Line Thermal Printer

STAR Graphic Mode

Command Specifications

Rev. 2.31

Notes

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Table of Contents

This specifications document describes the command specifications for the STAR Graphic Mode on line thermal printers. Information contained herein applies to models with the following conditions.

- Line thermal printers
- Interface
    - USB
    - Ethernet
    - Wireless LAN
    - Bluetooth

<Name of applicable models>
- TSP100U
- TSP100PU
- TSP100GT
- TSP100LAN
- TSP100IIU
- TSP100IIIW
- TSP100IIILAN
- TSP100IIIBI
- TSP100IIIU

1. INTERFACE CONFIGURATION

1-1) USB Interface

Specifications: Conforms to USB2.0 Full Speed
                  Supports Printer class and vendor class
Connector: Type A (TSP100IIIU)
                  Type B (TSP100U, TSP100PU, TSP100IIU, TSP100GT、TSP100IIIU)
                  PoweredUSB (TSP100PU)

1-2) Ethernet Interface

Specifications: Physical layer, MAC layer：   10Base-T/100Base-TX (IEEE802.3/IEEE802.3u)
                  Protocol: TCP/IP v4
Connector: RJ45 (TSP100LAN)

1-3) Wireless LAN Interface

Specifications: Conforms to IEEE 802.11b/g/n

2. COMMAND FUNCTION LIST

● Standard Commands

Classification	Command	Name	Line mode	Raster mode
External device drive	ESC BEL	Set pulse width for external device drive	OK	OK
	BEL	External device 1 drive instruction	OK	OK
	FS	External device 1 drive instruction	OK	OK
	SUB	External device 2 drive instruction	OK	OK
	EM	External device 2 drive instruction	OK	OK
	ESC GS BEL	Ring buzzer	OK	OK
	ESC GS EM DC1	Set external buzzer drive pulse condition	OK	OK
	ESC GS EM DC2	Output External buzzer drive pulse	OK	OK
Print settings	ESC RS A	Set print area	OK	OK
	ESC RS d	Set print density	OK	OK
	ESC RS r	Set printing speed	OK	OK
	ESC GS c	Set reduced printing	OK	OK
Status	ESC RS a	Set status transmission conditions	OK	OK
	ESC ACK SOH	Real-time printer status (ASB status)	OK	OK
	ETB	Update ETB status	OK	OK
	ESC RS E	Clear ETB counter, ETB status	OK	OK
	ESC GS ETX	Document start, Document end	OK	OK
Other	ESC GS #	Set memory switch	OK	OK
	ESC ?	Reset printer	OK	OK
	ESC GS L DC1	Set LED blink condition	OK	OK
	ESC GS L DC2	LED blink	OK	OK

● Raster related commands

Classification	Command	Name	Line mode	Raster mode
Raster	ESC * r R	Initialize raster mode	OK	OK
	ESC * r A	Enter raster mode	OK	OK
	ESC * r B	Quit raster mode	No	OK
	ESC * r C	Clear raster data	No	OK
	ESC * r D	Drive drawer	No	OK
	ESC * r E	Set EOT mode	No	OK
	ESC * r F	Set FF mode	No	OK
	ESC * r P	Set page length	No	OK
	ESC * r Q	Set print quality	No	OK
	ESC * r m l	Set left margin	No	OK
	ESC * r m r	Set right margin	No	OK
	ESC * r t	Set top margin	No	OK
	ESC * r K	Set print color	No	OK
	b n1 n2 d1. . . dk	Transfer raster data (auto line feed)	No	OK
	k n1 n2 d1. . . dk	Transfer raster data	No	OK
	ESC * r Y	Position movement in vertical direction	No	OK
	ESC FF NUL	Execute FF mode	No	OK
	ESC FF EOT	Execute EOT mode	No	OK
Raster extension	ESC * r a	Start block	OK	OK
	ESC * r b	End block	No	OK
	ESC * r e	Set EM mode	No	OK
	ESC FF EM	Execute EM mode	No	OK
	ESC FF LF	Execute LF mode	No	OK

● USB-I/F related commands

Classification	Command	Name	Line mode	Raster mode
USB-I/F	ESC # # W	Register/Initialize USB serial number	OK	OK

● Print mode related commands

Classification	Command	Name	Line mode	Raster mode
Select print mode	ESC RS C	Select print mode	OK	OK
	ESC RS S	Select print startup setting	OK	OK

● Printer information related commands

Classification	Command	Name	Line mode	Raster mode
Register printer information	ESC GS (S	Register/Clear printer information	OK	OK
Send printer information	ESC GS) I	Send printer information	OK	OK
	ESC # *	Inquire printer version	OK	OK

● Customer Display commands

Classification	Command	Name	Line mode	Raster mode
Select print mode	ESC GS B @	Send data to a customer display	OK	OK
	ESC RS B A	Status request	OK	OK
	ESC GS B B	Customer display data request	OK	OK
	ESC GS B C	Buffer clear	OK	OK

3. COMMAND DETAILS

3-1) Standard Command Details

3-1-1) External Device Drive

ESC BEL n1 n2

[Name]   Set external drive device 1 pulse width
[Code]   ASCII   ESC BEL   n1   n2
              Hex   1B   07   n1   n2
              Decimal   27   7   n1   n2

[Defined Area] 1≦n1≦127
               1≦n2≦127
[Initial Value] n1 = 20 (Energizing time: 200 msec)
                n2 = 20 (Delay time: 200 msec)

[Function]   Sets the energizing and delay times for driving the external device.
               ・Energizing time = 10 x n1 (ms)
               ・Delay time = 10 x n2 (ms)
               This setting value is not initialized with a soft reset.
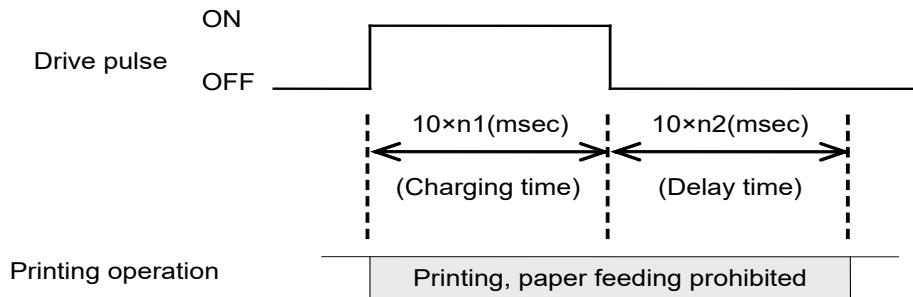
BEL

[Name]   External device 1 drive instruction
[Code]   ASCII   BEL
                Hex   07
                Decimal   7

[Defined Area] ---
[Initial Value] ---
[Function]   Executes the external device drive conditions set according to the command to set the external drive device pulse width (ESC BEL n1 n2).
                External device 1 and external device 2 cannot be executed simultaneously.
                If unprinted data exists, the unprinted data is printed out and then the command is executed.

FS

[Name]   External device 1 drive instruction
[Code]   ASCII   FS
                Hex   1C
                Decimal   28

[Defined Area] ---
[Initial Value] ---
[Function]   Executes the external device drive conditions set according to the command to set the external drive device pulse width (ESC BEL n1 n2).
                External device 1 and external device 2 cannot be executed simultaneously.
                If unprinted data exists, the unprinted data is printed out and then the command is executed.

SUB

[Name]	External device 2 drive instruction	
[Code]	ASCII	SUB
	Hex	1A
	Decimal	26

[Defined Area] ---

[Initial Value] ---

[Function] Drives external device 2.

The energizing time and delay time for external device 2 are fixed at 200 ms each.

External device 1 and external device 2 cannot be executed simultaneously.

If unprinted data exists, the unprinted data is printed out and then the command is executed.

EM

[Name]	External device 2 drive instruction	
[Code]	ASCII	EM
	Hex	19
	Decimal	25

[Defined Area] ---

[Initial Value] ---

[Function] Drives external device 2.

The energizing time and delay time for external device 2 are fixed at 200 ms each.

External device 1 and external device 2 cannot be executed simultaneously.

If unprinted data exists, the unprinted data is printed out and then the command is executed.

ESC GS BEL m n1 n2

[Name]	Ring buzzer					
[Code]	ASCII	ESC	GS BEL	m	n1	n2
	Hex	1B	1D 07	m	n1	n2
	Decimal	27	29 7	m	n1	n2

[Defined Area] $1 \leqq m \leqq 2$
$1 \leqq n1 \leqq 255$
$1 \leqq n2 \leqq 255$

[Initial Value] ---

[Function] Rings the buzzer.

m specifies the buzzer drive terminal.

m	Buzzer Drive Terminal
1, 49	Buzzer Drive Terminal 1
2, 50	Buzzer Drive Terminal 2

n1 specifies energizing time; n2 specifies the delay time.
・ Energizing time = 20 x n1 (ms)
・ Delay time = 20 x n2 (ms)

The buzzer will not ring while printing.
Use of this command other than for ringing the buzzer is prohibited.
(There is the possibility of damage if using this command for driving the drawer on models that support external device terminals.)

ESC GS EM DC1 m n1 n2

[Name]   Set external buzzer drive pulse condition
[Code]   ASCII   ESC GS   EM   DC1   m   n1   n2
             Hex   1B   1D   19   11   m   n1   n2
             Decimal   27   29   25   17   m   n1   n2

[Defined Area] 1≦m≦2, 49≦m≦50
                0≦n1≦255
                0≦n2≦255
[Initial Value] n1 = 0, n2 = 0

[Function]   Set external buzzer drive pulse condition
              m specifies the buzzer drive terminal to perform the condition settings.

