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0x1D 0x43 0x30.
- The counter mode is set using 0x1D 0x43 0x31 or 0x1D 0x43 0x3B.
- In count-up mode, if the counter value set by this command goes out of the counter operation range set by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B 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 0x1D 0x43 0x31 or 0x1D 0x43 0x3B it is forced to revert to the maximum value.

[Default]

[Reference] 0x1D 0x43 0x30, 0x1D 0x43 0x31, 0x1D 0x43 0x32, 0x1D 0x43 0x3B

[Example]



0x1D 0x7C

<GS |>

Set printing density

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	|	n
	Hex	1D	7C	n
	Decimal	29	124	n

[Range]	$1 \leq n \leq 3$
	$49 \leq n \leq 51$

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

n	PRINTING DENSITY
1, 49	-25 %
2, 50	0 %
3, 51	25 %

[Notes] The printing density is cleared at default value when the printer is reset or the power is turned off.

[Default] n = 2

[Reference]

[Example]



LABEL MANAGEMENT COMMANDS

0x1D 0x65

<GS e>

Ejector commands

Valid for TPTCM60III (models with ejector)
TPTCM112III (models with ejector)

[Format] ASCII GS e n [m]
Hex 1D 65 n [m]
Decimal 29 101 n [m]

[Range] $0 \leq n \leq 3, 5 \leq n \leq 6$
 $n = 8, n = 18, n = 20$

[Description] This command checks tickets ejector:

n = 0 Ticket produced with defined number of steps (see command notes)
n = 1 Ejector motor off
n = 2 Ejector motor on
n = 3 ticket presenting with m steps (1 step = 36mm)
n = 5 ticket expulsion
n = 6 transmits ejector byte status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not near paper end
	On	01	1	Near paper end
1	Off	00	0	Not used. Fixed to Off
	On	04	4	Paper end sensor
2	Off	00	0	Paper end sensor
	On	04	4	Paper is present
3	Off	00	0	Tickets out
	On	08	8	Ticket present on ejector mouth
4	Off	00	0	Printer stepping motor off
	On	10	16	Printer stepping motor on
5	Off	00	0	Ejector motor off
	On	20	32	Ejector motor on
6	Off	00	0	No error
	On	40	64	Error occurs
7	-	-	-	RESERVED



- n = 8 ticket presenting with m steps (1 step = 12 mm)
- n = 18 Disable the dispenser continuous mode, sets the normal functioning: when printing the ticket remains in the outlet paper mouth, until a cut command or eject command will be sent.
- n = 20 Enable the dispenser continuous mode: when printing the ticket doesn't remain in the outlet paper mouth, but continuously presented it.

[Notes]

- m must be sent with n = 3, 8
- if n=3 and ticket is not cut yet, before execute the command a total cutting will be make.
- if n=0 the fixed value of ticket presenting is:
 - on power on and after a reset command (both hardware and software) 47mm
 - the last distance saved to a 0x1D 0x65 3 or 0x1D 0x65 8 commands.
 - Ticket presenting length can change of +/- 12 mm.

[Default]

[Reference]

[Example]



0x1D 0xF4

Label management with cut

Valid for TPTCM60IIIL
TPTCM112IIIL

[Format] ASCII GS 0xF4
 Hex 1D F4
 Decimal 29 244

[Range]

[Description] Execute the following commands:
 Align the label with the cutting line
 Perform a cut (0x1B 0x69)
 Align the label with the first printing line (0x1D 0xF6)

[Notes] This command is available with the cutter unit only.

[Default]

[Reference] 0x1D 0xF6

[Example]



0x1D 0xF5

Presentation of the label

Valid for	TPTCM60III L		
[Format]	ASCII	GS	0xF5
	Hex	1D	F5
	Decimal	29	245
[Range]			
[Description]	Execute the following commands: Align the end of the label at the printing line Advances by a fixed amount: 22mm.		
[Notes]			
[Default]			
[Reference]	0x1D 0xFA, 0x1D 0xFB		
[Example]			



0x1D 0xF6

Align the label with the first printing line

Valid for TPTCM60IIIL
TPTCM112IIIL

[Format] ASCII GS 0xF6
 Hex 1D F6
 Decimal 29 246

[Range]

[Description] After the cut or presentation of the label No.1, align the label No.2 with the printing line as follows:

- If the label No. 2 is already beyond the printing line, the label is retracted.
- If the label No. 2 is not beyond the printing line, the label is fed under the printing line.

[Notes]

[Default]

[Reference] 0x1D 0xF7

[Example]



0x1D 0xF7

Align with the cut line

Valid for	TPTCM60IIIIL
	TPTCM112IIIIL

[Format]	ASCII	GS	0xF7
	Hex	1D	F7
	Decimal	29	247

[Range]

[Description] Align the label with the cut line (in the half of the space between the next label)

[Notes]

- This command works with ticket height > 1 inch.
- Use the command 0x1D 0xF6 after the command 0x1D 0xF7 to perform a retracting to the first printing line

[Default]

[Reference] 0x1D 0xF6

[Example]

0x1D 0xFA

Presentation of the label

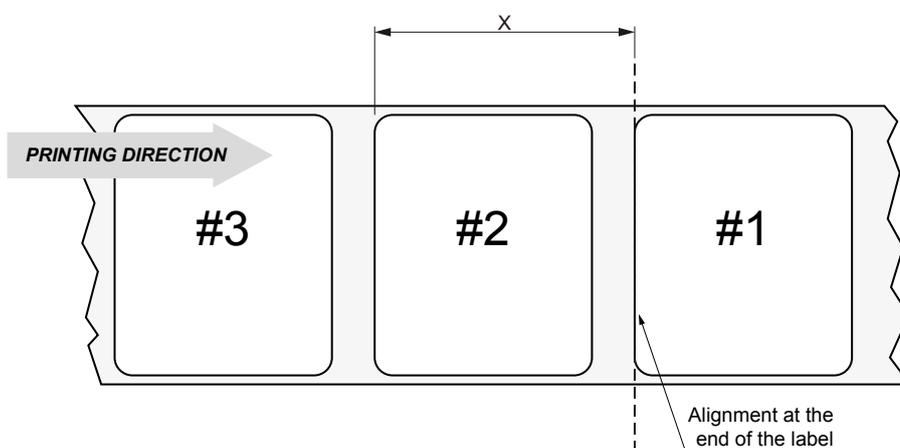
Valid for	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xFA	n
	Hex	1D	FA	n
	Decimal	29	250	n

[Range] $0 \leq n \leq 255$

[Description] Execute the following commands:
Align the end of the label at the printing line
Advances n millimetres.

[Notes] When is set a value n greater than X (see figure), it is ignored and n becomes equal to X.



[Default]

[Reference] 0x1D 0xFB

[Example]



0x1D 0xFB

Retrieve the print position

Valid for	TPTCM60IIIIL
	TPTCM112IIIIL

[Format]	ASCII	GS	0xFB	n
	Hex	1D	FB	n
	Decimal	29	251	n

[Range] $0 \leq n \leq 255$

[Description] Execute a retract of n millimetres.

[Notes] Command to send after the command 0x1D 0xFA.

[Default]

[Reference] 0x1D 0xFA

[Example]



CUSTOM/POS EMULATION



COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	200
0x09	<HT>	201
0x0A	<LF>	196
0x0D	<CR>	197
0x10 0x04	<DLE EOT>	209
0x18	<CAN>	171
0x1B 0x0C	<ESC FF>	255
0x1B 0x20	<ESC SP>	172
0x1B 0x21	<ESC !>	173
0x1B 0x24	<ESC \$>	202
0x1B 0x25	<ESC %>	175
0x1B 0x26	<ESC &>	176
0x1B 0x28 0x76	<ESC (>	203
0x1B 0x2A	<ESC *>	164
0x1B 0x2D	<ESC ->	178
0x1B 0x30	<ESC 0>	193
0x1B 0x32	<ESC 2>	194
0x1B 0x33	<ESC 3>	195
0x1B 0x34	<ESC 4>	179
0x1B 0x3D	<ESC =>	226
0x1B 0x3F	<ESC ?>	180
0x1B 0x40	<ESC @>	227
0x1B 0x44	<ESC D>	204
0x1B 0x45	<ESC E>	181
0x1B 0x47	<ESC G>	182
0x1B 0x4A	<ESC J>	198



0x1B 0x4C	<ESC L>	256
0x1B 0x4D	<ESC M>	183
0x1B 0x52	<ESC R>	184
0x1B 0x53	<ESC S>	257
0x1B 0x54	<ESC T>	258
0x1B 0x56	<ESC V>	185
0x1B 0x57	<ESC W>	259
0x1B 0x5C	<ESC \>	205
0x1B 0x61	<ESC a>	206
0x1B 0x63 0x35	<ESC c 5>	228
0x1B 0x64	<ESC d>	199
0x1B 0x69	<ESC i>	223
0x1B 0x6D	<ESC m>	224
0x1B 0x74	<ESC t>	186
0x1B 0x76	<ESC v>	214
0x1B 0x7B	<ESC {>	188
0x1B 0xC1		189
0x1B 0xFA		229
0x1B 0xFF		231
0x1C 0x25	<FS %>	190
0x1C 0x65	<FS e>	262
0x1C 0x66	<FS f>	263
0x1D 0x21	<GS !>	191
0x1D 0x24	<GS \$>	260
0x1D 0x28 0x6B	<GS (>	129
0x1D 0x28 0x6B [fn 065]	<GS (>	131
0x1D 0x28 0x6B [fn 065]	<GS (>	139
0x1D 0x28 0x6B [fn 065]	<GS (>	151



0x1D 0x28 0x6B [fn 066]	<GS (>	132
0x1D 0x28 0x6B [fn 066]	<GS (>	140
0x1D 0x28 0x6B [fn 067]	<GS (>	133
0x1D 0x28 0x6B [fn 067]	<GS (>	141
0x1D 0x28 0x6B [fn 067]	<GS (>	152
0x1D 0x28 0x6B [fn 068]	<GS (>	134
0x1D 0x28 0x6B [fn 068]	<GS (>	153
0x1D 0x28 0x6B [fn 069]	<GS (>	135
0x1D 0x28 0x6B [fn 069]	<GS (>	142
0x1D 0x28 0x6B [fn 069]	<GS (>	154
0x1D 0x28 0x6B [fn 080]	<GS (>	137
0x1D 0x28 0x6B [fn 080]	<GS (>	143
0x1D 0x28 0x6B [fn 080]	<GS (>	155
0x1D 0x28 0x6B [fn 081]	<GS (>	138
0x1D 0x28 0x6B [fn 081]	<GS (>	144
0x1D 0x28 0x6B [fn 081]	<GS (>	156
0x1D 0x28 0x6B [fn 365]	<GS (>	145
0x1D 0x28 0x6B [fn 366]	<GS (>	146
0x1D 0x28 0x6B [fn 367]	<GS (>	147
0x1D 0x28 0x6B [fn 368]	<GS (>	148
0x1D 0x28 0x6B [fn 380]	<GS (>	149
0x1D 0x28 0x6B [fn 381]	<GS (>	150
0x1D 0x2A	<GS *>	166
0x1D 0x2F	<GS />	168
0x1D 0x3A	<GS :>	221
0x1D 0x42	<GS B>	192
0x1D 0x43 0x30	<GS C>	232
0x1D 0x43 0x31	<GS C>	233



0x1D 0x43 0x32	<GS C>	234
0x1D 0x43 0x3B	<GS C>	235
0x1D 0x48	<GS H>	157
0x1D 0x49	<GS I>	236
0x1D 0x4C	<GS L>	207
0x1D 0x50	<GS P>	238
0x1D 0x56	<GS V>	225
0x1D 0x57	<GS W>	208
0x1D 0x5C	<GS \>	261
0x1D 0x5E	<GS ^>	222
0x1D 0x63	<GS c>	239
0x1D 0x65	<GS e>	253
0x1D 0x66	<GS f>	158
0x1D 0x68	<GS h>	159
0x1D 0x6B	<GS k>	160
0x1D 0x72	<GS r>	215
0x1D 0x76 0x30	<GS v 0>	169
0x1D 0x77	<GS w>	163
0x1D 0x7C		240
0x1D 0xD0		241
0x1D 0xE0		216
0x1D 0xE1		217
0x1D 0xE2		218
0x1D 0xE3		219
0x1D 0xE5		220
0x1D 0xE6		242
0x1D 0xE7		244
0x1D 0xE9	<FS f>	265



0x1D 0xF0	243
0x1D 0xF4	246
0x1D 0xF5	247
0x1D 0xF6	248
0x1D 0xF7	249
0x1D 0xF8	250
0x1D 0xFA	251
0x1D 0xFB	252



COMMANDS LISTED BY FUNCTION

BARCODE COMMANDS

0x1D 0x28 0x6B<GS (>	129
Print two-dimensional barcode	
0x1D 0x28 0x6B [fn 065]<GS (>	131
Specify the number of columns of PDF417 barcode	
0x1D 0x28 0x6B [fn 066]<GS (>	132
Specify the number of rows of PDF417 barcode	
0x1D 0x28 0x6B [fn 067]<GS (>	133
Specify the width of a module of PDF417 barcode	
0x1D 0x28 0x6B [fn 068]<GS (>	134
Specify the height of PDF417 barcode	
0x1D 0x28 0x6B [fn 069]<GS (>	135
Specify the error correction level of PDF417 barcode	
0x1D 0x28 0x6B [fn 080]<GS (>	137
Store the PDF417 barcode data in the barcode save area	
0x1D 0x28 0x6B [fn 081]<GS (>	138
Encodes and prints the PDF417 barcode data in the barcode save area	
0x1D 0x28 0x6B [fn 065]<GS (>	139
Specify encoding scheme of QRcode barcode	
0x1D 0x28 0x6B [fn 066]<GS (>	140
Specify dot size of the module of the QRcode barcode	
0x1D 0x28 0x6B [fn 067]<GS (>	141
Specify QRcode barcode size	
0x1D 0x28 0x6B [fn 069]<GS (>	142
Specify the error correction level of the QRcode barcode	
0x1D 0x28 0x6B [fn 080]<GS (>	143
Store the QRcode barcode data in the barcode save area	
0x1D 0x28 0x6B [fn 081]<GS (>	144
Prints the QRcode barcode data	
0x1D 0x28 0x6B [fn 365]<GS (>	145
Specify the encoding scheme of DATAMATRIX barcode	
0x1D 0x28 0x6B [fn 366]<GS (>	146
Set rotation of DATAMATRIX barcode	
0x1D 0x28 0x6B [fn 367]<GS (>	147
Set dot size of the module of DATAMATRIX barcode	



0x1D 0x28 0x6B [fn 368]<GS (>	148
Set size of DATAMATRIX barcode	
0x1D 0x28 0x6B [fn 380]<GS (>	149
Store the DATAMATRIX barcode data in the barcode save area	
0x1D 0x28 0x6B [fn 381]<GS (>	150
Encodes and prints the DATAMATRIX barcode data in the barcode save area	
0x1D 0x28 0x6B [fn 065]<GS (>	151
Specify encoding scheme of AZTEC barcode	
0x1D 0x28 0x6B [fn 067]<GS (>	152
Specify dot size of the module of the AZTEC barcode	
0x1D 0x28 0x6B [fn 068]<GS (>	153
Specify AZTEC barcode size	
0x1D 0x28 0x6B [fn 069]<GS (>	154
Specify the error correction level of the AZTEC barcode	
0x1D 0x28 0x6B [fn 080]<GS (>	155
Store the AZTEC barcode data in the barcode save area	
0x1D 0x28 0x6B [fn 081]<GS (>	156
Prints the AZTEC barcode data	
0x1D 0x48<GS H>	157
Select printing position of Human Readable Interpretation (HRI) characters	
0x1D 0x66<GS f>	158
Select font for HRI characters	
0x1D 0x68<GS h>	159
Set bar code height	
0x1D 0x6B<GS k>	160
Print barcode	
0x1D 0x77<GS w>	163
Set barcode width	

BIT IMAGE COMMANDS

0x1B 0x2A<ESC *>	164
Select image print mode	
0x1D 0x2A<GS *>	166
Define downloaded bit image	
0x1D 0x2F<GS />	168
Print downloaded bit image	
0x1D 0x76 0x30<GS v 0>	169
Print raster image	



CHARACTER COMMANDS

0x18	<CAN>	171
Cancel current line transmitted		
0x1B 0x20	<ESC SP>	172
Set right side character spacing		
0x1B 0x21	<ESC !>	173
Select print mode		
0x1B 0x25	<ESC %>	175
Select/cancel user-defined character set		
0x1B 0x26	<ESC &>	176
Defines user-defined characters		
0x1B 0x2D	<ESC ->	178
Turn underline mode on/off		
0x1B 0x34	<ESC 4>	179
Set/reset italic mode		
0x1B 0x3F	<ESC ?>	180
Cancel user-defined characters		
0x1B 0x45	<ESC E>	181
Select emphasized mode		
0x1B 0x47	<ESC G>	182
Select double-strike mode		
0x1B 0x4D	<ESC M>	183
Select character font		
0x1B 0x52	<ESC R>	184
Select international character set		
0x1B 0x56	<ESC V>	185
Select print mode 90° turned		
0x1B 0x74	<ESC t>	186
Select character code table		
0x1B 0x7B	<ESC {>	188
Set / cancel upside-down character printing		
0x1B 0xC1		189
Set / cancel cpi mode		
0x1C 0x25	<FS %>	190
Select the font type		
0x1D 0x21	<GS !>	191
Select character size		
0x1D 0x42	<GS B>	192
Turn white/black reverse printing mode on/off		



LINE SPACING COMMANDS

0x1B 0x30	<ESC 0>	193
Select 1/8 inch line spacing		
0x1B 0x32	<ESC 2>	194
Select 1/6 inch line spacing		
0x1B 0x33	<ESC 3>	195
Set line spacing using minimum units		

