Line Thermal Printer

Command Emulator
STAR Line Mode
Command Specifications

Revision 0.01

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Special Products Division

Table of Contents

This is the Command Emulator Command Specifications Manual created based on Command Emulator dedicated commands and the Star Line Mode Command Specifications Manual.

Information contained herein applies to the following models.

< Applicable Models>
- TSP100
- TSP700II

1. Command Emulator

The commands outlined below are dedicated to the Command Emulator.

1-1) Command List

Commands	Name
ESC US A	Set print region with in mm units
ESC US f	Switch to country of destination
ESC US p	Specify delimiter

1-2) Command Details

ESC US A

[Name]	Set print region with in mm units				
[Code]	ASCII	ESC :	US	A	n
	Hexadecimal	1B	1F	41	n
	Decimal	27	31	65	n

[Defined Area] $0 \leq n \leq 255$
[Initial Value]   Depends on Config setting
[Function]   Sets the printer region width to n mm.
This sets the print region width when processing this command, and unprinted data remaining in the expanded buffer is printed.
The print region width is set by left side alignment.
The left and right margin settings are initialized.
The print region width is set by left alignment so the horizontal tab positions are not initialized.
ESC @ initialize this command setting. (Returns to the Config setting)

ESC US f

[Name]	Switch to country of destination				
[Code]	ASCII	ESC :	US	f	n
	Hexadecimal	1B	1F	66	n
	ecimal	27	31	102	n

[Defined Area] $0 \leq n \leq 4$
$48 \leq n \leq 52$ ("0" $\leq n \leq$ "4")
[Initial Value]   Depends on Config setting
[Function]   Specifies country of destination.
ESC @, and CAN initialize this command setting. (Returns to the Config setting)

n	Country of Destination
0 ,"0"	SBCS
1 ,"1"	Japan
2 ,"2"	China
3 ,"3"	Taiwan
4 , "4"	Korea

Only in STAR Line Mode; See the specifications below.
The default ANK pitch is switched by the memory switch writing command <ESC> <GS> #.

	Default	International Characters		Code Page	
	ANK Pitch	De-fault	<ESC> "R" n	Default	<ESC><GS> "t" n
SBCS	12/15 dots	USA	Command Enabled	Normal	Command Enabled
Japan	12/15 dots	Japan	Command Disabled (Ignores 3 Bytes)	Normal (Katakana)	Command Disabled (Ignores 4 Bytes)
China	13/15 dots	USA	Command Enabled	Normal (Katakana)	Command Disabled (Ignores 4 Bytes)
Tai-wan	13/15 dots	USA	Command Enabled	Normal (Katakana)	Command Disabled (Ignores 4 Bytes)
Korea	13/15 dots	Korea	Command Disabled (Ignores 3 Bytes)	Normal (Katakana)	Command Disabled (Ignores 4 Bytes)

ESC US p

[Name]	Specify delimiter				
[Code]	ASCII	ESC :	US	p	n
	Hexadecimal	1B	1F	70	n
	Decimal	27	31	112	n

[Defined Area] $0 \leq n \leq 3$
              $48 \leq n \leq 51$ ("0" $\leq n \leq$ "3")
[Initial Value]   ———
[Function]   Specifies delimiter.

n	Content
0 ,"0"	Top of document
1 ,"1"	Top of page
2 ,"2"	Bottom of page
3 ,"3"	Bottom of document

This command determines the printing job data boundary for the command emulator plug-in.
The plug-in finds these delimiters and executes a process.
If the command emulator plug-in is not registered, these delimiters are ignored.

1-3)   List of Compatible Models

Class	Commands	Model Name						
		TSP100	**TS-P700II**					
Command Emulator Special Commands	ESC US A	○	○					
	ESC US f	○	○					
	ESC US p	○	○					

2. STAR Line Mode

2-1) Command List

• Refer to the Star Line Mode Command Specifications for details of the commands.
• Font Style and Character Set

Com- mands		Difference to F/W Specifications (When applicable)
ESC RS F	Select font	4 bytes ignored
ESC GS t	Specify code page	IBM block uses vertical 24 dot fonts (for ESC/POS)
ESC GS =	Write blank code page data	*1
ESC R	Specify international character set	
ESC /	Specify/cancel slash zero	
ESC SP	Set ANK right space	
ESC M	Specify ANK 12 dot pitch	
ESC P	Specify ANK 15 dot pitch	
ESC :	Specify ANK 16 dot pitch	
ESC g	Specify ANK 14 dot pitch	

• Character Expansion Settings

Com- mands		Difference to F/W Specifications (When applicable)
ESC i	Set/cancel the double wide/high printing	
ESC W	Set/cancel the double wide printing	
ESC h	Set/cancel the double high printing	
SO	Set double wide printing	
DC4	Cancel double wide printing	
ESC SO	Set printing vertical double high characters	
ESC DC4	Cancel printing magnified character height	

