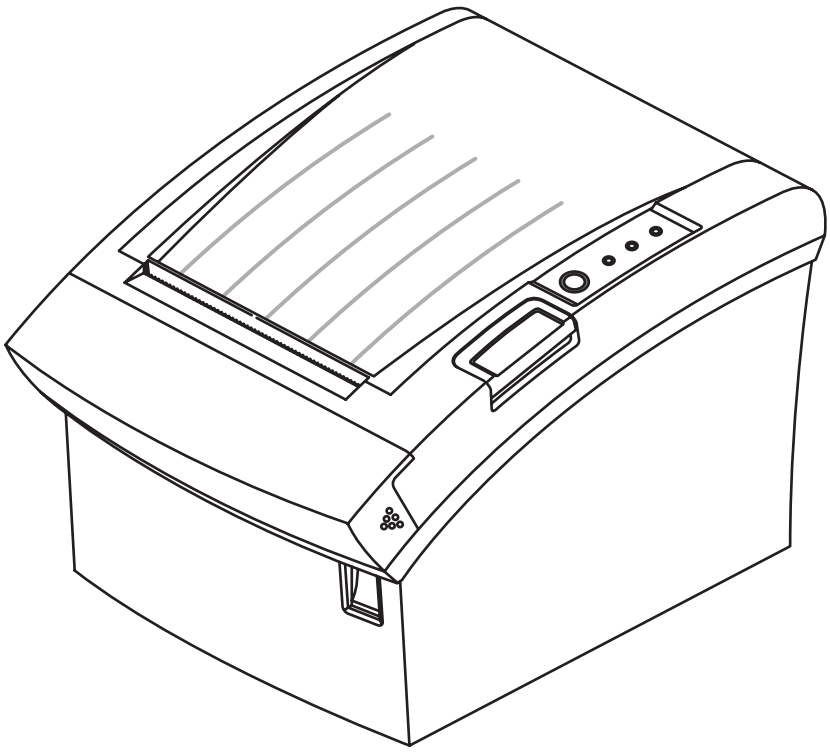
BIXOLON®
SAMSUNG mini printers

SAMSUNG

Command Manual
SRP-350

Thermal Printer
Rev. 1.00



http://www.samsungminiprinters.com

1. Control Commands List

Control codes	Hexadecimal codes	Function
<HT>	09	Horizontal tab
<LF>	0A	Print and line feed
<FF>	0C	Print and return to standard mode in page mode
<CR>	0D	Print and carriage return
<CAN>	18	Cancel print data in page mode
<DLE><EOT> n	10 04 n	Real-time status transmission
<DLE><ENQ> n	10 05 n	Real-time request to printer
<ESC><FF>	1B 0C	Print data in page mode
<ESC><SP> n	1B 20 n	Set right-side character spacing
<ESC> ! n	1B 21 n	Select print modes
<ESC> $ nL nH	1B 24 nL nH	Set absolute print position
<ESC> % n	1B 25 n	Select/Cancel user-defined character set
<ESC> & y c1 c2 ..	1B 26 y c1 c2	Define user-defined characters
<ESC> * m nL nH ..	1B 2A m nL nH	Select bit-image mode
<ESC> - n	1B 2D n	Turn underline mode on/off
<ESC> 2	1B 32	Select default line spacing
<ESC> 3 n	1B 33 n	Set line spacing
<ESC> = n	1B 3D n	Set peripheral device
<ESC> ? n	1B 3F n	Cancel user-defined characters
<ESC> @	1B 40	Initialize printer
<ESC> D n1 ~ nK	1B 44 … 00	Set horizontal tab position
<ESC> E n	1B 45 n	Turn emphasized mode on/off
<ESC> G n	1B 47 n	Turn double-strike mode on/off
<ESC> J n	1B 4A n	Print and feed paper
<ESC> L	1B 4C	Select page mode
<ESC> M n	1B 4D n	Select character fonts
<ESC> R n	1B 52 n	Select an international character set
<ESC> S	1B 53	Select standard mode
<ESC> T n	1B 54 n	Select print direction in page mode
<ESC> V n	1B 56 n	Turn 90º clockwise rotation mode on/off
<ESC> W xL…..	1B 57 ….	Set printing area in page mode
<ESC> \ nL nH	1B 5C n	Set relative print position
<ESC> a n	1B 61 n	Select justification
<ESC> c 3 n	1B 63 33 n	Select paper sensor to output paper end signals
<ESC> c 4 n	1B 63 34 n	Select paper sensor to stop printing
<ESC> c 5 n	1B 63 35 n	Enable/Disable panel button
<ESC> d n	1B 64 n	Print and feed n lines
<ESC> p m t1 t2	1B 70 m t1 t2	Generate pulse
<ESC> t n	1B 74 n	Select character code table
<ESC> { n	1B 7B n	Turn on/off upside-down printing mode

