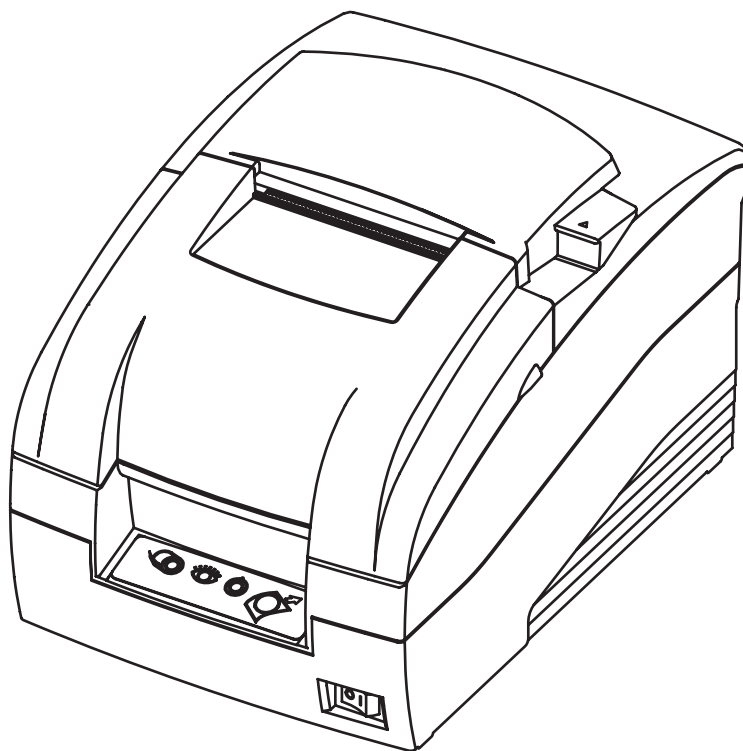


Command Manual **SRP-275**

Impact Printer
Rev. 1.01



1. EPSON mode (TM-U220)

No.	Command	Description	Hex
1	HT	Horizontal tab	09
2	LF	Print and line feed	0A
3	CR	Print and carriage return	0D
4	DLE EOT	Real-time status transmission	10 04
5	DLE ENQ	Real-time request to printer	10 05
6	DLE DC4(fn = 1)	Generate pulse at real-time	10 14
7	ESC SP	Set right-side character spacing	1B 20
8	ESC !	Select print mode(s)	1B 21
9	ESC %	Select/cancel user-defined character set	1B 25
10	ESC &	Define user-defined characters	1B 26
11	ESC *	Select bit-image mode	1B 2A
12	ESC –	Turn underline mode on/off	1B 2D
13	ESC 2	Select default line spacing	1B 32
14	ESC 3	Set line spacing	1B 33
15	ESC <	Return home	1B 3C
16	ESC =	Select peripheral device	1B 3D
17	ESC ?	Cancel user-defined characters	1B 3F
18	ESC @	Initialize printer	1B 40
19	ESC D	Set horizontal tab positions	1B 44
20	ESC E	Turn emphasized mode on/off	1B 45
21	ESC G	Turn double-strike mode on/off	1B 47
22	ESC J	Print and feed paper	1B 4A
23	ESC K	Print and reverse feed	1B 4B
24	ESC M	Select character font	1B 4D
25	ESC R	Select an international character set	1B 52
26	ESC U	Turn unidirectional printing mode on/off	1B 55
27	ESC a	Select justification	1B 61
28	ESC c 3	Select paper sensor(s) to output paper end signals	1B 63 33
29	ESC c 4	Select paper sensor(s) to stop printing	1B 63 34
30	ESC c 5	Enable/disable panel buttons	1B 63 35
31	ESC d	Print and feed <i>n</i> lines	1B 64
32	ESC e	Print and reverse feed <i>n</i> lines	1B 65
33	ESC g	Start macro record (For logo)	1B 67 00
34	ESC g<n>	Execute macro (For logo)	1B 67 <n>
35	ESC i	Partial cut (one point left uncut)	1B 69
36	ESC m	Partial cut (one point left uncut)	1B 6D
37	ESC p	Generate pulse	1B 70
38	ESC r	Select print color	1B 72
39	ESC t	Select character code table	1B 74
40	ESC u	Transmit peripheral device status	1B 75
41	ESC v	Transmit paper sensor status	1B 76
42	ESC {	Turn upside-down printing mode on/off	1B 7B
43	FS p	Print NV bit image	1C 70
44	FS q	Define NV bit image	1C 71
45	GS (A	Execute test print	1D 28 41
46	GS (C	Edit NV user memory	1D 28 43
47	GS (D	Enable/disable real-time command	1D 28 44
48	GS (E	User setup commands	1D 28 45
49	GS I	Transmit printer ID	1D 49
50	GS V	Select cut mode and cut paper	1D 56
51	GS a	Enable/disable Automatic Status Back (ASB)	1D 61
52	GS r	Transmit status	1D 72

2. STAR mode (SP500)

<i>n</i>	Command	Description	Hex
1	ESC GS t	Specify code page	1B 1D 74
2	ESC R	Specify international character set	1B 52
3	ESC /	Specify/cancel slash zero	1B 2F
4	ESC M	Specify 7×9 font (half dots)	1B 4D
5	ESC P	Specify 9×9 font	1B 50
6	ESC :	Specify 5×9 font (3P-1)	1B 3A
7	ESC SP	Specify character space	1B 20
8	SO	Specify double-wide expanded characters	0E
9	DC4	Cancel double wide printing	14
10	ESC W	Specify/cancel double-wide printing	1B 57
11	ESC h	Specify/cancel double-high printing	1B 68
12	ESC E	Select emphasized printing	1B 45
13	ESC F	Cancel emphasized printing	1B 46
14	ESC -	Select/cancels underline mode	1B 2D
15	ESC _	Select/cancels upperline mode	1B 5F
16	ESC 4	Specify white/black inversion and red color printing	1B 34
17	ESC 5	Cancel white/black inversion and specify black color printing	1B 35
18	SI	Select upside-down printing	0F
19	DC2	Cancel upside-down printing	12
20	ESC RS i	Specify/cancel rotating print mode	1B 1E 69
21	LF	Line feed	0A
22	CR	Line feed (according to Memory Switch settings)	0D
23	ESC a	Feed paper n lines	1B 61
24	ESC 0	Set line feed to 1/8 inch	1B 30
25	ESC 1	Set line feed to 7/72 inch	1B 31
26	ESC z 0("0")	Set line feed to 1/12 inch	1B 7A 00(30)
27	ESC z 1("1")	Set line feed to 1/6 inch	1B 7A 01(31)
28	ESC J	Execute n/72 inch paper feed one time	1B 4A
29	ESC A	Define n/72 inch pitch line feed	1B 41
30	ESC 2	Set ESC A line feed pitch	1B
31	ESC 3	Set line feed to n/216 inch line feed pitch (approximate value)	1B 33
32	ESC y	Set line feed to n/144 inch line feed pitch	1B 79
33	ESC I	Execute n/144 inch paper feed one time	1B 49
34	FF	Form feed	0C
35	ESC C	Set page length to n lines	1B 43
36	ESC C 0	Set page length to n inches	1B 43 00
37	VT	Feed paper to vertical table position	0B
38	ESC B	Set vertical tab position	1B 42
39	ESC N	Set bottom margin to n lines	1B 4E
40	ESC O	Cancel bottom margin	1B 4F
41	ESC I	Set left margin	1B 6C
42	ESC Q	Set right margin	1B 51
43	HT	Move print position to horizontal tab position	09
44	ESC D	Set/cancel horizontal tab position	1B 44
45	ESC GS a	Specify position alignment	1B 1D 61
46	ESC GS A	Specify absolute position	1B 1D 41
47	ESC GS R	Specify relative position	1B 1D 52
48	ESC &	Register/delete download characters	1B 26
49	ESC %	Set/cancel download characters	1B 25
50	ESC K	Standard density bit image	1B 4B