• Print Modes

Commands		Difference to F/W Specifications (When applicable)
ESC E	Select emphasized printing	
ESC F	Cancel emphasized printing	
ESC -	Select/cancels underline mode	
ESC _	Select/cancels upperline mode	
ESC 4	Selects white/black inverted printing	
ESC 5	Cancel white/black inverted printing	
SI	Selects upside-down printing	
DC2	Cancel upside-down printing	

• Line Spacing

Com- mands		Difference to F/W Specifications (When applicable)
LF	Line feed	
CR	Carriage return (same as line feed)	
ESC a	Feed paper n lines	
ESC z	Select line feed amount	
ESC 0	Specify line feed to 3 mm	
ESC J	n/4 mm line feed	
ESC I	n/8mm line feed	

• Page Control

Com-mands		Difference to F/W Specifications (When applicable)
FF	Form feed	
ESC C	Set page length to n lines	
ESC C 0	Set page length in 24 mm units	
VT	Feed paper to vertical table position	
ESC B	Set vertical tab position	

• Horizontal Direction Position

Com-mands		Difference to F/W Specifications (When applicable)
ESC I	Set left margin	Enabled only at top of line (Specification 2 of the Star Line Mode Command Specifications)
ESC Q	Set right margin	Enabled only at top of line (Specification 2 of the Star Line Mode Command Specifications)
HT	Move print position to horizontal tab position	
ESC D	Set/cancel horizontal tab position	Reference point is lefts edge of paper (same as TSP1000)
ESC GS A	Move absolute position	
ESC GS R	Move relative position	
ESC GS a	Specify position alignment	

• Download

Commands		Difference to F/W Specifications (When applicable)
ESC &	Register/delete download characters	
ESC %	Set/cancel download characters	

• Bit Image Graphics

Commands		Difference to F/W Specifications (When applicable)
ESC K	Standard density bit image	Prints only printable protion when counter exceeds print region.
ESC L	High density bit image	
ESC k	Fine bit image	
ESC X	Fine bit image (wire dot conversion)	

• Logos

Commands		Difference to F/W Specifications (When applicable)
ESC FS q	Register logo data	*1
ESC FS p	Print logo data	Registration size up to 65535 x 65535 (normally 1023 x 288)

• Bar Codes

Commands		Difference to F/W Specifications (When applicable)
ESC b	Print bar code	

• Cutter Control

Commands		Difference to F/W Specifications (When applicable)
ESC d	Paper cut instruction	

• External Device Drive

Commands		Difference to F/W Specifications (When applicable)
ESC BEL	Set pulse width for external device drive	
BEL	External device 1 drive instruction	
FS	External device 1 drive instruction	
SUB	External device 2 drive instruction	
EM	External device 2 drive instruction	
ESC GS BEL	Ring buzzer	

• Print Setting

Commands		Difference to F/W Specifications (When applicable)
ESC RS d	Set print density	
ESC RS r	Set print speed	

• Status

Commands		Difference to F/W Specifications (When applicable)
ESC RS a	Set status transmission conditions	4 bytes ignored
ESC ACK SOH	Real-time printer status (ASB Status)	When using a serial port emulator, operations are possible.
ENQ	Real-time printer status (1)	
EOT	Real-time printer status (2)	
ETB	Update of ETB status	1 byte ignored
ESC RS E	Clear ETB counter, ETB status	4 bytes ignored

• Chinese Characters

Commands		Difference to F/W Specifications (When applicable)
ESC p	Set to JIS Chinese character mode	
ESC q	Cancel JIS Chinese character mode	
ESC $	Set/cancel JIS Chinese character mode	
ESC s	Set two byte Chinese characters left/right spaces	
ESC t	Set 1 byte Chinese characters left/right spaces	
ESC r	Register Chinese download characters	

• Others

Commands		Difference to F/W Specifications (When applicable)
CAN	Cancel print data and initialize commands	Does not clear reception buffer Not real-time command.
ESC @	Command initialization	
ESC GS #	Set memory switch	*2
ESC ?	Reset printer	Only reset command (command for manufacturing unsupported)

