



TOSHIBA POS Printer

TRST-A10/TRST-A15

POSPrinter Application User Manual
Toshiba TEC JavaPOS

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TOSHIBA TEC CORPORATION

POSPrinter Application User Manual

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4	Jun 16, 2010	1.1.1. 2.1.1	<p>Descriptions about Windows Embedded Point of Service1.1 (WEPOS1.1) have been added.</p> <p>Descriptions about SUSE Linux Enterprise Desktop 11 have been added.</p>

Table of Contents

1.	<i>POSPrinter</i>	1
1.1	POSPrinter JavaPOS Device ["TECPOSPrinter"]	1
1.1.1	Supported Operating Systems	1
1.1.2	Supported JavaVM	1
1.1.3	Supported Devices	1
1.1.4	Architecture Overview	1
1.1.5	Architecture Structure	2
1.1.6	Supported Functions	4
1.1.6.1	Functions Supported by TRST-A10-S POSPrinter	4
1.1.6.2	Functions Supported by TRST-A10-P POSPrinter	10
1.1.6.3	Functions Supported by TRST-A10-U POSPrinter	16
1.1.6.4	Functions Supported by TRST-A10-L POSPrinter	22
1.1.6.5	Functions Supported by TRST-A15-S POSPrinter	28
1.1.6.6	Functions Supported by TRST-A15-P POSPrinter	34
1.1.6.7	Functions Supported by TRST-A15-U POSPrinter	40
1.1.7	Property Specifications	46
1.1.7.1	Property List	46
1.1.7.2	Details of Properties	55
1.1.8	Method Specifications	135
1.1.8.1	Methods	135
1.1.8.2	Details of Methods	136
1.1.8.3	Details of directIO Method	179
1.1.9	Event Specifications	192
1.1.9.1	Event List	192
1.1.9.2	Details of Events	193
1.1.9.3	Details of DirectIOEvent Event	200
1.1.10	Exception Specifications	202
1.1.10.1	JposException Exception Specifications	202
1.1.10.2	Exceptions Thrown by Methods	203
1.1.11	Setup Information	204
1.1.11.1	TRST-A10-S POSPrinter's Setup Information	204
1.1.11.2	TRST-A10-P POSPrinter's Setup Information	207
1.1.11.3	TRST-A10-U POSPrinter's Setup Information	210
1.1.11.4	TRST-A10-L POSPrinter's Setup Information	213
1.1.11.5	TRST-A15-S POSPrinter's Setup Information	216
1.1.11.6	TRST-A15-P POSPrinter's Setup Information	219
1.1.11.7	TRST-A15-U POSPrinter's Setup Information	222
1.1.12	Restrictions and Cautions	226
1.1.12.1	TRST-A1x-S, P, U, L – Restrictions and Cautions	227
1.1.12.2	TRST-A15-S, P, U – Restrictions and Cautions	241
1.1.12.3	TRST-A1x-S, P, U, L-QM-R – Restrictions and Cautions	255
1.1.12.4	TRST-A1x-S, P, U-CN-R – Restrictions and Cautions	256
1.1.12.5	TRST-A1x-U – Restrictions and Cautions	257
1.1.12.6	TRST-A1x-L – Restrictions and Cautions	258
1.1.13	Usage Example	260
1.1.14	Logs	267
1.1.14.1	INFO level log	267
1.1.14.2	WARN level log	267
1.1.14.3	ERROR level log	267
2.	<i>CashDrawer</i>	268
2.1	CashDrawer JavaPOS Device ["TECCashDrawer"]	268
2.1.1	Supported Operating Systems	268

2.1.2	Supported JavaVM.....	268
2.1.3	Supported Device.....	268
2.1.4	Architecture Overview	268
2.1.5	Architecture Structure	269
2.1.6	Supported Functions	271
2.1.7	Property Specifications	272
2.1.7.1	Initial Value of TRSTA1xDRW Properties (when opening the Service).....	272
2.1.7.2	Details of Properties	272
2.1.8	Method Specifications	281
2.1.8.1	Supported/Unsupported Method List.....	281
2.1.8.2	Details of Methods.....	281
2.1.9	Event Specifications	290
2.1.9.1	Event List.....	290
2.1.9.2	Details of Events.....	290
2.1.10	Exceptions.....	291
2.1.10.1	JposException Specifications	291
2.1.11	Setup Information	292
2.1.12	Restrictions and Cautions.....	297
2.1.13	Logs	298
2.1.13.1	INFO level log	298
2.1.13.2	WARN level log	298
2.1.13.3	ERROR level log.....	298

Introduction

The POSPrinter Application User Manual (hereinafter referred to as “this Manual”) was documented in accordance with the “UnifiedPOS Specifications Version 1.11” (hereinafter referred to as “UPOS Specification”) which was published by the UnifiedPOS Committee for the purpose of standardization.

This Manual mainly describes the specifications which are different from those described in the UPOS Specification and which are not described in it because they are Toshiba TEC’s own specifications. For specifications not provided in this Manual, please refer to the UPOS Specification.

Unless otherwise specified, this Manual focuses on DeviceService.

The UPOS Specification can be downloaded from the following web site:

ARTS Home Page: <http://www.nrf-arts.org/>

Target Reader of This Manual

This document assumes that the reader is familiar with the following:

- General characteristics of POS peripheral devices
- General characteristics of TOSHIBA POS terminals and their peripheral devices
- General features of Windows and Linux
- Java terminology and architecture

Notes

Before reading this Manual, please note the following:

- It is prohibited to use or duplicate a part or whole of this Manual without the permission of Toshiba TEC Corporation.
- This Manual is subject to change without prior notice.

1. POSPrinter

1.1 POSPrinter JavaPOS Device ["TECPOSPrinter"]

Class name of this Device Service is as follows:

"jpos.toshibatec.posprinter.services.POSPrinterService"

1.1.1 Supported Operating Systems

This Device Service supports the following operating systems.

- Windows 2000
- Windows Embedded for Point of Service1.1(WEPOS1.1)
- Windows XP
- Windows Vista
- SuSE Linux Enterprise Desktop 10 SP1(SLED10SP1)
- SuSE Linux Enterprise Desktop 11 (SLED11)

1.1.2 Supported JavaVM

It is assumed this Device Service runs on the following JavaVM.

- Java2 SDK, Standard Edition Version 1.4.2

1.1.3 Supported Devices

This Device Service supports the following Devices.

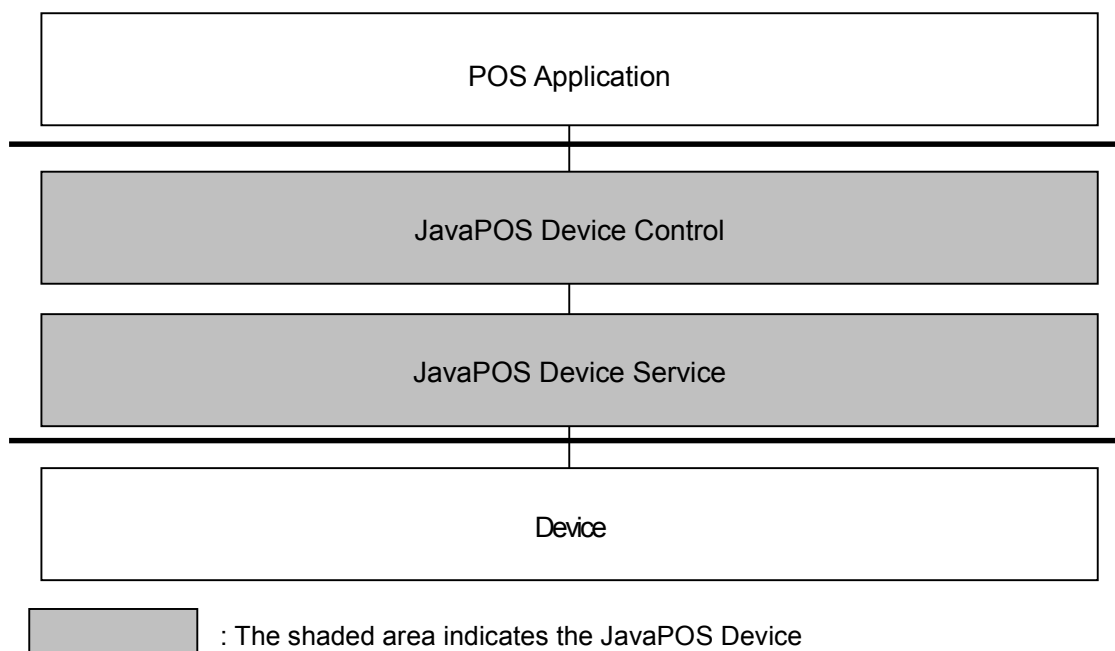
- TRST-A10-S-QM-R, TRST-A10-P-QM-R, TRST-A10-U-QM-R
- TRST-A10-L-QM-R (*1) (*2)
- TRST-A15-S-QM-R, TRST-A15-P-QM-R, TRST-A15-U-QM-R
- TRST-A10-S-CN-R, TRST-A10-P-CN-R, TRST-A10-U-CN-R (*1)
- TRST-A15-S-CN-R, TRST-A15-P-CN-R, TRST-A15-U-CN-R (*1)

(*1) In addition to the features of the TRST-A1x-x-CN-R support Chinese characters. Unless clearly specified in this Manual, the model names are "TRST-A10-S, P, U" and "TRST-A15-S, P, U", omitting "-QM-R" and "-CN-R".

(*2) A maximum of 3 TRST-A1x-L devices can be connected to a single POS or PC. For details, please refer to the section "1.1.12.5 TRST-A1x-L - Restrictions and Cautions 1) Use of Multiple Devices" in this Manual.

1.1.4 Architecture Overview

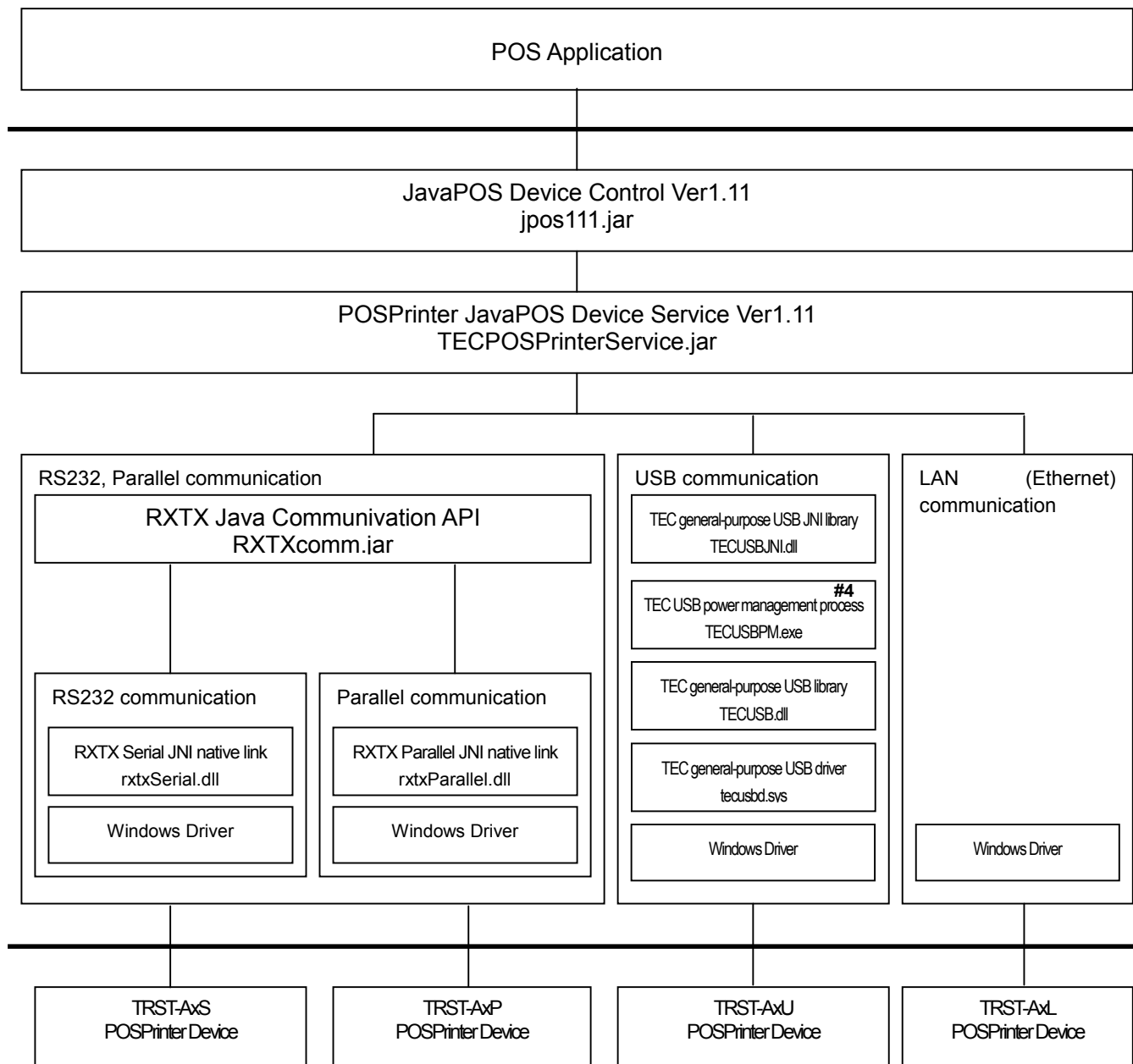
The JavaPOS Device provides an Application Programming Interface (API) for the POS Application to communicate with the Device.