<i>n</i>	Command	Description	Hex
51	ESC L	Double density bit image	1B 4C
52	ESC d	Paper cut instruction	1B 64
53	ESC BEL	Set pulse width for external device drive	1B 07
54	BEL	External device 1 drive instruction	07
55	FS	External device 1 drive instruction (real time)	1C
56	SUB	External device 2 drive instruction (real time)	1A
57	EM	External device 2 drive instruction (real time)	19
58	ENQ	Inquire ENQ status	05
59	EOT	Inquire EOT status	04
60	ESC ACK SOH	Inquire status	1B 06 01
61	ESC RS a	Set status transmission conditions	1B 1E 61
62	ETB	Update ETB status (check after printing)	17
63	ESC RS E	Clear the ETB counter and ETB status	1B 1E 45
64	DC3	Printer deselect	13
65	DC1	Printer select	11
66	ESC @	Command initialization	1B 40
67	ESC U	Select printing direction	1B 55
68	ESC GS #	Set Memory Switch	1B 1D 23
69	ESC #	Set Memory Switch	1B 23
70	ESC ? LF NUL	Reset printer and test print	1B 3F 0A 00

3. CITIZEN mode (iDP3550/3551)

n	Command	Description	Hexadecimal
1	FF n	n-line paper feed (CBM1 mode)	0C n
2	FF	Form feed (CBM2 mode)	0C
3	SO (Note)	Specifying the double width character (CBM1 mode)	0E
4	SI (Note)	Canceling the double width character	0F
5	LF	Print and paper feed	0A
6	CR	Printing	0D
7	DC1 (Note)	Initializing the printer (CBM1 mode)	11
8	DC2 (Note)	Specifying/Canceling the inverted character (CBM1 mode)	12
9	DC3 (Note)	Specifying the red print (CBM1 mode)	13
10	CAN	Canceling the print data	18
11	ESC * n1 n2	Specifying the bit image mode	1B 2A n1 n2
12	ESC - n	Specifying/Canceling the Underline	1B 2D n
13	ESC 1	Specifying 1/9-inch line feed width	1B 31H
14	ESC 2	Specifying 2/9-inch line feed width	1B 32
15	ESC 3	Specifying standard line feed width	1B 33
16	ESC C n	Setting the page length	1B 43 n
17	ESC N n	Specifying the perforation skip	1B 4E n
18	ESC O	Canceling the perforation skip	1B 4F
19	ESC f 1	Form feed (Changing the page)	1B 66 01
20	ESC t n	Selecting the character code table	1B 74 n
21	ESC BEL n1 n2	Setting the external device drive pulse width	1B 07 n1 n2
22	BEL	Driving command A for Drawer-1	07
23	FS	Driving command B for Drawer-1	1C
24	SUB	Driving command for Drawer-2	1A
25	RS	Buzzer-on	1E
26	ESC P 0	Partial cut	1B 50 00
27	ESC P 1	Partial cut	1B 50 01
28	ESC R n	Selecting the international character set	1B 52 n
29	ESC & 0 n1 n2	Defining the download character set	1B 26 00 n1 n2
30	ESC % n	Specifying/Canceling the download character	1B 25 n
31	ESC / n	Defining the message	1B 2F n
32	ESC DC3 n	Printing the message	1B 13 n
33	ESC y n	Setting the print lines after paper near end detection	1B 79 n
34	ESC DC2 n1 n2	Deleting the download character, message, bit image	1B 12 n1 n2
35	GS * n1 n2	Defining the download bit image	1D 2A n1 n2
36	GS / m	Printing the download bit image	1D 2F m

4. Control Commands Details

4-1 Command Notation

XXXX

[Name]	The name of the command.
[Format]	The code sequence.
[Range]	Gives the allowable ranges for the arguments.
[Description]	Describes the command's function.
[Notes]	Provides important information on setting and using the printer command, if necessary. Item(s) marked with * indicates "important notice".
[Default]	Gives the default values (if any) for the command arguments.
[Reference]	Lists related commands.

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.

4-2 Explanation of Terms

Item	Description
Reception buffer	The reception buffer is a buffer that stores, as is, the data received from the host (the reception data). The reception data is stored in the reception buffer temporarily, and is then processed sequentially.
Print buffer	The print buffer is a buffer that stores the image data to be printed.
Print buffer full	This is the state where the print buffer is full. If new print data is input while the print buffer is full, the data in the print buffer is printed out and a line feed is executed. This is the same operation as the LF operation.
Start of line	The start of line state satisfies the following condition: There is no print data (including spaces and portions of data skipped due to HT) currently in the print buffer.
Printable area	The maximum range within which printing is possible under the printer specifications.
Inch	A unit of length. One inch is 25.4mm.
MSB	Most Significant Bit
LSB	Least Significant Bit

4-3 Exception processing

• Undefined codes

This term refers to the codes ranging from 00H to 1FH in the character code table. If a code in this range that is not defined as a command is input, that code (one byte) is read in and discarded, and subsequent data is processed as normal data.

Example : 30H, 31H, 03H, 32H, 0AH, 33H

If the above data string is input, the printer reads in and discards "03H" as an undefined code.

Note that 0AH is defined as a command (**LF**). As a result, the data string that is actually processed is: 30H, 31H, 32H, 0AH, 33H

• Undefined commands

If the data following **ESC** (1BH) or **GS** (1DH) is not defined as a command, then the two bytes (**ESC/GS** and the code that follows) are read in and discarded.

Example : 30H, 1BH, 22H, 31H, 32H

If the above data string is input, the printer discards the data 1BH and 22H as undefined commands.

As a result, the data string that is actually processed is: 30H, 31H, 32H

• Settings outside the defined range

If a value outside of the defined range is input for a command that takes parameters, that command is ignored and the previous value for that setting remains unchanged. In the case of a command that takes multiple parameters, command processing is halted the moment that a value outside of the defined range is input and subsequent values are processed as normal data.

Example : 1BH, 52H, 15H

If the above data string is input, 1BH and 52H are defined as a command (**ESC R**), but the parameter 15H is outside of the defined range. As a result, the printer reads in and discards the data string 1BH, 52H, 15H. Accordingly, the previously set international character set is not changed.

4-4 Control Commands Details

HT

[Name]	Horizontal tab	
[Format]	ASCII	HT
	Hex	09
	Decimal	9
[Range]	None	
[Default]	None	
[Description]	Moves the printing position to the next horizontal tab.	

LF

[Name]	Print and line feed	
[Format]	ASCII	LF
	Hex	0A
	Decimal	10
[Range]	None	
[Default]	None	
[Description]	Prints the data in the print buffer and feeds one line.	

CR

[Name]	Print and carriage return	
[Format]	ASCII	CR
	Hex	0D
	Decimal	13
[Range]	None	
[Default]	None	
[Description]		

When auto line feed is enabled(DSW 2-1) (Only available with Parallel Interface)	When auto line feed is disabled
Executes printing and one line feed as LF	Prints data in print buffer and does not feed the paper

DLE EOT

[Name]	Real-time status transmission			
[Format]	ASCII	DLE	EOT	<i>n</i>
	Hex	10	04	<i>n</i>
	Decimal	16	4	<i>n</i>
[Range]	$1 \leq n \leq 4$			
[Description]	Transmits 1 byte of status data specified in real time, using <i>n</i> as follows:			

<i>n</i>	Function
1	Transmit printer status
2	Transmit offline status
3	Transmit error status
4	Transmit paper sensor status

[Notes]

• Printer status (*n* = 1) is as follows:

Bit	Binary	Hex	Decimal	Status
0	0	00	0.	Not used. Fixed to Off
1	1	02	2	Not used. Fixed to On
2	0	00	0	Drawer kick-out connector pin 3 is LOW
	1	04	4	Drawer kick-out connector pin 3 is HIGH
3	0	00	0	Online
	1	08	8	Offline
4	1	10	16	Not used. Fixed to On
5	0	00	0	Not used. Fixed to Off
6	0	00	0	Not used. Fixed to Off
7	0	00	0	Not used. Fixed to Off

• Offline status (*n* = 2) is as follows:

Bit	Binary	Hex	Decimal	Status
0	0	00	0.	Not used. Fixed to Off
1	1	02	2	Not used. Fixed to On
2	0	00	0	Cover is closed
	1	04	4	Cover is open
3	0	00	0	Paper is not being fed by the paper feed button
	1	08	8	Paper is being fed by the paper feed button
4	1	10	16	Not used. Fixed to On
5	0	00	0	No paper end stop
	1	20	32	Printing stops due to a paper end
6	0	00	0	No error
	1	04	4	Error occurred
7	0	00	0	Not used. Fixed to Off