• Raster

Commands		Difference to F/W Specifications (When applicable)
ESC * r R	Initialize raster mode	2 bytes ignored
ESC * r A	Enter raster mode	2 bytes ignored
ESC * r B	Quit raster mode	2 bytes ignored
ESC * r C	Clear raster data	2 bytes ignored
ESC * r D	Drawer drive	2 bytes ignored
ESC * r E	Set EOT mode	2 bytes ignored
ESC * r F	Set FF mode	2 bytes ignored
ESC * r P	Set page length	2 bytes ignored
ESC * r Q	Set print quality	2 bytes ignored
ESC * r m l	Set left margin	2 bytes ignored
ESC * r m r	Set right margin	2 bytes ignored
ESC * r T	Set top margin	2 bytes ignored
ESC * r K	Set print color	2 bytes ignored
b n1 n2 d1 … dk	Transfer raster data (auto line feed)	Processes from top of data as ASCII data
k n1 n2 d1 … dk	Transfer raster data	Processes from top of data as ASCII data
ESC * r Y	Move vertical direction position (Line feed for specified dots)	2 bytes ignored
ESC FF NUL	Execute form feed mode	2 bytes ignored
ESC FF EOT	Execute EOT mode	2 bytes ignored

• Black Mark

Com-mands		Difference to F/W Specifications (When applicable)
ESC d	Paper cut instruction	Same as operations in normal mode
FF	Form feed	
ESC C	Set page length to n lines	
ESC C 0	Set page length in 24 mm units	
VT	Feed paper to vertical table position	
ESC B	Set vertical tab position	

• 2-Color Printing

Com-mands		Difference to F/W Specifications (When applicable)
ESC RS c	Specify printing color in 2 color printing mode	
ESC RS C	Select/cancel 2 color printing mode	
ESC 4	Specify white/black inversion and printing color red	
ESC 5	Specify white/black inversion and printing color black	
ESC RS d	Set print density	
ESC RS r	Set printing speed	
ESC FS q	Register logo	*1
ESC FS p	Print logo	

• Presenter

Commands		Difference to F/W Specifications (When applicable)
ESC SYN 0	Execute presenter paper recovery	2 bytes ignored
ESC SYN 1	Set presenter automatic recovery function and recovery time	
ESC SYN 3	Acquire presenter paper counter	
ESC SYN 4	Initialize presenter paper counter	

• Mark Commands

Commands		Difference to F/W Specifications (When applicable)
ESC GS * 0	Print mark	3 bytes ignored
ESC GS * 1	Specify mark height and line feed amount	
ESC GS * 2	Specify mark color and horizontal width in each mark number	
ESC GS * W	Register mark format to non-volatile memory	
ESC GS * C	Initialize mark format from non-volatile memory	

• Auto Logo Commands

Commands		Difference to F/W Specifications (When applicable)
ESC GS / W	Register Auto Logo setting to non-volatile memory	3 bytes ignored
ESC GS / C	Initialize Auto Logo setting from non-volatile memory	
ESC GS / 1	Set ON/OFF for Auto Logo function	
ESC GS / 2	Set command characters	
ESC GS / 3	Set user macro 1	
ESC GS / 4	Set user macro 2	
ESC GS / 5	Set command character switching method	
ESC GS / 6	Set partial cut just prior to Auto Logo printing	

• PDF417 Commands

Commands		Difference to F/W Specifications (When applicable)
ESC GS x S 0	Set bar code size	3 bytes ignored
ESC GS x S 1	Set security level (ECC)	
ESC GS x S 2	Set module x direction size	
ESC GS x S 3	Set module aspect ratio	
ESC GS x D	Set bar code data	
ESC GS x P	Print bar code	
ESC GS x I	Get bar code expansion information	

• Print Start Trigger Control Commands

Commands		Difference to F/W Specifications (When applicable)
ESC GS g 0	Print starting trigger	3 bytes ignored
ESC GS g 1	Set print start timer	3 bytes ignored

• QR Code Commands

Commands		Difference to F/W Specifications (When applicable)
ESC GS y S 0	Set model	
ESC GS y S 1	Set error correction level	
ESC GS y S 2	Set cell size	
ESC GS y D 1	Set data (auto)	
ESC GS y D 2	Set data (manual)	
ESC GS y P	Print QR code	
ESC GS y I	Get expansion information (bar code size)	4 bytes ignored

*1 NV Logo, Blank Code Page Registration Commands
  TSP100: Write to xml file.
       After registration: Settings on the Command Emulator are initialized to the xml
       file contents. (<ESC> @ operation + clear external character registration)
  TSP700II: Register only on Command Emulator memory.
       When PC power is turned off, data is erased.

*2 Memory Switch Commands
  TSP100: Write to xml file. (No self-print)
       Not written to printer, but printer is reset.
  TSP700II: Set only on Command Emulator memory.
       Not written to printer, but printer is reset.
       When PC power is turned off, setting is erased.