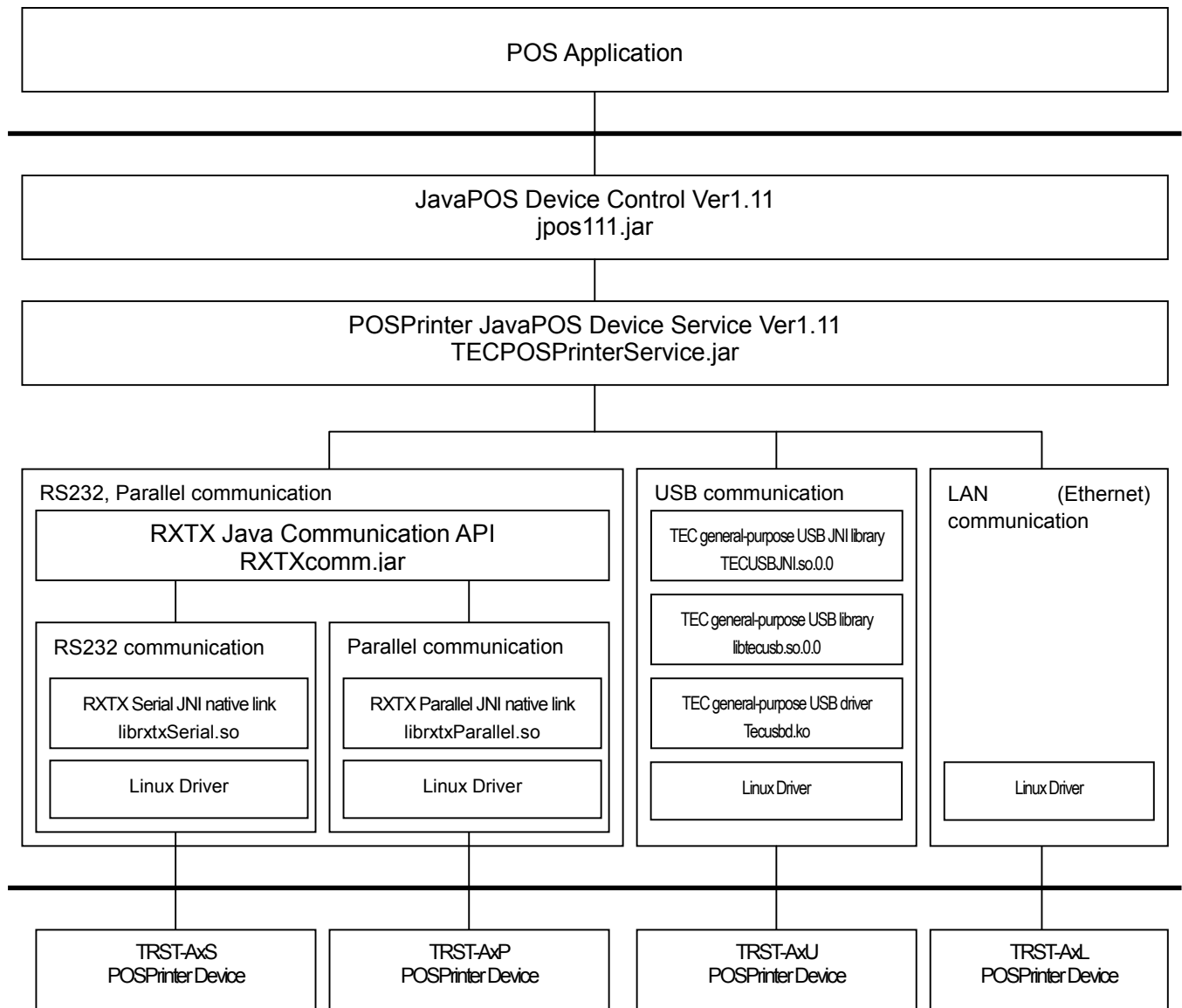
1.1.5 Architecture Structure

The POSPrinter JavaPOS Device uses some software to perform functions.
The software components shown below are required to build an execution environment.

- Windows 2000, WEPOS, XP, Vista Environment



- SuSE Linux Enterprise Desktop 10 SP1(SLED10SP1), SuSE Linux Enterprise Desktop 11(SLED11) | Environment



1.1.6 Supported Functions

1.1.6.1 Functions Supported by TRST-A10-S POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 1 TRST-A10-S JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1)	Power status notification Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color print Stamp print Shaded print Reverse feed Italic print/Disable italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

Table 2 TRST-A10-S JavaPOS Device – Supported Functions

3) Escape sequences

Supported/unsupported escape sequences by this Device Service are as follows.

For details of escape sequence, please refer to the section “1.1.12 Restrictions and Cautions, 5) Escape sequences” in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character “#” signifies the bitmap number. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, “1.1.12 Restrictions and Cautions, 8) Bitmap print” in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 3 TRST-A10-S JavaPOS Device – Escape Sequences

1.1.6.2 Functions Supported by TRST-A10-P POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 4 TRST-A10-P JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1)	Power status notification Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color print Stamp print Shaded print Reverse feed Italic print/Disable italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

Table 5 TRST-A10-P JavaPOS Device – Supported Functions

3) Escape sequences

Supported/unsupported escape sequences by this Device are as follows.

For details of escape sequence, please refer to the section “1.1.12 Restrictions and Cautions, 5) Escape sequences” in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character “#” signifies the bitmap number. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, “1.1.12 Restrictions and Cautions, 8) Bitmap print” in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 6 TRST-A10-P JavaPOS Device – Escape Sequences

1.1.6.3 Functions Supported by TRST-A10-U POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 7 TRST-A10-U JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1)	Power status notifications Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color Stamp print Shaded print Reverse feed Italic print/Disable italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

Table 8 TRST-A10-U JavaPOS Device – Supported Functions

3) Escape sequences

Supported/unsupported escape sequences by this Device are as follows.

For details of escape sequence, please refer to the section "1.1.12 Restrictions and Cautions, 5) Escape Sequences" in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character "#" signifies the percentage cut desired. If "#" is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device's architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character "#" signifies the percentage cut desired. If "#" is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device's architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character "#" signifies the percentage cut desired. If "#" is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device's architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character "#" signifies the bitmap number. "#" cannot be omitted. If "#" is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, "1.1.12 Restrictions and Cautions, 8) Bitmap print" in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 9 TRST-A10-U JavaPOS Device – Escape Sequences

1.1.6.4 Functions Supported by TRST-A10-L POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 10 TRST-A10-L JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1)	Power status notifications Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color Stamp print Shaded print Reverse feed Italic print/Disable italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

Table 11 TRST-A10-L JavaPOS Device – Supported Functions

3) Escape sequences

Supported/unsupported escape sequences by this Device are as follows.

For details of escape sequence, please refer to the section “1.1.12 Restrictions and Cautions, 5) Escape Sequences” in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character “#” signifies the bitmap number. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, “1.1.12 Restrictions and Cautions, 8) Bitmap print” in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 12 TRST-A10-L JavaPOS Device – Escape Sequences

1.1.6.5 Functions Supported by TRST-A15-S POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 13 TRST-A15-S JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1) Dual-side print (*3)	Power status notification Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color Stamp print Shaded print Reverse feed Italic print/Disable Italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification Dual-side print	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

(*3) This function is made available by extending some functions.

Table 14 TRST-A15-S JavaPOS Device – Supported Functions

3) Escape sequence

Supported/unsupported escape sequences by this Device are as follows.

For details of escape sequences, please refer to the section, "1.1.12 Restrictions and Cautions, 5) Escape sequences" in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character "#" signifies the percentage cut desired. If "#" is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device's architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character "#" signifies the percentage cut desired. If "#" is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device's architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character "#" signifies the percentage cut desired. If "#" is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device's architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character "#" signifies the bitmap number. "#" cannot be omitted. If "#" is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, "1.1.12 Restrictions and Cautions, 8) Bitmap print" in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 15 TRST-A15-S JavaPOS Device – Escape Sequences

1.1.6.6 Functions Supported by TRST-A15-P POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 16 TRST-A15-P JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1) Dual-side print (*3)	Power status notification Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color Stamp print Shaded print Reverse feed Italic print/Disable Italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification Dual-side print	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

(*3) This function is made available by extending some functions.

Table 17 TRST-A15-P JavaPOS Device – Supported Functions

3) Escape sequences

Supported/unsupported escape sequences by this Device are as follows.

For details of escape sequence, please refer to the section “1.1.12 Restrictions and Cautions, 5) Escape Sequences” in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character “#” signifies the bitmap number. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, “1.1.12 Restrictions and Cautions, 8) Bitmap print” in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 18 TRST-A15-P JavaPOS Device – Escape Sequences

1.1.6.7 Functions Supported by TRST-A15-U POSPrinter

1) Supported printer types

Supported/unsupported printer types by this Device are as follows:

Supported printers	Unsupported printers
Receipt printer	Journal printer Slip printer

Table 19 TRST-A15-U JavaPOS Device – Supported Printer Types

2) Supported printer functions

Supported/unsupported functions by this Device are as follows:

Supported functions	Unsupported functions
Synchronous/Asynchronous print Batch transaction Font typeface selection Bold print/Disable bold Reverse video print/Disable reverse video Underline print Double high and wide print Center/Right justify/Left justify Top log print/bottom log print Feed lines/Feed units Partial paper cut Pass through embedded data Rotated Left90°/Right90°/180° (upside-down) print Bar code print in normal orientation Rotated 180° (upside-down) bar code print Bitmap print in normal orientation Rotated 180° (upside-down) bitmap print Cover open notification No paper notification Paper near end (Paper low) notification (*2) Two color print (red and black, or blue and black) (*1) Red color print (*1) Dual-side print (*3)	Power status notifications Get statistics Update statistics Update firmware Compare firmware versions Simultaneous print on two kinds of printers Character set mapping Mark sensed paper handling Full paper cut Custom color print RGB color Stamp print Shaded print Reverse feed Italic print/Disable Italic Subscript print/Superscript print Cartridge status notification Cover open notification by stations Rotated Right90° bar code print Rotated Left90° bar code print Rotated Right90° bitmap print Rotated Left90° bitmap print
Extended functions	
Direct output to printer device Drawer control Bitmap registration to flash ROM Drawer status notification Dual-side print	

(*1) Red or blue is selected depending on the paper used. "Color Paper" should be selected in the printer configuration setting.