PRINT COMMANDS

0x0A	<LF>	196
Print and line feed		
0x0D	<CR>	197
Print and carriage return		
0x1B 0x4A	<ESC J>	198
Print and feed paper		
0x1B 0x64	<ESC d>	199
Print and feed paper		

PRINT POSITION COMMANDS

0x08	<BS>	200
Back space		
0x09	<HT>	201
Horizontal tab		
0x1B 0x24	<ESC \$>	202
Set absolute print position		
0x1B 0x28 0x76	<ESC (>	203
Set relative vertical print position		
0x1B 0x44	<ESC D>	204
Set horizontal tab position		
0x1B 0x5C	<ESC \>	205
Set relative print position		
0x1B 0x61	<ESC a>	206
Select justification		
0x1D 0x4C	<GS L>	207
Set left margin		
0x1D 0x57	<GS W>	208
Set printing area width		



STATUS COMMANDS

0x10 0x04	<DLE EOT>	209
Real-time status transmission		
0x1B 0x76	<ESC v>	214
Transmit paper sensor status		
0x1D 0x72	<GS r>	215
Transmit status		
0x1D 0xE0		216
Enable / Disable automatic FULL STATUS BACK		
0x1D 0xE1		217
Reading of length paper (cm) available before virtual paper end		
0x1D 0xE2		218
Reading number of cuts performed from the printer		
0x1D 0xE3		219
Reading of length (cm) of printed paper		
0x1D 0xE5		220
Reading number of power up		

MACRO FUNCTIONS

0x1D 0x3A	<GS :>	221
Set start/end of macro definition		
0x1D 0x5E	<GS ^>	222
Execute macro		

MECHANISM CONTROL

0x1B 0x69	<ESC i>	223
Total cut		
0x1B 0x6D	<ESC m>	224
Partial cut		
0x1D 0x56	<GS V>	225
Select cut mode		

MISCELLANEOUS COMMANDS

0x1B 0x3D	<ESC =>	226
Select peripheral device		
0x1B 0x40	<ESC @>	227
Initialize printer		



0x1B 0x63 0x35	<ESC c 5>	228
Enable / disable panel keys		
0x1B 0xFA		229
Print graphic bank		
0x1B 0xFF		231
Receive the graphic page from the communication port		
0x1D 0x43 0x30	<GS C>	232
Select counter print mode		
0x1D 0x43 0x31	<GS C>	233
Select count mode (A)		
0x1D 0x43 0x32	<GS C>	234
Set counter		
0x1D 0x43 0x3B	<GS C>	235
Select count mode (B)		
0x1D 0x49	<GS I>	236
Transmit printer ID		
0x1D 0x50	<GS P>	238
Set horizontal and vertical motion units (mode 1)		
0x1D 0x63	<GS c>	239
Print counter		
0x1D 0x7C		240
Set printing density		
0x1D 0xD0		241
Set horizontal and vertical motion units (mode 2)		
0x1D 0xE6		242
Virtual paper end limit		
0x1D 0xF0		243
Set printing speed		

TICKET MANAGEMENT COMMANDS

0x1D 0xE7		244
Set notch distance		
0x1D 0xF4		246
Label management with cut		
0x1D 0xF5		247
Presentation of the label		
0x1D 0xF6		248
Align the ticket		



0x1D 0xF7	Align with the cut line	249
0x1D 0xF8	Align at cut	250
0x1D 0xFA	Presentation of the label	251
0x1D 0xFB	Retrieve the print position	252

EJECTOR COMMANDS

0x1D 0x65	<GS e>	253
Ejector commands		

PAGE MODE COMMANDS

0x1B 0x0C	<ESC FF>	255
Print data in page mode		
0x1B 0x4C	<ESC L>	256
Select page mode		
0x1B 0x53	<ESC S>	257
Select standard mode		
0x1B 0x54	<ESC T>	258
Select print direction in page mode		
0x1B 0x57	<ESC W>	259
Set printing area in page mode		
0x1D 0x24	<GS \$>	260
Set absolute vertical print position in page mode		
0x1D 0x5C	<GS \>	261
Set relative vertical print position in page mode		

TRUE TYPE FONT COMMANDS

0x1C 0x65	<FS e>	262
Enable/Disable encoding		
0x1C 0x66	<FS f>	263
True Type font management		
0x1D 0xE9	<FS f>	265
Load a True Type font		





BARCODE COMMANDS

0x1D 0x28 0x6B

<GS (>

Print two-dimensional barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn
	Hex	1D	28	6B	pL	pH	cn	fn
	Decimal	29	40	107	pL	pH	cn	fn

[Range]

[Description] Processes the data concerning two-dimensional barcode.

- Barcode type is specified by *cn*
- Function is specified by *fn*

cn	fn	FUNCTION	
48	65	Function 065	PDF 417: Specify the number of columns
48	66	Function 066	PDF 417: Specify the number of rows
48	67	Function 067	PDF 417: Specify the width of module
48	68	Function 068	PDF 417: Specify the module height
48	69	Function 069	PDF 417: Specify the error correction level
48	80	Function 080	PDF 417: Store the received data in the barcode save area
48	81	Function 081	PDF 417: Print the barcode data in the barcode save area
49	65	Function 065	QRcode: Specify encoding scheme
49	66	Function 066	QRcode: Specify dot size of the module
49	67	Function 067	QRcode: Specify size of barcode
49	69	Function 069	QRcode: Specify the error correction level
49	80	Function 080	QRcode: Store the received data in the barcode save area
49	81	Function 081	QRcode: Print the barcode data
51	65	Function 365	DATAMATRIX: Set encoding scheme
51	66	Function 366	DATAMATRIX: Set rotate
51	67	Function 367	DATAMATRIX: Set dot size of the module



51	68	Function 368	DATAMATRIX: Set size of barcode
51	80	Function 380	DATAMATRIX: Store the received data in the barcode save area
51	81	Function 381	DATAMATRIX: Print the barcode data in the barcode save area
52	65	Function 065	AZTEC: Specify encoding scheme
52	67	Function 067	AZTEC: Specify dot size of the module
52	68	Function 068	AZTEC: Specify size of barcode
52	69	Function 069	AZTEC: Specify the error correction level
52	80	Function 080	AZTEC: Store the received data in the barcode save area
52	81	Function 081	AZTEC: Print the barcode

[Notes]

[Default]

[Reference]

[Example]



0x1D 0x28 0x6B [fn 065]

<GS (>

Specify the number of columns of PDF417 barcode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0) cn = 48 fn = 65 0 ≤ n ≤ 30								
[Description]	Specifies the number of columns of PDF417 barcode. <ul style="list-style-type: none"> • pL and pH specify the number of successive bytes to be sent • n = 0 specifies auto processing • When n is not 0, specifies the number of columns of the data area as n code word. • When auto processing (n = 0) is specified, the maximum number of columns in the data area is 30 columns. 								
[Notes]	<ul style="list-style-type: none"> • The following data is not included in the number of columns: <ul style="list-style-type: none"> - start pattern and stop pattern - indicator code word of left and right • Settings are effective until 0x1B 0x40 is executed, the printer is reset or the power is turned off. 								
[Default]	n = 0								
[Reference]	0x1D 0x28 0x6B								
[Example]	To define 3 columns the command sequence is the following: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x41 0x03								



0x1D 0x28 0x6B [fn 066]

<GS (>

Specify the number of rows of PDF417 barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 48
 fn = 66
 n = 0, 3 ≤ n ≤ 20

[Description] Specifies the number of rows of PDF417 barcode.

- pL and pH specify the number of successive bytes to be sent
- n = 0 specifies auto processing
- When n is not 0, specifies the number of rows of the data area as n rows.
- When auto processing (n = 0) is specified, the maximum number of rows is 20.

[Notes] Settings are effective until 0x1B 0x40 is executed, the printer is reset or the power is turned off.

[Default] n = 0

[Reference] 0x1D 0x28 0x6B

[Example] To define 3 rows the command sequence is the following: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x42 0x03



0x1D 0x28 0x6B [fn 067]

<GS (>

Specify the width of a module of PDF417 barcode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0) cn = 48 fn = 67 2 ≤ n ≤ 8								
[Description]	Specifies the width of a module of PDF417 barcode.								
[Notes]	<ul style="list-style-type: none"> • Settings are effective until 0x1B 0x40 is executed, the printer is reset or the power is turned off. • pL and pH specify the number of successive bytes to be sent. 								
[Default]	n = 3								
[Reference]	0x1D 0x28 0x6B								
[Example]	To define width 4 the command sequence is the following: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x43 0x04								



0x1D 0x28 0x6B [fn 068]

<GS (>

Specify the height of PDF417 barcode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3		(pL = 3, pH = 0)						
	cn = 48								
	fn = 68								
	2 ≤ n ≤ 8								
[Description]	Specifies the height of PDF417 barcode.								
[Notes]	<ul style="list-style-type: none"> • Settings are effective until 0x1B 0x40 is executed, the printer is reset or the power is turned off. • pL and pH specify the number of successive bytes to be sent. 								
[Default]	n = 3								
[Reference]	0x1D 0x28 0x6B								
[Example]	To define height 4 the command sequence is the following: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x44 0x04								



0x1D 0x28 0x6B [fn 069]

<GS (>

Specify the error correction level of PDF417 barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m	n
	Hex	1D	28	6B	pL	pH	cn	fn	m	n
	Decimal	29	40	107	pL	pH	cn	fn	m	n

[Range]	(pL+pH × 256) = 4	(pL = 4, pH = 0)
	cn = 48	
	fn = 69	
	m = 48	48 ≤ n ≤ 56
	m = 49	1 ≤ n ≤ 40

[Description] Specifies the error correction level of PDF417.

- pL and pH specify the number of successive bytes to be sent
- The error correction level is specified by “level” when m = 48.
- The error correction level is specified by “ratio” when m = 49 [n × 10%].

[Notes]

- Error correction level is specified by either “level” or “ratio”.
- Error correction level specified by “level” (m = 48) is as follows. The number of the error correction code word is fixed regardless of the number of code words on the data area.

n	CORRECTION LEVEL	N. OF ERROR CORRECTION CODE WORD
48	Error correction level 0	2
49	Error correction level 1	4
50	Error correction level 2	8
51	Error correction level 3	16
52	Error correction level 4	32
53	Error correction level 5	64
54	Error correction level 6	128
55	Error correction level 7	256
56	Error correction level 8	512

- Error correction level specified by “ratio” (m = 49) is as follows. The error correction level is defined by the calculated value [number of data code word × n × 0.1 = (A)]. The number of the error correction code word is changeable in proportion to the number of the code words on the data area.



CALCULATED VALUE (A)	CORRECTION LEVEL	N. OF ERROR CORRECTION CODE WORD
0 - 3	Error correction level 1	4
4 - 10	Error correction level 2	8
11 - 20	Error correction level 3	16
21 - 45	Error correction level 4	32
46 - 100	Error correction level 5	64
101 - 200	Error correction level 6	128
201 - 400	Error correction level 7	256
> 400	Error correction level 8	512

- Settings are effective until 0x1B 0x40 is executed, the printer is reset or the power is turned off.

[Default] m = 49, n = 1 [ratio: 10%]

[Reference] 0xD 0x28 0x6B

[Example] To define error correction 0,2 the command sequence is the following: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x45 0x30 0x02



0x1D 0x28 0x6B [fn 080]

<GS (>

Store the PDF417 barcode data in the barcode save area

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL									
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m	d1...dk
	Hex	1D	28	6B	pL	pH	cn	fn	m	d1...dk
	Decimal	29	40	107	pL	pH	cn	fn	m	d1...dk
[Range]	cn = 48 fn = 80 m = 48 $0 \leq d \leq 255$ $k = (pL + pH \times 256) - 3$ • PDF417 barcode only with ASCII characters: $4 \leq (pL + pH \times 256) \leq 1112$ ($0 \leq pL \leq 255, 0 \leq pH \leq 4$) • PDF417 barcode only with alphanumeric characters: $4 \leq (pL + pH \times 256) \leq 1854$ ($0 \leq pL \leq 255, 0 \leq pH \leq 7$) • PDF417 barcode only with numeric characters: $4 \leq (pL + pH \times 256) \leq 2729$ ($0 \leq pL \leq 255, 0 \leq pH \leq 10$)									
[Description]	Store the PDF417 barcode data (d1...dk) in the barcode save area.									
[Notes]	<ul style="list-style-type: none"> • Data stored in the barcode save area by this function are processed by Function 081. The data in the barcode save area are reserved after processing Function 081. • pL and pH specify the number of successive bytes to be sent • k bytes of d1...dk are processed as barcode data. • Specify only the data code word of the barcode with this function. Be sure not to include the control data in the data d1...dk because they are added automatically by the printer. • Settings are effective until ESC @ is executed, the printer is reset or the power is turned off. 									
[Default]										
[Reference]	0x1D 0x28 0x6B									
[Example]										



0x1D 0x28 0x6B [fn 081]

<GS (>

Encodes and prints the PDF417 barcode data in the barcode save area

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m
	Hex	1D	28	6B	pL	pH	cn	fn	m
	Decimal	29	40	107	pL	pH	cn	fn	m
[Range]	(pL+pH × 256) = 3		(pL = 3, pH = 0)						
	cn = 48 fn = 81 m = 48								
[Description]	Encodes and prints the PDF417 barcode data in the barcode save area.								
[Notes]	<ul style="list-style-type: none"> • In standard mode, use this function when printer is “at the beginning of a line” or “there is no data in the print buffer”. • pL and pH specify the number of successive bytes to be sent • A barcode that size exceeds the printing area cannot be printed. • If there is any error described below in the data of the barcode save area, it cannot be printer. <ul style="list-style-type: none"> - There is no data (Function 080 is not processed). - If [(number of columns × number of rows) < number of code word] when auto processing is specified for number of columns and number of rows. - Number of code word exceeds 928 in the data area. • When auto processing (Function 065) is specified, the number of columns is calculated by the current printing area, module width (Function 067) and the code word in the data area. Maximum number of the columns is 30. 								
[Default]									
[Reference]	0x1D 0x28 0x6B								
[Example]	To print the PDF417 barcode data the command sequence is : 0x1D 0x28 0x6B 0x03 0x00 0x30 0x51 0x30								



0x1D 0x28 0x6B [fn 065]

<GS (>

Specify encoding scheme of QRcode barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 49
 fn = 65
 0 ≤ n ≤ 1

[Description] Specifies encoding type of QRcode barcode.

n	ENCODING SCHEME
0	QRcode
1	MicroQR

[Notes]

- QRcode: Encode all extended ASCII characters data up to a maximum length of 7089 numeric digits, 4296 alphabetic characters or 2953 bytes of data.
- pL and pH specify the number of successive bytes to be sent
- MicroQR (a miniature version of the QRcode barcode for short message): Encode all numbers from 0 to 9 up to a maximum length of 35 characters.

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 066]

<GS (>

Specify dot size of the module of the QRcode barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 49
 fn = 66
 2 ≤ n ≤ 24

[Description] Specifies numbers of dot for each pixel of QRcode barcode.

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 067]

<GS (>

Specify QRcode barcode size

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range]	(pL+pH × 256) = 3	(pL = 3, pH = 0)
	cn = 49	
	fn = 67	
	0 ≤ n ≤ 40	

[Description] Specifies QRcode barcode eversion, as follows:

n	VERSION	n	VERSION	n	VERSION
0	AUTO	14	V14	28	V28
1	V1	15	V15	29	V29
2	V2	16	V16	30	V30
3	V3	17	V17	31	V31
4	V4	18	V18	32	V32
5	V5	19	V19	33	V33
6	V6	20	V20	34	V34
7	V7	21	V21	35	V35
8	V8	22	V22	36	V36
9	V9	23	V23	37	V37
10	V10	24	V24	38	V38
11	V11	25	V25	39	V39
12	V12	26	V26	40	V40
13	V13	27	V27		

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 069]

<GS (>

Specify the error correction level of the QRcode barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 49
 fn = 69
 0 ≤ n ≤ 4

[Description] Specifies the ECC level (Error Correction Capacity) of QRcode barcode.

n	ECC level
0	AUTO
1	ECC = approx 20% of barcode Recovery Capacity = approx 7%
2	ECC = approx 37% of barcode Recovery Capacity = approx 15%
3	ECC = approx 50% of barcode Recovery Capacity = approx 25%
4	ECC = approx 65% of barcode Recovery Capacity = approx 30%

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 080]

<GS (>

Store the QRcode barcode data in the barcode save area

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m	d1...dk
	Hex	1D	28	6B	pL	pH	cn	fn	m	d1...dk
	Decimal	29	40	107	pL	pH	cn	fn	m	d1...dk

[Range]	cn = 49
	fn = 80
	m = 49
	$0 \leq d \leq 255$
	$k = (pL + pH \times 256) - 3$
	• QRcode barcode only with binary characters (8 bit):
	$4 \leq (pL + pH \times 256) \leq 2957 \quad (0 \leq pL \leq 255, 0 \leq pH \leq 11)$
	• QRcode barcode only with alphanumeric characters:
	$4 \leq (pL + pH \times 256) \leq 4300 \quad (0 \leq pL \leq 255, 0 \leq pH \leq 16)$
	• QRcode barcode only with numeric characters:
	$4 \leq (pL + pH \times 256) \leq 7093 \quad (0 \leq pL \leq 255, 0 \leq pH \leq 27)$

[Description] Store the QRcode barcode data (d1...dk) in the barcode save area.

[Notes]

- Data stored in the barcode save area by this function are processed by Function 081. The data in the barcode save area are reserved after processing Function 081.
- pL and pH specify the number of successive bytes to be sent
- k bytes of d1...dk are processed as barcode data.
- Specify only the data code word of the barcode with this function.