Control codes	Hexadecimal codes	Function
<FS> p n m	1C 70 n m	Print NT bit image
<FS> q n ….	1C 71 n …	Define NV bit image
<GS> ! n	1D 21 n	Select character size
<GS> $ nL nH	1D 24 nL nH	Set absolute vertical print position in page mode
<GS> * x y …..	1D 2A x y …..	Define downloaded bit image
<GS> / m	1D 2F n	Print downloaded bit image
<GS> :	1D 3A	Start/end macro definition
<GS> B n	1D 42 n	Turn white/black reverse printing mode on/off
<GS> H n	1D 48 n	Select printing position of HRI characters
<GS> I n	1D 49 n	Transmit printer ID
<GS> L nL nH	1D 4C nL nH	Set left margin
<GS> P x y	1D 50 x y	Set horizontal and vertical motion units
<GS> V m <GS> V m n	1D 56 m 1D 56 m n	Select cut mode and cut paper
<GS> W nL hH	1D 57 nL nH	Set printing area width
<GS> \ nL nH	1D 5C nL nH	Set relative vertical print position in page mode
<GS> ^ r t m	1D 5E r t m	Execute macro
<GS> a n	1D 61 n	Enable/Disable Automatic status back
<GS> f n	1D 62 n	Select font for HRI characters
<GS> h n	1D 68 n	Set bar code height
<GS> k m ….NUL <GS> k m n …	1D 6B m… NUL 1D 6B m n …	Print bar code
<GS> r n	1D 72 n	Transmit status
<GS> v 0 m ….	1D 76 30	Print raster bit image
<GS> w n	1D 77 n	Set bar code width

2. Control Commands Details

2-1 Command Notation

[Name]	The name of the command.
[Format]	The code sequence. ASCII Indicates the ASCII equivalents. Hex indicates the hexadecimal equivalents. Decimal indicates the decimal equivalents. [ ] k indicates the contents of the [ ] should be repeated k times.
[Range]	Gives the allowable ranges for the arguments.
[Description]	Describes the function of the command.

2-2 Explanation of Terms

LSB	Least Significant Bit

2-3 Control Commands Details

HT

[Name]	Horizontal tab.
[Format]	ASCII HT Hex 09 Decimal 9
[Description]	Moves the print position to the next horizontal tab position.

LF

[Name]	Print and line feed.
[Format]	ASCII LF Hex 0A Decimal 10
[Description]	Prints the data in the print buffer and feeds one line based on the current line spacing.

FF

[Name]	Print and return to standard mode in page mode.
[Format]	ASCII FF Hex 0C Decimal 12
[Description]	Prints the data in the print buffer collectively and returns to standard mode.

CR

[Name]	Print and carriage return.
[Format]	ASCII CR Hex 0D Decimal 13
[Description]	When automatic line feed is enabled, this command functions the same as LF : when automatic line feed is disabled, this command is ignored.

CAN

[Name] Cancel print data in page mode.

[Format] ASCII CAN
Hex 18
Decimal 24

[Description] In page mode, deletes all the print data in the current printable area.

DLE EOT n

[Name] Real-time status transmission.

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

[Range] 1 ≤n ≤4

[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 = 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	Drawer open/close signal is LOW (connector pin 3).
	On	04	4	Drawer open/close signal is HIGH (connector pin 3).
3	Off	00	0	On-Line
	On	08	8	Off-Line
4	On	10	16	Not used. Fixed to On.
5-6	-	-	-	Undefined.
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 is closed.
	On	04	4	Cover is open.
3	Off	00	0	Paper is not being fed by using the PAPER FEED button.
	On	08	8	Paper is being fed by the PAPER FEED button.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	No paper-end stop.
	On	20	32	Printing stops due to paper end.
6	Off	00	00	No error.
	On	40	64	Error occurs.
7	Off	00	0	Not used. Fixed to Off.

Bit 5 : Becomes on when the paper end sensor detects paper end and printing stops.

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	-	-	-	Undefined.
3	Off	00	0	No auto-cutter error.
	On	08	8	Auto-cutter error occurs.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error occurs.
6	Off	00	0	No auto-recoverable error.
	On	40	64	Auto recoverable error occurs.
7	Off	00	0	Not used. Fixed to Off.

Bit 3 : If these errors occur due to paper jams or the like, it is possible to recover by correcting the cause of the error and executing DLE ENQ n (1 ≤n ≤2).

Bit 6 : When printing is stopped due to high print head temperature until the print head temperature drops sufficiently or when the paper roll cover is open during printing, bit 6 is on.

n = 4 : Continuous paper 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	Off	00	0	Paper roll Near-END sensor : Paper adequate.
3	On	0C	12	Paper near-end is detected by the paper roll Near-END sensor.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Paper roll end sensor : Paper present.
6	On	60	96	Paper roll end detected by the paper roll-end sensor.
7	Off	00	0	Not used. Fixed to Off.

DLE ENQ n

[Name] Real-time request to printer.
[Format] ASCII DLE ENQ n
Hex 10 05 n
Decimal 16 5 n
[Range] 1 ≤n ≤2
[Description] Recovers from an error and restart printing from the line where the error occurred.

ESC FF

[Name] Print data in page mode.
[Format] ASCII ESC FF
Hex 1B 0C
Decimal 27 12
[Description] In page mode, prints all buffered data in the printing area collectively.

ESC SP n

[Name] Set right-side character spacing.

[Format]

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

[Range] 0 ≤n ≤255

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

ESC ! n

[Name] Select print modes.

[Format]

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

[Range] 0 ≤n ≤255

[Description] Selects print mode(s) using n as follows.

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Character font(12 ×24) selected.
	On	01	1	Character font(9 ×17) selected.
1,2	-	-	-	Undefined.
3	Off	00	0	Emphasized mode not selected.
	On	08	8	Emphasized 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	-	-	-	Undefined.
7	Off	00	0	Underline mode not selected.
	On	80	128	Underline mode selected.

ESC $ nL nH

[Name] Set absolute print position.

[Format]

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

[Range] 0 ≤n ≤255
0 ≤n ≤255

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

ESC % n

[Name] Select / Cancel user-defined character set.