2-2) List of Compatible Models

Class	Commands	Model Name						
		TSP100	**TS-P700II**					
Font Style and Character Set	ESC RS F	x	x					
	ESC GS t	○	○					
	ESC GS =	○	○					
	ESC R	○	○					
	ESC /	○	○					
	ESC SP	○	○					
	ESC M	○	○					
	ESC P	○	○					
	ESC :	○	○					
	ESC g	○	○					
Character expansion settings	ESC i	○	○					
	ESC W	○	○					
	ESC h	○	○					
	SO	○	○					
	DC4	○	○					
	ESC SO	○	○					
	ESC DC4	○	○					
Print modes	ESC E	○	○					
	ESC F	○	○					
	ESC -	○	○					
	ESC _	○	○					
	ESC 4	○	○					
	ESC 5	○	○					
	SI	○	○					
	DC2	○	○					
Line spacing	LF	○	○					
	CR	○	○					
	ESC a	○	○					
	ESC z	○	○					
	ESC 0	○	○					
	ESC J	○	○					
	ESC I	○	○					
Page Control	FF	○	○					
	ESC C	○	○					
	ESC C 0	○	○					
	VT	○	○					
	ESC B	○	○					
Horizontal Direction Position	ESC l	○	○					
	ESC Q	○	○					
	HT	○	○					
	ESC D	○	○					
	ESC GS A	○	○					
	ESC GS R	○	○					
	ESC GS a	○	○					
Download	ESC &	○	○					
	ESC %	○	○					

○ : OK
x : NG

Class	Commands	Model Name						
		TSP100	**TS-P700II**					
Bit Image Graphics	ESC K	○	○					
	ESC L	○	○					
	ESC k	○	○					
	ESC X	○	○					
Logos	ESC FS q	○	○					
	ESC FS p	○	○					
Bar Codes	ESC b	○	○					
Cutter control	ESC d	○	○					
External Device Drive	ESC BEL	○	○					
	BEL	○	○					
	FS	○	○					
	SUB	○	○					
	EM	○	○					
	ESC GS BEL	○	○					
Print Setting	ESC RS d	○	○					
	ESC RS r	○	○					
Status	ESC RS a	x	x					
	ESC ACK SOH	○	x					
	ENQ	○	○					
	EOT	○	○					
	ETB	x	x					
	ESC RS E	x	x					
Chinese Character	ESC p	○	○					
	ESC q	○	○					
	ESC $	○	○					
	ESC s	○	○					
	ESC t	○	○					
	ESC r	○	○					
Others	CAN	○	○					
	ESC @	○	○					
	ESC GS #	○	○					
	ESC ?	○	○					
Raster	ESC * r R	x	x					
	ESC * r A	x	x					
	ESC * r B	x	x					
	ESC * r C	x	x					
	ESC * r D	x	x					
	ESC * r E	x	x					
	ESC * r F	x	x					
	ESC * r P	x	x					
	ESC * r Q	x	x					
	ESC * r m l	x	x					
	ESC * r m r	x	x					
	ESC * r T	x	x					
	ESC * r K	x	x					
	b n1 n2 d1 … dk	x	x					
	k n1 n2 d1 … dk	x	x					
	ESC * r Y	x	x					
	ESC FF NUL	x	x					
	ESC FF EOT	x	x					

Class	Commands	Model Name							
		TSP100	TS-P700II						
Black mark related commands	ESC d	x	x						
	FF	x	x						
	ESC C	x	x						
	ESC C 0	x	x						
	VT	x	x						
	ESC B	x	x						
2-Color Printing	ESC RS c	○	○						
	ESC RS C	○	○						
	ESC 4	○	○						
	ESC 5	○	○						
	ESC RS d	○	○						
	ESC RS r	○	○						
	ESC FS q	○	○						
	ESC FS p	○	○						
Presenter	ESC SYN 0	x	x						
	ESC SYN 1	x	x						
	ESC SYN 3	x	x						
	ESC SYN 4	x	x						
Mark Commands	ESC GS * 0	x	x						
	ESC GS * 1	x	x						
	ESC GS * 2	x	x						
	ESC GS * W	x	x						
	ESC GS * C	x	x						
Auto Logo Commands	ESC GS / W	x	x						
	ESC GS / C	x	x						
	ESC GS / 1	x	x						
	ESC GS / 2	x	x						
	ESC GS / 3	x	x						
	ESC GS / 4	x	x						
	ESC GS / 5	x	x						
	ESC GS / 6	x	x						
PDF417 Commands	ESC GS x S 0	x	x						
	ESC GS x S 1	x	x						
	ESC GS x S 2	x	x						
	ESC GS x S 3	x	x						
	ESC GS x D	x	x						
	ESC GS x P	x	x						
	ESC GS x I	x	x						
Print Start Trigger Control	ESC GS g 0	x	x						
	ESC GS g 1	x	x						
QR Code	ESC GS y S 0	○	○						
	ESC GS y S 1	○	○						
	ESC GS y S 2	○	○						
	ESC GS y D 1	○	○						
	ESC GS y D 2	○	○						
	ESC GS y P	○	○						
	ESC GS y I	x	x						

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