[Default]

[Reference]

[Example]



0x1D 0x28 0x6B [fn 081]

<GS (>

Prints the QRcode barcode data

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m
	Hex	1D	28	6B	pL	pH	cn	fn	m
	Decimal	29	40	107	pL	pH	cn	fn	m

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 49
 fn = 81
 m = 49

[Description] Prints the QRcode barcode in the current position.

[Notes] pL and pH specify the number of successive bytes to be sent

[Default]

[Reference]

[Example]



0x1D 0x28 0x6B [fn 365]

<GS (>

Specify the encoding scheme of DATAMATRIX barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 51
 fn = 65
 0 ≤ n ≤ 6

[Description] Set the encoding scheme specified by n as follows:

n	ENCODING SCHEME
0	Ascii
1	C40
2	Text
3	X12
4	Edifact
5	Base256
6	AutoBest

[Notes] pL and pH specify the number of successive bytes to be sent

[Default]

[Reference] 0x1D 0x28 0x6B

[Example] To set encoding = Ascii, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x33 0x41 0x00



0x1D 0x28 0x6B [fn 366]

<GS (>

Set rotation of DATAMATRIX barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 51
 fn = 66
 n = 0, 1

[Description] Set rotate by n as follows:

n	ROTATION
0	No rotation
1	Rotation

[Notes] pL and pH specify the number of successive bytes to be sent

[Default]

[Reference] 0x1D 0x28 0x6B

[Example]



0x1D 0x28 0x6B [fn 367]

<GS (>

Set dot size of the module of DATAMATRIX barcode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0) cn = 51 fn = 67 2 ≤ n ≤ 24								
[Description]	Set dot size of the module of the DATAMATRIX barcode. n = dot dimension								
[Notes]	pL and pH specify the number of successive bytes to be sent								
[Default]	n = 6								
[Reference]	0x1D 0x28 0x6B								
[Example]	To set dot size = 6 the command sequence is : 0x1D 0x28 0x6B 0x03 0x00 0x33 0x43 0x06								



0x1D 0x28 0x6B [fn 368]

<GS (>

Set size of DATAMATRIX barcode

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII GS (k pL pH cn fn n
 Hex 1D 28 6B pL pH cn fn n
 Decimal 29 40 107 pL pH cn fn n

[Range] (pL + pH × 256) = 3 (pL = 3, pH = 0)
 cn = 51
 fn = 68
 1 ≤ n ≤ 29

[Description] Set the size of DATAMATRIX barcode specified by n as follows:

n	BARCODE SIZE
1	10 x 10
2	12 x 12
3	14 x 14
4	16 x 16
5	18 x 18
6	20 x 20
7	22 x 22
8	24 x 24
8	26 x 26
10	32 x 32
11	36 x 36
12	40 x 40
13	44 x 44
14	48 x 48
15	52 x 52

n	BARCODE SIZE
16	64 x 64
17	72 x 72
18	80 x 80
19	88 x 88
20	96 x 96
21	104 x 104
22	120 x 120
23	132 x 132
24	144 x 144
25	8 x 18
26	8 x 32
27	12 x 26
28	12 x 36
29	16 x 36

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] DmtxSymbolSquareAuto

[Reference] 0x1D 0x28 0x6B

[Example]



0x1D 0x28 0x6B [fn 380]

<GS (>

Store the DATAMATRIX barcode data in the barcode save area

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL									
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m	d1...dk
	Hex	1D	28	6B	pL	pH	cn	fn	m	d1...dk
	Decimal	29	40	107	pL	pH	cn	fn	m	d1...dk
[Range]	cn = 51 fn = 80 m = 51 $0 \leq d \leq 255$ $k = (pL + pH \times 256) - 3$ <ul style="list-style-type: none"> DATAMATRIX barcode only with ASCII characters (8 bit) : $4 \leq (pL + pH \times 256) \leq 1560$ ($0 \leq pL \leq 255, 0 \leq pH \leq 6$) DATAMATRIX barcode only with alphanumeric characters: $4 \leq (pL + pH \times 256) \leq 2339$ ($0 \leq pL \leq 255, 0 \leq pH \leq 9$) DATAMATRIX barcode only with numeric characters: $4 \leq (pL + pH \times 256) \leq 3120$ ($0 \leq pL \leq 255, 0 \leq pH \leq 12$) 									
[Description]	Store the DATAMATRIX barcode data (d1...dk) in the barcode save area.									
[Notes]	<ul style="list-style-type: none"> Data stored in the barcode save area by this function are processed by Function 081. The data in the barcode save area reserved after processing Function 381. k bytes of d1...dk are processed as barcode data. Specify only the data code word of the barcode with this function. Be sure not to include the control data in the data d1...dk because they are added automatically by the printer. Settings are effective until ESC @ is executed, the printer is reset or the power is turned off. 									
[Default]										
[Reference]	0x1D 0x28 0x6B									
[Example]										



0x1D 0x28 0x6B [fn 381]

<GS (>

Encodes and prints the DATAMATRIX barcode data in the barcode save area

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m
	Hex	1D	28	6B	pL	pH	cn	fn	m
	Decimal	29	40	107	pL	pH	cn	fn	m
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0) cn = 51 fn = 81 m = 51								
[Description]	Encodes and prints the DATAMATRIX barcode data in the barcode save area.								
[Notes]	<ul style="list-style-type: none"> • In standard mode, use this function when printer is “at the beginning of a line” or “there is no data in the print buffer”. • pL and pH specify the number of successive bytes to be sent • A barcode that size exceeds the printing area cannot be printed. • If there is any error described below in the data of the barcode save area, it cannot be printer. <ul style="list-style-type: none"> • There is no data (Function 380 is not processed). • If [(number of columns × number of rows) < number of code word] when auto processing is specified for number of columns and number of rows. • Number of code word exceeds 928 in the data area. 								
[Default]									
[Reference]	0x1D 0x28 0x6B								
[Example]	To print the DATAMATRIX barcode data the command sequence is : 0x1D 0x28 0x6B 0x03 0x00 0x33 0x51 0x33								



0x1D 0x28 0x6B [fn 065]

<GS (>

Specify encoding scheme of AZTEC barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 52
 fn = 65
 0 ≤ n ≤ 1

[Description] Specifies encoding type of AZTEC barcode.

n	ENCODING SCHEME
0	FULL AZTEC
1	AZTEC RUNE

[Notes]

- Full Aztec: Encode all extended ASCII characters data up to a maximum length of approximately 3823 numeric or 3067 alphabetic characters or 1914 bytes of data.
- pL and pH specify the number of successive bytes to be sent
- Aztec Rune (Compact Aztec Code, sometimes called Small Aztec Code): Encode all numbers from 0 to 255 up to a maximum length of 3 numbers.

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 067]

<GS (>

Specify dot size of the module of the AZTEC barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 52
 fn = 67
 2 ≤ n ≤ 24

[Description] Specifies numbers of dot for each pixel of AZTEC barcode.

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 068]

<GS (>

Specify AZTEC barcode size

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range]	(pL+pH × 256) = 3	(pL = 3, pH = 0)
	cn = 52	
	fn = 68	
	0 ≤ n ≤ 36	

[Description] Specifies AZTEC barcode format (rows and columns), as follows:

n	FORMAT	n	FORMAT	n	FORMAT
0	AUTO	13	C53X53	26	C109X109
1	C15X15 Compact	14	C57X57	27	C113X113
2	C19X19 Compact	15	C61X61	28	C117X117
3	C23X23 Compact	16	C67X67	29	C121X121
4	C27X27 Compact	17	C71X71	30	C125X125
5	C19X19	18	C75X75	31	C131X131
6	C23X23	19	C79X79	32	C135X135
7	C27X27	20	C83X83	33	C139X139
8	C31X31	21	C87X87	34	C143X143
9	C37X37	22	C91X91	35	C147X147
10	C41X41	23	C95X95	36	C151X151
11	C45X45	24	C101X101		
12	C49X49	25	C105X105		

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 069]

<GS (>

Specify the error correction level of the AZTEC barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 4 (pL = 4, pH = 0)
 cn = 52
 fn = 69
 0 ≤ n ≤ 4

[Description] Specifies the ECC level (Error Correction Capacity) of AZTEC barcode.

N	ECC LEVEL
0	AUTO
1	> 10 % + 3 codewords
2	> 23 % + 3 codewords
3	> 36 % + 3 codewords
4	> 50 % + 3 codewords

- It is not possible to select both barcode size and error correction capacity for the same barcode. If both options are selected then the error correction capacity selection will be ignored.

[Notes] pL and pH specify the number of successive bytes to be sent

[Default] n = 0

[Reference]

[Example]



0x1D 0x28 0x6B [fn 080]

<GS (>

Store the AZTEC barcode data in the barcode save area

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m	d1...dk
	Hex	1D	28	6B	pL	pH	cn	fn	m	d1...dk
	Decimal	29	40	107	pL	pH	cn	fn	m	d1...dk

[Range]	cn = 52
	fn = 80
	m = 52
	$0 \leq d \leq 255$
	$k = (pL + pH \times 256) - 3$
	• AZTEC barcode only with ASCII characters:
	$4 \leq (pL + pH \times 256) \leq 1918 \quad (0 \leq pL \leq 255, 0 \leq pH \leq 7)$
	• AZTEC barcode only with alphanumeric characters:
	$4 \leq (pL + pH \times 256) \leq 3071 \quad (0 \leq pL \leq 255, 0 \leq pH \leq 11)$
	• AZTEC barcode only with numeric characters:
	$4 \leq (pL + pH \times 256) \leq 3836 \quad (0 \leq pL \leq 255, 0 \leq pH \leq 14)$

[Description] Store the AZTEC barcode data (d1...dk) in the barcode save area.

[Notes]

- Data stored in the barcode save area by this function are processed by Function 081. The data in the barcode save area are reserved after processing Function 081.
- pL and pH specify the number of successive bytes to be sent
- k bytes of d1...dk are processed as barcode data.
- Specify only the data code word of the barcode with this function.

[Default]

[Reference]

[Example]



0x1D 0x28 0x6B [fn 081]

<GS (>

Prints the AZTEC barcode data

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m
	Hex	1D	28	6B	pL	pH	cn	fn	m
	Decimal	29	40	107	pL	pH	cn	fn	m

[Range] (pL+pH × 256) = 3 (pL = 3, pH = 0)
 cn = 52
 fn = 81
 m = 48

[Description] Prints the AZTEC barcode in the current position.

[Notes] pL and pH specify the number of successive bytes to be sent

[Default]

[Reference]

[Example]



0x1D 0x48

<GS H>

Select printing position of Human Readable Interpretation (HRI) characters

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	H	n
	Hex	1D	48	n
	Decimal	29	72	n

[Range]	$0 \leq n \leq 3$
	$48 \leq n \leq 51$

[Description] Selects the printing position of HRI characters when printing barcodes. 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]

[Default] n = 0

[Reference] 0x1D 0x6B

[Example]



0x1D 0x66

<GS f>

Select font for HRI characters

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0x1D 0x48.

[Default] n = 0

[Reference] 0x1D 0x48, 0x1D 0x6B

[Example]



0x1D 0x68

<GS h>

Set bar code height

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[Format]

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

[Range] $1 \leq n \leq 255$

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

[Notes]

[Default] n = 162 (20.25 mm)

[Reference] 0x1D 0x6B

[Example]



0x1D 0x6B

<GS k>

Print barcode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format 1]	ASCII	GS	k	m	NUL	[d1..dk]
	Hex	1D	6B	m	00	[d1..dk]
	Decimal	29	107	m	0	[d1..dk]

[Format 2]	ASCII	GS	k	m	n	[d1..dn]
	Hex	1D	6B	m	n	[d1..dn]
	Decimal	29	107	m	n	[d1..dn]

[Range]	Format 1:	$0 \leq m \leq 8$ $m = 20$
	Format 2:	$65 \leq m \leq 73$ $m = 90$

[Description] Select a barcode system and prints the barcode. m selects a barcode system as follows:

Format 1:

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0	UPC-A	$11 \leq k \leq 12$	$48 \leq d \leq 57$
1	UPC-E	$11 \leq k \leq 12$	$48 \leq d \leq 57$
2	EAN13 (JAN)	$12 \leq k \leq 13$	$48 \leq d \leq 57$
3	EAN8 (JAN)	$7 \leq k \leq 8$	$48 \leq d \leq 57$
4	CODE39	$1 \leq k$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
5	ITF	$1 \leq k$ (even number)	$48 \leq d \leq 57$
6	CODABAR	$1 \leq k$	$48 \leq d \leq 57, 65 \leq d1 \leq 68, 36, 43, 45, 46, 47, 58$
7	CODE93	$1 \leq k \leq 255$	$1 \leq d \leq 127$
8	CODE128	$2 \leq k \leq 255$	$1 \leq d \leq 127$
20	CODE32	$8 \leq k \leq 9$	$48 \leq d \leq 57$



Format 2:

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

[Notes]

- If d is outside of the specified range, the printer prints the following message: “BARCODE 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 barcode, regardless of the line spacing specified by 0x1B 0x32 or 0x1B 0x33.
- After printing the barcode, 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.

Format 1:

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

Format 2:

- 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 (0x00 to 0x1F and 0x7F).



When CODE128 is used:

- When using CODE128 in this printer, please note the following regarding data transmission:
- The top part of the barcode 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

When UPC-E is used, introducing the barcode characters, the printer prints:

TRANSMITTED DATA											PRINTED DATA					
d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11						
0	0-9	0-9	0	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	0
0	0-9	0-9	1	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	1
0	0-9	0-9	2	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	2
0	0-9	0-9	3-9	0	0	0	0	0	0-9	0-9	d2	d3	d4	d10	d11	3
0	0-9	0-9	0-9	1-9	0	0	0	0	0	0-9	d2	d3	d4	d5	d11	4
0	0-9	0-9	0-9	0-9	1-9	0	0	0	0	5-9	d2	d3	d4	d5	d6	d11

[Default]

[Reference] 0x1D 0x48, 0x1D 0x66, 0x1D 0x68, 0x1D 0x77

[Example] Format 1: Example of Barcode 39 printing
1D 6B 04 54 45 53 54 00

Format 2: Example of Barcode 39 printing
1D 6B 45 04 54 45 53 54



0x1D 0x77

<GS w>

Set barcode width

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	w	n
	Hex	1D	77	n
	Decimal	29	119	n

[Range]	0x1 ≤ n ≤ 0x6
	0x81 ≤ n ≤ 0x86

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

n	MODULE WIDTH (mm)
0x1, 0x81	0.125
0x2, 0x82	0.25
0x3, 0x83	0.375
0x4, 0x84	0.5
0x5, 0x85	0.625
0x6, 0x86	0.75

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

	n	WIDE/NARROW BAR RATIO
If n < 0x80	0x1, 0x2, 0x3, 0x4, 0x5, 0x6	3:1
	0x81	3:1
	0x82	2,5:1
If n > 0x80	0x83	2,33:1
	0x84	2,25:1
	0x85	3:1
	0x86	3:1

[Notes]

[Default] n = 3

[Reference] 0x1D 0x6B

[Example]



BIT IMAGE COMMANDS

0x1B 0x2A

<ESC *>

Select image print mode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL
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[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

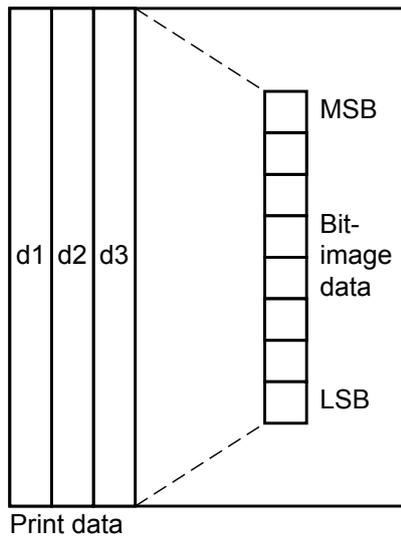
[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION (*1)	
		N. DOTS	DPI	DPI	N. 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

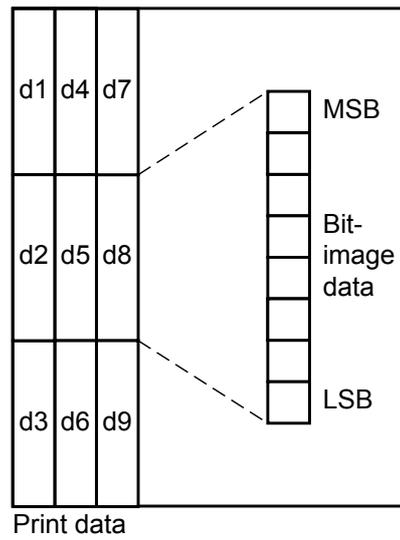
- [Notes]
- The nL and nH parameters indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH x 256.
 - If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
 - d indicates the bit image 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 0x1D 0x4C and 0x1D 0x57 is less than the width required by the data set using 0x1B 0x2A, the excess data are ignored.
 - To print the bit image use 0x0A, 0x0D, 0x1B 0x4A or 0x1B 0x64.
 - 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:



8-dot bit image



24-dot bit image



[Default]

[Reference]

[Example]



0x1D 0x2A

<GS *>

Define downloaded bit image

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	*	x	y	d1...d(x x y x 8)
	Hex	1D	2A	x	y	d1...d(x x y x 8)
	Decimal	29	42	x	y	d1...d(x x y x 8)

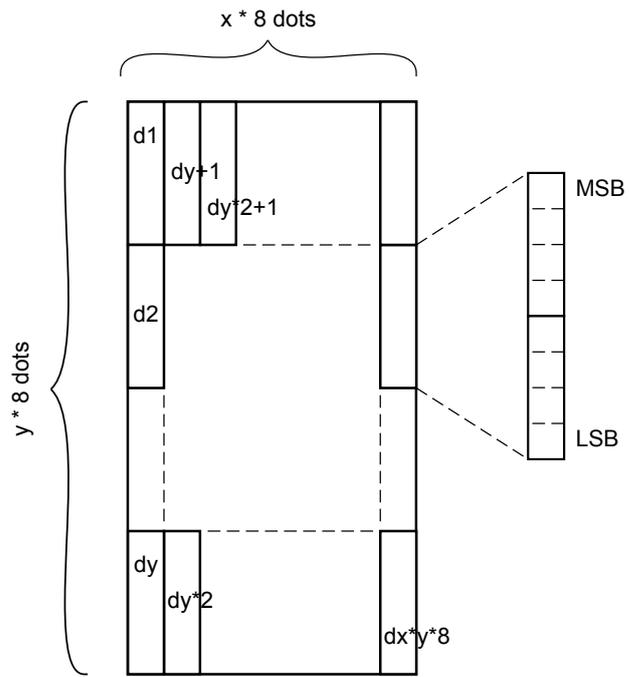
[Range]	$1 \leq x \leq 255$
	$1 \leq y \leq 48$
	$x \times y \leq 1536$
	$0 \leq d \leq 255$

[Description]	<p>Defines a downloaded bit image using the number of dots specified by x and y.</p> <ul style="list-style-type: none"> • x specifies the number of dots in the horizontal direction. • y specifies the number of dots in the vertical direction.
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[Notes]	<ul style="list-style-type: none"> • The number of dots in the horizontal direction is $x \times 8$, in the vertical direction it is $y \times 8$. • If $x \times y$ is out of the specified range, this command is disabled. • The d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0. • The downloaded bit image definition is cleared when: <ol style="list-style-type: none"> 1) 0x1B 0x40 is executed. 2) 0x1B 0x26 is executed. 3) Printer is reset or the power is turned off.
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- The following figure shows the relationship between the downloaded bit image and the printed data.