[Format]

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

[Range] 0 ≤n ≤255

[Description] Selects or cancels the user-defined character set.
When the LSB is 0, the user-defined character set is canceled.
When the LSB is 1, the user-defined character set is selected.

ESC & y c1 c2 [x1 d1…d(y X x1)]… [xk d1… d(yx X xk)]

[Name] Define user-defined characters.

[Format]

ASCII	ESC	&	n	y	c1	c2[x1 d1…d(y X x1)]… [xk d1… d(yx X xk)]
Hex	1B	26	n	y	c1	c2[x1 d1…d(y X x1)]… [xk d1… d(yx X xk)]
Decimal	27	38	n	y	c1	c2[x1 d1…d(y X x1)]… [xk d1… d(yx X xk)]

[Range] y = 3, 32 ≤c1 ≤c2 ≤126
0 ≤x ≤12 (12x24 font)
0 ≤x ≤9 (9x17 font)
0 ≤d1 … d(y X xk) ≤255

[Description] - 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.

ESC * m nL nH d1…dk

[Name] Select bit-image mode.

[Format]

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

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

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

m	No. Vertical Dots	Vertical Direction		Horizontal Direction	
		Number of Dots	Dot Density	Dot Density	Number of Data (k)
0	8-dots single-density	8	60 DPI	90 DPI	nL + nH ×256
1	8-dot double-density	8	60 DPI	180 DPI	nL + nH ×256
32	24-dot single-density	24	180 DPI	90 DPI	(nL + nH ×256) ×3
33	24-dot double-density	24	180 DPI	180 DPI	(nL + nH ×256) ×3

ESC - n

[Name] Turn underline mode on / off.
[Format] ASCII ESC - n
Hex 1B 2D n
Decimal 27 45 n
[Range] 0 ≤n ≤2, 48 ≤H ≤50
[Description] Turns underline mode on or off, based on the following values of n :

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

ESC 2

[Name] Select default line spacing.
[Format] ASCII ESC 2
Hex 1B 32
Decimal 27 50
[Description] Selects 1/6-inch line (approximately 4.32mm) spacing.

ESC 3 n

[Name] Set line spacing
[Format] ASCII ESC 3 n
Hex 1B 33 n
Decimal 27 51 n
[Range] 0 ≤n ≤255
[Description] Sets the line spacing to [n X vertical or horizontal motion unit] inches.

ESC = n

[Name] Select peripheral device.
[Format] ASCII ESC = n
Hex 1B 3D n
Decimal 27 61 n
[Range] 0 ≤n ≤3
[Description] Selects device to which host computer sends data, using n as follows :

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Printer Disabled.
	On	01	1	Printer Disabled.
1-7	-	-	-	Undefined.

ESC ? n

[Name] Cancel user-defined characters.
[Format] ASCII ESC ? n
Hex 1B 3F n
Decimal 27 63 n
[Range] 32 ≤n ≤126
[Description] Cancels user-defined characters.

ESC @

[Name] Initialize printer.

[Format]

ASCII	ESC	@
Hex	1B	40
Decimal	27	64

[Range] 32 ≤n ≤126

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

ESC D n1… nk NUL

[Name] Set horizontal tab positions.

[Format]

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

[Range] 1 ≤n ≤255

0 ≤k ≤32

[Description] Sets horizontal tab positions.

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

ESC E n

[Name] Turn emphasized mode on / off.

[Format]

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

[Range] 0 ≤n ≤255

[Description] Turns emphasized mode on or off.

* When the LSB of n is 0, emphasized mode is turned off.
* When the LSB of n is 1, emphasized mode is turned on.

ESC G n

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

[Format]

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

[Range] 0 ≤n ≤255

[Description] Turns double-strike mode on or off.

* When the LSB of n is 0, double-strike mode is turned off.
* When the LSB of n is 1, double-strike mode is turned on.

ESC J n

[Name] Print and feed paper.

[Format]

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

[Range] 0 ≤n ≤255

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

ESC L

[Name] Select page mode.
[Format] ASCII ESC L
Hex 1B 4C
Decimal 27 76
[Description] Switches from standard mode to page mode.

ESC M n

[Name] Select character font.
[Format] ASCII ESC M n
Hex 1B 4D n
Decimal 27 77 n
[Range] n = 0, 1, 48, 49
[Description] Selects character fonts.

n	Function
0, 48	Character font A (12 ×24) selected.
1, 49	Character font B (9 ×17) selected.

ESC R n

[Name] Select an international character set.
[Format] ASCII ESC R n
Hex 1B 52 n
Decimal 27 82 n
[Range] 0 ≤n ≤10
[Description] Selects an international character set in from the following table.
[Default] n = 0

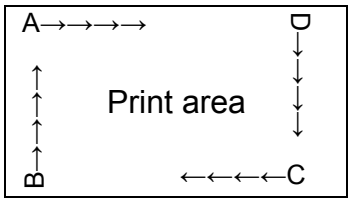
n	Character set	n	Character set
0	U.S.A	5	Sweden
1	France	6	Italy
2	Germany	7	Spain
3	U.K	9	Norway
4	Denmark 1	10	Denmark 2

ESC S

[Name] Select standard mode
[Format] ASCII ESC S
Hex 1B 53
Decimal 27 83
[Description] Switches from page mode to standard mode.