(*2) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting.

(*3) This function is made available by extending some functions.

Table 20 TRST-A15-U JavaPOS Device – Supported Functions

3) Escape sequences

Supported/unsupported escape sequences by this Device are as follows.

For details of escape sequence, please refer to the section “1.1.12 Restrictions and Cautions, 5) Escape Sequences” in this Manual.

[Escape sequences to perform indicated actions]

Name	Data	Description	Support	Remarks
Paper cut	ESC|#P	Cuts receipt paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed and Paper cut	ESC|#fP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end.
Feed, Paper cut, and Stamp	ESC|#sP	Feeds receipt paper by the RecLinesToPaperCut lines, then cuts and stamps the paper. The character “#” signifies the percentage cut desired. If “#” is omitted, a full cut is performed.	Yes, partially	# = 1 to 100 (If any other value is specified, this escape sequence is ignored.) Due to device’s architecture, a partial cut is always performed, leaving 5-mm distance at an end. Only feed and paper cut are performed and stamp is ignored.
Print bitmap	ESC|#B	Prints the pre-stored bitmap. The character “#” signifies the bitmap number. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 11 (If any other value is specified, this escape sequence is ignored.) For details of bitmap print, please refer to the section, “1.1.12 Restrictions and Cautions, 8) Bitmap print” in this Manual. # = 1 to 3: Prints the bitmap pre-stored in the RAM. # = 4 to 11: Prints the bitmap pre-stored in the flash ROM.
Print top logo	ESC|tL	Prints the pre-stored top logo.	Yes	
Print bottom logo	ESC|bL	Prints the pre-stored bottom logo.	Yes	
Print stamp	ESC|sL	Print the stamp.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Feed lines	ESC|#F	Feed the paper forward by multiple lines. The character “#” signifies the number of lines to be fed. If “#” is omitted, one line is fed.	Yes	# = 1 to 255 (If any other value is specified, this escape sequence is ignored.)
Feed units	ESC|#uF	Feed the paper forward in the unit of measure given by the MapMode property. The character “#” signifies the number of units to be fed. If “#” is omitted, one unit is fed.	Yes	# = 1 to 4800, when MapMode=PTR_MM_DOTS (If any other value is specified, this escape sequence is ignored.) # = 1 to 32000, when MapMode=PTR_MM_TWIPS (If any other value is specified, this escape sequence is ignored.) # = 1 to 23600, when MapMode= PTR_MM_ENGLISH (If any other value is specified, this escape sequence is ignored.) # = 1 to 60000, when MapMode=PTR_MM_METRIC (If any other value is specified, this escape sequence is ignored.)
Feed reverse	ESC|#rF	Feed the paper backward by multiple lines. The character “#” signifies the number of lines to be fed backward. If “#” is omitted, feeds one line backward.	No	This escape sequence is ignored.
Pass through embedded data	ESC|#E	Sends the characters subsequent to #E without modifying them. The character “#” signifies the number of bytes of the characters to be sent. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 1 to 99999 (If any other value is specified, this escape sequence is ignored.) Up to 99999 bytes of characters can be sent.
Print in-line barcode	ESC|#R	Prints the bar code specified by the characters subsequent to #R. The character “#” signifies the number of bytes of characters that indicates bar code symbology. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	Specifies characters that indicates bar code symbology subsequent to #R. For details, please refer to the sections, “1.1.12 Restrictions and Cautions, 6) Bar code print” and “1.1.12 Restrictions and Cautions, 7) Bar code print using escape sequence”.

[Print mode escape sequence]

Name	Data	Description	Support	Remarks
Font typeface selection	ESC|#FT	Selects a new typeface for the characters subsequent to #FT. The character “#” signifies a value that indicates a font typeface. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 2 (If any other value is specified, this escape sequence is ignored.) # = 0: FontA (default typeface) # = 1: FontA # = 2: FontB

[Print line escape sequences]

Name	Data	Description	Support	Remarks
Bold	ESC|bC	Prints in bold or double-strike.	Yes	
Disable bold	ESC|!bC	Disables printing in bold or double-strike.	Yes	
Underline	ESC|#uC	Prints with underline. The character “#” signifies a value that indicates the thickness of the underline in printer dot units. If “#” is omitted, a printer-specific default thickness is used.	Yes	# = 0 to 99999 (If any other value is specified, this escape sequence is ignored.) # = 0: No underline (Default) # = 1: 1-dot thin underline # = 2 to 99999: 2-dot thick underline
Italic	ESC|iC	Prints in italics.	No	This escape sequence is ignored.
Disable italic	ESC|!iC	Disables printing in italics.	No	This escape sequence is ignored.
Custom color	ESC|#rC	Prints using a custom color. The “#” character signifies the value of the cartridge constant (used in the printer device properties) that indicates a desired color. If “#” is omitted, Custom Color 1 (secondary color) is selected.	No	This escape sequence is ignored.
Red color	ESC|rC	Prints in red color.	Yes	Red color print is available only when the special paper is used. When blue is selected for paper type, printing is performed in blue.
Reverse video	ESC|rvC	Prints with reversing dark and light colors.	Yes	
Disable reverse video	ESC|!rvC	Disables reverse video.	Yes	
Shading	ESC|#sC	Prints in a shaded manner. The “#” character signifies a percentage of shading desired. If “#” is omitted, a printer-specific default level of shading is used.	No	This escape sequence is ignored.

Name	Data	Description	Support	Remarks
Single high and wide	ESC|1C	Prints normal size.	Yes	
Double wide	ESC|2C	Prints double-wide characters.	Yes	
Double high	ESC|3C	Prints double-high characters.	Yes	
Double high and wide	ESC|4C	Prints double-high/double-wide characters.	Yes	
Scale horizontally	ESC|#hC	Prints with the width horizontally scaled. The character “#” signifies a horizontal scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
Scale vertically	ESC|#vC	Prints with the height vertically scaled. The character “#” signifies a vertical scale in percentage. “#” cannot be omitted. If “#” is omitted, this escape sequence is ignored.	Yes	# = 0 to 850 (If any other value is specified, this escape sequence is ignored.) # = 0 to 150 : x1 # = 151 to 250 : x2 # = 251 to 350 : x3 # = 351 to 450 : x4 # = 451 to 550 : x5 # = 551 to 650 : x6 # = 651 to 750 : x7 # = 751 to 850 : x8
RGB color	ESC|#fC	Prints in a specified RGB color. The character “#” signifies a 9-digit RGB color value (3 digits x 3 colors (red, green, and blue)). If “#” is omitted, a printer default color is used.	No	This escape sequence is ignored.
Center	ESC|cA	Prints the characters subsequent to ESC|cA by aligning them in the center.	Yes	
Right justify	ESC|rA	Prints the characters subsequent to ESC|rA by aligning them at the right.	Yes	
Left justify	ESC|lA	Prints the characters subsequent to ESC|lA by aligning them at the left.	Yes	
Normal	ESC|N	Restores printer characteristics to normal condition.	Yes	Characters subsequent to ESC|N are printed in disable bold, disable underline, 2-color print, disable reverse video, single high and wide, and right justify.

Name	Data	Description	Support	Remarks
Subscript	ESC|tbC	Prints subscript characters.	No	This escape sequence is ignored.
Disable subscript	ESC|!tbC	Disables printing of subscript.	No	This escape sequence is ignored.
Superscript	ESC|tpC	Prints superscript characters.	No	This escape sequence is ignored.
Disable superscript	ESC|!tpC	Disables printing of superscript.	No	This escape sequence is ignored.

Table 21 TRST-A15-U JavaPOS – Escape Sequences

1.1.7 Property Specifications

1.1.7.1 Property List

This Device Service covers the following properties.

For details, please refer to the section, “1.1.7.2 Details of Properties” in this Manual and the UPOS Specification.

Common Property	May Use After	Description
DeviceControlDescription	-----	Holds an identifier for the Device Control.
DeviceControlVersion	-----	Holds the Device Control version number.
DeviceServiceDescription	open	Holds an identifier for the Device Service and the company that produced it.
DeviceServiceVersion	open	Holds the Device Service version number.
PhysicalDeviceDescription	open	Holds an identifier for the physical device.
PhysicalDeviceName	open	Holds a short name identifying the physical device.
CapCompareFirmwareVersion	open	Identifies the availability of the function to compare the version of the firmware in the physical device against that of a firmware file.
CapPowerReporting	open	Identifies the power status notification capabilities of the Device.
CapStatisticsReporting	open	Identifies the availability of the function to accumulate and provide various statistics.
CapUpdateFirmware	open	Identifies the availability of the function to update the device's firmware.
CapUpdateStatistics	open	Identifies the availability of the function to update the statistics.
CheckHealthText	open	Holds the results of the most recent call to the checkHealth method. For details, please refer to the section, “1.1.8.2 Details of Methods, checkHealth Method”.
Claimed	open	Identifies if the device is claimed for exclusive access.
DeviceEnabled	open & claim	Identifies if the Device is in an operational state.
FreezeEvents	open	Identifies if events are frozen.
OutputID	open	Holds the identifier of the most recently started asynchronous output.
PowerNotify	open	Contains the type of power status notification.
PowerState	open	Identifies the current power condition of the Device.
State	-----	Holds the current state of the JavaPOS Device.
Specific Property	May Use After	Description
CapCharacterSet	open	Holds the printable character sets.
CapConcurrentJrnRec	open	Identifies if the journal and receipt stations can print at the same time.
CapConcurrentJrnSlp	open	Identifies if the journal and slip stations can print at the same time.
CapConcurrentPageMode	open	Identifies if the printer is capable of supporting the Page Mode function concurrently for both the receipt and slip stations and one of them can enter into Page Mode when the other has already been in Page Mode.
CapConcurrentRecSlp	open	Identifies if the receipt and slip stations can print at the same time.
CapCoverSensor	open	Identifies if the POS printer has a cover open sensor.
CapMapCharacterSet	open	Defines the ability to map the characters of the application to the selected character set when printing data.
CapTransaction	open	Identifies if batch transaction is supported.

Specific Property	May Use After	Description
CapJrnPresent	open	Identifies if the journal print is supported.
CapJrn2Color	open	Identifies if the journal can print in two colors.
CapJrnBold	open	Identifies if the journal can print bold characters.
CapJrnDhigh	open	Identifies if the journal can print double high characters.
CapJrnDwide	open	Identifies if the journal can print double wide characters.
CapJrnDwideDhigh	open	Identifies if the journal can print double high / double wide characters.
CapJrnEmptySensor	open	Identifies if the journal has a no paper sensor and can deliver a no paper notification.
CapJrnItalic	open	Identifies if the journal can print italic characters.
CapJrnNearEndSensor	open	Identifies if the journal has a paper-near-end sensor and has a function to notify paper-near-end.
CapJrnUnderline	open	Identifies if the journal can underline characters.
CapJrnCartridgeSensor	open	Indicates the presence of journal cartridge monitoring sensors.
CapJrnColor	open	Indicates the availability of journal color cartridges.
CapRecPresent	open	Identifies if the receipt print station is present.
CapRec2Color	open	Identifies if the receipt can print in two colors.
CapRecBarCode	open	Identifies if the receipt has bar code printing capability.
CapRecBitmap	open	Identifies if the receipt can print bitmaps.
CapRecBold	open	Identifies if the receipt can print bold characters.
CapRecDhigh	open	Identifies if the receipt can print double high characters.
CapRecDwide	open	Identifies if the receipt can print double wide characters.
CapRecDwideDhigh	open	Identifies if the receipt can print double high and wide characters.
CapRecEmptySensor	open	Identifies if the receipt has a no paper sensor and can deliver a no paper notification.
CapRecItalic	open	Identifies if the receipt can print italic characters.
CapRecLeft90	open	Identifies if the receipt can print in a rotated 90° left mode.
CapRecNearEndSensor	open	Identifies if the receipt has a paper-near-end sensor and has a function to notify paper-near-end.
CapRecPapercut	open	Identifies if the receipt can perform paper cuts.
CapRecRight90	open	Identifies if the receipt can print in a rotated 90° right mode.