[Default]

[Reference] 0x1D 0x5C

[Example]



0x1D 0x2F

<GS />

Print downloaded bit image

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	/	m
	Hex	1D	2F	m
	Decimal	29	47	m

[Range]

[Description] Prints a downloaded bit image using the mode specified by m. m selects a mode from the table below:

m	MODE
0,48	Normal
1, 49	Double width
2, 50	Double height
3, 51	Quadruple

- [Notes]
- This command is ignored if a downloaded bit image has not been defined.
 - In standard mode, this command is effective only when there is no data in the print buffer.
 - This command has no effect in the print modes (emphasized, underline, character size, or white/black reverse printing), except for upside-down printing mode.
 - If the downloaded bit-image to be printed exceeds the printable area, the excess data is not printed
 - If the printing area width set by 0x1D 0x4C and 0x1D 0x57 is less than the bit image horizontal size, the following processing is performed:
 - 1) The printing area width is extended to the right up to one line in vertical. In this case, printing does not exceed the printable area.
 - 2) If the printing area width cannot be extended by one line in vertical, the left margin is reduced to accommodate one line in vertical.

[Default]

[Reference] 0x1D 0x2A

[Example]



0x1D 0x76 0x30

<GS v 0>

Print raster image

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	v	0	m	xL	xH	yL	yH	d1...dk
	Hex	1D	76	30	m	xL	xH	yL	yH	d1...dk
	Decimal	29	118	48	m	xL	xH	yL	yH	d1...dk

[Range]

$0 \leq m \leq 3, 48 \leq m \leq 51$
 $0 \leq xL \leq 255$
 $0 \leq xH \leq 255 (1 \leq xL + xH \times 256 \leq 65535)$
 $0 \leq yL \leq 255$
 $0 \leq yH \leq 8 (1 \leq yL + yH \times 256 \leq 2047)$
 $0 \leq d \leq 255$
 $k = (xL + xH \leq 256) + (yL + yH \leq 256)$
 (except for $k = 0$)

[Description] Selects raster bit image mode. The value of m selects the mode as follows:

m	MODE
0, 48	Normal
1, 49	Double width
2, 50	Double height
3, 51	Quadruple

- xL, xH selects the number of data bits ($xL + xH \times 256$) in the horizontal direction for the bit image.
- yL, yH selects the number of data bits ($yL + yH \times 256$) in the vertical direction for the bit image.
- k shows the number of data of the image. It's an explanation parameter so it isn't necessary to transmit it.
- d shows the data of the image.

- [Notes]
- In standard mode for receipt paper, this command is effective only when there is no data in the print buffer.
 - The data (d) identify as 1 a printed bit and as 0 a non printed bit.
 - If a raster bit image is longer than one line, the surplus data aren't printed.
 - This command has no effect in all print modes (character size, emphasized, upside-down, underline, white/black reverse printing, etc.) for raster bit image, except the reverse mode (90° anticlockwise rotation).
 - This command feed the paper as much as is necessary to print the raster bit image, though the spacing set by 0x1B 0x32 or 0x1B 0x33.
 - Don't use this command during a macro execution because it can't be included in a macro.
 - After the printing, the printing position moves to the beginning of the line.



- The following table shows the report between the image data and the printing result:

d1	d2	...	dx
dX+1	dX+2	...	dX x 2
:	:	...	:
...	dk-2	dk-1	d

[Default]

[Reference]

[Example]



CHARACTER COMMANDS

0x18

<CAN>

Cancel current line transmitted

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	CAN
	Hex	18
	Decimal	24

[Range]

[Description] Deletes current line transmitted.

- [Notes]
- Sets the print position to the beginning of the line.
 - However, this command does not clear the receive buffer.

[Default]

[Reference]

[Example]



0x1B 0x20

<ESC SP>

Set right side character spacing

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	SP	n
	Hex	1B	20	n
	Decimal	27	32	n

[Range] $0 \leq n \leq 255$

[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 0x1D 0x50. Changing the horizontal or vertical motion units does not affect the current right side spacing.
 - The 0x1D 0x50 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] 0x1D 0x50, 0x1D 0xD0

[Example]



0x1B 0x21

<ESC !>

Select print mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	!	n
	Hex	1B	21	n
	Decimal	27	33	n

[Range] $0 \leq n \leq 255$

BIT	OFF/ON	HEX	Decimal	FUNCTION	11/15 cpi	15/20 cpi	20/25 cpi
0	Off	00	0	Character font A selected.	18 x 24	14 x 24	14 x 24
	On	01	1	Character font B selected.	14 x 24	10 x 24	8 x 24
1	-	-	-	RESERVED			
2	-	-	-	RESERVED			
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			

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

- [Notes]
- The printer can underline all characters, but cannot underline the spaces set by 0x09, 0x1B 0x24, 0x1B 0x5C and 90°/270° rotated characters.
 - This command resets the left and right margin at default value (see 0x1D 0x4C, 0x1D 0x57).
 - 0x1B 0x45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one.
 - 0x1B 0x2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one.
 - 0x1D 0x21 can also be used to select character height/width. However, the last-received setting command is the effective one.



• 0x1B 0x34 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] 0x1B 0x2D, 0x1B 0x34, 0x1B 0x45, 0x1D 0x21

[Example]



0x1B 0x25

<ESC %>

Select/cancel user-defined character set

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	%	n
	Hex	1B	25	n
	Decimal	27	37	n

[Range] $0 \leq n \leq 255$

[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] 0x1B 0x26, 0x1B 0x3F

[Example]



0x1B 0x26

<ESC &>

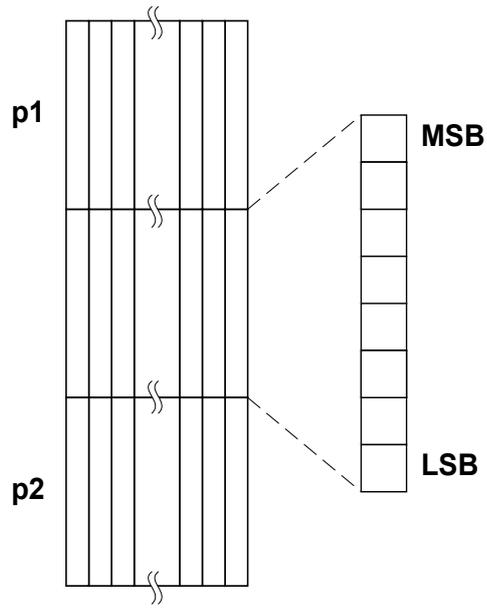
Defines user-defined characters

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL					
[Format]	ASCII	ESC	&	y	c1	c2
	Hex	1B	26	y	c1	c2
	Decimal	27	38	y	c1	c2
[Range]	y = 3 32 ≤ c1 ≤ c2 ≤ 126 0 ≤ x ≤ 16 (Font (18 x 24)) 0 ≤ x ≤ 13 (Font (13 x 24)) 0 ≤ x ≤ 10 (Font 10 x 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]	<ul style="list-style-type: none"> • The allowable character code range is from ASCII 0x20 (32) to 0x7E (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 × 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 0x1B 0x21, 0x1B 0xC1. • The user-defined character definitions are cleared when: 0x1B 0x40 or 0x1D 0x2A or 0x1B 0x3F are executed or the printer is reset or the power shut off. 					
[Default]	Internal character set.					
[Reference]	0x1B 0x25, 0x1B 0x3F					



[Example]

18 dots (11 cpi)
14 dots (15 cpi)





0x1B 0x2D

<ESC ->

Turn underline mode on/off

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL
-----------	--

[Format]	ASCII ESC - n Hex 1B 2D n Decimal 27 45 n
[Range]	$0 \leq n \leq 2$ $48 \leq n \leq 50$
[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]	<ul style="list-style-type: none">• The printer can underline all characters, but cannot underline the space and right-side character spacing (command 0x09).• 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 0x1B 0x21. Note, however, that the last received command is the effective one.
[Default]	n = 0
[Reference]	0x1B 0x21



0x1B 0x34

<ESC 4>

Set/reset italic mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	4	n
	Hex	1B	34	n
	Decimal	27	52	n

[Range]	$0 \leq n \leq 1$
	$48 \leq n \leq 49$

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

n	FUNCTION
0, 48	Turn off italic mode
1, 49	Turn 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 0x1B 0x21. Note, however, that the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21

[Example]



0x1B 0x3F

<ESC ?>

Cancel user-defined characters

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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.
 - This command deletes the pattern defined for the specified character code in the font selected by 0x1B 0x21.
 - If the user-defined character has not been defined for the specified character code, the printer ignores this command.

[Default]

[Reference] 0x1B 0x26, 0x1B 0x25

[Example]



0x1B 0x45

<ESC E>

Select emphasized mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	E	n
	Hex	1B	45	n
	Decimal	27	69	n

[Range] $0 \leq n \leq 255$

[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.
- 0x1B 0x21 also turns on and off the emphasized mode. However, the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21

[Example]



0x1B 0x47

<ESC G>

Select double-strike mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	G	n
	Hex	1B	47	n
	Decimal	27	71	n

[Range] $0 \leq n \leq 255$

[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] 0x1B 0x45

[Example]



0x1B 0x4D

<ESC M>

Select character font

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range]	$0 \leq n \leq 1$
	$48 \leq n \leq 49$

[Description] Selects characters font depending of cpi value set (Char/Inch) as follows :

CHAR /INCH	n	FUNCTION
A = 11 cpi	0, 48	Font 11 cpi (18x24)
B = 15 cpi	1, 49	Font 15 cpi (14x24)
A = 15 cpi	0, 48	Font 15 cpi (14x24)
B = 20 cpi	1, 49	Font 20 cpi (10x24)
A = 20 cpi	0, 48	Font 20 cpi (10x24)
B = 15 cpi	1, 49	Font 15 cpi (14x24)

[Notes]

[Default]

[Reference] 0x1B 0xC1

[Example]



0x1B 0x52

<ESC R>

Select international character set

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII ESC R n
 Hex 1B 52 n
 Decimal 27 82 n

[Range] $0 \leq n \leq 10$

[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 SET												
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	\$	@	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]



0x1B 0x56

<ESC V>

Select print mode 90° turned

Valid for

TPTCM60III
TPTCM112III
PRT80III
TPTCM60IIIL
TPTCM112IIIL

[Format]

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

[Range]

$0 \leq n \leq 1$
 $48 \leq n \leq 49$

[Description]

Turns 90° rotation mode on/off. n is used as follows:

n	FUNCTION
0, 48	Turn off 90° rotation mode
1, 49	Turn 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.
- This command is not available in Page mode.
- If this command is entered in Page mode, the printer all the same save the setting.

[Default]

n = 0

[Reference]

0x1B 0x21 , 0x1B 0x2D

[Example]



0x1B 0x74

<ESC t>

Select character code table

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII ESC t n
 Hex 1B 74 n
 Decimal 27 116 n

[Range] $1 \leq n \leq 53, n = 255$

[Description] Select a page n from the character code table as follows:

n	PAGE
0	PC437 - U.S.A., Standard Europe
1	Katakana
2	PC850 - Multilingual
3	PC860 - Portuguese
4	PC863 - Canadian/French
5	PC865 - Nordic
11	PC851 - Greek on request
12	PC853 - Turkish on request
13	PC857 - Turkish on request
14	PC737 - Greek on request
15	ISO8859-7 - Greek on request
16	WPC1252
17	PC866 - Cyrillic 2
18	PC852 - Latin 2 on request
19	PC858 for Euro symbol at position 213
20	KU42 - Thai on request
21	TIS11 - Thai on request
26	TIS18 - Thai on request
30	TCVN_3 - Vietnamese on request
31	TCVN_3 - Vietnamese on request
32	PC720 - Arabic on request
33	WPC775 - Baltic Rim on request
34	PC855 - Cyrillic on request



n	PAGE
35	PC861 - Icelandic on request
36	PC862 - Hebrew
37	PC864 - Arabic
38	PC869 - Greek on request
39	ISO8859-2 - Latin 2 on request
40	ISO8859-15 - Latin 9 on request
41	PC1098 - Farci on request
42	PC1118 - Lithuanian on request
43	PC1119 - Lithuanian on request
44	PC1125 - Ukranian on request
45	WPC1250 - Latin 2
46	WPC1251 - Cyrillic
47	WPC1253 - Greek
48	WPC1254 - Turkish
49	WPC1255 - Hebrew
50	WPC1256 - Arabic
51	WPC1257 - Baltic Rim
52	WPC1258 - Vientamese
53	KZ1048 - Kazakhstan on request
255	Space page

[Notes] WPC1252, PC866 and PC852 tables are valid only for TrueType fonts.

[Default] n = 0

[Reference] See character code tables

[Example] For printing Euro symbol (€), the command sequence is: 0x1B, 0x74, 0x13, 0xD5

0x1B 0x7B

<ESC {>

Set / cancel upside-down character printing

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII ESC { n
 Hex 1B 7B n
 Decimal 27 123 n

[Range] $0 \leq n \leq 255$

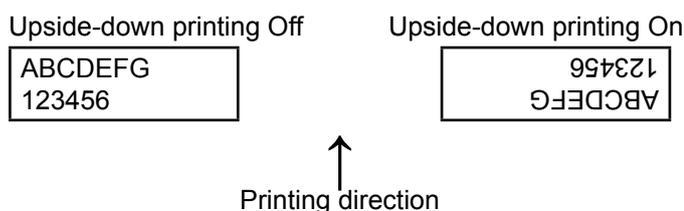
[Description] Turns upside-down printing mode on or off.
 • When the LSB of n is 0, the upside-down printing mode is off.
 • When the LSB of n is 1, the upside-down printing mode is on.

[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] 0x1C 0x65, 0x1C, 0x66

[Example]





0x1B 0xC1

Set / cancel cpi mode

Valid for

TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format]

ASCII	ESC	0xC1	n
Hex	1B	C1	n
Decimal	27	193	n

[Range]

$0 \leq n \leq 2$
 $48 \leq n \leq 50$

[Description]

Turns upside-down printing mode on or off.

n	FUNCTION	
0, 48	Font A = 11 cpi	Font B = 15 cpi
1, 49	Font A = 15 cpi	Font B = 20 cpi
2, 50	Font A = 20 cpi	Font B = 15 cpi

[Notes]

[Default]

n = 0

[Reference]

0x1B 0x21

[Example]



0x1C 0x25

<FS %>

Select the font type

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[Format]

ASCII	FS	%	n
Hex	1C	25	n
Decimal	28	37	n

[Range] n= 0, 1, 2

[Description] Select the font type.

n	FONT TYPE
0	International
1	Chinese GB18030
2	Korean PC949

[Notes]

- This command can be used only for the models with Extended Chinese (GB18030-2000) or Korean (PC949).
- The selection made by this command is stored in the RAM memory. Turn off the machine reverts to the default value, that can be set with the parameter "FONT TYPE" in the setup.
- After selecting the font type "INTERNATIONAL" it must be selected the desired character code table using the command 0x1B 0x74.

[Default]

[Reference] 0x1B 0x74, See the command manual "Chinese fonts management".

[Example]



0x1D 0x21

<GS !>

Select character size

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 (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.
- 0x1B 0x21 can also be used to select character size. However, the setting of the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21

[Example]



0x1D 0x42

<GS B>

Turn white/black reverse printing mode on/off

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	!	n
	Hex	1D	21	n
	Decimal	29	33	n

[Range] $0 \leq n \leq 255$

[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 0x09, 0x1B 0x24 and 0x1B 0x5C.
- 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]



LINE SPACING COMMANDS

0x1B 0x30

<ESC 0>

Select 1/8 inch line spacing

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0
	Hex	1B	30
	Decimal	27	48

[Range]

[Description] Selects 1/8-inch line spacing.