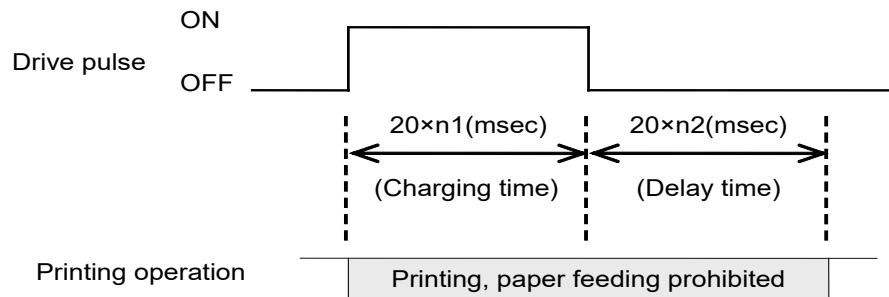| m	Buzzer Drive Terminal
1, 49	Buzzer Drive Terminal 1
2, 50	Buzzer Drive Terminal 2

n1 specifies energizing time; n2 specifies the delay time.
・ Energizing time = 20 x n1 (ms)
・ Delay time = 20 x n2 (ms)
Drives for external buzzers set using this command is performed by <ESC> <GS> <EM> <DC2> m n1 n2.
When n1 = 0, regardless of the value of n2, the external buzzer drive command
<ESC><GS><EM><DC2> is ignored.
This setting value is not initialized with a soft reset.
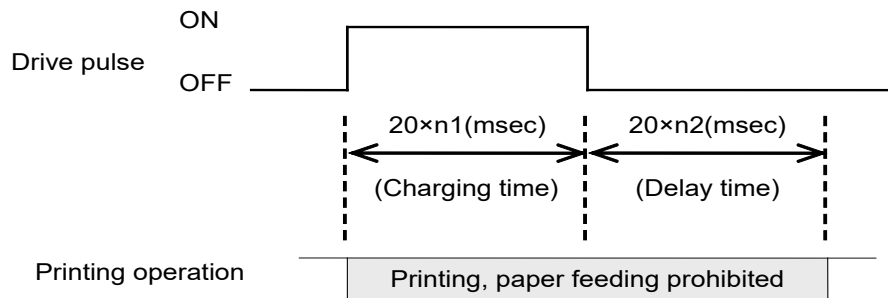
ESC GS EM DC2 m n1 n2

[Name]   Output External buzzer drive pulse

[Code]

	ASCII	ESC	GS	EM	DC2	m	n1	n2
	Hex	1B	1D	19	12	m	n1	n2
	Decimal	27	29	25	18	m	n1	n2

[Defined Area] $1 \leqq m \leqq 2$, $49 \leqq m \leqq 50$
              $1 \leqq n1 \leqq 20$
              $n2 = 0$

[Initial Value]   ---

[Function]   Repeatedly drives the buzzer according to the ON/OFF conditions set by the external buzzer drivepulse conditions command <ESC> <GS> <EM> <DC1> m t1 t2.

m specifies the buzzer drive terminal to drive.

m specifies the buzzer drive terminal to drive.

m	Buzzer Drive Terminal
1, 49	Buzzer Drive Terminal 1
2, 50	Buzzer Drive Terminal 2

Specifies the number of repetitions of the buzzer drive with (n2 x 256 + n1).

The buzzer will not ring while printing.

Use of this command other than for ringing the buzzer is prohibited.

(If this command is used to drive the cash drawer on models that have an external device terminal, the system will be damaged. Absolutely never use it for other purposes.)

The buzzer can be stopped by pressing the paper feed switch when it is ringing.

<Example>
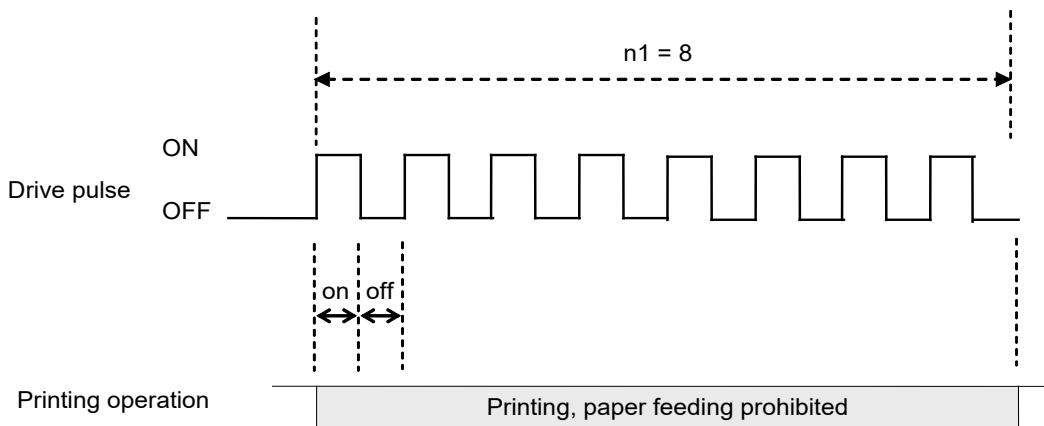
(Special Note) If off time=0, it is only possible to continuously sound it n1 times. For example, if on=5 seconds, off=0 and n1=20 times, it will sound for 100 seconds.

3-1-2) Print Settings

ESC RS A n

[Name]	Set print area			
[Code]	ASCII	ESC	RS	A	n

[Code] ASCII   ESC RS   A   n
        Hex   1B 1E   41   n
        Decimal   27 30   65   n

[Defined Area] 0≦n≦1
[Initial Value] Memory SW setting
[Function]   Sets the print area according to n.
Set n to be the same as the print area setting of MSW. (See MSW setting of each model for details)
If unprinted data exists when processing this command, the data is printed out and then the command is executed.
(Cutting and feeding operations are not performed.)
This command is executed after the print operation is stopped.
The raster left and right margin settings are initialized.
This setting value is initialized with a soft reset.

ESC RS d n

[Name]   Set print density

[Code]   ASCII   ESC   RS   d   n

               Hex   1B   1E   64   n

               Decimal   27   30   100 n

[Defined Area] $0 \leqq n \leqq 6$

                  $48 \leqq n \leqq 57$ ("0"$\leqq n \leqq$"6")

[Initial Value] Memory SW setting

[Function]   Sets print density.

If unprinted data exists when processing this command, the data is printed out and then the command is executed.

This command is executed after the print operation is stopped.

When in two-color printing mode, only print density for red printing can be set by this command.

n	Print Density			
	Single Color Printing Mode	Two-Color Printing Mode Red Print Density Double Resolution Mode	Energy saving mode 1	Energy saving mode 2
0, 48	Print density +3	Red print density +	Print density +3	Print density +3
1, 49	Print density +2	Red print density +	Print density +2	Print density +2
2, 50	Print density +1	Red print density (Standard)	Print density +1	Print density +1
3, 51	Print density (Standard)	Red print density (Standard)	Print density (Standard)	Print density (Standard)
4, 52	Print density -1	Red print density (Standard)	Print density -1	Print density -1
5, 53	Print density -2	Red print density -	Print density -2	Print density -2
6, 54	Print density -3	Red print density -	Print density -3	Print density -3

ESC RS r n

[Name]   Set print speed

[Code]   ASCII   ESC   RS   r   n

               Hex   1B   1E   72   n

               Decimal   27   30   114 n

[Defined Area] $0 \leqq n \leqq 2$

                  $48 \leqq n \leqq 50$ ("0"$\leqq n \leqq$"2")

[Initial Value] Memory SW setting

[Function]   Sets print speed.

If unprinted data exists when processing this command, the data is printed out and then the command is executed.

This command is executed after the print operation is stopped.

Since the printing speed in two-color printing mode and energy saving mode 1 are fixed, the speed settings with this command are invalid. However, the settings of this command become valid when returning from two-color printing mode or energy saving mode 1 to single color printing mode.

n	Print Speed			
	Single Color Printing Mode	Two-color Printing Mode	Energy saving mode 1	Energy saving mode 2
0, 48	High speed	Invalid	Invalid	Invalid
1, 49	Mid-speed	Invalid	Invalid	Invalid
2, 50	Slow speed	Invalid	Invalid	Invalid

ESC GS c h v

[Name]   Set reduced printing

[Code]   ASCII   ESC   GS   c   h   v

            Hex   1B   1D   63   h   v

            Decimal   27   29   99   h   v

[Defined Area] 0≦h≦255

                0≦v≦255

[Initial Value] h = 0 (Always 0)

                v = 0 (When not set) or previously set value

[Function]   Sets reduced printing.

            If unprinted data exists, the unprinted data is printed out and then the command is executed.

h	Set horizontal direction of reduced printing	Remarks
0	Always 0	

v	Set vertical direction of reduced printing	Remarks
0	Invalid (100%)	Setting is stored to non-volatile memory
1	Valid (50%)	Setting is stored to non-volatile memory
2	Valid (75%)	Setting is stored to non-volatile memory

・The reduced printing setting can be changed or disabled for a receipt. However, intermittent printing will occur when it is switched (Print quality is no guaranteed).

・If the correct setting value is specified, it is stored to non-volatile memory.

・The print quality is not guaranteed for reduced printing (barcodes and 2D barcodes may not be read correctly at times).

3-1-3) Status

ESC RS a n

[Name]	Set status transmission conditions
[Code]	ASCII ESC RS a n
	Hex. 1B 1E 61 n
	Decimal 27 30 97 n

[Defined Area] $0 \leq n \leq 3$, $48 \leq n \leq 51$("0"$\leq n \leq$"3")
                 n=16, n=255
[Initial Value] Set by memory switches.
[Function]   Sets the status transmission conditions.
                 See Appendix 1 for details regarding ASB status.
                 See each printer's product specifications manual for details on the memory switch settings.

n	Status transmission conditions
0, 48	ASB Invalid , NSB Invalid
1, 49	ASB Valid , NSB Invalid
2, 50	ASB Invalid , NSB Valid
3, 51	ASB Valid , NSB Valid
16	Returns the ASB and NSB settings to the initial state previously set by the MSW.
255	Sends the ASB status information.

ESC ACK SOH

[Name]	Real-time printer status (ASB status)
[Code]	ASCII ESC ACK SOH
	Hex. 1B 06 01
	Decimal 27 6 1

[Defined Area] - - -
[Initial Value] - - -
[Function]   Sends ASB status information to the host.
                 This command is not used when ASB is valid.
                 See Appendix 1, Automatic Status for details regarding ASB status.

ETB

[Name]   Update ETB status of normal status
[Code]   ASCII   ETB
                Hex   17
                Decimal   23

[Defined Area] ---
[Initial Value] ---
[Function]   Sets the ETB status of the normal status and updates the ETB counter.
                If unprinted data exists when processing this command, the data is printed out and then the command is
                executed.
                (Cutting and feeding operations are not performed.)
                This command is executed after the print operation is stopped.
                For information on the normal status, see Appendix-1.