Specific Property	May Use After	Description
CapRecRotate180	open	Identifies if the receipt can print in a rotated 180° (upside down) mode.
CapRecStamp	open	Identifies if the receipt has a stamp capability.
CapRecUnderline	open	Identifies if the receipt can underline characters.
CapRecCartridgeSensor	open	Indicates the presence of receipt cartridge monitoring sensors.
CapRecColor	open	Indicates the availability of receipt color cartridges.
CapRecMarkFeed	open	Indicates the type of mark sensed paper handling available.
CapRecPageMode	open	Identifies if the printer is capable of supporting Page Mode for the receipt station.
CapSlpPresent	open	Identifies if the slip print station is present.
CapSlpFullslip	open	Identifies if the slip is a full slip station or validation type station.
CapSlp2Color	open	Identifies if the slip can print in two colors.
CapSlpBarCode	open	Identifies if the slip has bar code printing capability.
CapSlpBitmap	open	Identifies if the slip can print bitmaps.
CapSlpBold	open	Identifies if the slip can print bold characters.
CapSlpDhigh	open	Identifies if the slip can print double high characters.
CapSlpDwide	open	Identifies if the slip can print double wide characters.
CapSlpDwideDhigh	open	Identifies if the slip can print double high and wide characters.
CapSlpEmptySensor	open	Identifies if the slip has a no paper sensor and can deliver a no paper notification.
CapSlpItalic	open	Identifies if the slip can print italic characters.
CapSlpLeft90	open	Identifies if the slip can print in a rotated 90° left mode.
CapSlpNearEndSensor	open	Identifies if the slip has a paper-near-end sensor and has a function to notify paper-near-end.
CapSlpRight90	open	Identifies if the slip can print in a rotated 90° right mode.
CapSlpRotate180	open	Identifies if the slip can print in a rotated 180° (upside down) mode.
CapSlpUnderline	open	Identifies if the slip can underline characters.
CapSlpBothSidePrint	open	Identifies if the slip station can print on both sides of a paper.
CapSlpCartridgeSensor	open	Indicates the presence of slip cartridge monitoring sensors.
CapSlpColor	open	Indicates the availability of slip color cartridges.
CapSlpPageMode	open	Identifies if the printer is capable of supporting Page Mode for the slip station.

Specific Property	May Use After	Description
AsyncMode	open	Identifies if the print methods which can be performed asynchronously will be performed asynchronously.
CartridgeNotify	open	Selects disable or enable of cartridge state notification.
CharacterSet	open, claim & enable	Holds the character set for printing characters.
CharacterSetList	open	Holds the numbers of the settable character sets separated by commas.
CoverOpen	open, claim & enable	Identifies if the printer cover is open.
ErrorLevel	open	Holds the severity of the error condition.
ErrorStation	open	Holds the station or stations that were printing when an error was detected.
ErrorString	open	Holds a vendor-supplied description of the current error.
FontTypefaceList	open	Holds the fonts that are supported by the printer (or a string which specifies typefaces) which are separated by commas (",").
FlagWhenIdle	open	Identifies if a StatusUpdateEvent is to be delivered when the Device is in the idle state.
MapCharacterSet	open	Identifies if the characters transferred by the application is mapped for printing data.
MapMode	open	Holds the mapping mode (the unit of measure used for other properties, such as line heights and line spacing) of the printer.
PageModeArea	open	Holds the page area. (expressed in the unit of measure given by MapMode.)
PageModeDescriptor	open	Indicates the basic Page Mode functionality of the station selected by the PageModeStation property.
PageModeHorizontalPosition	open	Holds the horizontal start position offset value within the page mode print area for the station selected by the PageModeStation property.
PageModePrintArea	open	Holds the page mode print area for the station selected by the PageModeStation property (expressed in the unit of measure given by the MapMode property).
PageModePrintDirection	open	Holds the page mode print direction.
PageModeStation	open	Set the print station for subsequent Page Mode properties.
PageModeVerticalPosition	open	Holds the vertical start position offset value within the page mode print area for the station selected by the PageModeStation property.
RotateSpecial	open	Holds the rotation orientation for bar codes.

Specific Property	May Use After	Description
JrnLineChars	open, claim & enable	Holds a line character width (the number of 1-byte characters that may be printed on a journal line).
JrnLineCharsList	open	Holds the line character widths (number of 1-byte characters printed per line) supported by the journal station, separated by commas (",").
JrnLineHeight	open, claim & enable	Holds the journal print line height (expressed in the unit of measure given by the MapMode property).
JrnLineSpacing	open, claim & enable	Holds the spacing of each single-high print line (including both the printed line height plus the whitespace between each pair of lines) for journal print (expressed in the unit of measure given by the MapMode property).
JrnLineWidth	open, claim & enable	Holds the width of a line of the JrnLineChars property characters (expressed in the unit of measure given by the MapMode property).
JrnLetterQuality	open, claim & enable	Performs a journal print in high quality mode.
JrnEmpty	open, claim & enable	Identifies the presence of journal paper.
JrnNearEnd	open, claim & enable	Identifies if journal paper is paper near end or not paper near end.
JrnCartridgeState	open, claim & enable	Sets the status of the journal cartridge (ink, ribbon, or toner) currently selected.
JrnCurrentCartridge	open, claim & enable	Specifies the currently selected journal cartridge.
RecLineChars	open, claim & enable	Holds a line character width (the number of 1-byte characters that may be printed on a receipt line).
RecLineCharsList	open	Holds the line character widths (number of 1-byte characters printed per line) supported by the receipt station, separated by commas (",").
RecLineHeight	open, claim & enable	Holds the receipt print line height (expressed in the unit of measure given by the MapMode property).
RecLineSpacing	open, claim & enable	Holds the spacing of each single-high print line (including both the printed line height plus the whitespace between each pair of lines) for receipt print (expressed in the unit of measure given by the MapMode property).
RecLineWidth	open, claim & enable	Holds the width of a line of the RecLineChars property characters (expressed in the unit of measure given by the MapMode property).
RecLetterQuality	open, claim & enable	Performs a receipt print in high quality mode.
RecEmpty	open, claim & enable	Identifies the presence of receipt paper.
RecNearEnd	open, claim & enable	Identifies if receipt paper is paper near end or not paper near end.
RecSidewaysMaxLines	open, claim & enable	Holds the maximum number of lines that may be printed in sideways mode (CapRecLeft90 or CapRecRight90).
RecSidewaysMaxChars	open, claim & enable	Holds the maximum number of 1-byte characters that may be printed by the receipt on each line in sideways mode (CapRecLeft90 and CapRecRight90).
RecLinesToPageCut	open, claim & enable	Holds the number of lines that must be advanced before the receipt paper is cut.
RecBarCodeRotationList	open	Holds the directions in which a receipt bar code may be rotated.
RecCartridgeState	open, claim & enable	Sets the status of the receipt cartridge (ink, ribbon, or toner) currently selected.

Specific Property	May Use After	Description
RecCurrentCartridge	open, claim & enable	Specifies the currently selected receipt cartridge.
RecBitmapRotationList	open	Holds the directions in which a receipt bitmap may be rotated.
SlpLineChars	open, claim & enable	Holds a line character width (the number of 1-byte characters that may be printed on a slip line).
SlpLineCharsList	open	Holds the line character widths (number of 1-byte characters printed per line) supported by the slip station, separated by commas (",").
SlpLineHeight	open, claim & enable	Holds the slip print line height (expressed in the unit of measure given by the MapMode property).
SlpLineSpacing	open, claim & enable	Holds the spacing of each single-high print line (including both the printed line height plus the whitespace between each pair of lines) for slip print (expressed in the unit of measure given by the MapMode property).
SlpLineWidth	open, claim & enable	Holds the width of a line of SlpLineChars characters (expressed in the unit of measure given by the MapMode property).
SlpLetterQuality	open, claim & enable	Performs a slip print in high quality mode.
SlpEmpty	open, claim & enable	Identifies the presence of slip paper.
SlpNearEnd	open, claim & enable	Identifies if slip paper is paper near end or not paper near end.
SlpSidewaysMaxLines	open, claim & enable	Holds the maximum number of lines that may be printed in sideways mode (CapSlpLeft90 or CapSlpRight90).
SlpSidewaysMaxChars	open, claim & enable	Holds the maximum number of 1-byte characters that may be printed by the slip on each line in sideways mode (CapSlpLeft90 and CapSlpRight90).
SlpMaxLines	open, claim & enable	Holds the maximum number of lines that can be printed on a slip paper.
SlpLinesNearEndToEnd	open, claim & enable	Holds the number of lines that may be printed after "slip near end" is detected but before the printer reaches the end of the slip.
SlpBarCodeRotationList	open	Holds the directions in which a slip barcode may be rotated.
SlpPrintSide	open, claim & enable	Holds the current side of the slip document on which printing will occur.
SlpCartridgeState	open, claim & enable	Sets the status of the slip cartridge (ink, ribbon, or toner) currently selected.
SlpCurrentCartridge	open, claim & enable	Specifies the currently selected slip cartridge.

Table 22 POSPrinter JavaPOS Device - Property List

This Device Service sets each property to a value given in the table below.

Common Property	Value
DeviceControlDescription	"JavaPOS POSPrinter Device Control"
DeviceControlVersion	"1011000"
DeviceServiceDescription	"TEC JavaPOS POSPrinter Device Service"
DeviceServiceVersion	"1011XXX" (*1)
PhysicalDeviceDescription	"TEC TRST-A1x POSPrinter"
PhysicalDeviceName	"TEC TRST-A1x"
CapCompareFirmwareVersion	false
CapPowerReporting	JPOS_PR_NONE
CapStatisticsReporting	false
CapUpdateFirmware	false
CapUpdateStatistics	false
CheckHeakthText	""
Claimed	false
DeviceEnabled	false
FreezeEvents	false
OutputID	0
PowerNotify	JPOS_PN_DISABLED
PowerState	JPOS_PS_UNKNOWN
State	JPOS_S_IDLE
Specific Property	Value
CapCharacterSet	PTR_CCS_ASCII
CapConcurrentJrnRec	false
CapConcurrentJrnSlp	false
CapConcurrentPageMode	false
CapConcurrentRecSlp	false
CapCoverSensor	true
CapMapCharacterSet	false
CapTransaction	true
CapJrnPresent	false
CapJrn2Color	false
CapJrnBold	false
CapJrnDhigh	false
CapJrnDwide	false
CapJrnDwideDhigh	false
CapJrnEmptySensor	false
CapJrnItalic	false
CapJrnNearEndSensor	false
CapJrnUnderline	false
CapJrnCartridgeSensor	0
CapJrnColor	0
CapRecPresent	true
CapRec2Color	true
CapRecBarCode	true
CapRecBitmap	true
CapRecBold	true
CapRecDhigh	true
CapRecDwide	true
CapRecDwideDhigh	true
CapRecEmptySensor	true
CapRecItalic	false
CapRecLeft90	true
CapRecNearEndSensor	true (*6)
CapRecPapercut	true
CapRecRight90	true
CapRecRotate180	true
CapRecStamp	false
CapRecUnderline	true
CapRecCartridgeSensor	0
CapRecColor	0
CapRecMarkFeed	false
CapRecPageMode	false