[Notes]

[Default]

[Reference] 0x1B 0x32, 0x1B 0x33

[Example]



0x1B 0x32

<ESC 2>

Select 1/6 inch line spacing

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[Format]

ASCII	ESC	2
Hex	1B	32
Decimal	27	50

[Range]

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

[Notes]

[Default]

[Reference] 0x1B 0x33, 0x1B 0x30

[Example]



0x1B 0x33

<ESC 3>

Set line spacing using minimum units

Valid for	TPTCM60III			
	TPTCM112III			
	PRT80III			
	TPTCM60IIIL			
	TPTCM112IIIL			
[Format]	ASCII	ESC	3	n
	Hex	1B	33	n
	Decimal	27	51	n
[Range]	$0 \leq n \leq 255$			
[Description]	Sets line spacing to [n × (vertical or horizontal motion unit)] inches.			
[Notes]	<ul style="list-style-type: none"> • The horizontal and vertical motion unit are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current line spacing. • The 0x1D 0x50 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 horizontal and vertical motion unit are specified by 0x1D 0x50 or 0x1D 0xD0. Changing the horizontal or vertical motion unit does not affect the current line spacing. • The 0x1D 0x50 or 0x1D 0xD0 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount. 			
[Default]	n = 64 (1/6 inch)			
[Reference]	0x1B 0x32, 0x1D 0x50, 0x1B 0x30, 0x1D 0xD0			
[Example]				



PRINT COMMANDS

0x0A

<LF>

Print and line feed

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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.

[Default]

[Reference] 0x0D

[Example]



0x0D

<CR>

Print and carriage return

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	CR
	Hex	0D
	Decimal	13

[Range]

[Description] When autofeed is “CR enabled”, this command functions in the same way as 0x0A, otherwise it is disregarded.

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

[Default] See “Autofeed in setup” parameter.

[Reference] 0x0A

[Example]



0x1B 0x4A

<ESC J>

Print and feed paper

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq n \leq 255$

[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 0x1B 0x32 or 0x1B 0x33.
 - The horizontal and vertical motion units are specified by 0x1D 0x50.
 - 0x1D 0x50 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 horizontal and vertical motion units are specified by 0x1D 0x50 or 0x1D 0xD0.
 - 0x1D 0x50 or 0x1D 0xD0 can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.

[Default]

[Reference] 0x1D 0x50, 0x1D 0xD0

[Example]



0x1B 0x64

<ESC d>

Print and feed paper

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	d	n
	Hex	1B	6A	n
	Decimal	27	100	n

[Range] $0 \leq n \leq 255$

[Description] Prints the data in the print buffer and feeds the paper n rows.

[Notes]

- n rows paper feed is equivalent to $(n \times \text{char height} + \text{line spacing set})$.
- Sets the print starting position at the beginning of the line.
- This command does not affect the line spacing set by 0x1B 0x32 or 0x1B 0x33.
- 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] 0x1B 0x32, 0x1B 0x33

[Example]



PRINT POSITION COMMANDS

0x08

<BS>

Back space

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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]



0x09

<HT>

Horizontal tab

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0x1B 0x44.

[Default]

[Reference] 0x1B 0x44

[Example]



0x1B 0x24

<ESC \$>

Set absolute print position

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	\$	nL	nH
	Hex	1B	24	nL	nH
	Decimal	27	33	nL	nH

[Range]	$0 \leq nL \leq 255$
	$0 \leq nH \leq 255$

[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 $[(nL + nH \times 256) \times (\text{vertical or horizontal motion unit})]$ inches.

- [Notes]
- Settings outside the specified printable area are ignored.
 - The horizontal and vertical motion unit are specified by 0x1D 0x50.
 - 0x1D 0x50 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.
 - The horizontal and vertical motion unit are specified by 0x1D 0x50 or 0x1D 0xD0.
 - 0x1D 0x50 or 0x1D 0xD0 can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.

[Default]

[Reference] 0x1B 0x5C, 0x1D 0x50, 0x1D 0xD0

[Example]



0x1B 0x28 0x76

<ESC (>

Set relative vertical print position

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL					
[Format]	ASCII	ESC	(	v	nL	nH
	Hex	1B	28	76	nL	nH
	Decimal	27	40	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]	<ul style="list-style-type: none"> • When the starting position is specified by N motion unit to the bottom: $nL + nH \times 256 = N$ • When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536: $nL + nH \times 256 = 65536 - N$ • The horizontal and vertical motion unit are specified by 0x1D 0x50. • The 0x1D 0x50 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]	0x1D 0x50					
[Example]						



0x1B 0x44

<ESC D>

Set horizontal tab position

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[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 <ul style="list-style-type: none"> • 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]	<ul style="list-style-type: none"> • 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 0x09. • 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. • 0x1B 0x44 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, ...) when the right-side character spacing is 0.				
[Reference]	0x09				
[Example]					



0x1B 0x5C

<ESC \>

Set relative print position

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[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]	<ul style="list-style-type: none"> • 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 0x1D 0x50. • 0x1D 0x50 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. • Any setting that exceeds the printable area is ignored. • The horizontal and vertical motion unit are specified by 0x1D 0x50 or 0x1D 0xD0. • 0x1D 0x50 or 0x1D 0xD0 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount. 				
[Default]					
[Reference]	0x1B 0x24, 0x1D 0x50, 0x1D 0xD0				
[Example]					



0x1B 0x61

<ESC a>

Select justification

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[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 0x09, 0x1B 0x24 and 0x1B 0x5C will be justified according to the previously-entered mode.

[Default] n = 0

[Reference]

[Example]

Flush left	Centered	Flush right
ABC ABCD ABCDE	ABC ABCD ABCDE	ABC ABCD ABCDE

0x1D 0x4C

<GS L>

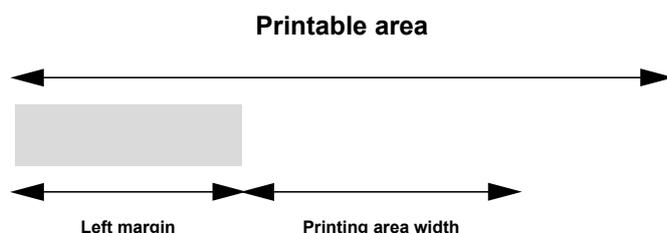
Set left margin

Valid for
 TPTCM60III
 TPTCM112III
 PRT80III
 TPTCM60IIIL
 TPTCM112IIIL

[Format] ASCII GS L nL nH
 Hex 1B 4C nL nH
 Decimal 29 76 nL nH

[Range] $0 \leq nL, nH \leq 255$

[Description] Sets the left margin.
 • The left margin is set to $[(nL + nH \times 256) \times (\text{horizontal motion unit})]$ 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 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 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.
 - The horizontal and vertical motion unit are specified by 0x1D 0x50 or 0x1D 0xD0. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 or 0x1D 0xD0 command can change the horizontal (and vertical) motion unit.

[Default] n = 0

[Reference] 0x1D 0x50, 0x1D 0x57, 0x1D 0xD0

[Example]

0x1D 0x57

<GS W>

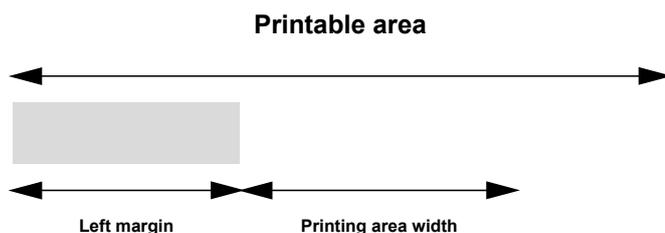
Set printing area width

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	W	nL	nH
	Hex	1B	57	nL	nH
	Decimal	29	87	nL	nH

[Range] $0 \leq nL, nH \leq 255$
 $0 \leq nL + nH \times 256 \leq nMAX$

[Description] Sets the printing area width to the area specified by nL and nH.
 The nMAX value is 576.
 • The left margin is set to $[(nL+nH \times 256) \times (\text{horizontal motion unit})]$ 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 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 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.
 - The horizontal and vertical motion units are specified by 0x1D 0x50 or 0x1D 0xD0. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 or 0x1D 0xD0 command can change the horizontal (and vertical) motion unit.

[Default]

[Reference] 0x1D 0x4C, 0x1D 0x50, 0x1D 0xD0

[Example]



STATUS COMMANDS

0x10 0x04

<DLE EOT>

Real-time status transmission

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	DLE	EOT	n
	Hex	10	04	n
	Decimal	16	4	n

[Range] $1 \leq n \leq 4, n = 17, n = 20$

[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

[Notes] Immediately executed even when the data buffer is full.
 This status is transmitted whenever data sequence 0x10 0x04 n ($1 \leq n \leq 4$) is received.

[Default]

[Reference]

[Example] n=1: Printer 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	On-line
	On	08	8	Off-line
4	On	10	16	Not used. Fixed to On
5	-	-	-	Undefined



6	Off	00	0	Key released
	On	40	64	Key pressed
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	Cover closed
	On	04	4	Cover opened
3	Off	00	0	Paper is not being fed by LINE FEED key
	On	08	8	Paper is being fed by LINE FEED key
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Printing stops due to paper end
6	Off	00	0	No error
	On	40	64	Error
7	-	-	-	RESERVED

n=3: Error status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	-	-	-	RESERVED
1	On	02	2	Not used. Fixed to On
2	-	-	-	RESERVED
3	Off	00	0	Cutter ok (only for models with cutter)
	On	08	8	Cutter error (only for models with cutter)
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 (over-temperature, parity, wrong command)
7	-	-	-	RESERVED



n=4: Paper roll sensor status

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

n=17: Print status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	-	-	-	RESERVED
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	Ejecter motor off (only for models with ejector)
	On	08	8	Ejecter motor on (only for models with ejector)
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Paper not present
6	-	-	-	RESERVED
7	-	-	-	RESERVED

n=20: FULL status (6 bytes)

1st Byte = 0x10 (DLE)

2nd Byte = 0x0F

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	2	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	Paper virtually present (*)
	On	40	64	Virtual paper end (*).
7	Off	00	0	Ticket not aligned to notch (only for models TPTCM60IIIIL and TPTCM112IIIIL)
	On	80	128	Ticket aligned to notch (only for models TPTCM60IIIIL and TPTCM112IIIIL)

(*) Virtual paper end is set when the paper length available, read by 0x1D 0xE1, is 0.

4th Byte = User status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Cover closed
	On	01	1	Cover opened.
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	Off	00	0	Emitter motor off
	On	80	128	Emitter motor on



5th Byte = Recoverable error statut

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 (only for models with ejector)
	On	40	64	Paper jam (only for models with ejector)
7	-	-	-	RESERVED

6th Byte = Unrecoverable error status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Cutter ok (only for models with cutter)
	On	01	1	Cutter error(only for models with cutter)
1	-	-	-	RESERVED
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



0x1B 0x76

<ESC v>

Transmit paper sensor status

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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. 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	-	-	-	RESERVED
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	RESERVED

[Notes]

- This command is executed immediately, even when the data buffer is full (Busy).
- After the paper autoloader all buffers (receive and print) are cleared.

[Default]

[Default]

[Reference] 0x10 0x04

[Example]



0x1D 0x72

<GS r>

Transmit status

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	r	n
	Hex	1D	72	n
	Decimal	29	114	n

[Range] n =1, 49

[Description] Transmit the status specified by n as follows:

n	FUNCTION
1, 49	Transmit paper sensor status (as for 0x1B 0x76)

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	-	-	-	RESERVED
5	-	-	-	Undefined
6	-	-	-	Undefined
7	-	-	-	RESERVED

[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]

[Default]

[Reference] 0x10 0x04, 0x1B 0x76

[Example]



0x1D 0xE0

Enable / Disable automatic FULL STATUS BACK

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE0	n
	Hex	1D	E0	n
	Decimal	29	224	n

[Range] $0 \leq n \leq 255$

[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	04	4	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:

1st Byte = 0x10 (DLE)

2nd Byte = n

Next bytes (depends how many bits are active in n)

[Default]

[Reference] 0x10 0x04

[Example]



0x1D 0xE1

Reading of length paper (cm) available before virtual paper end

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE1
	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 length 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 0x1D 0xE6.
 - 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] 0x1D 0xE6

[Example]



0x1D 0xE2

Reading number of cuts performed from the printer

Valid for	TPTCM60III
	TPTCM112III
	TPTCM112IIIL

[Format]	ASCII	GS	0xE2
	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]



0x1D 0xE3

Reading of length (cm) of printed paper

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE3
	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]



0x1D 0xE5

Reading number of power up

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE5
	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]



MACRO FUNCTIONS

0x1D 0x3A

<GS :>

Set start/end of macro definition

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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 0x1D 0x5E 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 0x1B 0x40 command. Therefore, 0x1B 0x40 may be included in the content of macro definitions.
- If the printer receives 0x1D 0x3A a second time after previously receiving 0x1D 0x3A, the printer remains in macro undefined status.
- The contents of the macro can be defined up to 2048 bytes. If the macro definition exceeds 2048 bytes, excess data is not stored.

[Default]

[Reference] 0x1D 0x5E

[Example]



0x1D 0x5E

<GS ^>

Execute macro

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL					
[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]	<p>Executes a macro.</p> <ul style="list-style-type: none"> • 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 FEED button to be pressed. After the button is pressed, the printer executes the macro once. The printer repeats the operation r times. 					
[Notes]	<ul style="list-style-type: none"> • 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 LINE FEED button (m=1), the paper cannot be fed using the LINE FEED button. 					
[Default]						
[Reference]	0x1D 0x3A					
[Example]						



MECHANISM CONTROL

0x1B 0x69

<ESC i>

Total cut

Valid for	TPTCM60III
	TPTCM112III
	TPTCM112IIIL

[Format]	ASCII	ESC	i
	Hex	1B	69
	Decimal	27	105

[Range]

[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]



0x1B 0x6D

<ESC m>

Partial cut

Valid for	TPTCM60III
	TPTCM112III
	TPTCM112IIIL

[Format]	ASCII	ESC	m
	Hex	1B	6D
	Decimal	27	109

[Range]

[Description] This command enables partial 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 partial cut.
 - This command is ignored in the models with ejector

[Default]

[Reference]

[Example]



0x1D 0x56

<GS V>

Select cut mode

Valid for	TPTCM60III
	TPTCM112III
	TPTCM112IIIL

[Format 1]	ASCII	GS	V	m
	Hex	1D	56	m
	Decimal	29	86	m

[Format 2]	ASCII	GS	V	m	n
	Hex	1D	56	m	n
	Decimal	29	86	m	n

[Range]	Format 1:	m = 0, 1, 48, 49
	Format 2:	m = 65, 66 0 ≤ n ≤ 255

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

m	FUNCTION
0, 48	Total cut.
1, 49	Partial cut.
65	Form feed (cut position + [n × vertical motion unit]) and total cut.
66	Form feed (cut position + [n × vertical motion unit]) and partial cut.

- [Notes]
- This command is only enabled if set at the beginning of the line.
 - The horizontal and vertical motion units are specified by 0x1B 0x50.
 - If you execute the command, disable the parameter “Total Cut”, the cut will be partial. If you want to effect a total cut you have to enable the parameter on the Set Up.

[Default]

[Reference] 0x1B 0x69, 0x1B 0x6D

[Example]



MISCELLANEOUS COMMANDS

0x1B 0x3D

<ESC =>

Select peripheral device

Valid for

- TPTCM60III
- TPTCM112III
- PRT80III
- TPTCM60IIIL
- TPTCM112IIIL

[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]

[Default] n = 1

[Reference]

[Example]



0x1B 0x40

<ESC @>

Initialize printer

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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]



0x1B 0x63 0x35

<ESC c 5>

Enable / disable panel keys

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] n = 0, 1

[Description] Enables or disables the front panel keys.

n	FUNCTION
0	Disables panel keys
1	Enables panel keys

[Notes]

[Default] n = 1

[Reference]

[Example]



0x1B 0xFA

Print graphic bank

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0xFA	n	xH	xL	yH	yL
	Hex	1B	FA	n	xH	xL	yH	yL
	Decimal	27	250	n	xH	xL	yH	yL

[Range] $1 \leq n \leq 2$
 $0 \leq xH, xL, yH, yL \leq 255$

[Description] Prints graphic logo from flash or current graphic page located in ram. n selects the graphic source as follows:

n	FUNCTION
1	Print logo 1 from flash bank
2	Print logo 2 from flash bank

TPTCM60III, TPTCM60IIIL

The graphic bank dimension is 448 x 585 dots
 $xL + xH \times 256$ specifies the starting dotline ($1 \div 585$).
 $yL + yH \times 256$ specifies the number of lines to print.

PRT80III

The graphic bank dimension is 576 x 455 dots
 $xL + xH \times 256$ specifies the starting dotline ($1 \div 455$).
 $yL + yH \times 256$ specifies the number of lines to print.

TPTCM112III, TPTCM112IIIL

The graphic bank dimension is 832 x 315 dots
 $xL + xH \times 256$ specifies the starting dotline ($1 \div 315$).
 $yL + yH \times 256$ specifies the number of lines to print.

[Notes]

TPTCM60III, TPTCM60IIIL

- If $(xL + (xH \times 256)) > 585$ the printer does not execute the command.
- If $(xL + (xH \times 256) + yL + (yH \times 256)) > 585$ the printer prints only $585 - xL + (xH \times 256) + 1$ dotline.

PRT80III

- If $(xL + (xH \times 256)) > 455$ the printer does not execute the command.
- If $(xL + (xH \times 256) + yL + (yH \times 256)) > 455$ the printer prints only $455 - xL + (xH \times 256) + 1$ dotline.



TPTCM112III, TPTCM112IIIL

- If $(xL + (xH \times 256)) > 315$ the printer does not execute the command.
- If $(xL + (xH \times 256) + yL + (yH \times 256)) > 315$ the printer prints only $315 - xL + (xH \times 256) + 1$ dotline.

- If the logo has been previously saved in the flash bank it will be printed correctly. If not a "NAK" (0x15) will be returned.