• Error status (*n* = 3) is as follows:

Bit	Binary	Hex	Decimal	Status
0	0	00	0	Not used. Fixed to Off
1	1	02	2	Not used. Fixed to On
2	0	00	0	No mechanical error
	1	04	4	Mechanical error occurred
3	0	00	0	No auto cutter error
	1	08	8	Auto cutter error occurred
4	1	10	16	Not used. Fixed to On
5	0	00	0	No unrecoverable error
	1	20	32	Unrecoverable error occurred
6	0	00	0	No auto-recoverable error
	1	04	4	Auto-recoverable error occurred
7	0	00	0	Not used. Fixed to Off

• Paper sensor status (*n* = 4) is as follows:

Bit	Binary	Hex	Decimal	Status
0	0	00	0	Not used. Fixed to Off
1	1	02	2	Not used. Fixed to On
2,3	00	00	0	Paper near end sensor: paper adequate
	11	0C	12	Paper near end sensor: paper near end
4	1	10	16	Not used. Fixed to On
5,6	00	00	0	Paper end sensor: paper present
	11	60	96	Paper end sensor: paper not present
7	0	00	0	Not used. Fixed to Off

DLE ENQ

[Name]	Real-time request to printer			
[Format]	ASCII	DLE	ENQ	<i>n</i>
	Hex	10	05	<i>n</i>
	Decimal	16	5	<i>n</i>
[Range]	<i>n</i> = 2			
[Default]	None			
[Description]	Recovers from an error after clearing the receive and print buffers.			

DLE DC4 (*fn* = 1)

[Name]	Generate pulse at real-time			
[Format]	ASCII	DLE	DC4	<i>n m t</i>
	Hex	10	14	<i>n m t</i>
	Decimal	16	20	<i>n m t</i>
[Range]	<i>n</i> = 1			
	<i>m</i> = 0, 1			
	$1 \leq t \leq 8$			
[Description]	Outputs the pulse specified by <i>t</i> to connector pin <i>m</i> as follows in real time:			

<i>m</i>	Connector pin
0	Drawer kick-out connector pin 2
1	Drawer kick-out connector pin 5

The pulse ON time is [*t* x100 ms] and the OFF time is [*t* x100 ms]

ESC SP

[Name]	Set right-side character spacing			
[Format]	ASCII	ESC	SP	<i>n</i>
	Hex	1B	20	<i>n</i>
	Decimal	27	32	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	<i>n</i> = 0			
[Description]	Sets the right-side character spacing to <i>n</i> x (horizontal or vertical motion unit).			

ESC !

[Name]	Select print mode(s)			
[Format]	ASCII	ESC	!	<i>n</i>
	Hex	1B	21	<i>n</i>
	Decimal	27	33	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	<i>n</i> = 1			
[Description]	Selects or cancels print modes collectively (emphasized, double-height, double-width, underline) using <i>n</i> as follows:			

Bit	On/Off	Hex	Decimal	Function
0	Off	00		Character font A(9x9)selected
	On	01		Character font B(7x9) 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	Off	-	-	Undefined
7	Off	00	0	Underline mode not selected
	On	80	128	Underline mode selected

ESC %

[Name]	Select/cancel user-defined character set			
[Format]	ASCII	ESC	%	<i>n</i>
	Hex	1B	25	<i>n</i>
	Decimal	27	37	<i>n</i>
[Range]	$0 \leq \mathbf{n} \leq 255$			
[Default]	<i>n</i> = 0			
[Description]	Selects or cancels the user-defined character set.			
	- When the LSB of <i>n</i> is 0, the user-defined character set is canceled.			
	- When the LSB of <i>n</i> is 1, the user-defined character set is selected.			

ESC &

[Name]	Define user-defined characters			
[Format]	ASCII	ESC	&	<i>y c1 c2 [x1 d1 ... d(y x x1)]... [xk d1 ... d(y x xk)]</i>
	Hex	1B	26	<i>y c1 c2 [x1 d1 ... d(y x x1)]... [xk d1 ... d(y x xk)]</i>
	Decimal	27	38	<i>y c1 c2 [x1 d1 ... d(y x x1)]... [xk d1 ... d(y x xk)]</i>
[Range]	<i>y</i> = 2			
	$32 \leq \mathbf{c1} \leq \mathbf{c2} \leq 126$			
	$0 \leq \mathbf{x} \leq 12$ (Font A (9 x 9))			
	$0 \leq \mathbf{x} \leq 10$ (Font B (7 x 9))			
	$0 \leq \mathbf{d} \leq 255$			
	<i>k</i> = <i>c2</i> - <i>c1</i> + 1			
[Default]	None			
[Description]	Defines user-defined characters from character code check <i>c1</i> to <i>c2</i> .			
	- <i>y</i> specifies the number of bytes in the vertical direction.			
	- <i>x</i> specifies the number of dots in the horizontal direction.			
[Notes]	- <i>d</i> is the dot data for the user-defined characters.			
	• The relationship between the definition data and printing result is as follows.			
	Example: Downloaded character definition consists of 9x7 dots.			

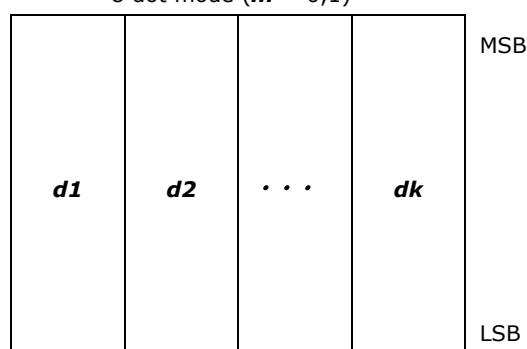
<i>d1</i>	<i>d3</i>	<i>d5</i>	<i>d7</i>	<i>d9</i>	<i>d11</i>	<i>d13</i>	MSB
							LSB
<i>d2</i>	<i>d4</i>	<i>d6</i>	<i>d8</i>	<i>d10</i>	<i>d12</i>	<i>d14</i>	MSB
							LSB

ESC *

[Name]	Select bit-image mode				
[Format]	ASCII	ESC	*	<i>m</i>	<i>nL nH d1 ... dk</i>
	Hex	1B	2A	<i>m</i>	<i>nL nH d1 ... dk</i>
	Decimal	27	42	<i>m</i>	<i>nL nH d1 ... dk</i>
[Range]	<i>m</i> = 0, 1				
	$0 \leq nL \leq 255$				
	$0 \leq nH \leq 3$				
	$0 \leq d \leq 255$				
	<i>k</i> = <i>nL</i> + <i>nH</i> × 256				
[Default]	None				
[Description]	Selects a bit-image mode using <i>m</i> for the number of dots specified by (<i>nL</i> + <i>nH</i> × 256) as follows:				

<i>m</i>	Mode	Number of bits for vertical data	Dot density in horizontal	Amount of data (<i>k</i>)
0	8-dot single-density	8	Single-density	<i>nL</i> + <i>nH</i> × 256
1	8-dot double-density	8	Double-density	<i>nL</i> + <i>nH</i> × 256

[Notes]	<ul style="list-style-type: none"> The relationship between the bit image data and the print result is as follows.
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8 dot mode (*m* = 0,1)

- The modes selectable by *m* are as follows:

<i>m</i>	Mode	Vertical dot density	Dot density	Set adjacent dots	Horizontal	
					Maximum number of dots	
					DSW1-8: ON	DSW 1-8: OFF
					Paper Width: 76/ 69.5/ 57.5 (mm)	Paper Width: 76/ 69.5/ 57.5 (mm)
0	8-dot single-density	72 dpi	80 dpi	Permitted	192/ 180/ 148	200/ 180/ 150
1	8-dot double-density	72 dpi	160 dpi	Prohibited	385/ 360/ 297	400/ 360/ 300

ESC –

[Name]	Turn underline mode on/off				
[Format]	ASCII	ESC	–	<i>n</i>	
	Hex	1B	2D	<i>n</i>	
	Decimal	27	45	<i>n</i>	
[Range]	<i>n</i> = 0, 1, 48, 49				
[Default]	<i>n</i> = 0				
[Description]	Turns underline mode on or off using <i>n</i> as follows:				

<i>n</i>	Function
0, 48	Turns off underline mode
1, 49	Turns on underline mode (1-dot thick)
2, 50	Turns on underline mode (1-dot thick)

ESC 2

[Name]	Select default line spacing			
[Format]	ASCII	ESC	2	
	Hex	1B	32	
	Decimal	27	50	
[Range]	None			
[Default]	None			
[Description]	Sets the line spacing to the "default line spacing."			