ESC RS E n

[Name]   Initialize normal status ETB counter and ETB status
[Code]   ASCII   ESC   RS   E   n
                Hex   1B   1E   45   n
                Decimal   27   30   69   n

[Defined Area] n = 0
                n = 48 ("0")
[Initial Value] Normal status ETB counter = 0
[Function]   Clears the normal status ETB counter to zero and ETB status.

_____

ESC GS ETX s n1 n2

[Name] Document start , end

[Code]

ASCII	ESC	GS	ETX	s	n1	n2
Hexadecimal	1B	1D	03	s	n1	n2
Decimal	27	30	3	s	n1	n2

[Defined Area] $3 \leq s \leq 5$

Refer to the table below for the n1 and n2 defined area of n1 and n2.

[Function] This command is run when reading from the reception buffer. Processes the print end counter according to the s parameter.

s	Name	Function
3	Start document n1, n2 = 0	(1) Sets data intake mode (2) Initialize
4	End document n1, n2 = 0	(1) Prints data in line buffer, if data exists. (2) Waits until printing ends (motor stops). (3) Cancels data intake mode
5	Data timeout setting	n1=0 : Initializes to the content of MSW. (n2=0) n1=1 : Data timeout setting n2=0 : Timeout disabled Others: n2 = Data timeout time (units: seconds 1 to 255 seconds) n1=2: Sends the current timeout setting to the host. (n2=0)

When s = 3, and s = 4 (Document start command + document end command), printer operates as though in data cancel mode. If there is an error after receiving the document start command, reception data is received and discarded until the document end command is received when the printer is recovered from the error. If the document end command cannot be recognized, all reception data is destroyed. Timeouts are 10 seconds. Automatically cancels the data intake mode.

Restrictions
1) Sleep mode decrease
2) Erroneous printing occurs if the same data as the End command is contained in the raster data.
3) If the interval of data transmission is longer than the timeout time for some reason, it will be judged as an error even though the transmission is not actually disconnected.   In case of data cancellation, data up to the document end command will be cancelled.   Be sure to check by ETB to control.

When s = 3, initialize the following settings using the initializing process.

<T:TOP Command/E:END Command>
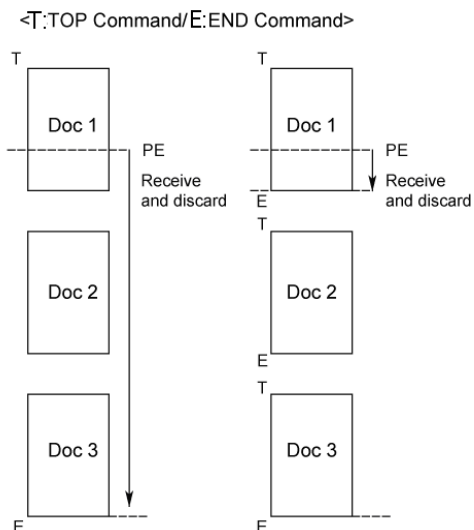
The interface disconnection detection function through data reception timeout is controlled when s=5 is specified.

When this function is enabled, the interface is determined to have been disconnected when no data is received
for a specified period of time at the data read section of the printer.
When a disconnection is detected during a command execution, the command parsing is stopped.
When data cancel is enabled, the print start function using the timer (ESC GS g 1) is disabled, and data is canceled.

n1=0 and n2=0:   Initializes the interface disconnection detection function through data reception timeout.
                 (Returns to the MSW settings. The initial value for the timeout time is 3 seconds.)
n1=1 :   Set enable/disable and the timeout time for data reception timeouts.
                 When n2 is 0, the disconnection detection function is disabled due to data reception timeouts.
                 When n2 is anything except for 0, the data reception timeout is set. (Units: seconds, 1 to 255 seconds)
n1=2 and n2=0:   Sends the current setting to the host.
                 The data format returned to the host is as shown below.

<Returned Data Formats>
[Code]   ASCII   ESC GS ETX s n1 n2 [timeout setting] NUL
         Hex.   1B 1D 03 s n1 n2 [timeout setting] 00
         Decimal   27 29 3 s n1 n2 [timeout setting] 0

* Echoes back the specified contents from the host as is until ESC GS ETX s n1 n2, and then sends the print end counter value and NUL.

This function is invalid at the time of program rewriting.

3-1-4) Other

ESC GS # m N n1 n2 n3 n4 LF NUL

[Name]   Set memory SW

[Code]

ASCII	ESC	GS	#	m	N	n1	n2	n3	n4	LF	NUL
Hex	1B	1D	23	m	N	n1	n2	n3	n4	0A	00
Decimal	27	29	35	m	N	n1	n2	n3	n4	10	0

[Defined Area] m = 87, 84, 44, 43, 45, 64 (m = "W", "T", ",", "+", "-", "@")

$48 \leqq N \leqq 57$ ("0"$\leqq N \leqq$"9"), $65 \leqq N \leqq 70$ ("A"$\leqq N \leqq$"F"), $97 \leqq N \leqq 102$ ("a"$\leqq N \leqq$"f")

$48 \leqq n1 \leqq 57$ ("0"$\leqq n1 \leqq$"9"), $65 \leqq n1 \leqq 70$ ("A"$\leqq n1 \leqq$"F"), $97 \leqq n1 \leqq 102$ ("a"$\leqq n1 \leqq$"f")

$48 \leqq n2 \leqq 57$ ("0"$\leqq n2 \leqq$"9"), $65 \leqq n2 \leqq 70$ ("A"$\leqq n2 \leqq$"F"), $97 \leqq n2 \leqq 102$ ("a"$\leqq n2 \leqq$"f")

$48 \leqq n3 \leqq 57$ ("0"$\leqq n3 \leqq$"9"), $65 \leqq n3 \leqq 70$ ("A"$\leqq n3 \leqq$"F"), $97 \leqq n3 \leqq 102$ ("a"$\leqq n3 \leqq$"f")

$48 \leqq n4 \leqq 57$ ("0"$\leqq n4 \leqq$"9"), $65 \leqq n4 \leqq 70$ ("A"$\leqq n4 \leqq$"F"), $97 \leqq n4 \leqq 102$ ("a"$\leqq n4 \leqq$"f")

[Initial Value] ---

[Function] Sends command to write after defining memory switch using the definition command specified by the following classes.

Memory switch information defined by the command to write is written to the volatile memory.

When writing to the volatile memory by the command to write, the printer executes a reset.

For information on the memory switch, see the product specifications document for each model.

Function	Class	m	N	n1 n2 n3 n4
Definition data write and reset	Write	"W"	Fixed at "0"	Fixed at "0000"
Definition data write and reset and self print	Write	"T"	Fixed at "0"	Fixed at "0000"
Data definition (data specification)	Definition	","	N	n1 n2 n3 n4
Data definition (specify bit and set)	Definition	"+"	N	n1 n2 n3 n4
Data definition (specify bit and clear)	Definition	"-"	N	n1 n2 n3 n4
Definition data (all data initialized)	Definition	"@"	Fixed at "0"	Fixed at "0000"
Data definition (load factory setting)	Definition	"*"	Fixed at "0"	Fixed at "0000"

・ m   : Mode selection

・ N   : Memory switch number to specify

・ n1 n2 n3 n4 : Specified data   m="," -> Specified data

                                      m="+" -> Bit number to set

                                      m="-" -> Bit number cleared

ESC ? LF NUL

[Name]   Reset printer (execute self print)

[Code]

ASCII	ESC	?	LF	NUL
Hex	1B	3F	0A	00
Decimal	27	63	10	0

[Defined Area] ---

[Initial Value] ---

[Function]   After executing a software reset, executes self print once.

ESC GS L DC1 m n1 n2

[Name]   Set LED blink condition

[Code]

ASCII	ESC	GS	L	DC1	m	n1	n2
Hex	1B	1D	4C	11	m	n1	n2
Decimal	27	29	76	17	m	n1	n2

[Defined Area] $1 \leqq m \leqq 2$, $49 \leqq m \leqq 50$
                   $0 \leqq n1 \leqq 255$
                   $0 \leqq n2 \leqq 255$

[Initial Value] n1 = 0, n2 = 0

[Function]   Sets LED flashing conditions.

m specifies the LED applicable to the condition settings.

m	LED
1, 49	ERROR LED (Red)
2, 50	READY LED (Blue)

n1 specifies lit time; n2 specifies the time the LED turns off.

・ Lit time = 20 x n1 (ms)

・ Turn off time = 20 x n1 (ms)

Perform LED flashing set with this command using <ESC><GS>"L"<DC2> m n1 n2.

When n1 = 0, regardless of the value of n2, the LED flash command <ESC><GS>"L"<DC2> is ignored.

This setting value is not initialized with a soft reset.

LED   ON / OFF

        20×n1(msec)   20×n2(msec)

        (Lit (LED ON) time)   (Not-lit (LED OFF) time)
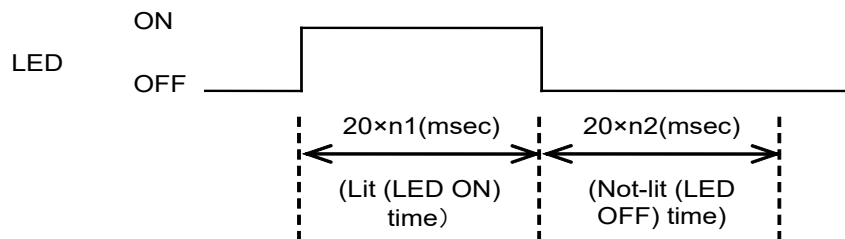
ESC GS L DC2 m n1 n2

[Name]   LED blink

[Code]

	ASCII	ESC	GS	L	DC2	m	n1	n2
	Hex	1B	1D	4C	12	m	n1	n2
	Decimal	27	29	76	18	m	n1	n2

[Defined Area] $1 \leqq m \leqq 3$, $49 \leqq m \leqq 51$
                $1 \leqq n1 \leqq 20$
                $n2 = 0$

[Initial Value]   ---

[Function]   Repeatedly flashes the LED according to the ON/OFF conditions set by the LED flashing condition setting command <ESC><GS>"L"<DC1> m t1 t2.

m specifies the LED to flash.

m	LED
1, 49	ERROR LED (Red)
2, 50	READY LED (Blue)
3, 51	ERROR LED (Red), READY LED (Blue)

Specifies the number of repetitions of the LED flash with (n2 x 256 + n1).