[Default]

[Reference]

[Example]

To print from ram bank dotline 100 to dotline 299, send:

0x1B 0xFA 0x00 0x00 0x64 0x00 0xC7



0x1B 0xFF

Receive the graphic page from the communication port

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	0xFF	n	nL	nH
	Hex	1B	FF	n	nL	nH
	Decimal	27	255	n	nL	nH

[Range]	$1 \leq n \leq 2$
	$0 \leq nL, nH \leq 255$

[Description] Receive $[nL + (nH \times 256)]$ word from the communication port and save them in the flash bank specified by n as shown in the following table:

n	FUNCTION
1	Save logo in the flash bank 1
2	Save logo in the flash bank 2

- [Notes]
- Set the communication protocol on “Hardware” for this command.
 - The number of received data bytes is $[nL + (nH \times 256)] \times 2$.
 - Every word is received first as MSByte and then as LSByte.
 - If $[nL + (nH \times 256)]$ is more than 32756, the following data are processed as normal data.
 - In the horizontal dotline there are 38 words.
 - The flash bank for graphic print dimensions are: 608 horizontal dots (76 bytes/line) x 862 vertical dots (65512 bytes).

[Default]

[Reference]

[Example]



0x1D 0x43 0x30

<GS C>

Select counter print mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq n \leq 5$
 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] 0x1D 0x43 0x31, 0x1D 0x43 0x32, 0x1D 0x43 0x3B, 0x1D 0x63

[Example] n = 3, m = 0 n = 3, m = 1 n = 3, m = 2
 □ □ 1 001 1 □ □

□ indicates a space



0x1D 0x43 0x31

<GS C>

Select count mode (A)

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[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] $0 \leq aL, aH \leq 255$
 $0 \leq bL, bH \leq 255$
 $0 \leq n, r \leq 255$

[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.
- indicates the repetition number when the counter value is fixed.

[Notes]

- Count-up mode is specified when:
 $[aL + (aH \times 256)] < [bL + (bH \times 256)]$ and $n \neq 0$ and $r \neq 0$
- Count-down mode is specified when:
 $[aL + (aH \times 256)] > [bL + (bH \times 256)]$ and $n \neq 0$ and $r \neq 0$
- Counting stops when:
 $[aL + (aH \times 256)] = [bL + (bH \times 256)]$ or $n = 0$ or $r = 0$
- Setting the count-up mode, the minimum counter value is $[aL + (aH \times 256)]$ and the maximum value is $[bL + (bH \times 256)]$. 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 $[aL + (aH \times 256)]$ and the minimum value is $[bL + (bH \times 256)]$. 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] 0x1D 0x43 0x30, 0x1D 0x43 0x32, 0x1D 0x43 0x3B, 0x1D 0x63

[Example] Send the command:

```

0x1D  0x43  0x31  0x01  0x00  0x0A  0x00  0x01  0x02
                ↓    ↓    ↓    ↓    ↓    ↓
                aL   aH   bL   bH   n    r

```

The counter is set from 1 $[aL + (aH \times 256)]$ to 10 $[bL + (bH \times 256)]$.
The counter is incremented by 1 (n) repeating the same value of 2 times (r).



Set counter

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq nL, nH \leq 255$

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

[Notes]

- In count-up mode, if the counter value specified by this command goes out of the counter operation range specified by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B, it is forced to convert to the minimum value through 0x1D 0x63.
- In count-down mode, if the counter value specified by this command goes out of the counter operation range specified by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B, it is forced to convert to the maximum value through 0x1D 0x63.

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

[Reference] 0x1D 0x43 0x30, 0x1D 0x43 0x32, 0x1D 0x43 0x3B, 0x1D 0x63

[Example]

Send the command:

0x1D	0x43	0x32	0x05	0x00
			↓	↓
			nL	nH

The counter is set starting from 5 $[nL + (nH \times 256)]$.



0x1D 0x43 0x3B

<GS C>

Select count mode (B)

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] 0 ≤ sa, sb, sc ≤ 65535
0 ≤ sn, sr ≤ 255

[Description] Selects a count mode for the serial number counter and specifies the value of the counter.

- sa, sb, sn, sr e sc are all displayed as ASCII characters using codes from '0' to '9'.
- sa e 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 specifi ed when: sa > sb and sn ≠ 0 and sr ≠ 0
- Counting stops when:
sa = sb o 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 0x1D 0x63.
- 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 0x1D 0x63.
- 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] 0x1D 0x43 0x30, 0x1D 0x43 0x31, 0x1D 0x43 0x32, 0x1D 0x63

[Example] Send the command:

```

0x1D 0x43 0x3B 0x30 0x3B 0x31 0x30 0x3B 0x31 0x3B 0x31 0x3B 0x32 0x3B
  ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓
"GS"  "C"   "j"   "0"   " ,"  "1"  "0"  " ,"  "1"  " ,"  "1"  " ,"  "2"  " ,"
                        |-----|
                        ↓      ↓      ↓      ↓      ↓
                        sa   ;   sb   ;   sn   ;   sr   ;   sc   ;
  
```

The counter is set from 0 (sa) to 10 (sb) starting from 2 (sc).
The counter is incremented by 1 (sn) repeating the same value of 1 time (sr).



0x1D 0x49

<GS I>

Transmit printer ID

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	I	n
	Hex	1D	49	n
	Decimal	29	73	n

[Range]	1 ≤ n ≤ 3
	49 ≤ n ≤ 51
	n=255

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

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID (1 byte)	0xFF (resend the command with n=255)
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 character)
255	Printer model ID (2 bytes)	0x02 0x1D (TPTCM60III, TPTCM60IIIL) 0x02 0x25 (TPTCM112III, TPTCM112IIIL) 0x02 0x27 (PRT80III)

n = 2, 50 Type ID

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	2-byte character codes not supported
1	Off	00	0	Autocutter not supplied Autocutter supplied
2	Off	00	0	Thermal paper w/o label Thermal paper with 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]



0x1D 0x50

<GS P>

Set horizontal and vertical motion units (mode 1)

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

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

[Range] $0 \leq x, y \leq 255$

[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):
 - Commands using x: 0x1D 0x4C, 0x1D 0x57
 - Commands using y: 0x1B 0x33A, 0x1B 0x4A
 - 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] 0x1B 0x4A, 0x1D 0x4C, 0x1D 0x57, 0x1D 0xD0

[Example]



0x1D 0x63

<GS c>

Print counter

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	c
	Hex	1D	63
	Decimal	29	102

[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 0x1D 0x43 0x30.
- The counter mode is set using 0x1D 0x43 0x31 or 0x1D 0x43 0x3B.
- In count-up mode, if the counter value set by this command goes out of the counter operation range set by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B, 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 0x1D 0x43 0x31 or 0x1D 0x43 0x3B, it is forced to revert to the maximum value.

[Default]

[Reference] 0x1D 0x43 0x30, 0x1D 0x43 0x31, 0x1D 0x43 0x32, 0x1D 0x43 0x3B

[Example]



0x1D 0x7C

Set printing density

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0x7C	n
	Hex	1D	7C	n
	Decimal	29	124	n

[Range]	$2 \leq n \leq 6$
	$50 \leq n \leq 54$

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

n	PRINTING DENSITY
2, 50	- 25%
3, 51	- 12.5%
4, 52	0%
5, 53	+ 12.5%
6, 54	+ 25%

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

[Default] n = 4

[Reference]

[Example]



0x1D 0xD0

Set horizontal and vertical motion units (mode 2)

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xD0	xH	xL	yH	yL
	Hex	1D	D0	xH	xL	yH	yL
	Decimal	29	208	xH	xL	yH	yL

[Range] $0 \leq (xH \times 256) + xL \leq 2040$
 $0 \leq (yH \times 256) + yL \leq 4080$

[Description] Sets the horizontal and vertical motion units to $1/((xH \times 256) + xL)$ inch and $1/((yH \times 256) + yL)$ 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):

Commands using x: 0x1D 0x4C, 0x1D 0x57
 Commands using y: 0x1B 0x33, 0x1B 0x4A

- 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] 0x1B 0x4A, 0x1D 0x4C, 0x1D 0x57

[Example]



0x1D 0xE6

Virtual paper end limit

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE6	nH	nL
	Hex	1D	E6	nH	nL
	Decimal	29	230	nH	nL

[Range] $0 \leq nH, nL \leq 255$

[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 $[(nH \times 256) + nL]$

[Default] nH = 0x00
nL = 0xF0

[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:

$$nH = 1500 / 256 = 5$$

$$nL = 1500 - (nH \times 256) = 1500 - (5 \times 256) = 220$$

and then send the following command:

Hex:	0x1D	0xE6	0x05	0xDC
Decimal:	29	230	5	220



0x1D 0xF0

Set printing speed

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xF0	n
	Hex	1D	F0	n
	Decimal	29	240	n

[Range] $0 \leq n \leq 2$

[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 = 2

[Reference]

[Example]



TICKET MANAGEMENT COMMANDS

0x1D 0xE7

Set notch distance

Valid for	TPTCM112III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE7	nH	nL
	Hex	1D	E7	nH	nL
	Decimal	29	231	nH	nL

[Range] $0 \leq nH \leq 255, 0 \leq nL \leq 255$

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

- [Notes]
- This value is expressed as $[(nH \times 256) + nL]$
 - It's possible to put in the notch distance maximum limit during the setup phase. The notch distance value range goes from 0 to 99,9 mm.
 - The distance is saved in nonvolatile memory: it is therefore recommended not to send this command for each printed ticket, because the number of rewrites is limited. In many devices, however, is checked the diversity of the data before performing the rescue to avoid reaching the limit of rewrites.
 - The distance defined by this command is the same that can be set with the value of the "Notch Distance" during the setup of the printer (see User Manual for further explanation).

[Default] nH = 0x00
nL = 0x00

[Reference]

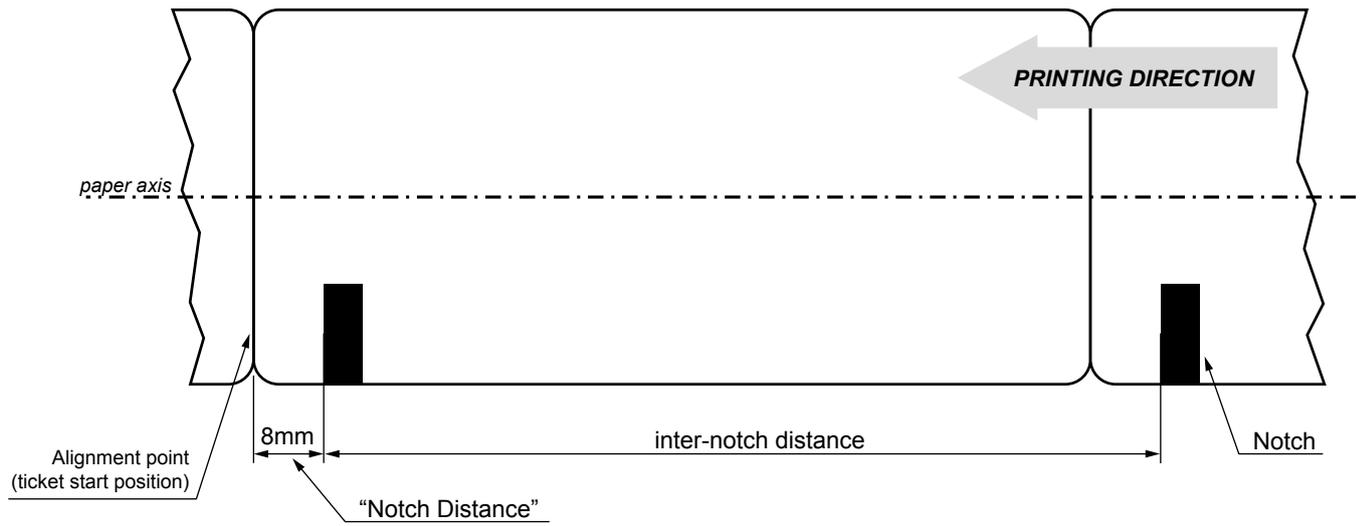
[Example] Send the command:

0x1D	0xE7	0x00	0x50
		↓	↓
		<i>nH</i>	<i>nL</i>

Is set to notch a distance equal to 80 tenths of a mm $[(nH \times 256) + nL]$ equal to 8.0 mm.



The following image shows a ticket with "Alignment Point" positioned at 8 mm from the





0x1D 0xF4

Label management with cut

Valid for TPTCM60IIIL
TPTCM112IIIL

[Format] ASCII GS 0xF4
 Hex 1D F4
 Decimal 29 244

[Range]

[Description] Execute the following commands:
 Align the label with the cutting line
 Perform a cut (0x1B 0x69)
 Align the label with the first printing line (0x1D 0xF6)

[Notes] This command is available with the cutter unit only.

[Default]

[Reference] 0x1D 0xF6

[Example]



0x1D 0xF5

Presentation of the label

Valid for	TPTCM60III L		
[Format]	ASCII	GS	0xF5
	Hex	1D	F5
	Decimal	29	245
[Range]			
[Description]	Execute the following commands: Align the end of the label at the printing line Advances by a fixed amount: 22mm.		
[Notes]			
[Default]			
[Reference]	0x1D 0xFA, 0x1D 0xFB		
[Example]			



0x1D 0xF6

Align the ticket

Valid for	TPTCM112III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xF6
	Hex	1D	F6
	Decimal	29	246

[Descrizione]

TPTCM112III

This command aligns the edge of the black mark at the point of alignment (see chapter Alignment for further explanation).

TPTCM60IIIL, TPTCM112IIIL

This command aligns the label with the first printing line. After the cut or presentation of the label No.1, align the label No.2 with the printing line as follows:

- If the label No. 2 is already beyond the printing line, the label is retracted.
- If the label No. 2 is not beyond the printing line, the label is fed under the printing line.

[Notes]

- Use the command 0x1D 0xE7 to set an offset between the black mark and the point of alignment
- To work properly, the “Notch Alignment” parameter must be enabled during the Setup procedure (see the User Manual of each device).

[Default]

[Reference]

TPTCM112III

0x1D 0xE7, 0x1D 0xF8

TPTCM60IIIL, TPTCM112IIIL

0x1D 0xE7, 0x1D 0xF7

[Example]



0x1D 0xF7

Align with the cut line

Valid for	TPTCM60IIIIL
	TPTCM112IIIIL

[Format]	ASCII	GS	0xF7
	Hex	1D	F7
	Decimal	29	247

[Range]

[Description] Align the label with the cut line (in the half of the space between the next label)

[Notes] Use the command 0x1D 0xF6 after the command 0x1D 0xF7 to perform a retracting to the first printing line

[Default]

[Reference] 0x1D 0xF6

[Example]



0x1D 0xF8

Align at cut

Valid for	TPTCM112III TPTCM60IIIL TPTCM112IIIL
-----------	--

[Format]	ASCII	GS	0xF8
	Hex	1D	F8
	Decimal	29	248

[Range]

[Description] This command aligns the edge of the black mark at the point of alignment (see chapter Alignment for further explanation).

[Notes]

- To work properly, the “Notch Alignment” parameter must be enabled during the Setup procedure (see the User Manual of each device).
- Use the command 0x1D 0xE7 to set an offset between the black mark and the point of alignment
- To work properly, you must send this command just before the cut command.

[Default]

[Reference] 0x1D 0xE7, 0x1D 0xF6

[Example]

0x1D 0xF6	<i>Positioning ticket</i>
<print ticket>	
0x1D 0xF8	<i>Align ticket</i>
0x1B 0x69	<i>Total cut</i>

0x1D 0xFA

Presentation of the label

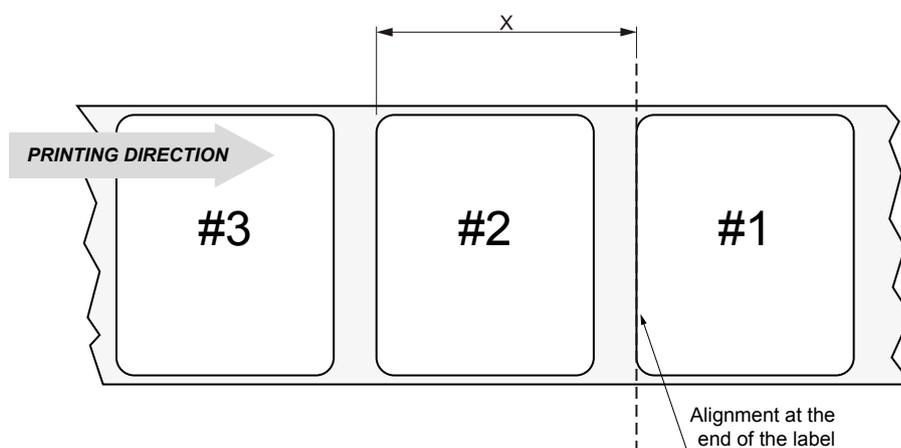
Valid for	TPTCM60III L
	TPTCM112III L

[Format]	ASCII	GS	0xFA	n
	Hex	1D	FA	n
	Decimal	29	250	n

[Range] $0 \leq n \leq 255$

[Description] Execute the following commands:
Align the end of the label at the printing line
Advances n millimetres.

[Notes] When is set a value n greater than X (see figure), it is ignored and n becomes equal to X.



[Default]

[Reference] 0x1D 0xFB

[Example]



0x1D 0xFB

Retrieve the print position

Valid for	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xFB	n
	Hex	1D	FB	n
	Decimal	29	251	n

[Range] $0 \leq n \leq 255$

[Description] Execute a retract of n millimetres.

[Notes] Command to send after the command 0x1D 0xFA.