ESC 3

[Name]	Set line spacing			
[Format]	ASCII	ESC	3	<i>n</i>
	Hex	1B	33	<i>n</i>
	Decimal	27	51	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	Amount of line spacing which corresponds to "default line spacing." (See ESC 2 for the default line spacing.)			
[Description]	Sets the line spacing to <i>n</i> x (vertical or horizontal motion unit).			

ESC <

[Name]	Return home			
[Format]	ASCII	ESC	<	
	Hex	1B	3C	
	Decimal	27	60	
[Range]	None			
[Default]	None			
[Description]	Moves the print head to the standby position.			

ESC =

[Name]	Select peripheral device			
[Format]	ASCII	ESC	=	<i>n</i>
	Hex	1B	3D	<i>n</i>
	Decimal	27	61	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	<i>n</i> = 1			
[Description]	Selects the device to which the host computer sends data, using <i>n</i> as follows:			

<i>n</i>	Function
1	Enables the printer
2	Disables the printer
3	Enables the printer

ESC ?

[Name]	Cancel user-defined characters			
[Format]	ASCII	ESC	?	<i>n</i>
	Hex	1B	3F	<i>n</i>
	Decimal	27	63	<i>n</i>
[Range]	$32 \leq n \leq 126$			
[Default]	None			
[Description]	Cancels the user-defined characters defined for the character code <i>n</i> .			

ESC @

[Name]	Initialize printer		
[Format]	ASCII	ESC	@
	Hex	1B	40
	Decimal	27	64
[Range]	None		
[Default]	None		
[Description]	<p>The data in the print buffer is cleared, and the printer mode(s) is reset to the mode that was in effect when the power was turned on.</p> <ul style="list-style-type: none"> - Any macro definitions are not cleared. - Contents of user NV memory are not cleared. - NV bit image is not cleared. 		

ESC D

[Name]	Set horizontal tab positions			
[Format]	ASCII	ESC	D	<i>n1 ... nk NULS</i>
	Hex	1B	44	<i>n1 ... nk 00</i>
	Decimal	27	68	<i>n1 ... nk 0</i>
[Range]	$0 \leq n \leq 255$			
	$0 \leq k \leq 32$			
[Default]	<i>n</i> = 8, 16, 24, 32, ...			
[Description]	(Every eight characters for the default font set by ESC ! or ESC M)			
	<p>Sets a horizontal tab to <i>n</i> columns from the beginning of the line.</p> <ul style="list-style-type: none"> - <i>k</i> indicates the number of horizontal tab positions to be set. 			

ESC E

[Name]	Turn emphasized mode on/off			
[Format]	ASCII	ESC	E	<i>n</i>
	Hex	1B	45	<i>n</i>
	Decimal	27	69	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	<i>n</i> = 0			
[Description]	Turns emphasized mode on or off.			
	<ul style="list-style-type: none"> - When the LSB of <i>n</i> is 0, emphasized mode is turned off. - When the LSB of <i>n</i> is 1, emphasized mode is turned on. 			

ESC G

[Name]	Turn double-strike mode on/off			
[Format]	ASCII	ESC	G	<i>n</i>
	Hex	1B	47	<i>n</i>
	Decimal	27	71	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	<i>n</i> = 0			
[Description]	Turns double-strike mode on or off.			
	<ul style="list-style-type: none"> - When the LSB of <i>n</i> is 0, double-strike mode is turned off. - When the LSB of <i>n</i> is 1, double-strike mode is turned on. 			

ESC J

[Name]	Print and feed paper			
[Format]	ASCII	ESC	J	<i>n</i>
	Hex	1B	4A	<i>n</i>
	Decimal	27	74	<i>n</i>
[Range]	$0 \leq n \leq 255$			
[Default]	None			
[Description]	Prints the data in the print buffer and feeds the paper <i>n</i> x (vertical or horizontal motion unit).			

ESC K

[Name]	Print and reverse feed			
[Format]	ASCII	ESC	K	<i>n</i>
	Hex	1B	4B	<i>n</i>
	Decimal	27	75	<i>n</i>
[Range]	$0 \leq n \leq 24$			
[Default]	None			
[Description]	Prints the data in the print buffer and feeds the paper <i>n</i> x (vertical motion unit) in the reverse direction.			

ESC M

[Name]	Select character font			
[Format]	ASCII	ESC	M	<i>n</i>
	Hex	1B	4D	<i>n</i>
	Decimal	27	77	<i>n</i>
[Range]	$n = 0, 1, 48, 49$			
[Default]	<i>n</i> = 1			
[Description]	Selects a character font, using <i>n</i> as follows:			

<i>n</i>	Font
0, 48	Font A (9x9)
1, 49	Font B (7x9)

ESC R

[Name]	Select an international character set			
[Format]	ASCII	ESC	R	<i>n</i>
	Hex	1B	52	<i>n</i>
	Decimal	27	82	<i>n</i>
[Range]	$0 \leq n \leq 10$			
[Default]	<i>n</i> = 0			
[Description]	Selects an international character set <i>n</i> as follows:			

<i>n</i>	Country
0	U.S.A.
1	France
2	Germany
3	U.K.
4	Denmark I
5	Sweden
6	Italy
7	Spain I
8	Japan
9	Norway
10	Denmark II

ESC U

[Name]	Turn unidirectional printing mode on/off			
[Format]	ASCII	ESC	U	<i>n</i>
	Hex	1B	55	<i>n</i>
	Decimal	27	85	<i>n</i>
[Range]	$0 \leq \mathbf{n} \leq 255$			
[Default]	<i>n</i> = 0			
[Description]	Turns unidirectional printing mode on or off.			
	- When the LSB of <i>n</i> is 0, unidirectional printing mode is turned off.			
	- When the LSB of <i>n</i> is 1, unidirectional printing mode is turned on.			

ESC a

[Name]	Select justification			
[Format]	ASCII	ESC	a	<i>n</i>
	Hex	1B	61	<i>n</i>
	Decimal	27	97	<i>n</i>
[Range]	$0 \leq \mathbf{n} \leq 2, 48 \leq \mathbf{n} \leq 50$			
[Default]	<i>n</i> = 0			
[Description]	Aligns all the data in one line to a specified position, using <i>n</i> as follows:			

<i>n</i>	Justification
0, 48	Left justification
1, 49	Centering
2, 50	Right justification

ESC c 3

[Name]	Select paper sensor(s) to output paper end signals			
[Format]	ASCII	ESC	c	3 <i>n</i>
	Hex	1B	63	33 <i>n</i>
	Decimal	27	99	51 <i>n</i>
[Range]	$0 \leq \mathbf{n} \leq 255$			
[Default]	<i>n</i> = 15			
[Description]	Selects whether to output paper end signals to a parallel interface or not when a paper end is detected by the sensor selected, using <i>n</i> as follows:			

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

ESC c 4

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

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

[Range] $0 \leq n \leq 255$ [Default] *n* = 0[Description] Selects whether to stop printing or not when the paper runs out using *n* as follows:

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper near end sensor disabled.
	On	01	1	Paper near end sensor enabled.
1	Off	00	0	Paper near end sensor disabled.
	On	02	2	Paper near end sensor enabled.
2-7	-	-	-	Undefined

ESC c 5

[Name] Enable/disable panel buttons

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

[Range] $0 \leq n \leq 255$ [Default] *n* = 0

[Description] Enables or disables the panel buttons.