ESC T n	
[Name]	Select print direction in page mode.
[Format]	ASCII ESC T n Hex 1B 54 n Decimal 27 84 n
[Range]	0 ≤n ≤3
[Description]	48 ≤n ≤51
[Default]	Selects 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 right	Upper left (A in the figure)
1, 49	Bottom to top	Lower left (B in the figure)
2, 50	Right to left	Lower right (C in the figure)
3, 51	Top to bottom	Upper right (D in the figure)



ESC V n	
[Name]	Turn 90°clockwise rotation mode on/off.
[Format]	ASCII ESC V n Hex 1B 56 n Decimal 27 86 n
[Range]	0 ≤n ≤1, 48 ≤n ≤49
[Description]	Turn 90°clockwise rotation mode on/off. n is used as follows :

n	Function
0, 48	Turn off 90°clockwise rotation mode.
1, 49	Turn on 90°clockwise rotation mode.

ESC W xL xH yL yH dxL dxH dyL dyH	
[Name]	Set printing area in page mode.
[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 ≤ xL xH yL yH dxL dxH dyL dyH ≤255 (except dxL=0 or dyL=dyH=0)
[Description]	The horizontal starting position, vertical starting position, printing area width, and printing area height are defined as x0, y0, dx (inch), respectively. x0 = [(xL + xH ×256)] ×(horizontal motion unit)] y0 = [(yL + yH ×256)] ×(vertical motion unit)] dx = [(dxL + dxH ×256)] ×(horizontal motion unit)] dy = [(dyL + dyH ×256)] ×(horizontal motion unit)] The printing area is set as shown in the figure below.

ESC \ n

[Name] Set relative print position.

[Format]

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

[Range] 0 ≤nL ≤255
0 ≤nH ≤255

[Description] Set 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]

ESC a n

[Name] Select justification.

[Format]

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

[Range] 0 ≤nL ≤2, 48 ≤nL ≤50

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

n	Justification
0, 48	Left justification
1, 49	Centering
2, 50	Right justification

ESC c 3 n

[Name] Select paper sensor(s) to output paper end signals.

[Format]

ASCII	ESC	c	3	n
Hex	1B	63	33	n
Decimal	27	99	51	n

[Range] 0 ≤n ≤255

[Description] Selects the paper sensor(s) to output paper end signals.
* Each bit of n is used as follows.

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll near-end sensor disable.
	On	01	1	Paper roll near-end sensor enable.
1	Off	00	0	Paper roll near-end sensor disable.
	On	02	2	Paper roll near-end sensor enable.
2	Off	00	0	Paper roll end sensor disable.
	On	04	4	Paper roll end sensor enable.
3	Off	00	0	Paper roll end sensor disable.
	On	08	8	Paper roll end sensor enable.
4-7	-	-	-	Undefined.

ESC c 4 n

[Name] Select paper sensor(s) to stop printing.

[Format]

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

[Range] 0 ≤nL ≤255

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

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll end sensor disable.
	On	01	1	Paper roll end sensor enable.
1	Off	00	0	Paper roll end sensor disable.
	On	02	2	Paper roll end sensor enable.
2-7	-	-	-	Undefined.

ESC c 5 n

[Name] Enable / Disable panel button.

[Format]

ASCII	ESC	c	3	n
Hex	1B	63	35	n
Decimal	27	99	53	n

[Range] 0 ≤n ≤255

[Description] Enables or disables the panel button.
* When the LSB of n is 0, the panel buttons are enabled.
* When the LSB of n is 1, the panel buttons are disabled.

ESC d n

[Name] Print and feed n lines.

[Format]

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

[Range] 0 ≤n ≤255

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

ESC p m t1 t2

[Name] Generate pulse.

[Format]

ASCII	ESC	p	m	t1	t2
Hex	1B	70	m	t1	t2
Decimal	27	112	m	t1	t2

[Range] m = 0, 1, 48, 49
0 ≤t1 ≤255, 0 ≤t2 ≤255

[Description] Outputs the pulse specified by t1 and t2 to connector pin m as follows.

m	Connector pin
0, 48	Drawer kick-out connector pin 2
1, 49	Drawer kick-out connector pin 5

ESC t n

[Name] Select character code table.

[Format]

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

[Range] 0 ≤n ≤5, n = 255

[Description] Selects a page n from the character code table.

n	Page
0	0 (PC437 {USA, standard Europe})
1	1 (Katakana)
2	2 (PC850 {Multilingual})
3	3 (PC860 {Portuguese})
4	4 (PC863 {Canadian-French})
5	5 (PC865 {Nordic})
19	19 (PC858 {Euro})
255	Space page

ESC { n

[Name] Turns on / off upside-down printing mode.

[Format]

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

[Range] 0 ≤n ≤255

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

* When the LSB of n is 0, upside-down printing mode is turned off.
* When the LSB of n is 1, upside-down printing mode is turned on.

FS p n m

[Name] Print NV bit image.

[Format]

ASCII	FS	p	n	m
Hex	1C	70	n	m
Decimal	28	112	n	m

[Range] 1 ≤n ≤255

0 ≤m ≤3, 48 ≤m ≤51

[Description] Prints a NV bit image n using the mode specified by m.

m	Mode	Vertical Dot Density (DPI)	Horizontal Dot Density (DPI)
0, 48	Normal	180	180
1, 49	Double-width	180	90
2, 50	Double-height	90	180
3, 51	Quadruple	90	90

* n is the number of the NV bit image (defined using the FS q command).
* m specifies the bit image mode.

FS q n [xL xH yL yH d1…dk]1…[xL xH yL yH d1…dk]n

[Name] Defined NV bit image.