[Default]

[Reference] 0x1D 0xFA

[Example]



EJECTOR COMMANDS

0x1D 0x65

<GS e>

Ejector commands

Valid for TPTCM60III (models with ejector)
TPTCM112III (models with ejector)

[Format] ASCII GS e n [m]
Hex 1D 65 n [m]
Decimal 29 101 n [m]

[Range] $0 \leq n \leq 3, 5 \leq n \leq 6$
 $n = 8, n = 18, n = 20$

[Description] This command handles tickets ejector:

n = 0 Ticket produced with defined number of steps (see command notes)
n = 1 Ejector motor off
n = 2 Ejector motor on
n = 3 ticket presenting with m steps (1 step = 36mm)
n = 5 ticket expulsion
n = 6 transmits ejector byte status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not near paper end
	On	01	1	Near paper end
1	Off	00	0	Not used. Fixed to Off
	On	04	4	Paper is present
2	Off	00	0	Paper end sensor
	On	04	4	Paper is present
3	Off	00	0	Tickets out
	On	08	8	Ticket present on ejector mouth
4	Off	00	0	Printer stepping motor off
	On	10	16	Printer stepping motor on
5	Off	00	0	Ejector motor off
	On	20	32	Ejector motor on
6	Off	00	0	No error
	On	40	64	Error occurs
7	-	-	-	RESERVED



n = 8	ticket presenting with m steps (1 step = 12 mm)
n = 18	Disable the dispenser continuous mode, sets the normal functioning: when printing the ticket remains in the outlet paper mouth, until a cut command or eject command will be sent.
n = 20	Enable the dispenser continuous mode: when printing the ticket doesn't remain in the outlet paper mouth, but continuously presented it.

[Notes]

- m must be sent with n = 3, n = 8
- if n=3 and ticket is not cut yet, before execute the command a total cutting will be make.
- if n=0 the fixed value of ticket presenting is:
 - on power on and after a reset command (both hardware and software) 47mm
 - the last distance saved to a 0x1D 0x65 3 or 0x1D 0x65 8 commands.
 - Ticket presenting lenght can change of +/- 12 mm.

[Default]

[Reference]

[Example]



PAGE MODE COMMANDS

0x1B 0x0C

<ESC FF>

Print data in page mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	FF
	Hex	1B	0C
	Decimal	27	12

[Range]

[Description] In page mode, prints all buffered data in the printing area collectively.

[Notes]

- This command is enabled only in page mode.
- After printing, the printer does not clear the buffered data, setting values for 0x1B 0x54 and 0x1B 0x57 and the position for buffering character data.

[Default]

[Reference] 0x0C, 0x1B 0x4C, 0x1B 0x53

[Example]



0x1B 0x4C

<ESC L>

Select page mode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL									
[Format]	<table border="1"> <tr> <td>ASCII</td> <td>ESC</td> <td>L</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>4C</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>78</td> </tr> </table>	ASCII	ESC	L	Hex	1B	4C	Decimal	27	78
ASCII	ESC	L								
Hex	1B	4C								
Decimal	27	78								
[Range]										
[Description]	Switches from standard mode to page mode.									
[Notes]	<ul style="list-style-type: none"> • This command is enabled only when processed at the beginning of a line in standard mode. • This command has no effect in page mode • After printing by 0x0C or 0x1B 0x0C is completed or by using 0x1B 0x53, the printer returns to standard mode. • This command sets the position where data is buffered to the position specified by 0x1B 0x54 within the printing area defined by 0x1B 0x57. • This command switches the settings for the following commands (in which the values can be set independently in standard mode and page mode) to those for page mode: <ol style="list-style-type: none"> 1) Set right-side character spacing: 0x1B 0x20 2) Select default line spacing: 0x1B 0x32, 0x1B 0x33 • Only value settings is possible for the following commands in page mode; these commands are not executed. <ol style="list-style-type: none"> 1) Turn 90° clockwise rotation mode on/off: 0x1B 0x56 2) Select justification: 0x1B 0x61 3) Turn upside-down printing mode on/off: 0x1B 0x7B 4) Set left margin: 0x1D 0x4C 5) Set printable area width: 0x1D 0x57 • The following command is not available in page mode: <ol style="list-style-type: none"> 1) Print raster bit image: 0x1D 0x76 0x30 • The printer returns to standard mode when power is turned on, the printer is reset, or 0x1B 0x40 is used. 									
[Default]										
[Reference]	0x0C, 0x18, 0x1B 0x0C, 0x1B 0x53, 0x1B 0x54, 0x1B 0x57, 0x1D 0x24, 0x1D 0x5C.									
[Example]										



0x1B 0x53

<ESC S>

Select standard mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	S
	Hex	1B	53
	Decimal	27	83

[Range]

[Description] Switches from page mode to standard mode.

- [Notes]
- This command is effective only in page mode.
 - Data buffered in page mode are cleared.
 - This command sets the print position to the beginning of the line.
 - The printing area set by 0x1B 0x57 are initialized.
 - This command switches the settings for the following commands (in which the values can be set independently in standard mode and page mode) to those for standard mode:
 - 1) Set right-side character spacing: 0x1B 0x20
 - 2) Select default line spacing: 0x1B 0x32, 0x1B 0x33
 - The following commands are enabled only to set in standard mode.
 - 1) Set printing area in page mode: 0x1B 0x57
 - 2) Select print direction in page mode: 0x1B 0x54
 - The following commands are ignored in standard mode.
 - 1) Set absolute vertical print position in page mode: 0x1D 0x24
 - 2) Set relative vertical print position in page mode: 0x1D 0x5C
 - Standard mode is selected automatically when power is turned on, the printer is reset, or command 0x1B 0x40 is used.

[Default]

[Reference] 0x0C, 0x1B 0x0C, 0x1B 0x4C

[Example]



0x1B 0x54

<ESC T>

Select print direction in page mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	T	n
	Hex	1B	54	n
	Decimal	27	84	n

[Range]	$0 \leq n \leq 3$
	$48 \leq n \leq 51$

[Description] Select the print direction and starting position in page mode. n specifies the print direction and starting position as follows :

n	PRINT DIRECTION	STARTING POSITION
0, 48	Left to right	Upper left
1, 49	Bottom to top	Lower left
2,50	Right to left	Lower right
3,51	Top to bottom	Upper right

[Notes]

- When the command is input in standard mode, the printer executes only internal flag operation. This command does not affect printing in standard mode.
- This command sets the position where data is buffered within the printing area set by 0x1B 0x57.
- Parameters for horizontal or vertical motion units (x or y) differ as follows, depending on the starting position of the printing area:
 - 1) If the starting position is the upper left or lower right of the printing area, data is buffered in the direction perpendicular to the paper feed direction:

Commands using horizontal motion units: 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C.

Commands using vertical motion units: 0x1B 0x33, 0x1B 0x4A, 0x1D 0x24, 0x1D 0x5C.

- 2) If the starting position is the upper right or lower left of the printing area, data is buffered in the paper feed direction:

Commands using horizontal motion units: 0x1B 0x33, 0x1B 0x4A, 0x1D 0x24, 0x1D 0x5C.

Commands using vertical motion units: 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C.

[Default] n = 0

[Reference] 0x1B 0x24, 0x1B 0x4C, 0x1B 0x57, 0x1B 0x5C, 0x1D 0x24, 0x1D 0x50, 0x1D 0x5C.

[Example]



0x1B 0x57

<ESC W>

Set printing area in page mode

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	ESC	W	xL	xH	yL	yH	dxL	dxH	dyL	dyH
	Hex	1B	57	xL	xH	yL	yH	dxL	dxH	dyL	dyH
	Decimal	27	87	xL	xH	yL	yH	dxL	dxH	dyL	dyH

[Range] $0 \leq xL, xH, yL, yH, dxL, dxH, dyL, dyH \leq 255$ (except $dxL = dxH = 0$ or $dyL = dyH = 0$)

[Description] The horizontal starting position, vertical starting position, printing area width, and printing area height are defined as x_0 , y_0 , dx (inch), dy (inch), respectively.
 Each setting for the printing area is calculated as follows:
 $x_0 = [(xL + xH \times 256) \times (\text{horizontal motion unit})]$
 $y_0 = [(yL + yH \times 256) \times (\text{vertical motion unit})]$
 $dx = [dxL + dxH \times 256] \times (\text{horizontal motion unit})]$
 $dy = [dyL + dyH \times 256] \times (\text{vertical motion unit})]$

- [Notes]
- If this command is input in standard mode, the printer executes only internal flag operation. This command does not affect printing in standard mode.
 - If the horizontal or vertical starting position is set outside the printable area, the printer stops command processing and processes the following data as normal data.
 - If the printing area width or height is set to 0, the printer stops command processing and processes the following data as normal data.
 - This command sets the position where data is buffered to the position specified by 0x1B 0x54 within the printing area.
 - If (horizontal starting position + printing area width) exceeds the printable area, the printing area width is automatically set to (horizontal printable area - horizontal starting position).
 - If (vertical starting position + printing area height) exceeds the printable area, the printing area height is automatically set to (vertical printable area - vertical starting position).
 - The horizontal and vertical motion unit are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current printing area.
 - The 0x1D 0x50 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 minimum horizontal movement amount.
 - Use the horizontal motion unit (x) for setting the horizontal starting position and printing area width, and use the vertical motion unit (y) for setting the vertical starting position and printing area height.
 - When the horizontal starting position, vertical starting position, printing area width, and printing area height are defined as X, Y, Dx, and Dy respectively, the printing area is set.

[Default]

[Reference]

[Example]



0x1D 0x24

<GS \$>

Set absolute vertical print position in page mode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[Format]	ASCII	GS	\$	nL	nH
	Hex	1D	24	nL	nH
	Decimal	29	36	nL	nH
[Range]	$0 \leq nL \leq 255, 0 \leq nH \leq 255$				
[Description]	<ul style="list-style-type: none"> Set the absolute vertical print starting position for buffer character data in page mode. This command sets the absolute print position to $[(nL + nH \times 256) \times (\text{vertical or horizontal motion unit})]$ inches. 				
[Notes]	<ul style="list-style-type: none"> This command is effective only in page mode. If the $[(nL + nH \times 256) \times (\text{vertical or horizontal motion unit})]$ exceeds the specified printing area, this command is ignored. The horizontal starting buffer position does not move. The reference starting position is that specified by 0x1B 0x54. This command operates as follows, depending on the starting position of the printing area specified by 0x1B 0x54: <ol style="list-style-type: none"> When the starting position is set to the upper left or lower right, this command sets the absolute position in the vertical direction. When the starting position is set to the upper right or lower left, this command sets the absolute position in the horizontal direction. The horizontal and vertical motion unit are specified by 0x1D 0x50. The 0x1D 0x50 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]	0x1B 0x24, 0x1B 0x54, 0x1B 0x57, 0x1B 0x5C, 0x1D 0x50, 0x1D 0x5C				
[Example]					



0x1D 0x5C

<GS |>

Set relative vertical print position in page mode

Valid for	TPTCM60III TPTCM112III PRT80III TPTCM60IIIL TPTCM112IIIL				
[Format]	ASCII	GS	\	nL	nH
	Hex	1D	5C	nL	nH
	Decimal	29	92	nL	nH
[Range]	$0 \leq nL \leq 255, 0 \leq nH \leq 255$				
[Description]	<ul style="list-style-type: none"> • Sets the relative vertical print starting position from the current position in page mode. • This command sets the distance from the current position to $[(nL + nH \times 256) \times \text{vertical or horizontal motion unit}]$ inches. 				
Notes]	<ul style="list-style-type: none"> • This command is ignored unless page mode is selected. • When N is specified to the movement downward: $nL + nH \times 256 = N$ • When N is specified to the movement upward (the negative direction), use the complement of 65536. • When N is specified to the movement upward: $nL + nH \times 256 = 65536 - N$ • Any setting that exceeds the specified printing area is ignored. • This command function as follows, depending on the print starting position set by 0x1B 0x54: <ol style="list-style-type: none"> 1) When the starting position is set to the upper left or lower right of the printing, the vertical motion unit (y) is used. 2) When the starting position is set to the upper right or lower left of the printing area, the horizontal motion unit (x) is used. • The horizontal and vertical motion unit are specified by 0x1D 0x50. • The 0x1D 0x50 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]	0x1B 0x24, 0x1B 0x54, 0x1B 0x57, 0x1B 0x5C, 0x1D 0x24, 0x1D 0x50				
[Example]					



TRUE TYPE FONT COMMANDS

0x1C 0x65

<FS e>

Enable/Disable encoding

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	FS	e	n
	Hex	1C	65	n
	Decimal	28	101	n

[Range] n = '0', '1', '2', 48, 49, 50

[Description] Enable/Disable the text encoding based on the following values of n:

n	ENCODING
0, 48	Disabled
1, 49	Enable UTF-8
2, 50	Enable UTF-16

- [Notes]
- This command is valid only for TrueType fonts of monospace type.
 - If the text encoding is disabled, manage the characters coding by 0x1B 0x52 and 0x1B 0x74 commands.
 - If the text encoding is enabled, the character's addressing respects the UNICODE™ standard (see www.unicode.org).

[Default] Disabled.

[Reference] 0x1B 0x52, 0x1B 0x74, 0x1C 0x66

[Example]

True Type font management

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	FS	f	m	n	d[0]...d[n]
	Hex	1C	66	m	n	d[0]...d[n]
	Decimal	28	102	m	n	d[0]...d[n]

[Range] $0 \leq m \leq 256$
 $0 \leq n \leq 64$

[Description] Manage the TrueType fonts depending on the following values of m

m (BIT)	FUNCTION
0	Check glyph width
1	TTF enable hinting
2	Not used
3	Not used
4	Re-enable TrueType font
5	Disable TrueType font
6	De-init TrueType font
7	Clear all

n specifies the name length of the font to use.
d[0]...d[n] specifies the font name to use.

- [Notes]
- If “Check glyph width” is selected, for every character, printer checks if the glyph width is different from default width. In this case, the font will be not installed. The check may require some time (it depends on the characters number of the font).
 - For “Hinting” means the font adaptation to the grid. When hinting is enabled, the characters are more legible but some characters may be too high (for example, the accented capital letters). This bit is active only when you install a new font.
 - “Re-enable” function re-enables a TrueType font previously disabled.
 - “Disable” function disables a TrueType font.
 - “De-init” function uninstalls a font and clears the memory used by the font. Use this function only when you intend to use the font more, otherwise use the “Disable” function to speed up operations.
 - “Clear all” function uninstalls all the installed fonts.
 - If command is successful the printer transmits the ACK (0x06), otherwise return NACK (0x015).
 - After “Disable”, “Re-enable” and “Clear-all” functions, do not pass the filename of the TrueType font.



[Default]

[Reference]

[Example]

- Select the TrueType font with dimensions check, without hinting:
0x1C 0x66 0x02 0x0C "veramono.ttf"
- Return to use the embedded fonts:
0x1C 0x66 0x20 0x00
- Select the font previously disabled:
0x1C 0x66 0x10 0x00
- Uninstall a TrueType font:
0x1C 0x66 0x40 0x0C



0x1D 0xE9

<FS f>

Load a True Type font

Valid for	TPTCM60III
	TPTCM112III
	PRT80III
	TPTCM60IIIL
	TPTCM112IIIL

[Format]	ASCII	GS	0xE9	dimFile	,	C	,	fd0..fdn	,	d0..dn
	Hex	1D	E9	dimFile	2C	43	2C	fd0..fdn	2C	d0..dn
	Decimal	29	233	dimFile	44	67	44	fd0..fdn	44	d0..dn

[Range] 0 ≤ dimFile ≤ 255
0 ≤ d0, dn ≤ 255

[Description] Saves the font received from serial port into the printer flash.
 • dimFile indicates the file size (4 bytes expressed in hexadecimal notation)
 • fd0..fdn indicates the font-name

[Notes]

- The length fd0 .. fdn of the font-name can be up to 50 characters long.
- The maximum file size is related to the free space in the flash.
- The font-name specified in this command does not depend on the file-name because it is uniquely assigned in flash; therefore the font into the flash will be called as specified.
- If command is successful the printer transmits the ACK (0x06), otherwise return NACK (0x015).

Default]

[Reference]

[Example] To load the TrueType font "courier.ttf", send the command:
0x1D 0xE9 0x00 0x50 0x2C 0x43 0x2C "ARIALN.ttf" 0x2C

The following example shows the bytes sequence received from serial port to store a font into the printer flash :

Offset	Hexadecimal	ASCII
00000000:	1D E9 31 37 35 39 35 36 2C 43 2C 41 52 49 41 4C	GS ° 175956,C,ARIAL
00000016:	4E 2E 74 74 66 2C 00 01 00 00 00 00 00 14 01	N.ttf,
00000032:	00 00 00-00 00 00 00-00 00 00 00-00 00 00 00 00	
....		
....		Font data
....		
00175952:	00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00175968:	00 00	



ALIGNMENT





ALIGNMENT COMMANDS

Devices are provided with sensors for the alignment management in order to handle:

- rolls of tickets with pre-printed fields and a fixed length;
- rolls of labels with a fixed length.

The alignment notch may be formed by

- black mark printed on paper;
- gap between two labels.

For further information, refer to the User Manual of each device.

The commands available for managing the alignment of the ticket are the following:

- 0x1D 0xE7: sets the distance between the point of alignment and the notch (value of parameter “Notch Distance”)
- 0x1D 0xF6 and 0x1D 0xF8: perform the ticket alignment, which is advanced to align the first point of alignment available under the sensor.

Print a ticket with alignment requires the following sequence of commands:

1. General settings of the ticket: character formatting, print density, margins etc..
2. Alignment command: 0x1D 0xF6.
3. Ticket printout: printing text, logos or any graphic.
4. Alignment command: 0x1D 0xF8.
5. Cut command.