After the command is executed, the LED display pattern occurs after according to the status of the printer.

<Example>
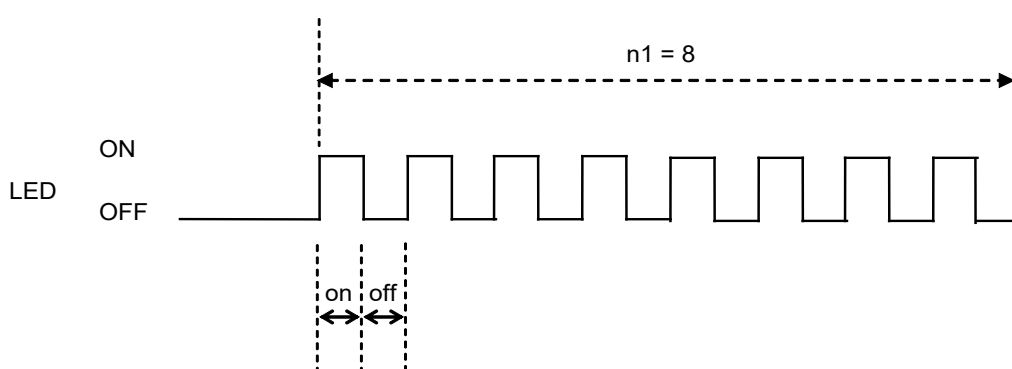
(Special note) If off time=0, it can be set to continously lit only for n1 number of times
                     For example, if on=5 seconds, off=0 and n1=20 times, it will be lit for 100 seconds.

3-2) Raster Graphics Command Details

During line mode, these commands are prohibited from being used because they will not be processed be correctly.
(Excluding ESC * r R command, ESC * r A command and ESC * r a command.)

ESC * r R

[Name]	Initialize raster mode			
[Code]	ASCII	ESC	*	r	R
	Hex	1B	2A	72	52
	Decimal	27	42	114	82

[Defined Area]   ---
[Initial Value]   ---
[Function]   Executes the initialization of raster mode.

This command is valid for other modes besides raster mode.

The raster mode initialization performed by this command is executed when entering raster mode.

This command initializes the following setting contents.

・ Raster page length setting (ESC * r P n NUL)
・ Raster print color setting (ESC * r K n NUL)
・ Raster top margin setting (ESC * r T n NUL)
・ Raster left margin setting (ESC * r T n NUL)
・ Raster right margin setting (ESC * r T n NUL)
・ Raster EOT mode setting (ESC FF EOT)
・ Raster FF mode setting (ESC FF NUL)
・ Clear raster image buffer

When entering raster mode, the command executes a process identical to initializing raster mode.

As the following setting is not initialized when entering raster mode, send this initialization command when initializing the contents below,

・ Raster data print color setting (ESC * r K n NUL)

(*) Raster print quality setting (ESC * Q n NUL)

ESC * r A

[Name]	Enter raster mode			
[Code]	ASCII	ESC	*	r	A
	Hex	1B	2A	72	41
	Decimal	27	42	114	65

[Defined Area]   ---

[Initial Value]   ---

[Function]   Enters raster mode.

This command is ignored during raster mode.

When entering raster mode, raster mode is initialized.

The corresponding initialization contents are listed below.

・ Raster page length setting (ESC * r P n NUL)

・ Raster top margin setting (ESC * r T n NUL)

・ Raster left margin setting (ESC * r T n NUL)

・ Raster right margin setting (ESC * r T n NUL)

・ Raster EOT mode setting (ESC FF EOT)

・ Raster FF mode setting (ESC FF NUL)

(*) Raster print color setting(ESC * r K n NUL)is not initialized when entering raster mode.

(*) Raster print quality setting (ESC * Q n NUL)is not initialized when entering raster mode.

If the printer is in command emulator mode and there is unprinted data, this command is processed after the unprinted data is printed. (Cutting and feeding operations are not performed.)

ESC * r B

[Name]	Quit raster mode			
[Code]	ASCII	ESC	*	r	B
	Hex	1B	2A	72	42
	Decimal	27	42	114	66

[Defined Area]   ---

[Initial Value]   ---

[Function]   Ends raster mode.

When raster mode ends, and if raster data still remains in the image buffer of the raster mode, after executing raster EOT mode, terminate the raster mode.

ESC * r C

[Name]	Clear raster data			
[Code]	ASCII	ESC	*	r	C
	Hex	1B	2A	72	43
	Decimal	27	42	114	67

[Defined Area]   ---

[Initial Value]   ---

[Function]   Clears the image buffer data of raster mode.

ESC * r D n NUL

[Name] Drive drawer

[Code]
	ASCII	ESC	*	r	D	n	NUL
	Hex	1B	2A	72	44	n	00
	Decimal	27	42	114	68	n	0

[Defined Area] 0≦n≦3

[Initial Value] n = 0

[Function] Executes the drawer drive during raster mode.

Drawer driving conditions is equivalent to the conditions set by the line mode.

nI is a decimal notation using ASCII characters (up to 255 digits)

If raster data exists in the image buffer of raster mode, this command is ignored.

n	Drive circuit
0	None
1	Drive external device drive 1
2	Drive external device drive 2
3	Drive external device drive 1 + Drive external device drive 2

ESC * r E n NUL

[Name] Set raster EOT mode

[Code]
	ASCII	ESC	*	r	E	n	NUL
	Hex	1B	2A	72	45	n	00
	Decimal	27	42	114	69	n	0

[Defined Area] n = 0, 1, 2, 3, 8, 9, 12, 13, 32, 33, 36, 37

[Initial Value] Cutter model n = 13

TearBar model n = 3

[Function] Sets the raster EOT mode.

The EOT mode is an operation to be performed by the raster document end command (ESC FF EOT).

nI is a decimal notation using ASCII characters (up to 255 digits)

If raster data exists in the image buffer of raster mode, this command is ignored.

<EOT mode setting format>

n	Model		Function		
	Cutter	TearBar	FormFeed	Cut Feed	Cutter
0	Valid	Valid	Set To Default	Set To Default	Set To Default
1	Valid	Valid	OK	——	——
2	Valid	Invalid	OK	OK	——
3	Invalid	Valid	OK	TearBar	——
8	Valid	Invalid	OK	——	Full Cut
9	Valid	Invalid	OK	OK	Full Cut
12	Valid	Invalid	OK	——	Partial Cut
13	Valid	Invalid	OK	OK	Partial Cut
32	Invalid	Invalid			
33	Invalid	Invalid			
36	Invalid	Invalid			
37	Invalid	Invalid			

ESC * r F n NUL

[Name]　　　　　Set raster FF mode

[Code]　　　　　ASCII　　　ESC　　*　　r　　F　　n　　NUL
　　　　　　　　　Hex　　　　1B　　2A　72　46　　n　　00
　　　　　　　　　Decimal　　27　　42　114　70　　n　　　0

[Defined Area]　n = 0, 1, 2, 3, 8, 9, 12, 13, 32, 33, 36, 37

[Initial Value]　Cutter model n = 13

　　　　　　　　　TearBar model n = 3

[Function]　　　Sets the raster FF mode.

　　　　　　　　　The FF mode is an operation to be performed by the raster document end command (ESC FF NUL).

　　　　　　　　　nI is a decimal notation using ASCII characters (up to 255 digits)

　　　　　　　　　If raster data exists in the image buffer of raster mode, this command is ignored.

<FF mode stetting format>

n	Model		Function		
	Cutter	TearBar	FormFeed	Cut Feed	Cutter
0	Valid	Valid	Set To Default	Set To Default	Set To Default
1	Valid	Valid	OK	――	――
2	Valid	Invalid	OK	OK	――
3	Invalid	Valid	OK	TearBar	――
8	Valid	Invalid	OK	――	Full Cut
9	Valid	Invalid	OK	OK	Full Cut
12	Valid	Invalid	OK	――	Partial Cut
13	Valid	Invalid	OK	OK	Partial Cut
32	Invalid	Invalid			
33	Invalid	Invalid			
36	Invalid	Invalid			
37	Invalid	Invalid			

ESC * r P n NUL

[Name]	Set raster page length
[Code]	ASCII ESC * r P n NUL
	Hex 1B 2A 72 50 n 00
	Decimal 27 42 114 80 n 0

[Defined Area]   0, 200≦n≦64000 (Other than TSP100IIU) 0, 200≦n≦32000 (TSP100IIU)

[Initial Value]   ---

[Function]   Sets the raster page length.

nl is a decimal notation using ASCII characters (up to 255 digits)

If raster data exists in the image buffer of raster mode, this command is ignored.

TSP100U, TSP100PU, TSP100GT, TSP100LAN, TSP100IIIW, TSP100IIILAN, TSP100IIIBI、TSP100IIIU

n	
0	Continuous printing mode (page length without setting, but maximum page length is 64000 dot)
200≦n≦64000	Specified page length

TSP100IIU

n	
0	Continuous printing mode (page length without setting, but maximum page length is 32000 dot)
200≦n≦32000	Specified page length

ESC * r Q n NUL

[Name]	Set raster print quality
[Code]	ASCII ESC * r Q n NUL
	Hex 1B 2A 72 51 n 00
	Decimal 27 42 114 81 n 0

[Defined Area]   0≦n≦2

[Initial Value]   n = 0

[Function]   Sets the raster print quality.

nl is a decimal notation using ASCII characters (up to 255 digits)

If raster data exists in the image buffer of raster mode, this command is ignored.

n	Print quality
0	High-speed printing specified
1	Normal print quality
2	High print quality

ESC * r m l n NUL

[Name]	Set the left margin of raster						
[Code]	ASCII	ESC	*	r	m	l	n	NUL
	Hex	1B	2A	72	6D	6C	n	00
	Decimal	27	42	114	109	108	n	0

[Defined Area] Print width: 72 mm mode 0≦n≦71

Print width 51 mm mode 0≦n≦50

[Initial Value] n = 0

[Function] Sets the left margin of the raster.