[Format]

ASCII	FS	q	n	[xL xH yL yH d1…dk]1…[xL xH yL yH d1…dk]n
Hex	1C	71	n	[xL xH yL yH d1…dk]1…[xL xH yL yH d1…dk]n
Decimal	28	113	n	[xL xH yL yH d1…dk]1…[xL xH yL yH d1…dk]n

[Range] 1 ≤n ≤255
0 ≤xL ≤255
0 ≤xH ≤3 (when 1 ≤(xL + xH ×256) ≤1023
0 ≤yL ≤3 (when 1 ≤(xL + xH ×256) ≤288
1 ≤d ≤255
k = (xL + xH ×256) ×(yL + yH ×256) ×8
Total defined data area = 2M bits (256K bytes)

[Description] Define the NV bit image specified by n.
* n specifies the number of the defined NV bit image.
* xL, xH specifies (xL + xH ×256) ×8 dots in the horizontal direction for the NV bit image you are defining.
* yL, yH specifies (yL + yH ×256) ×8 dots in the vertical direction for the NV bit image you are defining.

GS ! n

[Name] Select character size.

[Format]

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

[Range] 0 ≤n ≤255
(1 ≤vertical number of times ≤8, 1 ≤horizontal number of times ≤8)

[Description] Selects the character height using bits 0 to 2 and selects the character width using bits 4 to 7, as follows :

Bit	Off/On	Hex	Decimal	Function
0-3	Character height selection. See Table 2			
4-7	Character width selection. See Table 1			

Table 1
Character Width Selection

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

Table 2
Character Height Selection

Hex	Decimal	Height
00	0	1 (normal)
01	1	2 (double-width)
02	2	3
03	3	4
04	4	5
05	5	6
06	6	7
07	7	8

GS $ nL nH

[Name] Set absolute vertical print position in page mode.

[Format]

ASCII	GS	$	nL	nH
Hex	1D	24	nL	nH
Decimal	29	36	nL	nH

[Range] 0 ≤nL ≤255, 0 ≤nH ≤255

[Description] * Sets the absolute vertical print starting position for buffer character data in page mode.
* This command sets the absolute print position to [(nL + nH ×256) ×(vertical or horizontal motion unit)] inches.

GS * x y d1…d(x ×y ×8)

[Name] Define downloaded bit image.

[Format]

ASCII	GS	*	x	y	d1…d(x ×y ×8)
Hex	1D	2A	x	y	d1…d(x ×y ×8)
Decimal	29	42	x	y	d1…d(x ×y ×8)

[Range] 1 ≤x ≤255, 1 ≤y ≤48
x x y ≤1536, 0 ≤d ≤255

[Description] Defines a downloaded bit image using the dots specified by x and y.
* x indicates the number of dots in the horizontal direction.
* y indicates the number of dots in the vertical direction.

GS / m

[Name] Print downloaded bit image.

[Format]

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

[Range] 0 ≤m ≤3, 48 ≤m ≤51

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

m	Mode	Vertical Dot Density (DIP)	Horizontal Dot Density (DIP)
0, 48	Normal	180	180
1, 49	Double-width	180	90
2, 50	Double-height	90	180
3, 51	Quadruple	90	90

GS :

[Name] Start/End macro definition.

[Format]

ASCII	GS	:
Hex	1D	3A
Decimal	29	58

[Description] Starts or ends macro definition.

GS B n

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

[Format]

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

[Range] 0 ≤n ≤255

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

GS H n

[Name] Select printing position of HRI characters.

[Format]

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

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

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

* HRI indicates Human Readable Interpretation.

GS I n

[Name] Transmit printer ID.

[Format]

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

[Range] 1 ≤n ≤3, 49 ≤n ≤51

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

n	Printer ID	Specification	ID (hexadecimal)
1, 49	Printer model ID	SRP-350 series	20
2, 50	Type ID		02
3, 51	ROM version ID	Depends on ROM version	02

GS L nL nH

[Name] Set left margin.

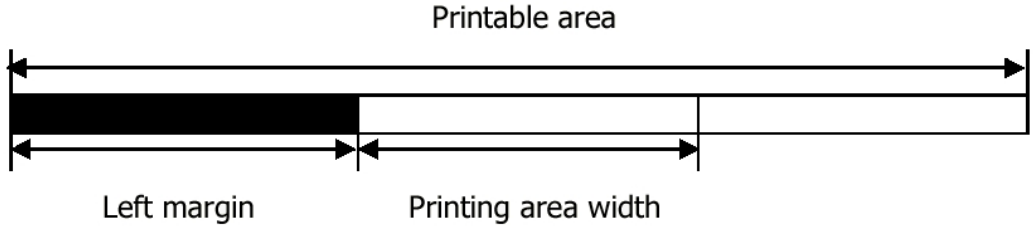
[Format]

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

[Range] 0 ≤nL ≤255, 0 ≤nH ≤255

[Description] Sets the left margin using nL and nH.

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



GS P x y

[Name] Set horizontal and vertical motion units.

[Format]

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

[Range] 0 ≤x ≤255, 0 ≤y ≤255

[Description] Sets the horizontal and vertical motion units to approximately 25.4/x mm {1/x inch and } and approximately 25.4/y mm {1/y inches }, respectively. When x and y are set to 0, the default setting of each value is used.

① GS V m , ② GS V m n

[Name] Select cut mode and cut paper.