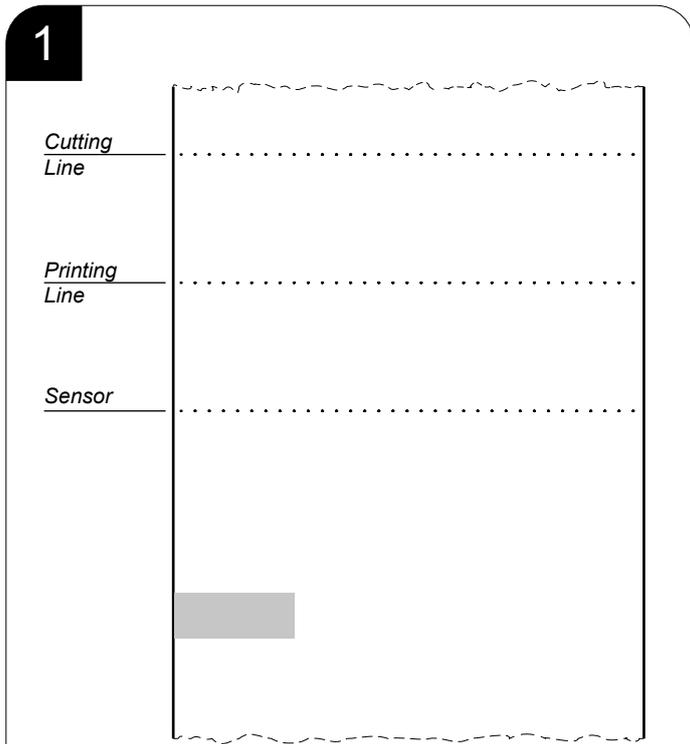
NOTE: The settings take effect from next ticket to the one already in the printer.

In the following examples, are described some sequences of commands to manage the alignment.

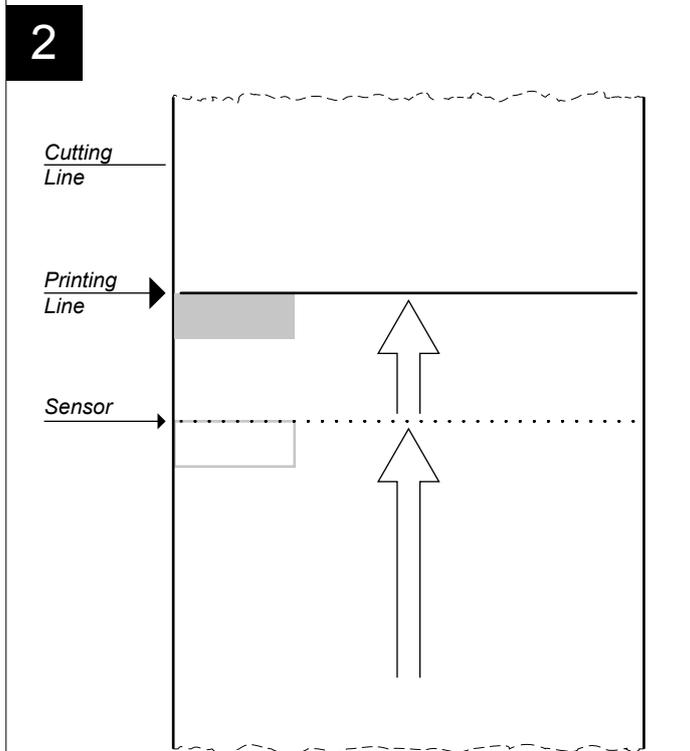


EXAMPLE 1

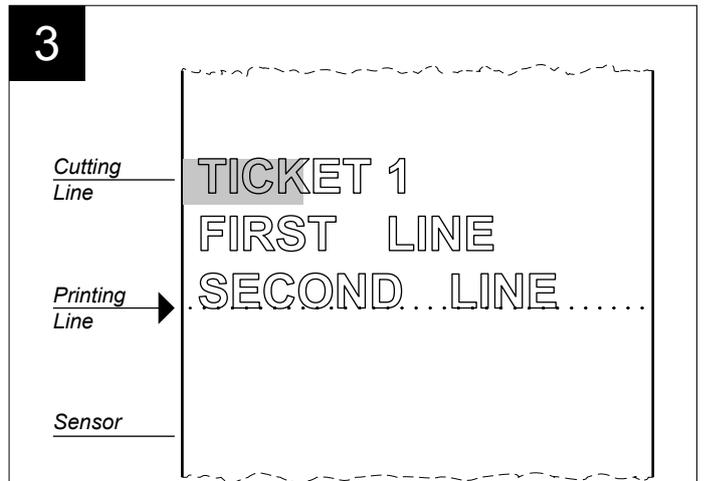
Commands sequence to print tickets with "alignment point" over the edge of the black mark (Notch Distance = 0mm set from SETUP).



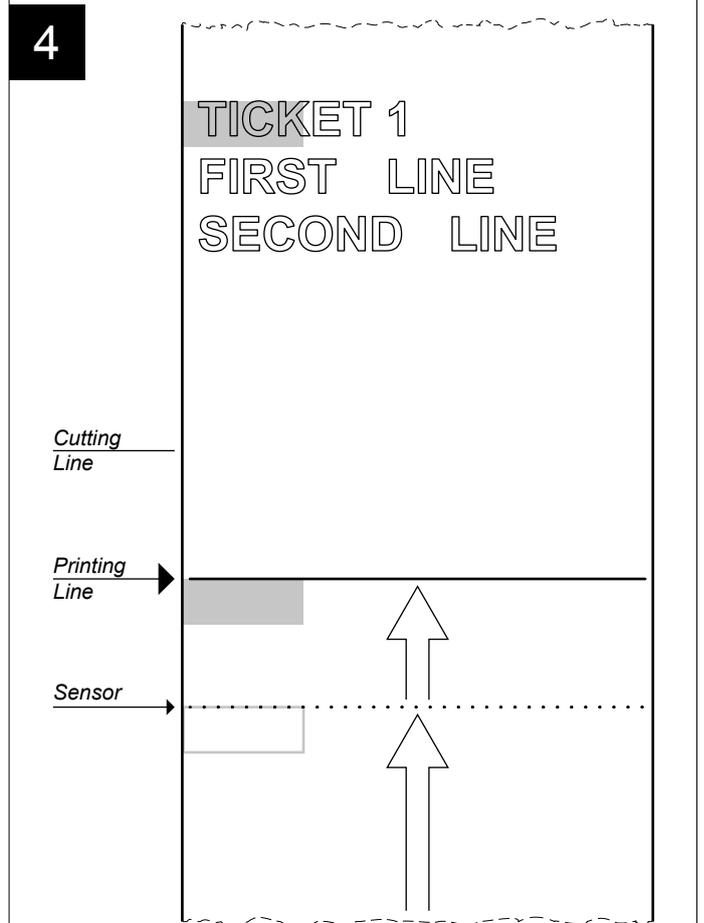
Start
Paper with black mark not aligned



Alignment command 0x1D 0xF6
Paper is fed. The black mark is recognized by the sensor and aligned under the printing line

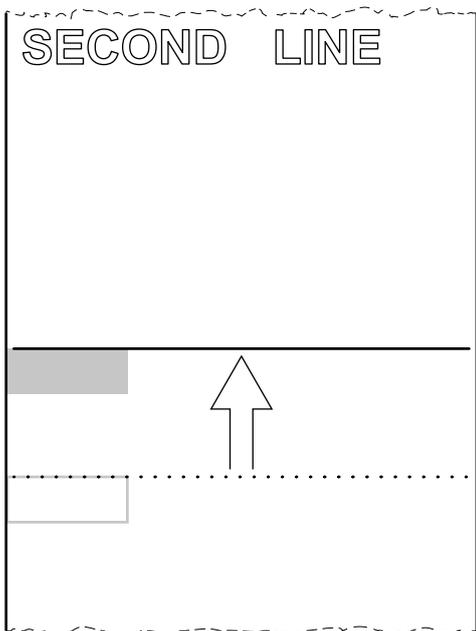


Command for text printing
'TICKET 1', 0x0A,'FIRST LINE', 0x0A,
'SECOND LINE', 0x0A

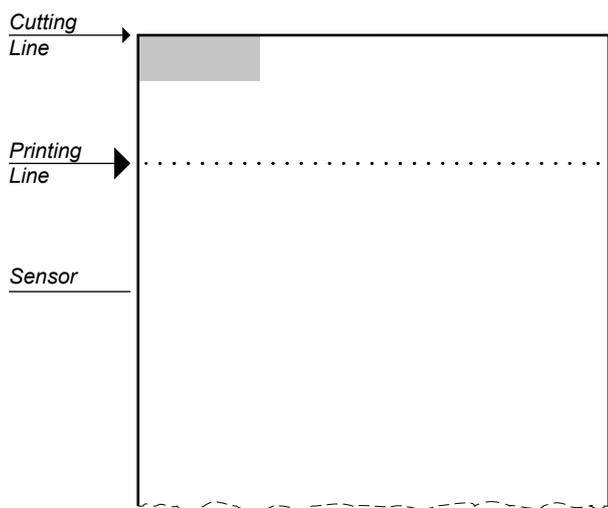
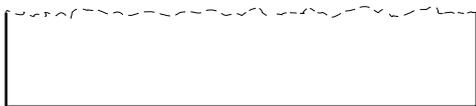


Alignment command 0x1D 0xF8
Paper is fed. The next black mark is recognized by the sensor and aligned under the printing line

5



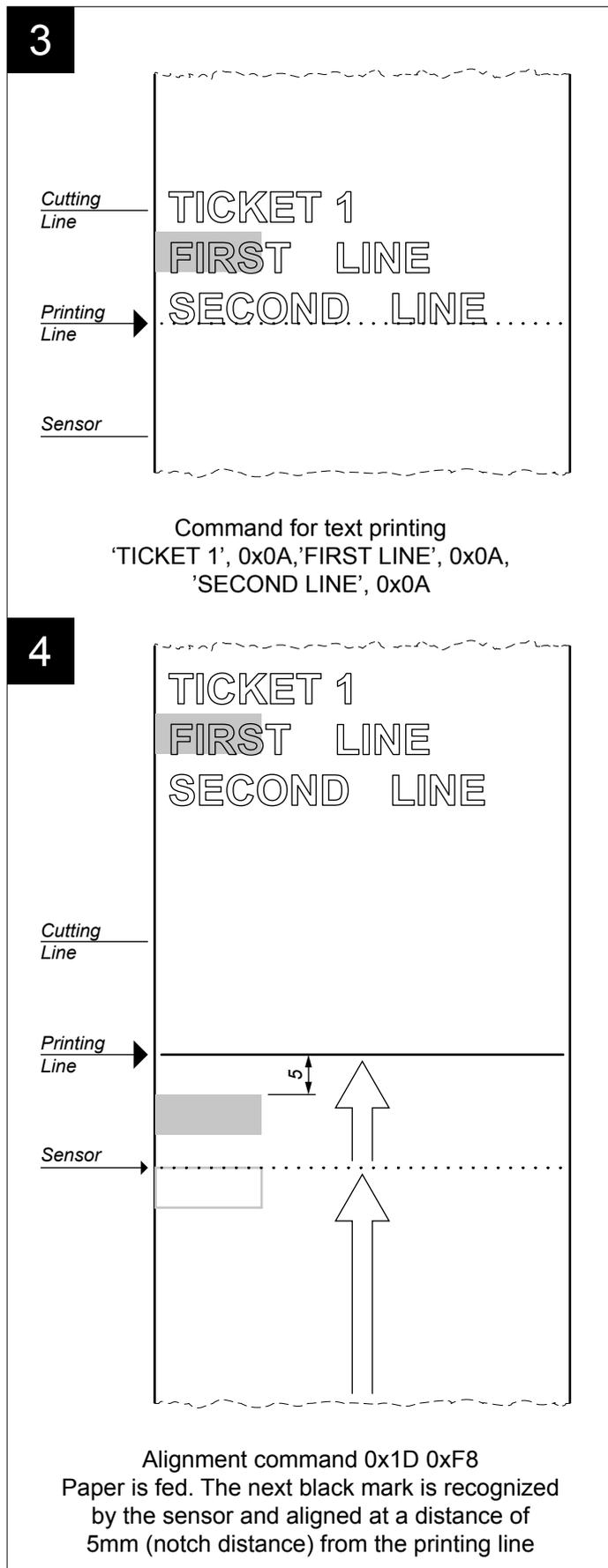
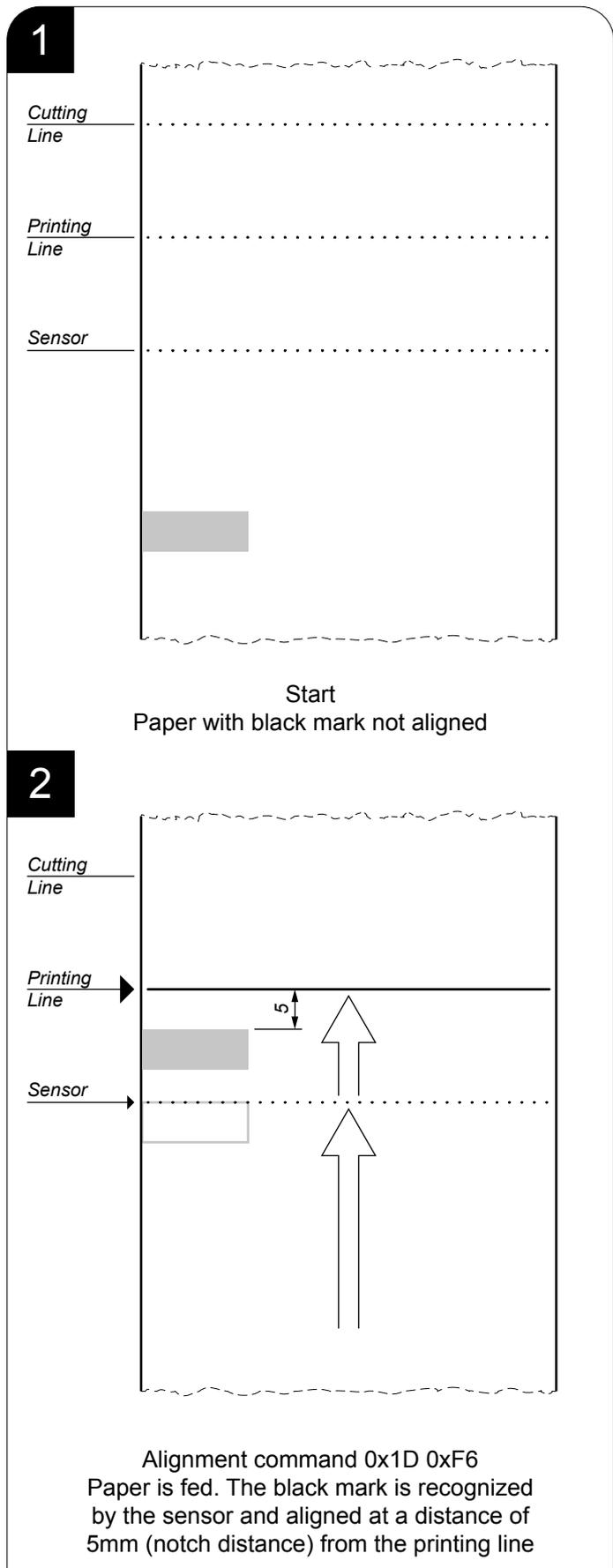
Cut command 0x1B 0x69
Paper is fed until the black mark is not aligned
under the cutting line ...



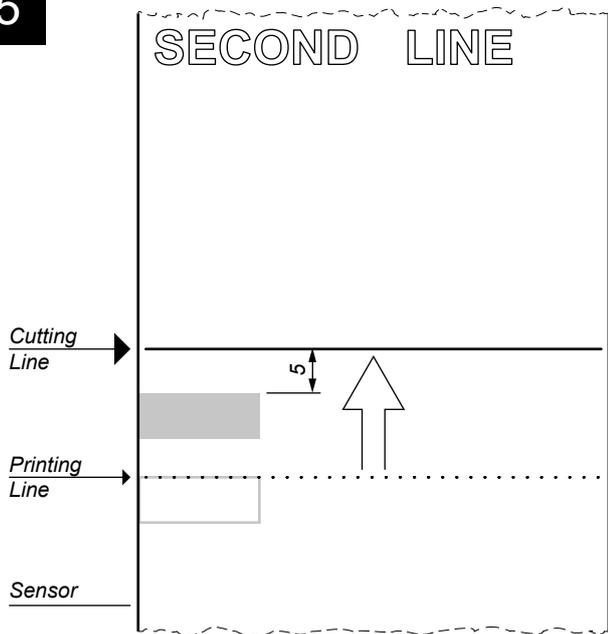
... The paper is cut.
The distance between the cutting line
and printing line can not be recovered.

EXAMPLE 2

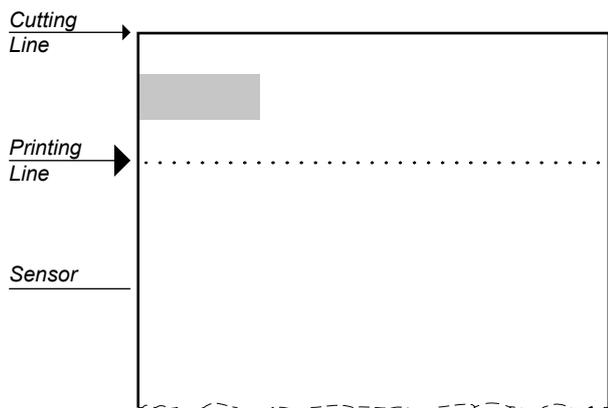
Commands sequence to print tickets with “alignment point” moved 10mm compared to the edge of the black mark (Notch Distance = 5mm set from SETUP).



5



Cut command 0x1B 0x69
Paper is fed until the black mark is not aligned at a distance of 5mm (notch distance) from the cutting line ...



... The paper is cut.
The distance between the cutting line and printing line can not be recovered.



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