Specific Property	Value
CapSlpPresent	false
CapSlpFullslip	false
CapSlp2Color	false
CapSlpBarCode	false
CapSlpBitmap	false
CapSlpBold	false
CapSlpDhigh	false
CapSlpDwide	false
CapSlpDwideDhigh	false
CapSlpEmptySensor	false
CapSlpItalic	false
CapSlpLeft90	false
CapSlpNearEndSensor	false
CapSlpRight90	false
CapSlpRotate180	false
CapSlpUnderline	false
CapSlpBothSidePrint	false
CapSlpCartridgeSensor	0
CapSlpColor	0
CapSlpPageMode	false
AsyncMode	false
CartridgeNotify	PTR_CN_DISABLED
CharacterSet	437
CharacterSetList	"437,850,852,857,858,860,863,865,866,1252,949,54936"
CoverOpen	false | true #2
ErrorLevel	PTR_EL_NONE
ErrorStation	0
ErrorString	""
FontTypefaceList	"FontA, FontB"
FlagWhenIdle	false
MapCharacterSet	false
MapMode	PTR_MM_DOTS
PageModeArea (*1) #2	"576,2000" "432,2000"
PageModeArea	""
PageModeDescriptor #2	PTR_PM_BARCODE | PTR_BM_BC_ROTATE
PageModeDescriptor	0
PageModeHorizontalPosition (*1) #2	0
PageModePrintArea #2	PTR_PD_LEFT_TO_RIGHT
PageModePrintArea	""
PageModePrintDirection #2	PTR_PD_LEFT_TO_RIGHT
PageModePrintDirection	0
PageModeStation #2	PTR_S_RECEIPT
PageModeStation	0
PageModeVerticalPosition	0
RotateSpecial	PTR_RP_NORMAL
JrnLineChars	0
JrnLineCharsList	"0"
JrnLineHeight	0
JrnLineSpacing	0
JrnLineWidth	0
JrnLetterQuality	false
JrnEmpty	false
JrnNearEnd	false
JrnCartridgeState	PTR_CART_UNKNOWN
JrnCurrentCartridge	0

Specific Property	Value	
RecLineChars (*1) #2	48	36
RecLineChars	48 or 36 or 42 or 32	
RecLineCharsList (*1) #2	"48,64"	"36,48"
RecLineCharsList	"48,64" or "36,48" or "42,56" or "32,42"	
RecLineHeight	24 or 28 #2	
RecLineSpacing	27 or 34 #2	
RecLineWidth #2	576	432
RecLineWidth	576 or 432 or 546 or 416	
RecLetterQuality	true	
RecEmpty	false	
RecNearEnd	false (*6)	
RecSidewaysMaxLines #2	21 (*3)	16 (*3)
RecSidewaysMaxLines	21 or 16 or 12 (*3)	
RecSidewaysMaxChars #2	166	222
RecSidewaysMaxChars	166 or 153	
RecLinesToPageCut	6 (*4)	
RecBarcodeRotationList	"0,180"	
RecCartridgeState	PTR_CART_UNKNOWN	
RecCurrentCartridge	0	
RecBitmapRotationList	"0,180"	
SlpLineChars	0	
SlpLineCharsList	""	
SlpLineHeight	0	
SlpLineSpacing	0	
SlpLineWidth	0	
SlpLetterQuality	false	
SlpEmpty	false	
SlpNearEnd	false	
SlpSidewaysMaxLines	0	
SlpSidewaysMaxChars	0	
SlpMaxLines	0	
SlpLinesNearEndToEnd	0	
SlpBarcodeRotationList	""	
SlpPrintSide	PTR_PS_UNKNOWN	
SlpCartridgeState	PTR_CART_UNKNOWN	
SlpCurrentCartridge	0	

(*1) Build version is indicated as "XXX" because this manual may not be revised as soon as the module is updated.

Table 23 TRST-A1x JavaPOS Device - Property List

1.1.7.2 Details of Properties

DeviceControlDescription Property

Type

String DeviceControlDescription;

Mutability

Read Only

Remarks

Holds an identifier for the Device Control.

This property is always readable and the following value is stored.

"JavaPOS POSPrinter Device Control"

Errors

When this property is accessed, no JavaPOS Exception is thrown.

DeviceControlVersion Property

Type

String DeviceControlVersion();

Mutability

Read Only

Remarks

Holds the Device Control version number.

Three version levels are specified: Major for the millions place, Minor for the thousands place, and Build for the units place. Major and minor version numbers indicate the JavaPOS version number this Device Control complies with. Build version number indicates an internal level version number of development. For example, 1011023 is interpreted as major version 1, minor version 11, and build number 23. That is, this Device Control complies with the JPOS Specification version 1.11 and corrections have been made 23 times internally.

This property is always readable and the following value is stored.

1011000

Errors

When this property is accessed, no JavaPOS Exception is thrown.

DeviceServiceDescription Property

Type

String DeviceServiceDescription;

Mutability

Read Only

Remarks

Holds an identifier for the Device Service.

This property is initialized by the **open** method to the value below.

"TEC JavaPOS POSPrinter Device Service"

Errors

When this property is accessed, no JavaPOS Exception is thrown.

DeviceServiceVersion Property**Type****String DeviceServiceVersion;****Mutability****Read Only****Remarks**

Holds the Device Service version number.

Three version levels are specified: Major for the millions place, Minor for the thousands place, and Build for the units place. Major and minor version numbers indicate the JavaPOS version number this Device Service complies with. Build version number indicates an internal level version number of development. For example, 1011023 is interpreted as major version 1, minor version 11, and build number 23. That is, this Device Service complies with the JPOS Specification version 1.11 and corrections have been made 23 times internally.

This property is initialized by the **open** method to the value below.

1011XXX(XXX: A value incremented from 000.)

Errors

When this property is accessed, no JavaPOS Exception is thrown.

PhysicalDeviceDescription Property**Type****String PhysicalDeviceDescription;****Mutability****Read Only****Remarks**

Holds an identifier for the physical device.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	"TEC TRST-A1x POSPrinter"
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

PhysicalDeviceName Property**Type****String PhysicalDeviceName;****Mutability****Read Only****Remarks**

Holds a short name identifying the physical device.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	"TEC TRST-A1x"
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapCompareFirmwareVersion Property**Type****boolean CapCompareFirmwareVersion;****Mutability****Read Only****Remarks**

Identifies the availability of the function to compare the version of the firmware in the physical device against that of a firmware file.

Value	Meaning
true	Supported
false	Not supported

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapPowerReporting Property**Type****int CapPowerReporting;****Mutability****Read Only****Remarks**

Identifies the reporting capabilities of the Device.

Value	Meaning
JPOS_PR_NONE	The Device Service cannot determine a power status. Therefore, no power status notification is possible.
JPOS_PR_STANDARD	The Device Service can determine and report two kinds of power statuses - OFF_OFFLINE (that is, off or offline) and ONLINE.
JPOS_PR_ADVANCE	The Device Service can determine and report all three power statuses - OFF, OFFLINE, and ONLINE.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	JPOS_PR_NONE
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapStatisticsReporting Property**Type****boolean CapStatisticsReporting;****Mutability****Read Only****Remarks**

Identifies the availability of the function to accumulate and provide various statistics.

Value	Meaning
true	Supported
false	Not supported

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapUpdateFirmware Property**Type****boolean CapUpdateFirmware;****Mutability****Read Only****Remarks**

Identifies the availability of the function to update the device's firmware.

Value	Meaning
true	Supported
false	Not supported

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapUpdateStatistics Property**Type****boolean CapUpdateStatistics;****Mutability****Read Only****Remarks**

Identifies if the Device Service or Device has the function to update the statistics.

Value	Meaning
true	Supported
false	Not supported

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CheckHealthText Property**Type****String CheckHealthText;****Mutability****Read Only****Remarks**

Holds the results of the most recent call to the **checkHealth** method. For details, please refer to the section, "1.1.8.2 Details of Methods, "**checkHealth** Method" in this Manual.

This property is empty ("") before the first call to the **checkHealth** method.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

Claimed Property**Type****boolean Claimed;****Mutability****Read Only****Remarks**

Identifies if the Device is claimed for exclusive access.

Value	Meaning
true	The Device is claimed for exclusive access.
false	The Device is released.

This property is initialized to false by the **open** method.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

DeviceEnabled Property**Type**

boolean DeviceEnabled;

Mutability

Read / Write

Remarks

Identifies if the Device is in an operational state.

Value	Meaning
true	The Device is in an operational state.
false	The Device has been disabled.

This property is initialized to false by the **open** method. Other values can be set by the application.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter, ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_FAILURE, 0	Initialization of communication with the printer failed.	Restart the printer. If the error cannot be corrected or reoccurs frequently after being corrected, investigate the error.
JPOS_E_BUSY, 0	An attempt was made to disable the printer while asynchronous output is in progress.	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

FreezeEvents Property**Type****boolean FreezeEvents;****Mutability****Read / Write****Remarks**

Identifies if events are frozen.

Value	Meaning
true	Events are frozen and enqueued. No events are sent.
false	Events are delivered.

If true, events are frozen and enqueued, and not delivered.

If false (and all other conditions are correct for delivering the event), events are allowed to be delivered. If some events have been held while events were frozen (and all other conditions are correct for delivering the events), changing this property to false will allow these events to be delivered. An application may choose to freeze events where interruption by an event is not desirable.

This property is initialized to false by the **open** method. Other values can be set by the application.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.

OutputID Property**Type****int OutputID;****Mutability****Read Only****Remarks**

Holds the identifier of the most recently started asynchronous output.

When a method successfully initiates an asynchronous output, the Device assigns an identifier to the request and set it to this **OutputID** property. When the asynchronous output completes, the identifier for the completed request (the one assigned at a startup) is set to this **OutputID** property and an **OutputCompleteEvent** is delivered.

The output ID numbers range from 0 to 2147483647. The value initialized to 0 by the **open** method is incremented by one every time the asynchronous output is initiated and returns to 0 when the value exceeds 2147483647.

This property is initialized to 0 by the **open** method.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

PowerNotify Property**Type****int PowerNotify;****Mutability****Read / Write****Remarks**

Contains the type of power notification.

Value	Meaning
JPOS_PN_DISABLED	The Device Service will not provide any power notifications. No power notification StatusUpdateEvent events will be delivered, and power state is not set to the PowerState property.
JPOS_PN_ENABLED	If the DeviceEnabled property is set to true, a power notification StatusUpdateEvent event will be delivered and a power state is set to the PowerState property.

This property is initialized to JPOS_PN_DISABLED by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and TRST-A15-S, P, U which do not provide the power notification function, JPOS_PN_DISABLED is always selected whenever the **open** method is executed and JPOS_PN_ENABLED cannot be selected. If an attempt is made to select JPOS_PN_ENABLED, a JavaPOS Exception, ErrorCode:JPOS_E_ILLEGAL or ErrorCodeExtended:0 may be thrown.

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	The Device is already enabled.	Execute this property again after disabling the Device by setting the DeviceEnabled property to false.
	With the CapPowerReporting property set to JPOS_PR_NONE, JPOS_PN_ENABLED is selected.	This function is not supported.
	An invalid parameter value was used.	An attempt was made to select a value other than JPOS_PN_DISABLED or JPOS_PN_ENABLED. Check the value being selected.

PowerState Property**Type****int PowerState;****Mutability****Read Only****Remarks**

Identifies the current power condition of the Device.