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

ESC d[Name] Print and feed *n* lines

[Format]	ASCII	ESC	d	<i>n</i>
	Hex	1B	64	<i>n</i>
	Decimal	27	100	<i>n</i>

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

[Default] None

[Description] Prints the data in the print buffer and feeds *n* lines.**ESC e**[Name] Print and reverse feed *n* lines

[Format]	ASCII	ESC	e	<i>n</i>
	Hex	1B	65	<i>n</i>
	Decimal	27	101	<i>n</i>

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

[Default] None

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

ESC g

[Name]	Start macro record				
[Format]	ASCII	ESC	g	0	<k> [<nH> <nL>]_k [d1...dm]_k
	Hex	1B	67	00	<k> [<nH> <nL>]_k [d1...dm]_k
	Decimal	27	103	0	<k> [<nH> <nL>]_k [d1...dm]_k
[Range]	k ≤ 10				
	0 ≤ nL ≤ 255				
	0 ≤ nH ≤ 255				
	[(256× nH) + nL] ₁ + + [(256× nH) + nL] _k < 2Mbit (256KB)				
	0 ≤ d ≤ 255				
[Description]	Start macro definition (Define logo)				
	- k = the number of total macro index				
	- (256× nH) + nL = the Length of each macro				
	- m = (256× nH) + nL				
[Notes]	The SRP-275 Printer maintains a 2M bit (256KB) section of flash memory to save NV bit image.				
	• This command is useful to define NV bit image (Logo).				
	• The NV bit image is printed by ESC g n .				

ESC g <n>

[Name]	Execute Macro			
[Format]	ASCII	ESC	g	n
	Hex	1B	67	n
	Decimal	27	103	n
[Range]	1 ≤ n ≤ 10			
[Description]	Execute macro using the parameter by n .			
[Notes]	• n = Macro index number.			
	• The NV bit image is defined by ESC g .			

ESC i

[Name]	Partial cut (one point left uncut)		
[Format]	ASCII	ESC	i
	Hex	1B	69
	Decimal	27	105
[Range]	None		
[Default]	None		
[Description]	Executes a partial cut of the paper with one point left uncut.		

ESC m

[Name]	Partial cut (one point left uncut)		
[Format]	ASCII	ESC	i
	Hex	1B	69
	Decimal	27	105
[Range]	None		
[Default]	None		
[Description]	Executes a partial cut of the paper with one point left uncut.		

ESC p

[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
 1 ≤ **t1** ≤ 255
 1 ≤ **t2** ≤ 255
 [Default] None
 [Description] Outputs the pulse specified by **t1** and **t2** to the specified connector pin **m** as follows:

m	Connector Pin
0	Drawer kick-out connector pin 2
1	Drawer kick-out connector pin 5

[Notes] - The pulse for ON time is (**t1** x 2msec) and for OFF time is (**t2** x 2 msec).
 • If **t2** < **t1**, the OFF time is equal to the ON time.
 • If **t2** < 50, **t2** is supposed to be 50.

ESC r

[Name] Select print color
 [Format] ASCII ESC r **n**
 Hex 1B 72 **n**
 Decimal 27 114 **n**
 [Range] **n** = 0, 1, 48, 49
 [Default] **n** = 0
 [Description] Selects a print color, using **n** as follows:

n	Selected color
0, 48	Black
1, 49	Red

ESC t

[Name] Select character code table
 [Format] ASCII ESC t **n**
 Hex 1B 74 **n**
 Decimal 27 116 **n**
 [Range] **n** = 0, 1, 2, 3, 4, 5, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 255
 [Default] **n** = 0
 [Description] Selects a page **n** from the character code table.

n	Page
0	Page 0 (PC437 : U.S.A.)
1	Page 1 (Katakana)
2	Page 2 (PC850 : Multilingual)
3	Page 3 (PC860 : Portuguese)
4	Page 4 (PC863 : Canadian-French)
5	Page 5 (PC865 : Nordic)
16	Page 16 (WPC1252 : Latin1)
17	Page 17 (PC866 : Russian)
18	Page 18 (PC852 : Latin2)
19	Page 19 (PC858 : Euro)
21	Page 21 (PC862 : Israel)
22	Page 22 (PC864 : Arabic)
23	Page 23 (Thai character code 42)
24	Page 24 (WPC1253 : Greek)
25	Page 25 (WPC1254 : Turkish)
26	Page 26 (WPC1257 : Baltic)
27	Page 27 (Farsi) (*1)
28	Page 28 (WPC1251 : Russian) (*1)
29	Page 29 (PC737 : Greek) (*1)
30	Page 30 (PC775 : Baltic) (*1)
31	Page 31 (Thai character code 14)
32	Page 32 (OldCode : Israel)
33	Page 33 (WPC1255 : Israel)
34	Page 34 (Thai character code 11)
35	Page 35 (Thai character code 18)
37	Page 37 (PC857 : Turkish)
38	Page 38 (PC928 : Greek)

ESC u

[Name] Transmit peripheral device status

[Format] ASCII ESC u **n**Hex 1B 75 **n**Decimal 27 117 **n**[Range] **n** = 0, 48

[Description] Transmits the peripheral device status of 1 byte.

[Notes] • The peripheral device status to be transmitted is as follows:

Bit	Binary	Hex	Decimal	Status
0	0			Drawer kick-out connector pin 3 is LOW.
	1			Drawer kick-out connector pin 3 is HIGH.
1-3	-	-	-	Undefined.
4	0	00	0	Not used. Fixed to Off.
5,6	-	-	-	Undefined.
7	0	00	0	Not used. Fixed to Off.

ESC v

[Name] Transmit paper sensor status

[Format] ASCII ESC v

Hex 1B 76

Decimal 27 118

[Description] Transmits the status of paper sensor(s) as 1 byte of data.

[Notes] • The paper sensor status to be transmitted is as follows:

Bit	Binary	Hex	Decimal	Status
0,1	00	00	0	Paper near end sensor: paper adequate.
	11	03	3	Paper near end sensor: paper near end.
2,3	00	00	00	Paper end sensor: paper present.
	11	0C	12	Paper end sensor: paper not present.
4	0	00	0	Not used. Fixed to Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed to Off.

ESC {

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

[Format] ASCII ESC { **n**Hex 1B 7B **n**Decimal 27 123 **n**[Range] $1 \leq n \leq 255$ [Default] **n** = 0

[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

[Name] Print NV bit image

[Format] ASCII FS p ***n*** ***m***
 Hex 1C 70 ***n*** ***m***
 Decimal 28 112 ***n*** ***m***

[Range] $1 \leq n \leq 255$ ***m*** = 0, 1, 48, 49[Description] Prints a NV bit image ***n*** using the mode specified by ***m***.

<i>m</i>	Mode	Scaling for horizontal	Scaling for vertical
0, 48	Normal	x 1	x 1
1, 49	Double-width	x 2	x 1

FS q

[Name] Define 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] $1 \leq n \leq 255$ $1 \leq (\mathbf{xL} + \mathbf{xH} \times 256) \leq 1023$ ($0 \leq \mathbf{xL} \leq 255, 0 \leq \mathbf{xH} \leq 3$) $1 \leq (\mathbf{yL} + \mathbf{yH} \times 256) \leq 288$ ($0 \leq \mathbf{yL} \leq 255, \mathbf{yH} = 0.1$) $1 \leq d \leq 255$ $k = (\mathbf{xL} + \mathbf{xH} \times 256) \times (\mathbf{yL} + \mathbf{yH} \times 256) \times 8$

Total defined data area is 256 KB

[Description] Defines NV bit image specified.

- ***n*** specifies the number of defined NV bit images.
- ***xL***, ***xH*** specifies (***xL*** + ***xH*** × 256) bytes in the horizontal direction for the NV bit image you defined.
- ***yL***, ***yH*** specifies (***yL*** + ***yH*** × 256) bytes in the vertical direction for the NV bit image you defined.
- ***d*** specifies the definition data for the NV bit image.
- ***k*** indicates the number of the definition data. ***k*** is a parameter for an explanation; therefore, it does not need to be transmitted.

GS (A

[Name] Execute test print

[Format] ASCII GS (A ***pL*** ***pH*** ***n*** ***m***
 Hex 1D 28 41 ***02*** ***00*** ***n*** ***m***
 Decimal 29 40 65 ***2*** ***0*** ***n*** ***m***

[Range] $1 \leq m \leq 3, 49 \leq m \leq 3$

[Description] Executes a specified test print.