By this command set the left margin to (nx 8) dots.

If the left margin exceeds the printable area, or if there is no print area by the left margin specified ((printable area - right margin) ≧ left margin specified value), it ignores this command.

nl is a decimal notation using ASCII characters (up to 255 digits)

If raster data exists in the image buffer of raster mode, this command is ignored.

ESC * r m r n NUL

[Name]	Set the right margin of raster						
[Code]	ASCII	ESC	*	r	m	r	n	NUL
	Hex	1B	2A	72	6D	72	n	00
	Decimal	27	42	114	109	114	n	0

[Defined Area] Print width: 72 mm mode 0≦n≦71

Print width 51 mm mode 0≦n≦50

[Initial Value] n = 0

[Function] Sets the right margin of the raster.

By this command set the right margin to (nx 8) dots.

If the right margin exceeds the printable area,

or if there is no print area by the right margin specified ((printable area - left margin) ≧ right margin specified value),

this command is ignored.

nl is a decimal notation using ASCII characters (up to 255 digits)

If raster data exists in the image buffer of raster mode, this command is ignored.

ESC * r t n NUL

[Name]	Set the top margin of raster

[Code]

	ASCII	ESC	*	r	t	n	NUL
Hex	1B	2A	72	74	n	00
Decimal	27	42	114	116	n	0

[Defined Area] 0≦n≦11
[Initial Value] n = 0
[Function] Sets the top margin of the raster.

nI is a decimal notation using ASCII characters (up to 255 digits)

n	Top margin	Remarks
0	Set To Default	Default top margin differs with the model
Other than 0	When n value is for that model, enabled setting: set top margin disabled setting: Ignore the command	Enabled setting differs with the model

(*) Support of this command varies according to the model.

TSP100IIU

n	Top margin	Remarks
0	Set To Default (3mm)	Setting is stored to non-volatile memory
3 to 11	Set top margin (3～11mm)	Setting is stored to non-volatile memory
Other than the above	Ignore the command	

(*) When the top margin setting is 3 ~ 10mm, back feed is performed before printing starts.

Back feed operation by the top margin setting is performed only with the following timing.
・After the cutting operation (including error recovery operation)

ESC * r K n NUL

[Name]	Set raster print color

[Code]

	ASCII	ESC	*	r	K	n	NUL
Hex	1B	2A	72	4B	n	00
Decimal	27	42	114	75	n	0

[Defined Area] 0≦n≦3
[Initial Value] n = 0
[Function] Sets the raster print color.

This command is valid only if it is designated a two-color printing mode by the line mode.
If not the two-color printing mode, ignore the command.
nI is a decimal notation using ASCII characters (up to 255 digits)

n	Print color
0	Black
1	Cyan
2	Magenta
3	Yellow

(*) This command is valid only for two-color printing compatible models.
Non-compatible models command ignored

b n1 n2 data

[Name]	Transfer of raster data (automatic line feed)

[Code]

ASCII	b	n1	n2	d1	d2	...	dk
Hex	62	n1	n2	d1	d2	...	dk
Decimal	98	n1	n2	d1	d2	...	dk

[Defined Area] $0 \leqq n1 \leqq 255$
$0 \leqq n2 \leqq 255$
$0 \leqq d \leqq 255$
$k = n1 + n2 \times 256$
$1 \leqq k$

[Initial Value]   ---

[Function]   Transfers the raster data.

Raster data is send at (n1 + n2 x 256) bytes binary data.

Raster data beyond the print area that is currently set is cut off.

The deployed position of the image buffer, after deploying the data to one dot column image buffer by this command, will one dot column automatic line feed, and move to the left margin of the next line position.

If it goes over page due to automatic line feed

・ Page length settings are in continuous print mode, if it exceeds the maximum page length
(see ESC * r P n NUL command)

・ Page length set in the specified page length mode, and if it exceeds the specified page length, and print the data up to the end page, to process as the first line of data for the next page.

In addition, data expansion is performed by overwriting processing (OR processing) the current image buffer data.

For the set raster print color, the deployment image buffer is described below.

Print color	Deployment image buffer
Black	Black image buffer
Cyan	Colored image buffer
Magenta	Colored image buffer
Yellow	Colored image buffer

k n1 n2 data

[Name]	Transfer raster data						
[Code]	ASCII	k	n1	n2	d1	d2	... dk
	Hex	6B	n1	n2	d1	d2	... dk
	Decimal	107	n1	n2	d1	d2	... dk

[Defined Area] $0 \leqq n1 \leqq 255$
$0 \leqq n2 \leqq 255$
$0 \leqq d \leqq 255$
$k = n1 + n2 \times 256$
$1 \leqq k$

[Initial Value] ---

[Function] Transfers the raster data.

Raster data is send at (n1 + n2 x 256) bytes binary data.

Raster data beyond the print area that is currently set is cut off.

The deployed position of the image buffer, after deploying the data to one dot column image buffer by this command, will not automatically line feed, and move to the left margin of the current line position.

In addition, data expansion is performed by overwriting processing (OR processing) the current image buffer data.

For the set raster print color, the deployment image buffer is described below.

Print color	Deployment image buffer
Black	Black image buffer
Cyan	Colored image buffer
Magenta	Colored image buffer
Yellow	Colored image buffer

ESC * r Y n NUL

[Name]   Moving position in the vertical direction (line break of a specified dot)

[Code]

	ASCII	ESC	*	r	Y	n	NUL
	Hex	1B	2A	72	59	n	00
	Decimal	27	42	114	89	n	0

[Defined Area] ---

[Initial Value] ---

[Function]   Performs position movement of the raster vertical direction.

          With this command it will move the position of n dot.

          If the specified movement makes you go over the page

            ・ If the page length settings are in continuous print mode, and the n dot is the maximum page length

              (see ESC * r P n NUL command)

            ・ Page length set at the specified page length mode, and the n dot exceeds the specified page length

          to do this, you print the data up to the end page, and the section that is overflow will be treated as data

          from the beginning of the next page.

          nI is a decimal notation using ASCII characters (up to 255 digits)

ESC FF NUL

[Name]   Execute FF mode

[Code]

	ASCII	ESC	FF	NUL
	Hex	1B	0C	00
	Decimal	27	12	0

[Defined Area] ---

[Initial Value] ---

[Function]   Executes FF mode.

          It runs the operation specified in FF mode setting command (ESC * r F n NUL).

          If raster data exists in the image buffer for raster mode, FF mode is implemented after printing.

          If raster data does not exist in the image buffer for raster mode, this command is ignored.

          (TSP100IIU) if the print paper length to be cut is less than 24mm, then empty feed is automatically added

          before cutting so that the printing paper length is 24mm.

ESC FF EOT

[Name]   Execute EOT mode

[Code]

	ASCII	ESC	FF	EOT
	Hex	1B	0C	04
	Decimal	27	12	4

[Defined Area] ---

[Initial Value] ---

[Function]   Executes EOT mode.

          It runs the operation specified in EOT mode setting command (ESC * r E n NUL).

          If raster data exists in the image buffer for raster mode, EOT mode is implemented after printing.

          If raster data does not exist in the image buffer for raster mode, this command is ignored.

          (TSP100IIU) if the print paper length to be cut is less than 24mm, then empty feed is automatically added

          before cutting so that the printing paper length is 24mm.

ESC * r a

[Name]   Start block
[Code]   ASCII   ESC   *   r   a
                Hex   1B   2A   72   61
                Decimal   27   42   114   97

[Defined Area]   ---
[Initial Value]   ---
[Function]   Starts the block
                Enters the command emulator mode.
                This command is ignored during command simulator mode.
                When it enters the command emulator mode, initialize the command emulator mode.
                The corresponding initialization contents are listed below.
                ・ Raster page length setting (ESC * r P n NUL)
                ・ Raster top margin setting (ESC * r T n NUL)
                ・ Raster left margin setting (ESC * r T n NUL)
                ・ Raster right margin setting (ESC * r T n NUL)
                ・ Raster EOT mode setting (ESC FF EOT)
                ・ Raster FF mode setting (ESC FF NUL)
                ・ Clear raster image buffer
                (*) Raster page length setting (ESC * r P n NUL), is initialized to 0.
                (*) Raster print color setting (ESC * r K n NUL)is not initialized when entering raster mode.
                (*) Raster print quality setting (ESC * Q n NUL)is not initialized when entering raster mode.

ESC * r b

[Name]   End the block
[Code]   ASCII   ESC   *   r   b
                Hex   1B   2A   72   62
                Decimal   27   42   114   98

[Defined Area]   ---
[Initial Value]   ---
[Function]   Ends the block
                Maintains a command emulator.
                If raster data remains in the image buffer of the raster mode, command emulator is maintained when
                raster EM mode is executed.

ESC * r e n NUL

[Name]	Set raster EM mode					
[Code]	ASCII	ESC	*	r	e	n	NUL
	Hex	1B	2A	72	65	n	00
	Decimal	27	42	114	101	n	0

[Defined Area] n = 0, 1, 2, 3, 8, 9, 12, 13, 32, 33, 36, 37
[Initial Value] Cutter model n = 13

TearBar model n = 3
[Function] Sets the raster EM mode.

The EM mode, is an operation to be performed by the raster document end command (ESC FF EM).

nl is a decimal notation using ASCII characters (up to 255 digits)

<EM mode setting format>

n	Model		Function		
	Cutter	TearBar	FormFeed	Cut Feed	Cutter
0	Valid	Valid	Set To Default	Set To Default	Set To Default
1	Valid	Valid	x	x	x
2	Valid	Valid	x	Cut Feed	x
3	Valid	Valid	x	Tear Bar Feed	x
8	Valid	Valid	x	x	Full Cut
9	Valid	Valid	x	Cut Feed	Full Cut
12	Valid	Valid	x	x	Partial Cut
13	Valid	Valid	x	Cut Feed	Partial Cut
32	Invalid	Invalid			
33	Invalid	Invalid			
36	Invalid	Invalid			
37	Invalid	Invalid			

(*) If an unsupported function is specified, it operates with supported features.