Value	Meaning
JPOS_PS_UNKNOWN	Cannot determine the Device's power state.
JPOS_PS_ONLINE	The Device is powered on and ready for use.
JPOS_PS_OFF	The Device is powered off or not connected.
JPOS_PS_OFFLINE	The Device is powered on but is either not ready or not able to respond to requests.
JPOS_PS_OFF_OFFLINE	The Device is either off or offline.

This property is initialized to JPOS_PS_UNKNOWN by the **open** method. When the **PowerNotify** property is set to JPOS_PN_ENABLED, a power state is set to this property.

For the TRST-A10-S, P, U, L and TRST-A15-S, P, U which do not provide the power notification function, JPOS_PS_UNKNOWN is always returned when the **open** method is executed.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

State Property**Type****int State;****Mutability****Read Only****Remarks**

Holds the current state of the Device.

Value	Meaning
JPOS_S_CLOSED	The Device is closed.
JPOS_S_IDLE	The Device is in a good state and is not busy.
JPOS_S_BUSY	The Device is in a good state and is busy performing output.
JPOS_S_ERROR	An error has been reported, and the application must recover the Device to a good state before normal I/O can resume.

This property is initialized to JPOS_S_IDLE by the **open** method.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapCharacterSet Property**Type****int CapCharacterSet;****Mutability****Read Only****Remarks**

Holds the default character set capability.

Value	Meaning
PTR_CCS_ALPHA	The default character set supports uppercase alphabetic plus numeric, space, minus, and period.
PTR_CCS_ASCII	The default character set supports all ASCII characters 20h through 7Fh.
PTR_CCS_KANA	The default character set supports partial code page 932, including ASCII characters A1h through DFh and the Japanese Kana characters 20h through 7Fh, but excluding the Japanese Kanji characters.
PTR_CCS_KANJI	The default character set supports code page 932, including ASCII characters A1h through DFh, the Japanese Kana characters 20h through 7Fh, and the Shift-JIS Kanji characters, Levels 1 and 2.
PTR_CCS_UNICODE	The default character set supports Unicode.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	PTR_CCS_ASCII

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapConcurrentJrnRec Property**Type****boolean CapConcurrentJrnRec;****Mutability****Read Only****Remarks**

Identifies if the journal and receipt stations can print at the same time.

Value	Meaning
true	The journal and receipt stations can print at the same time. The printTwoNormal method may be used with the PTR_TWO_RECEIPT_JOURNAL and PTR_S_JOURNAL_RECEIPT parameters.
false	The journal and receipt stations cannot print at the same time.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapConcurrentJrnSlp Property**Type****boolean CapConcurrentJrnRec;****Mutability****Read Only****Remarks**

Identifies if the journal and slip stations can print at the same time.

Value	Meaning
true	The journal and slip stations can print at the same time. The printTwoNormal method may be used with the PTR_TWO_SLIP_JOURNAL and PTR_S_JOURNAL_SLIP parameters.
false	The journal and slip stations cannot print at the same time.

This property is initialized by the open method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapConcurrentPageMode Property**Type****boolean CapConcurrentPageMode;****Mutability****Read Only****Remarks**

Identifies if the printer is capable of supporting Page Mode concurrently for both the receipt and slip stations and one of them can enter into Page Mode when the other has already been in Page Mode.

Value	Meaning
true	The printer is capable of supporting Page Mode concurrently for both the receipt and slip stations, and when one of them has been in Page Mode, the other can also enter into Page Mode. Each station can create and save a page of its own format.
false	The printer is capable of supporting Page Mode either or neither for the receipt or slip station, or when one of them has been in Page Mode, the other cannot enter into Page Mode.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapConcurrentRecSlp Property**Type****boolean CapConcurrentRecSlp;****Mutability****Read Only****Remarks**

Identifies if the receipt and slip stations can print at the same time.

Value	Meaning
true	The receipt and slip stations can print at the same time. The printTwoNormal method may be used with the PTR_TWO_SLIP_RECEIPT and PTR_S_RECEIPT_SLIP parameters.
false	The receipt and slip stations cannot print at the same time.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapCoverSensor Property**Type****boolean CapCoverSensor;****Mutability****Read Only****Remarks**

Identifies if the POS printer has a cover open sensor.

Value	Meaning
true	The POS printer has a cover open sensor.
false	The POS printer does not have a cover open sensor.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	true
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapMapCharacterSet Property**Type****boolean CapMapCharacterSet;****Mutability****Read Only****Remarks**

Defines the ability to map the characters of the application to the selected character set when printing data.

Value	Meaning
true	Able to map the characters to the character sets defined in the CharacterSetList property when printing data.
false	Not able to map the characters.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapTransaction Property**Type****boolean CapTransaction;****Mutability****Read Only****Remarks**

Identifies if transactions are supported.

Value	Meaning
true	Batch transactions are supported for each station.
false	Batch transactions are not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	true
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnPresent Property**Type****boolean CapJrnPresent;****Mutability****Read Only****Remarks**

Identifies if the journal print is supported.

Value	Meaning
true	The journal print is supported.
false	The journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrn2Color Property**Type****boolean CapJrn2Color;****Mutability****Read Only****Remarks**

Identifies if the journal can print in two colors.

Value	Meaning
true	The journal can print in two colors.
false	The journal cannot print in two colors or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnBold Property**Type****boolean CapJrnBold;****Mutability****Read Only****Remarks**

Identifies if the journal can print bold characters.

Value	Meaning
true	The journal can print bold characters.
false	The journal cannot print bold characters or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnDhigh Property**Type****boolean CapJrnDhigh;****Mutability****Read Only****Remarks**

Identifies if the journal can print double high characters.

Value	Meaning
true	The journal can print double high characters.
false	The journal cannot print double high characters or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnDwide Property**Type****boolean CapJrnDwide;****Mutability****Read Only****Remarks**

Identifies if the journal can print double wide characters.

Value	Meaning
true	The journal can print double wide characters.
false	The journal cannot print double wide characters or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnDwideDhigh Property**Type****boolean CapJrnDwideDhigh;****Mutability****Read Only****Remarks**

Identifies if the journal can print double high and double wide characters.

Value	Meaning
true	The journal can print double high and double wide characters.
false	The journal cannot print double high and double wide characters or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnEmptySensor Property**Type****boolean CapJrnEmptySensor;****Mutability****Read Only****Remarks**

Identifies if the journal has a no paper sensor and can deliver a no paper notification.

Value	Meaning
true	The journal has a no paper sensor and a function to deliver a no paper notification.
false	The journal does not have a no paper sensor or a function to deliver a no paper notification, or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnItalic Property**Type****boolean CapJrnItalic;****Mutability****Read Only****Remarks**

Identifies if the journal can print italic characters.

Value	Meaning
true	The journal can print italic characters.
false	The journal cannot print italic characters or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnNearEndSensor Property**Type****boolean CapJrnNearEndSensor;****Mutability****Read Only****Remarks**

Identifies if the journal has a paper-near-end sensor and has a function to notify paper-near-end.

Value	Meaning
true	The journal has a paper-near-end sensor and has a function to notify paper-near-end.
false	The journal does not have a paper-near-end sensor or a function to notify paper-near-end, or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnUnderline Property**Type****boolean CapJrnUnderline;****Mutability****Read Only****Remarks**

Identifies if the journal can underline characters.

Value	Meaning
true	The journal can underline characters.
false	The journal cannot underline characters or journal print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnCartridgeSensor Property**Type****int CapJrnCartridgeSensor;****Mutability****Read Only****Remarks**

Indicates the presence of journal cartridge monitoring sensors.

If the CapJrnPresent property is false or the cartridge sensor function is not supported, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_CART_REMOVED	There is a function to indicate that the cartridge has been removed.
PTR_CART_EMPTY	There is a function to indicate that the cartridge is empty.
PTR_CART_NEAREND	There is a function to indicate that the cartridge is near end.
PTR_CART_CLEANING	There is a function to indicate that the head is being cleaned.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapJrnColor Property**Type****int CapJrnColor;****Mutability****Read Only****Remarks**

Indicates the availability of journal color cartridges.

If CapJrnPresent is false or print in colors is not supported, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_COLOR_PRIMARY	Supports Primary Color Cartridge.
PTR_COLOR_CUSTOM1	Supports Custom Color Cartridge 1.
PTR_COLOR_CUSTOM2	Supports Custom Color Cartridge 2.
PTR_COLOR_CUSTOM3	Supports Custom Color Cartridge 3.
PTR_COLOR_CUSTOM4	Supports Custom Color Cartridge 4.
PTR_COLOR_CUSTOM5	Supports Custom Color Cartridge 5.
PTR_COLOR_CUSTOM6	Supports Custom Color Cartridge 6.
PTR_COLOR_CYAN	Supports Cyan Color Cartridge for full color printing.
PTR_COLOR_MAGENTA	Supports Magenta Color Cartridge for full color printing.
PTR_COLOR_YELLOW	Supports Yellow Color Cartridge for full color printing.
PTR_COLOR_FRULL	Supports full color.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecPresent Property**Type****boolean CapRecPresent;****Mutability****Read Only****Remarks**

Identifies if the receipt print is supported.

Value	Meaning
true	The receipt print is supported.
false	The receipt print is not supported .

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRec2Color Property**Type****boolean CapRec2Color;****Mutability****Read Only****Remarks**

Identifies if the receipt can print in two colors.

Value	Meaning
true	The receipt can print in two colors.
false	The receipt cannot print in two colors or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecBarCode Property**Type****boolean CapRecBarCode;****Mutability****Read Only****Remarks**

Identifies if the receipt has bar code printing capability.

Value	Meaning
true	The receipt has bar code printing capability.
false	The receipt does not have bar code printing capability or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecBitmap Property**Type****boolean CapRecBitmap;****Mutability****Read Only****Remarks**

Identifies if the receipt can print bitmaps.

Value	Meaning
true	The receipt can print bitmaps.
false	The receipt cannot print bitmaps or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecBold Property**Type****boolean CapRecBold;****Mutability****Read Only****Remarks**

Identifies if the receipt can print bold characters.

Value	Meaning
true	The receipt can print bold characters.
false	The receipt cannot print bold characters or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecDhigh Property**Type****boolean CapRecDhigh;****Mutability****Read Only****Remarks**

Identifies if the receipt can print double high characters.

Value	Meaning
true	The receipt can print double high characters.
false	The receipt cannot print double high characters or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecDwide Property**Type****boolean CapRecDwide;****Mutability****Read Only****Remarks**

Identifies if the receipt can print double wide characters.

Value	Meaning
true	The receipt can print double wide characters.
false	The receipt cannot print double wide characters or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	True
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecDwideDhigh Property**Type****boolean CapRecDwideDhigh;****Mutability****Read Only****Remarks**

Identifies if the receipt can print double high and wide characters.

Value	Meaning
true	The receipt can print double high and wide characters.
false	The receipt cannot print double high and wide characters or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	true
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecEmptySensor Property**Type****boolean CapRecEmptySensor;****Mutability****Read Only****Remarks**

Identifies if the receipt has a no paper sensor and can deliver a no paper notification.

Value	Meaning
true	The receipt has a no paper sensor and a function to deliver a no paper notification.
false	The receipt does not have a no paper sensor or a function to deliver a no paper notification, or receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecItalic Property**Type****boolean CapRecItalic;****Mutability****Read Only****Remarks**

Identifies if the receipt can print italic characters.

Value	Meaning
true	The receipt can print italic characters.
false	The receipt cannot print italic characters or receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecLeft90 Property**Type****boolean CapRecLeft90;****Mutability****Read Only****Remarks**

Identifies if the receipt can print in a rotated 90° left mode.