- ***pL*** and ***pH*** specify the number of parameters following ***n*** to (***pL*** + ***pH*** × 256) bytes.
- ***n*** specifies paper used for the test print as follows:

<i>n</i>	Paper
0, 48	Basic sheet (paper roll)
1, 49	Paper roll
2, 50	

- ***m*** specifies a type of the test print as follows:

<i>m</i>	Type
1, 49	Hexadecimal dump
2, 50	Printer status printing
3, 51	Rolling pattern

GS (C

[Name]	Edit NV user memory						
[Format]	ASCII	GS	(	C	<i>pl</i>	<i>ph</i>	<i>m fn b [c1, c2] [d1...dk]</i>
	Hex	1D	28	43	<i>pl</i>	<i>ph</i>	<i>m fn b [c1, c2] [d1...dk]</i>
	Decimal	29	40	67	<i>pl</i>	<i>ph</i>	<i>m fn b [c1, c2] [d1...dk]</i>
[Description]	Deletes, stores, and transmits data in the NV user memory area based on the functions defined in the table below. Also sends status information for the amount of space used in NV RAM and the amount of space still available.						

- The function code (*fn*) specifies the function.

<i>fn</i>	Function	Description
0, 48	Function 0	Deletes specified record
1, 49	Function 1	Stores data in specified record
2, 50	Function 2	Sends data stored in specified record
3, 51	Function 3	Sends capacity currently being used
4, 52	Function 4	Sends available capacity
5, 53	Function 5	Transmits the key code of the record stored in the NV user memory
6, 54	Function 6	Cancels all records stored in the NV user memory

- *pl* and *ph* specify the bytes following parameter *ph* (*m* and [*a1 b1*] ... [*ak bk*]) as (*pl* + (*ph* x 256)).

- The other parameters are explained under each of the functions.

GS (C *pl ph m fn b c1 c2* <Function 0>

[Format]	ASCII	GS	(	C	<i>pl</i>	<i>ph</i>	<i>m fn b c1 c2</i>
	Hex	1D	28	43	05	00	00 fn 00 c1 c2
	Decimal	29	40	67	5	0	0 fn 0 c1 c2
[Range]	$(pl + ph \times 256) = 5$ ($pl = 5, ph = 0$) <i>m</i> = 0 <i>fn</i> = 0, 48 <i>b</i> = 0 $32 \leq c1 \leq 126$ $32 \leq c2 \leq 126$						
[Description]	Deletes the specified record stored in the NV user memory. The deleted area becomes an "unused" area available for storage.						

GS (C *pl ph m fn b c1 c2 d1...dk* <Function 1>

[Format]	ASCII	GS	(	C	<i>pl</i>	<i>ph</i>	<i>m fn b c1 c2 d1...dk</i>
	Hex	1D	28	43	<i>pl</i>	<i>ph</i>	00 fn 00 c1 c2 d1...dk
	Decimal	29	40	67	<i>pl</i>	<i>ph</i>	0 fn 0 c1 c2 d1...dk
[Range]	$6 \leq (pl + ph \times 256) \leq 65535$ ($0 \leq pl \leq 255, 0 \leq ph \leq 255$) <i>m</i> = 0 <i>fn</i> = 1, 49 <i>b</i> = 0 $32 \leq c1 \leq 126$ $32 \leq c2 \leq 126$ $32 \leq d \leq 254$ $k = (pl + ph \times 256) - 5$						
[Description]	Stores data (<i>d1... dk</i>) in the record specified by parameters <i>c1</i> and <i>c2</i> (the key code ID numbers). - When the specified record already exists, the data is overwritten. - A terminator is automatically assigned.						

GS (C *pL pH m fn b c1 c2* <Function 2>

[Format]	ASCII	GS	(	C	<i>pL</i>	<i>pH</i>	<i>m</i>	<i>fn</i>	<i>b</i>	<i>c1</i>	<i>c2</i>
	Hex	1D	28	43	05	00	00	<i>fn</i>	00	<i>c1</i>	<i>c2</i>
	Decimal	29	40	67	5	0	0	<i>fn</i>	0	<i>c1</i>	<i>c2</i>
[Range]	$(pL + pH \times 256) = 5$ ($pL = 5, pH = 0$)										
	$m = 0$										
	$fn = 2, 50$										
	$b = 0$										
	$32 \leq c1 \leq 126$										
[Description]	Transmits the data for the record with the ID code specified by parameters c1 , c2 in the NV user memory.										
	- ESC/POS Handshaking Protocol is required for this function.										

GS (C *pL pH m fn b* <Function 3>

[Format]	ASCII	GS	(	C	<i>pL</i>	<i>pH</i>	<i>m</i>	<i>fn</i>	<i>b</i>
	Hex	1D	28	43	03	00	00	<i>fn</i>	00
	Decimal	29	40	67	3	0	0	<i>fn</i>	0
[Range]	$(pL + pH \times 256) = 3$ ($pL = 3, pH = 0$)								
	$m = 0$								
	$fn = 3, 51$								
	$b = 0$								
[Description]	The printer sends the host the number of data bytes currently used in the NV memory area.								
	- ESC/POS Handshaking Protocol is not required for this function.								

GS (C *pL pH m fn b* <Function 4>

[Format]	ASCII	GS	(	C	<i>pL</i>	<i>pH</i>	<i>m</i>	<i>fn</i>	<i>b</i>
	Hex	1D	28	43	03	00	00	<i>fn</i>	00
	Decimal	29	40	67	3	0	0	<i>fn</i>	0
[Range]	$(pL + pH \times 256) = 3$ ($pL = 3, pH = 0$)								
	$m = 0$								
	$fn = 4, 52$								
	$b = 0$								
[Description]	The printer sends the available NV user memory.								
	- ESC/POS Handshaking Protocol is not required for this function.								

GS (C *pL pH m fn b* <Function 5>

[Format]	ASCII	GS	(	C	<i>pL</i>	<i>pH</i>	<i>m</i>	<i>fn</i>	<i>b</i>
	Hex	1D	28	43	03	00	00	<i>fn</i>	00
	Decimal	29	40	67	3	0	0	<i>fn</i>	0
[Range]	$(pL + pH \times 256) = 3$ ($pL = 3, pH = 0$)								
	$m = 0$								
	$fn = 5, 53$								
	$b = 0$								
[Description]	Transmits the key code ID for the record stored in the NV user memory.								
	- ESC/POS Handshaking Protocol is required for this function.								

GS (C *pL pH m fn b d1 d2 d3* <Function 6>

[Format]	ASCII	GS	(	C	<i>pL</i>	<i>pH</i>	<i>m</i>	<i>fn</i>	<i>b</i>	<i>d1</i>	<i>d2</i>	<i>d3</i>
	Hex	1D	28	43	06	00	00	<i>fn</i>	00	43	4C	52
	Decimal	29	40	67	6	0	0	<i>fn</i>	0	67	76	82
[Range]	<p>(<i>pL</i> + <i>pH</i> × 256) = 6 (<i>pL</i> = 6, <i>pH</i> = 0)</p> <p><i>m</i> = 0</p> <p><i>fn</i> = 6, 54</p> <p><i>b</i> = 0</p> <p><i>d1</i> = 67</p> <p><i>d2</i> = 76</p> <p><i>d3</i> = 82</p>											
[Description]	<p>The printer deletes all records stored in the NV user memory.</p> <p>- All area is changed to unused area.</p>											

GS (D

[Name]	Enable/disable real-time command									
[Format]	ASCII	GS	(	D	<i>pL</i>	<i>pH</i>	<i>m</i>	<i>[a1 b1]...[ak bk]</i>		
	Hex	1D	28	44	<i>pL</i>	<i>pH</i>	<i>14</i>	<i>[a1 b1]...[ak bk]</i>		
	Decimal	29	40	68	<i>pL</i>	<i>pH</i>	<i>20</i>	<i>[a1 b1]...[ak bk]</i>		
[Range]	(<i>pL</i> + <i>pH</i> x 256) = 3, 5 (<i>pL</i> = 3, 5, <i>pH</i> = 0) <i>m</i> = 20 <i>a</i> = 1 <i>b</i> = 0, 1, 48, 49									
[Default]	<i>a</i> = 1/ <i>b</i> = 1 (DLE DC4 <i>fn m t</i> (<i>n</i> = 1): enable)									
[Description]	Specifies enable or disable of a real-time command. <ul style="list-style-type: none">- <i>pL</i>, <i>pH</i> sets the number of parameters after <i>pH</i> (<i>m</i> and <i>[a1 b1]...[ak bk]</i>) to (<i>pL</i> + <i>pH</i> x 256) bytes.- <i>a</i> specifies the type of real-time command.- <i>b</i> specifies enable/disable of real-time command processing.									