[Format]

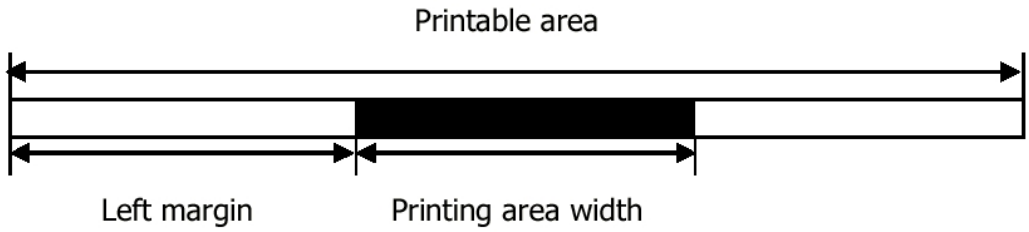
① ASCII	GS	V	m	② ASCII	GS	V	m	n
Hex	1D	56	m	Hex	1D	56	m	n
Decimal	29	86	m	Decimal	29	86	m	n

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

[Description] Selects a mode for cutting paper and executes paper cutting. The value of m selects the mode as follows :

m	Print mode
0,1,49	Partial cut (one point left uncut)
66	Feeds paper (cutting position + [nX(vertical motion unit)]), and cuts the paper partially (one point uncut).

GS W nL nH					
[Name]	Set printing area width.				
[Format]	ASCII	GS	W	nL	nH
	Hex	1D	57	nL	nH
	Decimal	29	87	nL	nH
[Range]	0 ≤nL ≤255, 0 ≤nH ≤255				
[Description]	Sets the printing area width to the area specified by nL and nH. * The printing area width is set to [(nL + nH ×256) ×horizontal motion unit] inches.				



GS \ nL nH					
[Name]	Set relative vertical print position in page mode.				
[Format]	ASCII	GS	\	nL	nH
	Hex	1D	5C	nL	nH
	Decimal	29	92	nL	nH
[Range]	0 ≤nL ≤255, 0 ≤nH ≤255				
[Description]	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 ×256) ×vertical or horizontal motion unit] inches.				

GS ^ r t m					
[Name]	Execute macro.				
[Format]	ASCII	GS	^	r	t m
	Hex	1D	5E	r	t m
	Decimal	29	94	r	t m
[Range]	0 ≤r ≤255, 0 ≤t ≤255 m = 0, 1				
[Description]	Executes a macro. * r specifies the number of times to execute the macro. * t specifies the waiting time for executing the macro. * m specifies macro executing mode. When the LSB of m = 0 The macro executes r times continuously at the interval specified by t. When the LSB of m = 1 : After waiting for the period specified by t, the PAPER OUT LED indicators blink 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.				

GS a n

[Name] Enable/Disable Automatic Status Back.

[Format]

ASCII	GS	a	n
Hex	1D	61	n
Decimal	29	97	n

[Range] 0 ≤n ≤255

[Description] Enables or disables ASB and specifies the status items to include, using n as follows :

Bit	Off/On	Hex	Decimal	Status for ASB
0	Off	00	0	Drawer kick-out connector pin 3 status disabled.
	On	01	1	Drawer kick-out connector pin 3 status enabled.
1	Off	00	0	On-line / Off-line status disabled.
	On	02	2	On-line / Off-line status enabled.
2	Off	00	0	Error status disabled.
	On	04	4	Error status enabled.
3	Off	00	0	Paper roll sensor status disabled.
	On	08	8	Paper roll sensor status enabled.
4-7	-	-	-	Undefined.

[Details]

* If any of the status items in the table above are enabled, the printer transmits the status when this command is executed. The printer automatically transmits the status whenever the enabled status item changes. The disabled status items may change, in this case, because each status transmission represents the current status.
* If all status items are disabled, the ASB function is also disabled.
* If the ASB is enabled as a default, the printer transmits the status when the printer data reception and transmission is possible at the first time from when the printer is turned on.
* The following four status bytes are transmitted without confirming whether the host is ready to receive data. The four status bytes must be consecutive, except for the XOFF code.
* Since this command is executed after the data is processed in the receive buffer, there may be a time la between data reception and status transmission.
* When the printer is disabled by ESC= (Select peripheral device), the four status bytes are transmitted whenever the status changes.
* The status to be transmitted are as follows :

First byte (printer information)

Bit	Off/On	Hex	Decimal	Status for ASB
0	Off	00	0	Not used. Fixed to Off.
1	Off	00	0	Not used. Fixed to Off.
2	Off	00	0	Drawer kick-out connector pin 3 is LOW.
	On	04	4	Drawer kick-out connector pin 3 is HIGH.
3	Off	00	0	Online.
	On	08	8	Offline.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Cover is closed.
	On	20	32	Cover is open.
6	Off	00	0	Paper is not being fed by using the PAPER FEED button.
	On	40	64	Paper is being fed by using the PAPER FEED button.
7	Off	00	0	Not used. Fixed to Off.

Second byte (printer information)

Bit	Off/On	Hex	Decimal	Status for ASB
0	-	-	-	Undefined.
1	-	-	-	Undefined.
2	-	-	-	Undefined.
3	Off	00	0	No Auto-cutter error.
	On	08	8	Auto-cutter error occurred.
4	Off	00	00	Not used. Fixed to Off.
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error occurred.
6	Off	00	0	No automatically recoverable error.
	On	40	64	Automatically recoverable error occurred.
7	Off	00	0	Not used. Fixed to Off.