Value	Meaning
true	The receipt can print in a rotated 90° left mode.
false	The receipt cannot print in a rotated 90° left mode or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	true
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecNearEndSensor Property**Type****boolean CapRecNearEndSensor;****Mutability****Read Only****Remarks**

Identifies if the receipt has a paper-near-end sensor and has a function to notify paper-near-end.

Value	Meaning
True	The receipt has a paper-near-end sensor and has a function to notify paper-near-end.
False	The receipt does not have a paper-near-end sensor or a function to notify paper-near-end, or receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	true (*1)
TRST-A15-S, P, U	

(*1) Available when PAPER_LOW_SENSOR is set to Enable in the printer setup.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecPapercut Property**Type****boolean CapRecPapercut;****Mutability****Read Only****Remarks**

Identifies if the receipt can perform paper cuts.

Value	Meaning
true	The receipt can perform paper cuts.
false	The receipt cannot perform paper cuts or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecRight90 Property**Type****boolean CapRecRight90;****Mutability****Read Only****Remarks**

Identifies if the receipt can print in a rotated 90° right mode.

Value	Meaning
true	The receipt can print in a rotated 90° right mode.
false	The receipt cannot print in a rotated 90° right mode or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecRotate180 Property**Type****boolean CapRecRotate180;****Mutability****Read Only****Remarks**

Identifies if the receipt can print in a rotated 180° (upside down) mode.

Value	Meaning
true	The receipt can print in a rotated 180° (upside down) mode.
false	The receipt cannot print in a 180° (upside down) mode or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	true
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecStamp Property**Type****boolean CapRecStamp;****Mutability****Read Only****Remarks**

Identifies if the receipt has a stamp capability.

Value	Meaning
true	The receipt has a stamp capability.
false	The receipt does not have a stamp capability or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecUnderline Property**Type****boolean CapRecUnderline;****Mutability****Read Only****Remarks**

Identifies if the receipt can underline characters.

Value	Meaning
true	The receipt can underline characters.
false	The receipt cannot underline characters or receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecCartridgeSensor Property**Type****int CapRecCartridgeSensor;****Mutability****Read Only****Remarks**

Indicates the presence of receipt cartridge monitoring sensors.

If the CapRecPresent property is false or the cartridge sensor function is not supported, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_CART_REMOVED	There is a function to indicate that the cartridge has been removed.
PTR_CART_EMPTY	There is a function to indicate that the cartridge is empty.
PTR_CART_NEAREND	There is a function to indicate that the cartridge is near end.
PTR_CART_CLEANING	There is a function to indicate that the head is being cleaned.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecColor Property**Type****int CapRecColor;****Mutability****Read Only****Remarks**

Indicates the availability of receipt color cartridges.

If CapRecPresent is false or print in colors is not supported, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_COLOR_PRIMARY	Supports Primary Color Cartridge.
PTR_COLOR_CUSTOM1	Supports Custom Color Cartridge 1.
PTR_COLOR_CUSTOM2	Supports Custom Color Cartridge 2.
PTR_COLOR_CUSTOM3	Supports Custom Color Cartridge 3.
PTR_COLOR_CUSTOM4	Supports Custom Color Cartridge 4.
PTR_COLOR_CUSTOM5	Supports Custom Color Cartridge 5.
PTR_COLOR_CUSTOM6	Supports Custom Color Cartridge 6.
PTR_COLOR_CYAN	Supports Cyan Color Cartridge for full color printing.
PTR_COLOR_MAGENTA	Supports Magenta Color Cartridge for full color printing.
PTR_COLOR_YELLOW	Supports Yellow Color Cartridge for full color printing.
PTR_COLOR_FRULL	Supports full color.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecMarkFeed Property**Type****int CapRecMarkFeed;****Mutability****Read Only****Remarks**

Indicates the type of mark sensed paper handling available.

If the **CapRecPresent** property is false or mark sensed paper handling is not available, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_MF_TO_TAKEUP	Feeds the mark sensed paper to the paper take-up position.
PTR_MF_TO_CUTTER	Feeds the mark sensed paper to the autocutter cutting position.
PTR_MF_TO_CURRENT_TOF	Feeds the mark sensed paper to the present paper's top of form. (reverse feed)
PTR_MF_TO_NEXT_TOF	Feeds the mark sensed paper to the paper's next top of form.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapRecPageMode Property**Type****boolean CapRecPageMode;****Mutability****Read Only****Remarks**

Identifies if the printer is capable of supporting Page Mode for the receipt station.

Value	Meaning
true	The printer is capable of supporting Page Mode for the receipt station.
false	The printer is not capable of supporting Page Mode for the receipt station or the receipt print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpPresent Property**Type****boolean CapSlpPresent;****Mutability****Read Only****Remarks**

Identifies if the slip print station is present.

Value	Meaning
true	The slip print is supported.
false	The slip print is not present.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpFullslip Property**Type****boolean CapSlpFullslip;****Mutability****Read Only****Remarks**

Identifies if the slip is a full slip station or validation type station.

Value	Meaning
true	The slip is a full slip station and can print full-length forms.
false	The slip is a validation type station. This usually limits the number of print lines, and disables access to the receipt and/or journal stations while the validation slip is being used. Or, the slip print station is not present.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlp2Color Property**Type****boolean CapSlp2Color;****Mutability****Read Only****Remarks**

Identifies if the slip can print in two colors.

Value	Meaning
true	The slip can print in two colors.
false	The slip cannot print in two colors or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpBarCode Property**Type****boolean CapSlpBarCode;****Mutability****Read Only****Remarks**

Identifies if the slip has bar code printing capability.

Value	Meaning
true	The slip has bar code printing capability.
false	The slip does not have bar code printing capability or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpBitmap Property**Type****boolean CapSlpBitmap;****Mutability****Read Only****Remarks**

Identifies if the slip can print bitmaps.

Value	Meaning
true	The slip can print bitmaps.
false	The slip cannot print bitmaps or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpBold Property**Type****boolean CapSlpBold;****Mutability****Read Only****Remarks**

Identifies if the slip can print bold characters.

Value	Meaning
true	The slip can print bold characters.
false	The slip cannot print bold characters or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpDhigh Property**Type****boolean CapSlpDhigh;****Mutability****Read Only****Remarks**

Identifies if the slip can print double high characters.

Value	Meaning
true	The slip can print double high characters.
false	The slip cannot print double high characters or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpDwide Property**Type****boolean CapSlpDwide;****Mutability****Read Only****Remarks**

Identifies if the slip can print double wide characters.

Value	Meaning
true	The slip can print double wide characters.
false	The slip cannot print double wide characters or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpDwideDhigh Property**Type****boolean CapSlpDwideDhigh;****Mutability****Read Only****Remarks**

Identifies if the slip can print double high and wide characters.

Value	Meaning
true	The slip can print double high and wide characters.
false	The slip cannot print double high and wide characters or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpEmptySensor Property**Type****boolean CapSlpEmptySensor;****Mutability****Read Only****Remarks**

Identifies if the slip has a no paper sensor and can deliver a no paper notification.

Value	Meaning
true	The slip has a no paper sensor and a function to deliver a no paper notification.
false	The slip does not have a no paper sensor or a function to deliver a no paper notification, or slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpItalic Property**Type****boolean CapSlpItalic;****Mutability****Read Only****Remarks**

Identifies if the slip can print italic characters.

Value	Meaning
true	The slip can print italic characters.
false	The slip cannot print italic characters or slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpLeft90 Property**Type****boolean CapSlpLeft90;****Mutability****Read Only****Remarks**

Identifies if the slip can print in a rotated 90° left mode.

Value	Meaning
true	The slip can print in a rotated 90° left mode.
false	The slip cannot print in a rotated 90° left mode or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpNearEndSensor Property**Type****boolean CapSlpNearEndSensor;****Mutability****Read Only****Remarks**

Identifies if the slip has a paper-near-end sensor and has a function to notify paper-near-end.

Value	Meaning
true	The slip has a paper-near-end sensor and has a function to notify paper-near-end.
false	The slip does not have a paper-near-end sensor or a function to notify paper-near-end, or slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpRight90 Property**Type****boolean CapSlpRight90;****Mutability****Read Only****Remarks**

Identifies if the slip can print in a rotated 90° right mode.

Value	Meaning
true	The slip can print in a rotated 90° right mode.
false	The slip cannot print in a rotated 90° right mode or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpRotate180 Property**Type****boolean CapSlpRotate180;****Mutability****Read Only****Remarks**

Identifies if the slip can print in a rotated 180° (upside down) mode.

Value	Meaning
true	The slip can print in a rotated 180° (upside down) mode.
false	The slip cannot print in a rotated 180° (upside down) mode or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpUnderline Property**Type****boolean CapSlpUnderline;****Mutability****Read Only****Remarks**

Identifies if the slip can underline characters.

Value	Meaning
true	The slip can underline characters.
false	The slip cannot underline characters or slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpBothSidePrint Property**Type****boolean CapSlpBothSidePrint;****Mutability****Read Only****Remarks**

Identifies if the slip station can print on both sides of a paper.

Value	Meaning
true	The slip station can print on both sides of a paper.
false	The slip station cannot print on both sides of a paper or slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpCartridgeSensor Property**Type****int CapSlpCartridgeSensor;****Mutability****Read Only****Remarks**

Indicates the presence of slip cartridge monitoring sensors.

If the CapSlpPresent property is false or the cartridge sensor function is not supported, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_CART_REMOVED	There is a function to indicate that the cartridge has been removed.
PTR_CART_EMPTY	There is a function to indicate that the cartridge is empty.
PTR_CART_NEAREND	There is a function to indicate that the cartridge is near end.
PTR_CART_CLEANING	There is a function to indicate that the head is being cleaned.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	0
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpColor Property**Type****int CapSlpColor;****Mutability****Read Only****Remarks**

Indicates the availability of slip color cartridges.

If CapSlpPresent is false or print in colors is not supported, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_COLOR_PRIMARY	Supports Primary Color Cartridge.
PTR_COLOR_CUSTOM1	Supports Custom Color Cartridge 1.
PTR_COLOR_CUSTOM2	Supports Custom Color Cartridge 2.
PTR_COLOR_CUSTOM3	Supports Custom Color Cartridge 3.
PTR_COLOR_CUSTOM4	Supports Custom Color Cartridge 4.
PTR_COLOR_CUSTOM5	Supports Custom Color Cartridge 5.
PTR_COLOR_CUSTOM6	Supports Custom Color Cartridge 6.
PTR_COLOR_CYAN	Supports Cyan Color Cartridge for full color printing.
PTR_COLOR_MAGENTA	Supports Magenta Color Cartridge for full color printing.
PTR_COLOR_YELLOW	Supports Yellow Color Cartridge for full color printing.
PTR_COLOR_FRULL	Supports full color.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CapSlpPageMode Property**Type****boolean CapSlpPageMode;****Mutability****Read Only****Remarks**

Identifies if the printer is capable of supporting Page Mode for the slip station.

Value	Meaning
true	The printer is capable of supporting Page Mode for the slip station.
false	The printer is not capable of supporting Page Mode for the slip station or the slip print is not supported.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	false
TRST-A15-S, P, U	false

Errors

When this property is accessed, no JavaPOS Exception is thrown.

AsyncMode Property**Type****boolean AsyncMode;****Mutability****Read / Write****Remarks**Identifies if the print methods, **printNormal**, **printTwoNormal**, **cutPaper**, **rotatePrint**, **printBarCode**, **printBitmap** which can be performed asynchronously will be performed asynchronously.

Value	Meaning
true	The print methods, which can be performed asynchronously, will be performed asynchronously.
false	The print methods, which cannot be performed asynchronously, will be performed synchronously.

This property is initialized to false by the **open** method. Other values can be set by the application.**Errors**A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.