<i>a</i>	<i>b</i>	Real-time command type
1	0, 48	Disable DLE DC4 <i>n m t</i> (<i>n</i> = 1): output a specified pulse in real-time (It does not process)
	1, 49	Enable DLE DC4 <i>n m t</i> (<i>n</i> = 1): output a specified pulse in real-time (It does process)

DLE DC4 *n m t* (*n*=1): output a specified pulse in real-time.

GS (E

[Name]	User setup commands									
[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>[parameters]</i>		
	Hex	1D	28	45	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>[parameters]</i>		
	Decimal	29	40	69	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>[parameters]</i>		
[Description]	Controls the user setting modes. The table below explains the functions available in this command. - The value of <i>fn</i> specifies the function.									

<i>fn</i>	Function	
1	Function1	Changes into the user setting mode
2	Function2	Ends user setting mode session. (Performs a software reset.)
3	Function3	Changes the Memory Switch
4	Function4	Transmits the host the value for the Memory Switch
5	Function5	Changes the customized setting values
6	Function6	Transmits the customized setting values
11	Function11	Sets communication condition of serial interface
12	Function12	Transmits communication condition of serial interface

- *pL* and *pH* specify the number of bytes for the parameters following *pH* (*fn* and *[a1 b1]* ... *[ak bk]*) as(*pL* + *pH* × 256).

GS (E *pL pH fn d1 d2* <Function 1>

[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>d1</i>	<i>d2</i>
	Hex	1D	28	45	03	00	01	49	4E
	Decimal	29	40	69	3	0	1	73	78
[Range]	$(pL + pH \times 256) = 3$ ($pL = 3, pH = 0$) $fn = 1$ $d1 = 73$ $d2 = 78$								
[Description]	This command changes the printer into the user setting mode.								

GS (E *pL pH fn d1 d2 d3* <Function 2>

[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>d1</i>	<i>d2</i>	<i>d3</i>
	Hex	1D	28	45	04	00	02	4F	55	54
	Decimal	29	40	69	4	0	2	79	85	84
[Range]	$(pL + pH \times 256) = 4$ ($pL = 4, pH = 0$) $fn = 2$ $d1 = 79$ $d2 = 85$ $d3 = 84$									
[Description]	Ends the user setting mode, and the printer performs a software reset.									

GS (E *pL pH fn [a1 b1₈...b11]...[ak nk₈ nk1]* <Function 3>

[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>[a1 b1₈...b11]...[ak nk₈ nk1]</i>
	Hex	1D	28	45	<i>pL</i>	<i>pH</i>	<i>03</i>	<i>[a1 b1₈...b11]...[ak nk₈ nk1]</i>
	Decimal	29	40	69	<i>pL</i>	<i>pH</i>	<i>3</i>	<i>[a1 b1₈...b11]...[ak nk₈ nk1]</i>
[Range]	<i>a</i> = 2, 8							
[Default]	All Memory Switches are OFF (<i>b</i> = 48).							
[Description]	Changes the Memory Switch specified by <i>a</i> to the value specified by <i>b</i> .							

- When $b = 48$, the Memory Switch is set to OFF.
- When $b = 49$, the Memory Switch is set to ON.
- When $b = 50$, does not change the Memory Switch.

- When $a = 2$, Memory Switch 2 is set as follows:

MSW	Setting value (<i>b</i>)	Function
2-1 to 2-8	48	Reserved

- When $a = 8$, Memory Switch 8 is set as follows:

MSW	Setting value (<i>b</i>)	Function
8-1	48	The printer is printing normally.
	49	The printer is printing upside-down.
8-2	48	The printer is printing font B.
	49	The printer is printing font A.
8-3	48	The printer sound a buzzer when the paper is out.
	49	The printer does not sound a buzzer when the paper is out.
8-4	48	Reserved
8-5	48	The printer status is sent back as "the paper end" when the rear cover is opened.
	49	The printer status is sent back "the rear cover open" when the rear cover is opened.
8-6	48	Reserved: Fixed to OFF (Don't change the setting)
8-7	48	Printer BUSY is released when the remaining capacity of the receive buffer goes to 640 bytes.
	49	Printer BUSY is released when the remaining capacity of the receive buffer goes to 522 bytes.
8-8	48	Printer rear cover open during operation: Error that automatically recovers.
	49	Printer rear cover open during operation: Error that can possibly recover.

- Setting of MSW 8-5 affects the statuses as follows:

- Basic ASB status (See "GS *a*" command)
- Real-time status (See "DLE EOT" command)

GS (E *pL pH fn a* <Function 4>

[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>a</i>
	Hex	1D	28	45	02	00	04	<i>a</i>
	Decimal	29	40	69	2	0	4	<i>a</i>
[Range]	$(pL + pH \times 256) = 2$ (<i>pL</i> = 2, <i>pH</i> = 0)							
	<i>fn</i> = 4							
	<i>a</i> = 2, 8							
[Description]	The printer transmits the host the value for the Memory Switch specified by parameter <i>a</i> .							

GS (E *pL pH fn [a1 n1L n1H]...[ak nkL nkH]* <Function 5>

[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>[a1 n1L n1H] ... [ak nkL nkH]</i>
	Hex	1D	28	45	<i>pL</i>	<i>pH</i>	05	<i>[a1 n1L n1H] ... [ak nkL nkH]</i>
	Decimal	29	40	69	<i>pL</i>	<i>pH</i>	5	<i>[a1 n1L n1H] ... [ak nkL nkH]</i>
[Range]	$4 \leq (pL + pH \times 256) \leq 65533$							
	$(0 \leq pL \leq 255, 0 \leq pH \leq 255: (pL + pH \times 256) = 3 \times k + 1)$							
	<i>fn</i> = 5							
	$1 \leq k \leq 21844$							
	<i>a</i> = 3							
[Default]	<i>nL</i> + <i>nH</i> × 256 = 2, 4, 5 (<i>nL</i> = 2, 4, 5, <i>nH</i> = 0)							
	$(nL + nH \times 256) = 5$ (<i>nL</i> = 5, <i>nH</i> = 0) [default value when <i>a</i> = 3]							
[Description]	Changes the customized value specified by parameter <i>a</i> to (<i>nL</i> + <i>nH</i> × 256).							

<i>a</i>	Type of customized value
3	Paper width

[Notes] • Paper width settings (*a* = 3)

$(nL + nH \times 256)$	Paper width
2	57.5mm (2.26 inch)
4	69.5 mm (2.74 inch)
5	76 mm (3.00 inch)

GS (E *pL pH fn a* <Function 6>

[Format]	ASCII	GS	(	E	<i>pL</i>	<i>pH</i>	<i>fn</i>	<i>a</i>
	Hex	1D	28	45	02	00	06	<i>a</i>
	Decimal	29	40	69	2	0	6	<i>a</i>
[Range]	$(pL + pH \times 256) = 2$ (<i>pL</i> = 2, <i>pH</i> = 0)							
	<i>fn</i> = 6							
	<i>a</i> = 3							
[Description]	The printer transmits to the host the customized value for the NV memory area specified by parameter <i>a</i> .							

<i>a</i>	Type of customized value
3	Paper width

GS (E *pL pH fn a d1...dk* <Function 11>

[Format]	ASCII	GS	(	E	<i>pL pH fn a d1...dk</i>
	Hex	1D	28	45	<i>pL pH 0B a d1...dk</i>
	Decimal	29	40	69	<i>pL pH 11 a d1...dk</i>

[Range] $3 \leq (pL + pH \times 256) \leq 8$ ($3 \leq pL \leq 8, 0 \leq pH \leq 255$)

fn = 11

$1 \leq a \leq 4$

$48 \leq d \leq 57$ [*a* = 1]

$48 \leq d \leq 50$ [*a* = 2]

d = 48, 49 [*a* = 3]

d = 55, 56 [*a* = 4]

$1 \leq k \leq 6$

[Default] *d1...dk* = "9600" [*a* = 1]

d = 48 [*a* = 2]

d = 48 [*a* = 3]

d = 56 [*a* = 4]

[Description] Changes the condition of the serial interface defined by *a*.