Bit 3 : If these errors occur due to paper jams or the line, it is possible to recover by correcting the cause of the error and executing DLE ENQ n (1≤n≤2). If an error due to a circuit failure (e.g. wire break) occurs, it is impossible to recover.

Bit 6 : When printing is stopped due to high print head temperature until the print head temperature drops sufficiently or when the paper roll cover is open during printing, bit 6 is On.

Third byte (paper sensor information)

Bit	Off/On	Hex	Decimal	Status for ASB
0,1	Off	00	0	Paper roll Near-END sensor : paper adequate.
	On	03	3	Paper roll Near-END sensor : paper near end.
2,3	Off	00	0	Paper roll end sensor : paper present.
	On	0C	12	Paper roll end sensor : paper not present.
4	Off	00	0	Not used. Fixed Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed Off.

Fourth byte (paper sensor information)

Bit	Off/On	Hex	Decimal	Status for ASB
0-3	-	-	-	Undefined.
4	Off	00	0	Not used. Fixed Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed Off.

[Default] n=0 when DIP SW 2-1 is Off, n=2 when DIP SW 2-1 is On.

GS f n

[Name] Select font for Human Readable Interpretation(HRI) characters.

[Format]

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

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

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

n	Font
0, 48	Font A (12 ×24)
1, 49	Font B (9 ×17)

GS h n

[Name] Set bar code height.

[Format]

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

[Range] 1 ≤ n ≤255

[Description] Set the height of the bar code.
n specifies the number of dots in the vertical direction.

① GS k m d1…dk NUL , ② GS k m n d1…dn

[Name] Print bar code.

[Format]

①	ASCII	GS	k	m	d1…dk	NUL
	Hex	1D	6B	m	d1…dk	00
	Decimal	29	107	m	d1…dk	0
②	ASCII	GS	k	m	n	d1…dn
	Hex	1D	6B	m	n	d1…dn
	Decimal	29	107	m	n	d1…dn

[Range] ① 0 ≤m ≤6 (k and d depends on the bar code system used.)
② 65 ≤m ≤73 (n and d depends on the bar code system used.)

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

m		Bar Code System	Number of Characters	Remarks
①	0	UPC-A	11 ≤k ≤12	48 ≤d ≤57
	1	UPC-E	11 ≤k ≤12	48 ≤d ≤57
	2	JAN13(EAN13)	12 ≤k ≤13	48 ≤d ≤57
	3	JAN8(EAN8)	7 ≤k ≤8	48 ≤d ≤57
	4	CODE 39	1 ≤k	48 ≤d ≤57, 65 ≤d ≤90, 32, 36, 37, 43, 45, 46, 47
	5	ITF	1 ≤k (even number)	48 ≤d ≤57
	6	CODABAR	1 ≤k	48 ≤d ≤57, 65 ≤d ≤68, 36, 43, 45, 46, 47 ,58
②	65	UPC-A	11 ≤n ≤12	48 ≤d ≤57
	66	UPC-E	11 ≤n ≤12	48 ≤d ≤57
	67	JAN13(EAN13)	12 ≤n ≤13	48 ≤d ≤57
	68	JAN8(EAN8)	7 ≤n ≤8	48 ≤d ≤57
	69	CODE 39	1 ≤n ≤255	48 ≤d ≤57, 65 ≤d ≤90, 32, 36, 37, 43, 45, 46, 47 d1 = dk = 42(1)
	70	ITF	1 ≤n ≤255 (even number)	48 ≤d ≤57
	71	CODABAR	1 ≤n ≤255	48 ≤d ≤57, 65 ≤d ≤68, 36, 43, 45, 46, 47 ,58
	72	CODE 93	1 ≤ n ≤255	0 ≤d ≤127
	73	CODE 128	1 ≤ n ≤255	0 ≤d ≤127

GS r n

[Name] Transmit status.

[Format]

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

[Range] n = 1, 2, 49, 50

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

GS v 0 m xL xH yL yH d1…dk

[Name] Print raster bit image.

[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 ≤m ≤3, 48 ≤m ≤51
0 ≤xL ≤255
0 ≤xH ≤255
0 ≤yL ≤255
0 ≤d ≤255
k = (xL + xH ×256) ×(yL + yH ×256) (k ≠0)

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

m	Mode	Vertical Dot Density (DIP)	Horizontal Dot Density (DIP)
0, 48	Normal	180 DPI	180 DPI
1, 49	Double-width	180 DPI	90 DPI
2, 50	Double-height	90 DPI	180 DPI
3, 51	Quadruple	90 DPI	90 DPI

* xL, xH, select the number of data bits (xL + xH ×256) in the horizontal direction for the bit image.
* yL, yH, select the number of data bits (yL + yH ×256) in the vertical direction for the bit image.

GS w n

[Name] Set bar code width.

[Format]

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

[Range] 2 ≤n ≤6

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

n	Module width for multi-level bar code	Binary-level bar code	
		Thin element width (mm)	Thick element width (mm)
2	0.282	0.282	0.706
3	0.423	0.423	1.129
4	0.564	0.564	1.411
5	0.706	0.706	1.834
6	0.847	0.847	2.258

* Multi-level bar codes are as follows :
UPC-A, UPC-E, JAN13(EAN13), JAN8(EAN8), CODE93, CODE128.
* Binary-level bar codes are as follows :
CODE39, ITF, CODABAR.