Cutter only mode: TearBar Feed -> Cut Feed

TearBar only model: Cut Feed -> TearBar Feed

Full cut only model: Partial Cut -> Full Cut

Partial Cut only model: Full Cut -> Partial Cut

ESC FF EM

[Name]   Execute EM mode
[Code]   ASCII   ESC   FF   EM
                Hex   1B   0C   19
                Decimal   27   12   25

[Defined Area] ---
[Initial Value] ---
[Function]   Executes EM mode.
                It runs the operation specified in EM mode setting command (ESC * r e n NUL).
                If raster data exists in the image buffer for raster mode, EM mode is implemented after printing.
                If raster data does not exist in the image buffer of raster mode, this command is executed.
                (TSP100IIU) if the print paper length to be cut is less than 24mm, then empty feed is automatically added before cutting so that the printing paper length is 24mm.

ESC FF LF

[Name]   Execute LF mode
[Code]   ASCII   ESC   FF   LF
                Hex   1B   0C   0A
                Decimal   27   12   10

[Defined Area] ---
[Initial Value] ---
[Function]   Executes LF mode.
                Nothing operates at the time when this command is processed.
                Then, when a certain period of time elapses without any data being received, it starts printing.
                However, if there is no non-printed data in the printer, it will not execute a line break or operate FormFeed even if this command is received.
                If the printer is command emulator mode, print out unprinted data and perform a line break.
                If the printer is raster mode, printing will perform a FormFeed operation by the page length setting.

3-3) USB Interface Related Command Details

The following command is a command to control the function of the USB interface.

−−− Specification(1) −−−

ESC # # W n , d1 d2. . .   dk LF NUL

[Name]	Register USB serial number										
[Code]	ASCII	ESC	#	#	W	n	,	d1	d2 . . .	dk	LF	NUL
	Hex	1B	23	23	57	n	2C	d1	d2 . . .	dk	LF	NUL
	Decimal	27	35	35	87	n	44	d1	d2 . . .	dk	LF	NUL

[Defined Area] n = 56 ("8")

When registering serial number : $48 \leqq d \leqq 57$ ("0" $\leqq d \leqq$ "9"), $65 \leqq d \leqq 90$ ("A" $\leqq d \leqq$ "Z")

When clearing serial number : d = 63 ("?")   k = n

[Initial Value]   ---

[Function]   Executes USB serial number registration.

After registration, the printer executes a soft reset, but at this time disconnect/reconnect of the USB-I/F is not performed, and the serial number before the value is changed is maintained.

In order to enable the registered serial number, it is necessary to power on again.

When initializing the serial number, insert "?" for all serial number data.

−−− Specification(2) −−−

ESC # # W n , d1 d2. . . dk LF NUL

【Name】	Register USB serial number										
【Code】	ASCII	ESC	#	#	W	n	,	d1	d2 . . .	dk	LF NUL
	Hex	1B	23	23	57	n	2C	d1	d2 . . .	dk	LF NUL
	Decimal	27	35	35	87	n	44	d1	d2 . . .	dk	LF NUL

【Defined Area】

When registering serial number(8 digits)   : n = 56 ("8")

When registering serial number(16 digits)   : n = 16

When registering serial number(8, 16 digits)   : $48 \leqq d \leqq 57$ ("0" $\leqq d \leqq$ "9")、$65 \leqq d \leqq 90$ ("A" $\leqq d \leqq$ "Z")

When initializing the serial number   : d = 63 ("?")   k = n

[Initial Value]   ---

【Function】Executes registration of 8 digits USB serial number or 16 digits one

After registration, the printer executes a soft reset, but at this time disconnect/reconnect of the USB-I/F is not performed, and the serial number before the value is changed is maintained.

In order to enable the registered serial number, it is necessary to power on again.

When initializing the serial number, insert "?" for all serial number data.

3-4) Print Mode Command Details

The following command is a command to control the printing mode.

--- Specification (1) power saving mode not compatible models ---

ESC RS C n

[Name]	Select/Cancel two-color print mode				
[Code]	ASCII	ESC	RS	C	n
	Hex	1B	1E	43	n
	Decimal	27	30	67	n

[Defined Area] 0≦n≦1, 48≦n≦49 ("0" ≦n≦"1")
[Initial Value] n = 0, 48
[Function] Selects/Cancels two-color print mode
This setting value is initialized with a soft reset.

n	Selects/Cancels two-color print mode
0, 48	Release two-color printing mode (setting of monochromatic print mode) When in two-color printing mode, delete the two-color mode with this command. If you already have deleted two-color printing mode, this command is ignored. When the two-color printing mode is released with this command, the following process is executed ・If there is a non-printed data, print the non-printed data in a two-color mode. ・Initialize the print color (two-color printing mode set to black) ・Set the print density setting in the monochromatic print mode ・Set the print speed setting in the monochromatic print mode
1, 49	Select two-color print mode When in monochromatic printing mode, select two-color printing mode with this command If the two-color printing mode is already selected, the command is ignored When the two-color printing mode is selected by this command, the following process is executed ・If there is unprinted data, and prints the unprinted data in the monochrome mode ・Initialize the print color (two-color printing mode is set to black) ・And set the print density setting in the two-color printing mode

--- Specification (2) power saving mode compatible model ---

ESC RS C n

[Name]   Select print mode

[Code]

ASCII	ESC	RS	C	n
Hex	1B	1E	43	n
Decimal	27	30	67	n

[Defined Area] $0 \leqq n \leqq 1$, $48 \leqq n \leqq 49$ ("0" $\leqq n \leqq$ "1")

[Initial Value] n = 0, 48

[Function]   Selects the print mode.

DIPSW setting	n	Printing Mode
Enable energy-saving	0, 48	Invalid
	1, 49	Invalid
Disable energy-saving	0, 48	Selection of standard print mode
	1, 49	Selection of two-color printing mode

Setting details when selecting and canceling two-color print mode are as follows.

Selects/Cancels two-color print mode	Configuration details
When disengaged 　When the standard print mode is selected	When the two-color printing mode is released with this command, the following process is executed ・If there is a non-printed data, print the non-printed data in a two-color mode. ・Initialize the print color (two-color printing mode is set to black) ・Set the print density setting in the monochromatic print mode ・Set the print speed setting in the monochromatic print mode
When selected 　When two-color printing mode is selected	When the two-color printing mode is selected by this command, the following process is executed ・If there is unprinted data, and prints the unprinted data in the monochrome mode ・Initialize the print color (two-color printing mode is set to black) ・And set the print density setting in the two-color printing mode

--- Specification (3) tone print mode compatible models compatible ---

ESC RS C n

[Name]   Select print mode
[Code]   ASCII   ESC   RS   C   n
            Hex   1B   1E   43   n
            Decimal   27   30   67   n

[Defined Area] 0≦n≦1, 48≦n≦49 ("0"≦n≦"1"), 8≦n≦8
[Initial Value] n = 0, 48
[Function]   Selects the print mode.

n	Select print mode
0, 48	Selection of monochromatic print mode When in two-color printing mode/gradation printing mode, select monochromatic printing mode with this command If the monochromatic printing mode is already selected, the command is ignored When the monochromatic printing mode is selected with this command, the following process is executed ・ If there is non-printed data, print the non-printed data with the current print mode (two-color printing mode/gradation print mode) ・Initialize the print color (two-color printing mode is set to black) ・Set the print density setting in the monochromatic print mode ・Set the print speed setting in the monochromatic print mode
1, 49	Selection of two-color printing mode When in monochromatic printing mode/monochromatic print mode, select two-color printing mode with this command If the two-color printing mode is already selected, this command is ignored When the two-color printing mode is selected by this command, the following process is executed ・ If there is non-printed data, print the non-printed data with the current print mode (monochromatic print mode/gradation print mode) ・Initialize the print color (two-color printing mode is set to black) ・And set the print density setting in the two-color printing mode (Printing speed fixed in the two-color printing mode)
8, 56	Selection of tone print mode When in monochromatic printing mode/two-color print mode, select gradation printing mode with this command If the gradation printing mode is already selected, this command is ignored When the gradation printing mode is selected with this command, the following process is executed ・ If there is non-printed data, print the non-printed data with the current print mode (monochromatic print mode/two-color print mode) ・ Initialize the printing gradation (set to the tone mode gradation 1) ・Set the print density setting in the monochromatic print mode (Printing speed fixed in the gradation printing mode)

ESC RS S n

[Name]   Select print startup setting

[Code]   ASCII   ESC   RS   S   n

              Hex   1B   1E   53   n

              Decimal   27   30   83   n

[Defined Area] $0 \leqq n \leqq 1$

                $48 \leqq n \leqq 49$

[Initial Value] Memory Switch Settings

[Function]   Selects the print startup setting.

                If the settings will not change when processing this command, the command is not executed.

                If unprinted data exists when processing this command, the data is printed out and then the command is executed.

                If printing when processing this command, the command waits for printing to stop and changes the print startup setting.

                This command setting is initialized by a printer reset.

Parameter details

n	print startup setting
0, 48	Page
1, 49	Line

3-5) Printer Information Related Commands Details

ESC GS (S n m [d1...dm]

[Name]	Register/Clear printer information	
[Code]	ASCII ESC GS (S n m [d1 . . dm]	
	Hex 1B 1D 28 53 n m [d1 . . dm]	
	Decimal 27 29 40 83 n m [d1 . . dm]	

[Defined Area] n = 5

When registering information:

Defined region of m is as in the following table

$48 \leqq d \leqq 57$ ("0"$\leqq$d$\leqq$"9"), $65 \leqq d \leqq 90$ ("A"$\leqq$d$\leqq$"Z"), $97 \leqq d \leqq 122$ ("a"$\leqq$d$\leqq$"z")

When clearing information:

m = 0

[Initial Value] ---

[Function]   Parameter details

・ n : Register information

・ m   : Registered number of data against information

・ d : Registration data

This command is, in addition to the printer information that is set at the factory, is a command for the user to arbitrarily register and clear the printer information.

This command can be specified at the beginning of a line.

However, if there is unprinted data in the line buffer, print the data in the line buffer and execute this command.

If it is determined that there are no problems with the parameter n and m, start processing this command.

If n or m was outside the definition, abort the command analysis.

After the registration is finished or the enforced termination of registration process, execute the printer set.

During the registration process (between the first parameter which is judged OK to when the initialization of the printer is completed after registration), error processing, mechanical operation, status processing and such are not executed.