<i>a</i>	Item
1	Baud rate
2	Parity
3	Flow control
4	Bit length

- Baud rate (*a* = 1) is specified by number.

Example: When defining 19200 bps: 5 bytes as "19200" (Hexadecimal = 31H, 39H, 32H, 30H, 30H / Decimal= 49, 57, 50, 48, 48)

- Parity (*a* = 2) is specified by *d* as follows:

<i>d</i>	Function
48	Select no parity
49	Select odd parity
50	Select even parity

- Flow control (*a* = 3) is specified by *d* as follows:

<i>d</i>	Function
48	Select Flow control of DTR/DSR
49	Select Flow control of XON/XOFF

- Bit length (*a* = 4) is specified by *d* as follows:

<i>d</i>	Function
55	Select 7 bits length
56	Select 8 bits length

GS (E *pL pH fn a* <Function 12>

[Format]	ASCII	GS	(	E	<i>pL pH fn a</i>
	Hex	1D	28	45	<i>pL pH 0B a</i>
	Decimal	29	40	69	<i>pL pH 11 a</i>

[Range] $(pL + pH \times 256) = 2$ ($pL = 2, pH = 0$)

fn = 12

$1 \leq a \leq 4$

[Description] Transmits the setting value of the serial interface communication condition specified by *a*.

[Notes]

- This function works in user setting mode and during normal operation.
- This function transmits "Header to NUL" as follows:

<i>a</i>	Communication condition
1	Baud rate
2	Parity
3	Flow control
4	Bit length

GS I

[Name]	Transmit printer ID			
[Format]	ASCII	GS	I	<i>n</i>
	Hex	1D	49	<i>n</i>
	Decimal	29	73	<i>n</i>
[Range]	$1 \leq n \leq 3, 49 \leq n \leq 51, 65 \leq n \leq 68, n = 33$			
[Default]	None			
[Description]	Transmits 1 byte of printer ID which is specified by <i>n</i> as follows:			

<i>n</i>	Printer ID	Specification
1, 49	Printer model ID	Printer model
2, 50	Type ID	Printer type
3, 51	Version ID	Firmware version

Transmits printer information A (common information), using ***n*** as follows:

<i>n</i>	Printer ID	Specification
33	Type information	Supported functions

Transmits printer information B (common information), using ***n*** as follows:

<i>n</i>	Printer ID	Specification
65	Firmware version	Firmware version
66	Maker name	BIXOLON
67	Printer model	Printer model
68	Serial No	Serial No of the printer

GS V

[Name]	Select cut mode and cut paper				
[Format]	Function A	ASCII	GS	V	<i>m</i>
		Hex	1D	56	<i>m</i>
		Decimal	29	86	<i>m</i>
	Function B	ASCII	GS	V	<i>m n</i>
		Hex	1D	56	<i>m n</i>
		Decimal	29	86	<i>m n</i>
[Range]	Function A	<i>m</i> = 0, 1, 48, 49			
	Function B	<i>m</i> = 65, 66; 0 ≤ <i>n</i> ≤ 255			
[Default]	None				
[Description]	Select a paper cutting mode using <i>m</i> and then cut the paper, as follows:				

<i>m</i>	Function
<A>	0,48 Executes a full cut (cuts the paper completely).
	1,49 Executes a partial cut (one point left uncut).
	65 Feeds paper to (cutting position + <i>n</i> × vertical motion unit) and executes a partial cut(one point left uncut).
	66 Feeds paper to (cutting position + <i>n</i> × vertical motion unit) and executes a partial cut(one point left uncut).

- [Note for <A>] • If an auto cutter is not provided, this command is ignored.
- [Notes for] • When ***n*** = 0, the printer feeds the paper to the cutting position and cuts it.
 • If an auto cutter is not provided, the printer only feeds the paper for specified amount.
 • Vertical motion unit is used for calculating a paper feed amount.

GS a

[Name]	Enable/disable Automatic Status Back (ASB)			
[Format]	ASCII	GS	a	n
	Hex	1D	61	n
	Decimal	29	97	n
[Range]	$0 \leq \mathbf{n} \leq 255$			
[Default]	When DIP Switch or Memory Switch (BUSY condition) is Off: n = 0			
	When DIP Switch or Memory Switch (BUSY condition) is On: n = 2			
[Description]	Enables or disables basic ASB (Automatic Status Back) and specifies the status items to include, using n as follows:			

Bit	On/Off	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 disabled.
	On	02	2	On-line/off-line enabled.
2	Off	00	0	Error status disabled.
	On	04	4	Error status enabled.
3	Off	00	0	Paper sensor status disabled.
	On	08	8	Paper sensor status enabled.
4	-	-	-	Undefined.
5	-	-	-	Undefined.
6	-	-	-	Undefined.
7	-	-	-	Undefined.

- [Notes]
- Basic ASB status is 4-byte configuration [first byte - fourth byte].
 - The status to be transmitted are as follows:
 - First byte (printer information)

Bit	On/Off	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	Drawer kick-out connector pin 3 is LOW.
	On	04	4	Drawer kick-out connector pin 3 is HIGH.
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Rear cover is close
	On	20	32	Rear cover is open
6	Off	00	0	Paper is not being fed by the paper feed button.
	On	40	64	Paper is being fed by the paper feed button.
7	Off	00	0	Not used. Fixed to Off.

- Second byte (printer information)

Bit	On/Off	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	No mechanical error.
	On	04	4	Mechanical error.
3	Off	00	0	No auto cutter error.
	On	08	8	Auto cutter error occurred.
4	Off	00	0	Not used. Fixed to Off.
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error.
6	Off	00	0	No automatically recoverable error.
	On	40	64	Automatically recoverable error occurred.
7	Off	00	0	Not used. Fixed to Off.

- Third byte (paper sensor information)

Bit	On/Off	Hex	Decimal	Function
0,1	Off	00	0	Paper near end sensor: paper adequate.
	On	03	3	Paper near end sensor: paper near end.
2,3	Off	00	0	Paper end sensor: paper present.
	On	0C	12	Paper end sensor: no paper present.
4	Off	00	0	Not used. Fixed to Off.
5	Off	00	0	Not used. Fixed to Off.
6	Off	00	0	Not used. Fixed to Off.
7	Off	00	0	Not used. Fixed to Off.

- Forth byte

Bit	On/Off	Hex	Decimal	Function
0	On	01	1	Not used. Fixed to On.
1	On	02	2	Not used. Fixed to On.
2	On	04	4	Not used. Fixed to On.
3	On	08	8	Not used. Fixed to On.
4	Off	00	0	Not used. Fixed to Off.
5	Off	00	0	Not used. Fixed to Off.
6	Off	00	0	Not used. Fixed to Off.
7	Off	00	0	Not used. Fixed to Off.

GS r

[Name] Transmit status

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

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

[Description] Transmits 1 byte of status data using **n** as follows:

n	Function
1, 49	Transmits paper sensor status
2, 50	Transmits drawer kick-out connector status

[Notes]

- Each status is 1 byte.
- The status to be transmitted is as follows:
 - Paper sensor status (**n** = 1, 49)

Bit	Binary	Hex	Decimal	Status
0, 1	00	00	0	Paper near end sensor: paper adequate.
	11	03	3	Paper near end sensor: paper not present.
2, 3	00	00	0	Paper end sensor: paper present.
	11	0C	12	Paper end sensor: paper not present.
4	0	00	0	Not used. Fixed to Off.
5,6	-	-	-	Undefined.
7	0	00	0	Not used. Fixed to Off.

- The status to be transmitted is as follows:
 - Drawer kick-out connector status (**n** = 2, 50)

Bit	Binary	Hex	Decimal	Status
0	0	00	0	Drawer kick-out connector pin 3 is LOW.
	1	01	1	Drawer kick-out connector pin 3 is HIGH.
1-3	-	-	-	Undefined.
4	0	00	0	Not used. Fixed to Off.
5,6				Undefined
7	0	00	0	Not used. Fixed to Off.