3. Appendix (Star Mode Command Summary)

Control codes	Hexadecimal codes	Function
<ESC> ”R” n	1B 52 n	Select international character set
<ESC> <GS> t n	1B 1D 74n	Select character table
<ESC> ”/” “1” <ESC> ”/” <1>	1B 2F 31 1B 2F 01	Select slash zero
<ESC> ”/” “0” <ESC> ”/” <0>	1B 2F 30 1B 2F 00	Select normal zero
<ESC> “b” n1 n2 n3 n4 d1 … dk <RS>	1B 62 n1 n2 n3 n4 d1 … dk 1E	Select bar code printing
<ESC> ”M”	1B 4D	Select 12-dot pitch printing
<ESC> ”p”	1B 70	Select 14-dot pitch printing
<ESC> ”P”	1B 50	Select 15-dot pitch printing
<ESC> ”:”	1B 3A	Select 16-dot pitch printing
<ESC> <SP> n	1B 20 n	Set character spacing
<SO>	0E	Sets the printing magnified double in character width.
<DC4>	14	Resets the printing magnified in character width.
<ESC> “W” n	1B 57 n	Sets the magnification rate in character width.
<ESC> <SO>	1B 0E	Sets the printing magnified double in character height.
<ESC> <DC4>	1B 14	Resets the printing magnified in character height.
<ESC> “h” n	1B 68 n	Sets the magnification rate in character height.
<ESC> ”-“ “1” <ESC> ”-:” <1>	1B 2D 31 1B 2D 01	Select underlining
<ESC> “_” “1” <ESC> “_” <1>	1B 5F 31 1B 5F 01	Select over lining
<ESC> “4”	1B 34	Select highlight printing
<ESC> “5”	1B 35	Cancel highlight printing
<SI>	0F	Inverted printing
<DC2>	12	Cancel inverted printing
<ESC> “E”	1B 45	Select emphasized printing
<ESC> “F”	1B 46	Cancel emphasized printing
<ESC> “C” n	1B 43 n	Set page length in lines
<ESC> “C” <0> n	1B 43 00 n	Set page length in inches
<ESC> “N” n	1B 4E n	Set bottom margin
<ESC> “O”	1B 4F	Cancel bottom margin
<ESC> “l” n	1B 6C n	Set left margin
<ESC> “Q” n	1B 51 n	Set right margin
<LF>	0A	Line Feed
<ESC> “a” n	1B 61 n	Feed paper n lines
<FF>	0C	Form Feed
<HT>	09	Horizontal tab
<VT>	0B	Vertical tab
<ESC> “z” “1”	1B 7A 31	Set line spacing to 4 mm

Control codes	Hexadecimal codes	Function
<ESC> “0”	1B 30	Set line spacing to 3 mm
<ESC> “J” n	1B 4A n	One time n/4 mm feed
<ESC> “I” n	1B 49 n	One time n/8 mm feed
<ESC> “B” n1 n2…<0>	1B 42 n1 n2 … 00	Set vertical tab stops
<ESC> “D” n1 n2…<0>	1B 44 n1 n2 … 00	Set horizontal tab stops
<ESC> <GS> “A” n1 n2	1B 1D 41 n1 n2	Absolute position setting
<ESC> <GS> “R” n1 n2	1B 1D 52 n1 n2	Relative position setting
<ESC> <GS> “a” n	1B 1D 61 n	Alignment
<ESC> “K” n <0> m1 m2 …	1B 48 n 00 m1 m2	Print normal density graphics
<ESC> “L” n <0> m1 m2 …	1B 4C n1 n2 m1 m2	Print high density graphics
<ESC> “k” n <0> d1	1B 6B n 00 d1	Print fine density graphics
<ESC> “X” n1 n2	1B 58 n1 n2	Print fine density graphics
<ESC> <FS> “p” n m	1B 1C 70 n m	Print NV bit image
<ESC> “&” ”1” ”1” n m1 m2 … m48	1B 26 31 31 n m1 m2 … m48	Define download character
<ESC> “&” <1> <1> n m1 m2 … m48	1B 26 01 01 n m1 m2 … m48	
<ESC> “&” ”1” ”0” n	1B 26 31 30 n	Delete a download character
<ESC> “&” <1> <0> n	1B 26 01 00 n	
<ESC> “%” “1” <ESC> “%” <1>	1B 25 31 1B 25 01	Enable download character set
<ESC> “%” “0” <ESC> “%” <0>	1B 25 30 1B 25 00	Disable download character set
<ESC> <GS> “*” xy	1B 1D 2A 78 79	Definition of download bit image
<ESC> <GS> “/” m	1B 1D 2F 6D	Printing of download bit image
<ESC> <BEL> n1 n2	1B 07 n1 n2	Define drive pulse width for peripheral device #1.
<BEL>	07	Control peripheral device #1
<FS>	1C	Control peripheral device #1 immediately.
<EM>	19	Control peripheral device #2 immediately
<SUB>	1A	Control peripheral device #2 immediately
<ESC> “d” n	1B 64 n	Partial-cut command to the auto cutter.
<CAN>	18	Cancel last line & Initialize printer immediately
<DC3>	13	Deselect printer
<DC1>	11	Set select mode
<RS>	1E	Beep the buzzer
<ESC> “@”	1B 40	Initialize printer
<ENQ>	05	Inquiry (Status inquiry)
<EOT>	04	Near end status inquiry
<ESC> “?” <LF> <NUL>	1B 3F 0A 00	Reset printer hardware (Perform test print)
<ESC> “8” n1 n2	1B 38 n1 n2	Registers a logo pattern
<ESC> “9” n1 n2	1B 39 n1 n2	Prints a logo pattern