When clearing registration information, specify m = 0.

n	m	Register information	Usage example
0		Reserved	
1		Reserved	
2		Reserved	
3		Reserved	
4		Reserved	
5	$1 \leqq m \leqq 16$	Product serial number	2284210080600197
6		Reserved	
7		Reserved	

ESC GS) I pL pH fn

[Name]	Send printer information						
[Code]	ASCII	ESC	GS	)	I	pL	pH	fn
	Hex	1B	1D	29	49	pL	pH	fn
	Decimal	27	29	41	73	pL	pH	fn

[Defined Area]　　pL = 1, pH = 0
　　　　　　　　　fn = 49

[Function]　　　　Send information of the printer that has been set by "Command ESC GS (S".

However, when the printer information is not registered by ESC GS (S, or printer information is cleared, the printer information that was set at the factory is sent.

[More information]　Send in the following format.

ESC GS) I pL pH fn [Tag name=Parameter, Tag name=Parameter, ...] LF NUL

There is a tag name associated to the beginning of each parameter, and a parameter corresponding to each tag name is sent.

The tag name is up to the equal sign ("="), and after that is the parameter.

Each set of tags and parameters are separated with a delimiter "," and (2CH).

Printer information that is sent by this command is different depending on the model.

Information is transmitted from the top of the list shown below.

Only the information supported by the printer of the transmission source (a set of tags and parameters) is transmitted.

<LF> <NUL> represents the terminal, the tag and its parameters after that are not transmitted.

Parameters are sent as a string.

If the information can not be obtained, transmits the following data.

ESC GS) I pL pH fn LF NUL

--- Specification(1) ---

transmission	Tag		Parameter information	
↓	PrHwV	Printer main body HW version		
↓	PrSrN	Product serial number	up to 16 digits (Information less than 16 digits is NUL.)	
↓	BtDvN	Bluetooth device name	Fixed 16 digits (Information less than 16 digits is NUL.)	
↓	BtAtC	Bluetooth auto connection	Auto connection Invalid: BtAtC=00　　Valid:BtAtC=01	
↓	BtIpN	Bluetooth iOS port name	Fixed 16 digits (Information less than 16 digits is NUL.)	
↓	BtDsC	Bluetooth Search Permitted Setting	Search Prohibited: BtDsC=00 Search Permitted: BtDsC=01	

−−− Specification(2) −−−

transmission	Tag	Parameter information	
↓	PrHwV	Printer main body HW version	
↓	PrSrN	Product serial number	up to 16 digits (Information less than 16 digits is NUL.)
↓	UsSrN	USB serial number	
↓	BtDvN	Bluetooth device name	Fixed 16 digits (Information less than 16 digits is NUL.)
↓	BtAtC	Bluetooth auto connection	Auto connection Invalid: BtAtC=00 Valid:BtAtC=01
↓	BtIpN	Bluetooth iOS port name	Fixed 16 digits (Information less than 16 digits is NUL.)
↓	BtDsC	Bluetooth Search Permitted Setting	Search Prohibited: BtDsC=00 Search Permitted: BtDsC=01

ESC # * LF NUL

[Name]   Inquire printer version
[Code]   ASCII   ESC   #   *   LF   NUL
              Hex   1B   23   2A   0A   00
              Decimal   27   35   42   10   0

[Defined Area]   ---
[Initial Value] ---
[Function]   Sends the printer version.
                     ESC # * , print version LF NUL
                         <Example TSP100IIIW Ver1.0： ESC # * , TSP100IIIWVer1.0 LF NUL >

3-6) Customer display Commands

Applicable Customer display
  Refer to the printer's specification manuals.

ESC GS B @

[Name]   Send data to a customer display
[Code]   ASCII   ESC   GS   B   @   n1   n2   d1   ・・・ dk
          Hex.   1B   1D   42   40   n1   n2   d1   ・・・ dk
          Decimal   27   29   66   64   n1   n2   d1   ・・・ dk

[Defined Area]   n1+n2x256 : BYTE count (1≤d≤65535)
                      k   : n1+ n2x256
[Initial Value]   - - -
[Function]   The customer display command is sent to a customer display.

ESC RS B A

[Name]   Status request
[Code]   ASCII   ESC   RS   B   A
          Hex.   1B   1E   42   41
          Decimal   27   30   66   65

[Defined Area]   - - -
[Initial Value]   - - -
[Function]   Receives the printer status

                      The customer display status transmission format from the printer
                      <ESC> <RS> B A n

Bit (n)	Status
0	No data in customer display buffer
	Data exists in customer display buffer
1	No connection of customer display
	Customer display is connected to the printer
2 – 7	Reserved

ESC GS B B

[Name]   Customer display data request

[Code]   ASCII   ESC   GS   B   B
         Hex.   1B   1D   42   42
         Decimal   27   29   66   66

[Defined Area]   - - -
[Initial Value]   - - -
[Function]   Acquire customer display data from a customer display.

The customer display data transmission format from the printer
<ESC><GS> B B n1 n2 d1・・・dk

n1+n2x256 : BYTE count (1≦d≦65535)
k   : n1 + n2 x 256

ESC GS B C

[Name]   Buffer clear

[Code]   ASCII   ESC   GS   B   C
         Hex.   1B   1D   42   43
         Decimal   27   29   66   67

[Defined Area]   - - -
[Initial Value]   - - -
[Function]   A customer display buffer of a printer is cleared.

4. APPENDIX

4-1) Appendix-1 Standard Status

Standard status, is a status group which is returned from the printer to the query from the host. Standard status is structured with "Header 1" + "Header 2" + "multiple-byte Printer Status", and is returned continuously to the host. Host will, for every 1 byte received, according to the identification method, execute data identification.
Standard status, is always replying to inquiries from the host.

Header 1

Header 1 is a 1-byte length information that is sent to the head of a standard status.
The structure of header 1 is as indicated in the following chart. Header 1, displays the sent bit number for the overall status that includes bit 1 to bit 3, and bit 5bit and header 1. Host acquires the sent byte number information and always receives the status data for the sent byte number. For reference, the relationship between the transmission bit count and header 1 is as shown in the chart below. This data, because the header 1 to indicate it is bit 0 is always 1 (the second and subsequent bytes always 0), so when detecting the header 1 just confirm that bit 0 = 1 and bit 4 = 0. In addition, bit 6 for future expansion, is ignored by host-side processing.

< Header 1 (the first byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	0	0	0	0	0	0	0	0	0
6	Reserved (0 fixed)		-	0	0	0	0	0	0	0	0	0
5	Print status number of bytes			1	1	1	1	1	1	1	1	1
4	Fixed at "0"		-	0	0	0	0	0	0	0	0	0
3	Print status number of bytes			0	0	0	0	0	0	0	0	0
2	Print status number of bytes			0	0	0	0	0	0	0	0	0
1	Print status number of bytes			1	1	1	1	1	1	1	1	1
0	Fixed at "1"	-		1	1	1	1	1	1	1	1	1

The actual number of bytes sent and the support table for header 1

Number of bytes sent n (7≦n≦15)	Header 1
7	00001111B (0F Hex)
8	00100001B (21 Hex)
9	00100011B (23 Hex)
10	00100101B (25 Hex)
11	00100111B (27 Hex)
12	00101001B (29 Hex)
13	00101011B (2B Hex)
14	00101101B (2D Hex)
15	00101111B (2F Hex)

Header 2

Header 2 is a 1-byte length information which is transmitted to the second byte of the standard status. Structure of the header 2 in the table below.

Header 2, for bit 1 to bit 3, and bit 5 is indicating the standard status version (standard status version).

The relationship of the actual version and header 2 is as shown in the chart below. Standard status version is to up new information for the bit position of the printer status that is empty until the addition of new feature in the future.

If you do not maintain the standard status version on the host side, it is okay to ignore the received header 2.

< Header 2 (the second byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	0	0	0	0	0	0	0	0	0
6	Not used (Fixed at "0")		-	0	0	0	0	0	0	0	0	0
5	Version number			0	0	0	0	0	0	0	0	0
4	Fixed at "0"		-	0	0	0	0	0	0	0	0	0
3	Version number			0	0	0	0	0	0	0	0	0
2	Version number			1	1	1	1	1	1	1	1	1
1	Version number			1	1	1	1	1	1	1	1	1
0	Fixed at "0"	-		0	0	0	0	0	0	0	0	0

Support table between actual standard status version and header 2

Version number n	Header 2
1	00000010B (02 Hex)
2	00000100B (04 Hex)
3	00000100B (06 Hex)
4	00001000B (08 Hex)
5	00001010B (0A Hex)
6	00001100B (0C Hex)
7	00001110B (0E Hex)
8	00100000B (20 Hex)
9	00100010B (22 Hex)
. . .	. . .
30	01101100B (6C Hex)
31	01101110B (CE Hex)

Printer status

The printer status is the status itself that is sent for the 3rd byte onwards for the standard status.

Printer status is (the 2 sent bytes that is attached to header 1) which is returned.

The printer status will always be updated to the newest information. (History does not exist)

The configuration of the status body is shown below.

< Printer Status 1 printer state (third byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	-			-	-	-	-	-	-	-	-	-
5	Cover status	CLOSE	OPEN	OK	OK	OK	OK	OK	OK	OK	OK	OK
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	ON-LINE／OFF-LINE status	ON-LINE	OFF-LINE	OK	OK	OK	OK	OK	OK	OK	OK	OK
2	Compulsion SW	OPEN	CLOSE	OK	OK	OK	OK	OK	OK	OK	OK	OK
1	<ETB> command	Not executed	Already executed	OK	OK	OK	OK	OK	OK	OK	OK	OK
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

・ <ETB> command

Cleared to 0 when sent back to the host

< Printer Status 2 error information (fourth byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	Stopped due to print head high temperature	Is not stopped	Is stopped	OK	OK	OK	OK	OK	OK	OK	OK	OK
5	Unrecoverable error	No error	Error occurs	OK	OK	OK	OK	OK	OK	OK	OK	OK
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	Auto cutter error	no error	Error occurs	OK	OK	OK	OK	OK	OK	OK	OK	OK
2	-			-	-	-	-	-	-	-	-	-
1	Not used (Fixed at "0")			-	-	-	-	-	-	-	-	-
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

< Printer Status 3 error information (fifth byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	-			-	-	-	-	-	-	-	-	-
5	-			-	-	-	-	-	-	-	-	-
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	-			-	-	-	-	-	-	-	-	-
2	-			-	-	-	-	-	-	-	-	-
1	-			-	-	-	-	-	-	-	-	-
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

< Printer Status 4 error information (sixth byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	Not used (Fixed at "0")		-	-	-	-	-	-	-	-	-	-
5	Not used (Fixed at "0")		-	-	-	-	-	-	-	-	-	-
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	Paper end	Has paper	No paper	OK	OK	OK	OK	OK	OK	OK	OK	OK
2	-			-	-	-	-	-	-	-	-	-
1	-			-	-	-	-	-	-	-	-	-
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

< Printer Status 5 error information (seventh byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	Not used (Fixed at "0")		-	-	-	-	-	-	-	-	-	-
5	Not used (Fixed at "0")		-	-	-	-	-	-	-	-	-	-
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	-			-	-	-	-	-	-	-	-	-
2	-			-	-	-	-	-	-	-	-	-
1	-			-	-	-	-	-	-	-	-	-
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

< Printer Status 6 ETB counter (eighth) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	ETB counter Bit-4			OK	OK	OK	OK	OK	OK	OK	OK	OK
5	ETB counter Bit-3			OK	OK	OK	OK	OK	OK	OK	OK	OK
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	ETB counter Bit-2			OK	OK	OK	OK	OK	OK	OK	OK	OK
2	ETB counter Bit-1			OK	OK	OK	OK	OK	OK	OK	OK	OK
1	ETB counter Bit-0			OK	OK	OK	OK	OK	OK	OK	OK	OK
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

(*) ETB counter

This counter is the ETB counter of 5 bits.
(0-31 count possible. If the counter overflows, it counts up to 31 -> 0.)
This counter is incremented by one by the <ETB> command.
The ETB counter is initialized with the following command. In this case, ETB status for standard status is also cleared.

<ETB counter initialization command >
・ <ESC><RS> e n   : ETB counter initialization

< Printer Status 7 presenter paper position (9th byte) >

Bit		Condition		TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
		"0"	"1"									
7	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
6	Not used (Fixed at "0")		-	-	-	-	-	-	-	-	-	-
5	Not used (Fixed at "0")		-	-	-	-	-	-	-	-	-	-
4	Fixed at "0"		-	-	-	-	-	-	-	-	-	-
3	-			-	-	-	-	-	-	-	-	-
2	-			-	-	-	-	-	-	-	-	-
1	-			-	-	-	-	-	-	-	-	-
0	Fixed at "0"		-	-	-	-	-	-	-	-	-	-

Status identification method

COMMAND FUNCTION LIST	Status							
	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Normal status (Header 1)	0	*	*	0	*	*	*	1
Normal status (except header 1)	0	*	*	0	*	*	*	0

0 = "0" represents fixed bit / 1 = "1" represents fixed bit / * = represents the changing bit

4-2) Appendix-2 Printer Status Transmission Specification for Wireless Ethernet I/F and LAN I/F

Describes the printer status transmission specification for the Ethernet I/F and wireless LAN I/F.

1) Transmission format

　・ If you want to send only STAR ASB
　　 | STAR ASB (2nd byte Bit-7=1) | + | Length | (Length = 0x0000)
　・ If you want to send printer status transmission other than STAR ASB
　　 | STAR ASB (2nd byte Bit-7=1) | + | Length | + | Status Data |

　　　 <Length details>
　　・ 2-byte value indicating the number of bytes of status data (0x0000 $\leqq$ Length $\leqq$ 0x0200)
　　・ If Status data is 10 bytes, Length = 0x000a
　　・ If sending only STAR ASB, add Length = 0x0000
　　・ If length is added to STAR ASB second byte Bit-7, then is set to Bit-7 = 1

Detect whether analysis of status detects all the bytes for ASB for the first byte STAR ASB, and length is added to the bit-7 for the 2nd byte for STAR ASB. Furthermore by obtaining the number of bytes of subsequent Status Data with the length, analyzed status is possible.

2) Transmission format for | status data |

| Status Type | + | delimiter 1 | + | Data Type | + | Status Length | + | *Printer Status* | + | delimiter 2 |

　(1) Status Type (2byte or 4Byte)
　　・ < Header 1 (the second byte) >
　　　 It indicates the cause of printer status
　　　 For more information refer to 3) status transmission specification list reference
　　・ 3rd and 4th byte
　　　 If the occurrence factors of command, indicating the n parameters of command
　　　 If the n parameter does not exist, third and fourth byte is optional
　　　　 <Example> When ESC SYN 3 n command is n = 0x31, the 3rd and 4th byte is "31"

　(2) Delimiter 1 (1 byte)
　　 Transmit ":"

　(3) Data Type (1byte)
　　 Indicate the data type of the Printer Status, and send "B" (the binary type)

　(4) Status Length (2byte)
　　 2-byte value that indicates the number of bytes in the Printer Status

　(5) Printer Status (variable length)
　　 Status transmitted by the printer
　　 Status contents are different due to the occurrence factor
　　 For more information on status content, refer to cause of command, and automatic status

　(6) Delimiter 2 (1 byte)
　　 Transmit ";"

3) Status transmission specification list

| Status causes | STAR ASB | Length | Status Data | | | | | | |
| | | | Status Type | | Delimiter 1 | Data Type | Status Length | Printer Status | Delimiter 2 |
			The first and second byte occurrence factor	Third and fourth byte n parameter					
ASB Automatic status (*1)	ASB	0x0000	——	——	——	——	——	——	——
ESC ACK SOH Printer Status Request	ASB	0x0000	——	——	——	——	——	——	——
ESC # * Request printer version	ASB	Variable length	"11"	Abridgment	":"	"B"	Variable length	Status	";"
ESC GS ETX s5 Setting request for time-out	ASB	0x000F	"23"	Abridgment	":"	"B"	0x0008	Status	";"
ESC GS) P fn49 ESC GS) I fn49 Request command response	ASB	Variable length	"A1"	Abridgment	":"	"B"	Variable length	Block Data	";"

(∗1) For automatic status it is delivered to all hosts in the TCP # 9100 port connection.

4-3) Appendix-3 Device Status Specification (USB Interface Only)

Device Status is a 1-byte status which is returned for the GET_PORT_STATUS request from the USB host.

Device status specification

Bit	Field	1	0
7 .. 6	Reserved	-	
5	Paper Empty	Paper Empty	Paper Not Empty
4	Select	Selected	Not Selected
3	Not Error	Not Error	Error
2 .. 0	Reserved	-	

4-4) Appendix-6 Supported Command List by Models

● Standard Commands

Class	Command	TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
External device drive	ESC BEL	OK	OK	OK	OK	OK	OK	OK	OK	OK
	BEL	OK	OK	OK	OK	OK	OK	OK	OK	OK
	FS	OK	OK	OK	OK	OK	OK	OK	OK	OK
	SUB	OK	OK	OK	OK	OK	OK	OK	OK	OK
	EM	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC GS BEL	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC GS EM DC1	V1.3~	OK	OK	OK	OK	OK	OK	OK	OK
	ESC GS EM DC2	V1.3~	OK	OK	OK	OK	OK	OK	OK	OK
Print settings	ESC RS A	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC RS d	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC RS r	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC GS c	No	No	OK	No	No	Ver2.0 or later	Ver2.0 or later	Ver2.0 or later	No
Status	ESC RS a	No	No	No	No	No	Ver1.4 or later	Ver1.3 or later	OK	OK
	ESC ACK SOH	No	No	No	No	No	Ver1.4 or later	Ver1.3 or later	OK	OK
	ETB	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC RS E	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC GS ETX	No	No	No	No	No	Ver1.4 or later	Ver1.3 or later	OK	OK
Other	ESC GS #	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC ?	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC GS L DC1	No	No	No	No	No	OK	OK	OK	OK
	ESC GS L DC2	No	No	No	No	No	OK	OK	OK	OK

● Raster related commands

Class	Command	TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
Raster	ESC * r R	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r A	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r B	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r C	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r D	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r E	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r F	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r P	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r Q	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r m l	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r m r	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r t	No	No	OK	No	No	No	No	No	No
	ESC * r K	OK	OK	OK	OK	OK	V1.4 or later	V1.3 or later	OK	OK
	b n1 n2 d1. . . dk	OK	OK	OK	OK	OK	OK	OK	OK	OK
	k n1 n2 d1. . . dk	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r Y	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC FF NUL	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC FF EOT	OK	OK	OK	OK	OK	OK	OK	OK	OK
Raster extension	ESC * r a	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r b	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC * r e	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC FF EM	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ESC FF LF	OK	OK	OK	OK	OK	OK	OK	OK	OK

● USB-I/F related commands

Class	Command	TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
USB-I/F	ESC # # W	(1)	(1)	(1)	(1)	No	No	No	No	(2)

● Print mode related commands

Class	Command	TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIB	TSP100 IIIU
Select print mode	ESC RS C	(1)	(2)	(1)	(1)	(1)	Ver1.4 or later (1)	Ver1.3 or later (1)	(1)	(1)
	ESC RS S	No	No	No	No	No	Ver1.4 or later	Ver1.3 or later	OK	OK

● Printer information related commands

Class	Command	TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
Register printer information	ESC GS (S	No	No	No	No	No	OK	OK	OK	OK
Send printer information	ESC GS) I	No	No	No	No	No	Ver1.5 or earlier (1) Ver2.0 or later (2)	Ver1.5 or earlier (1) Ver2.0 or later (2)	Ver1.1 or earlier (1) Ver2.0 or later (2)	(2)
	ESC # *	No	No	No	No	No	OK	OK	OK	OK

● Customer display related Commands

Class	Command	TSP100 U	TSP100 PU	TSP100 IIU	TSP100 GT	TSP100 LAN	TSP100 IIIW	TSP100 IIILAN	TSP100 IIIBI	TSP100 IIIU
Customer display	ESC GS B @	No	No	No	No	No	No	No	No	OK
	ESC RS B A	No	No	No	No	No	No	No	No	OK
	ESC GS B B	No	No	No	No	No	No	No	No	OK
	ESC GS B C	No	No	No	No	No	No	No	No	OK