CartridgeNotify Property**Type****int CartridgeNotify;****Mutability****Read / Write****Remarks**

Selects disable or enable of cartridge state notification.

Value	Meaning
PTR_CN_DISABLED	Disables cartridge state notification. No cartridge state notification StatusUpdateEvent events will be delivered, and JrnCartridgeState , RecCartridgeState , and SlpCartridgeState are set to PTR_CART_UNKNOWN.
PTR_CN_ENABLED	If the DeviceEnabled property is set to true, a cartridge state notification StatusUpdateEvent event will be delivered, and a cartridge state is set to JrnCartridgeState , RecCartridgeState , and SlpCartridgeState .

This property is initialized to PTR_CN_DISABLED by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the cartridge state notification function, PTR_CN_DISABLED is always returned and JPOS_PN_ENABLED cannot be selected when the **open** method is executed. If an attempt is made to select JPOS_PN_ENABLED, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCodeExtended:0 may be thrown.

ErrorsA **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	The Device is already enabled.	Execute this property again after disabling the Device by setting the DeviceEnabled property to false.
	With the CapJrnCartridge, CapRecCartridge, and CapSlpCartridge parameters set to 0, PTR_CN_ENABLED is selected.	This function is not supported.
	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

CharacterSet Property**Type****int CharacterSet;****Mutability****Read / Write****Remarks**

Holds the character set for printing characters.

Value	Meaning
100 - 199	Device-specific character sets that do not match a code page or the ASCII or ANSI character sets.
400 - 990	Prints with character sets that correspond with one of the standard code pages.
PTR_CN_UNICODE	The character set supports Unicode. The value of this constant is 997.
PTR_CN_ASCII	The ASCII character set, supporting the ASCII characters 20h through 7Fh. The value of this constant is 998.
PTR_CN_ANSI	The ANSI character set. The value of this constant is 999.
Range 1000 and higher	Prints with character sets that correspond with one of the standard code pages.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	437

The TRST-A10-S, P, U, L and the TRST-A15-S, P, U can set the code pages, 437, 850, 852, 857, 858, 860, 863, 865, 866, and 1252.

ErrorsA **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

CharacterSetList Property**Type****String CharacterSetList;****Mutability****Read Only****Remarks**

Holds the numbers of the settable character sets separated by commas.

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L	"437, 850, 852, 857, 858, 860, 863, 865, 866, 1252"
TRST-A15-S, P, U	

Errors

When this property is accessed, no JavaPOS Exception is thrown.

CoverOpen Property**Type****boolean CoverOpen;****Mutability****Read Only****Remarks**

Identifies if the printer cover is open.

Value	Meaning
true	The printer cover is open.
false	The printer cover is closed or the printer does not have a cover open sensor.

This property is initialized when the **deviceEnabled** property is set to true.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

ErrorLevel Property**Type****int ErrorLevel;****Mutability****Read Only****Remarks**

Holds the severity of the error condition.

This property has one of the following values:

Value	Meaning
PTR_EL_NONE	No error condition is present.
PTR_EL_RECOVERABLE	A recoverable error has occurred. (Example: No paper.)
PTR_EL_FATAL	A non-recoverable error has occurred. (Example: Internal printer failure.)

This property is set just before delivering an **ErrorEvent** event. When the error is cleared, the property is changed to PTR_EL_NONE.

This property is initialized to PTR_EL_NONE by the **open** method.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

ErrorStation Property**Type****int ErrorStation;****Mutability****Read Only****Remarks**

Holds the station or stations that were printing when an error was detected.

This property has one of the following values:

Value	Meaning
PTR_S_JOURNAL	An error is detected while the journal is printing (processing data).
PTR_S_RECEIPT	An error is detected while the receipt is printing (processing data).
PTR_S_SLIP	An error is detected while the slip is printing (processing data).
PTR_S_JOURNAL_RECEIPT	An error is detected while the journal and the receipt are printing (processing data) at the same time.
PTR_S_JOURNAL_SLIP	An error is detected while the journal and the slip are printing (processing data) at the same time.
PTR_S_RECEIPT_SLIP	An error is detected while the receipt and the slip are printing (processing data) at the same time.
PTR_TWO_RECEIPT_JOURNAL	An error is detected while the receipt and the journal are printing (processing data) at the same time.
PTR_TWO_SLIP_JOURNAL	An error is detected while the slip and the journal are printing (processing data) at the same time.
PTR_TWO_SLIP_RECEIPT	An error is detected while the slip and the receipt are printing (processing data) at the same time.

This property is set just before delivering an **ErrorEvent** event and changed to 0 when the error is cleared.

This property is initialized to 0 by the **open** method.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

ErrorString Property**Type****String ErrorString;****Mutability****Read Only****Remarks**

Holds a vendor-supplied description of the current error.

A description of an error occurred just before an **ErrorEvent** even is delivered is set to this property. When the error is cleared, the property is changed to an empty string ("").

This property is initialized to an empty string ("") by the **open** method.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide a description notification function, an empty string ("") is always returned after the **open** method is executed.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

FontTypefaceList Property**Type****String FontTypefaceList;****Mutability****Read Only****Remarks**

Holds the fonts that are supported by the printer (or a string which specifies typefaces) which are separated by commas (",").

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	"FontA, FontB"

Errors

When this property is accessed, no JavaPOS Exception is thrown.

FlagWhenIdle Property**Type****boolean FlagWhenIdle;****Mutability****Read / Write****Remarks**

Identifies if a StatusUpdateEvent event is to be delivered when the Device is in the idle state.

PTR_SUE_IDLE is set to the Status parameter of StatusUpdateEvent.

Value	Meaning
true	A StatusUpdateEvent will be enqueued when the Device is in the idle state.
false	A StatusUpdateEvent will not be delivered even when the Device is in the idle state.

This property is automatically reset to false when the **StatusUpdateEvent** event of which Status parameter is set to PTR_SUE_IDLE is delivered.

The application can get to know all asynchronous outputs have been processed by using this property with **StatusUpdateEvent**. The event will be delivered if the outputs were completed successfully or if they are cleared by JPOS_ER_CLEAR of the **clearOutput** method or by the **ErrorEvent** event.

If the **State** property is already set to JPOS_S_IDLE when this property is set to true, a **StatusUpdateEvent** is enqueued immediately. The application can therefore depend upon the event, with no race condition between the starting of its last asynchronous output and the setting of this flag.

This property is initialized to false by the **open** method. Other values can be set by the application.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.

MapCharacterSet Property**Type****boolean MapCharacterSet;****Mutability****Read / Write****Remarks**

Identifies if the characters transferred by the application is mapped for printing data.

Value	Meaning
true	Maps the characters transferred by the application to the character set selected in the CharacterSet property for printing data.
false	No mapping is supported. In such a case the application has to ensure the mapping of the character set used in the application to the character set selected in the CharacterSet property.

This property is initialized to false by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the character mapping function, this property is always set to false and true cannot be selected when the **open** method is selected. If an attempt is made to select true, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCodeExtended:0 may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	"true" is selected with the CapMapCharacterSet property set to false.	This function is not supported.

MapMode Property**Type****int MapMode;****Mutability****Read / Write****Remarks**

Holds the mapping mode (the unit of measure used for other properties, such as line heights and line spacings) of the printer. It has one of the following values:

Value	Meaning
PTR_MM_DOTS	The POS printer's dot width. This width may be different for each printer station. (*1)
PTR_MM_TWIPS	1/1440 of an inch
PTR_MM_ENGLISH	0.001 inch
PTR_MM_METRIC	0.01 millimeter

(*1) For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, a "dot" means the printer's smallest physical size (half dot). 1 dot = 0.125 millimeters

The unit of measure specified by the **MapMode** property influences on **JrnLineHeight**, **JrnLineSpacing**, **JrnLineWidth**, **RecLineHeight**, **RecLineSpacing**, **RecLineWidth**, **SlpLineHeight**, **SlpLineSpacing**, **SlpLineWidth**, and **PageModeArea** properties.

This property is initialized to PTR_MM_DOTS by the **open** method. Other values can be set by the application.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

PageModeArea Property**Type****String PageModeArea;****Mutability****Read Only****Remarks**

Holds the page mode area for the station specified by the **PageModeStation** property expressed in the unit of measure given by the **MapMode** property. This page mode area can be different than the page mode print area and is determined by the hardware capability of the printer.

The property consists of two numbers separated by a comma, in the following order: horizontal size and vertical size of the page mode area. For example, if the string is "450,800" and the MapMode property is set to PTR_MM_DOTS, the page size is 450 horizontal units by 800 vertical units, and the station print area is a rectangle beginning at the top left point (0,0), and continuing up to the bottom right point (449,799).

The **PageModeStation** property must be set to a valid station before accessing this property, otherwise an empty string ("") will be returned.

This property is initialized to an empty string ("") by the **open** method.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode function, this property is always set to empty string ("").

~~When a value is set to the **PageModeStation** and **MapMode** properties, the following values are set.~~

Device Type	PageModeStation Property Value	Paper Width	MapMode Property Value	Value
TRST-A10-S TRST-A10-P TRST-A10-U TRST-A15-S TRST-A15-P TRST-A15-U	PTR_S_RECEIPT	80mm	PTR_MM_DOTS	"576,2000"
			PTR_MM_TWIPS	"4082,14173"
			PTR_MM_ENGLISH	"2834,0842"
			PTR_MM_METRIC	"7200,25000"
		58mm	PTR_MM_DOTS	"432,2000"
			PTR_MM_TWIPS	"3061,14173"
			PTR_MM_ENGLISH	"2125,0842"
			PTR_MM_METRIC	"5400,25000"
	PTR_S_SLIP	80mm	PTR_MM_DOTS	""
			PTR_MM_TWIPS	""
			PTR_MM_ENGLISH	""
			PTR_MM_METRIC	""
		58mm	PTR_MM_DOTS	""
			PTR_MM_TWIPS	""
			PTR_MM_ENGLISH	""
			PTR_MM_METRIC	""
	0	80mm	PTR_MM_DOTS	""
			PTR_MM_TWIPS	""
			PTR_MM_ENGLISH	""
			PTR_MM_METRIC	""
		58mm	PTR_MM_DOTS	""
			PTR_MM_TWIPS	""
			PTR_MM_ENGLISH	""
			PTR_MM_METRIC	""

Errors

When this property is accessed, no JavaPOS Exception is thrown.

PageModeDescriptor Property**Type****int PageModeDescriptor;****Mutability****Read Only****Remarks**

Indicates the available Page Mode functionality of the station selected by the **PageModeStation** property. If the effective station is not set for the PageModeStation property, this property is set to 0. Otherwise, it is a logical OR combination of any of the following values.

Value	Meaning
PTR_PM_BITMAP	Prints bitmaps.
PTR_PM_BARCODE	Prints barcodes.
PTR_PM_BM_ROTATE	Rotates and prints bitmaps.
PTR_PM_BC_ROTATE	Rotates and prints barcodes.
PTR_PM_OPAQUE	Text, graphics, and background are opaque, meaning items already placed on the page area in the specified print area will not be visible after being printed over.

This property is initialized to 0 ~~an empty string ("")~~^{#2} by the **open** method.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode function, this property is always set to 0.

~~When a value is set to the PageModeStation property, the following values are set.~~^{#2}

Device Type	PageModeStation Property Value	Value
TRST-A10-S	PTR_S_RECEIPT	PTR_PM_BITMAP | PTR_PM_BM_ROTATE
TRST-A10-P		
TRST-A10-U	PTR_S_SLIP	0
TRST-A15-S		
TRST-A15-P	0	0
TRST-A15-U		

Errors

When this property is accessed, no JavaPOS Exception is thrown.

PageModeHorizontalPosition Property**Type****int PageModeHorizontalPosition;****Mutability****Read / Write****Remarks**

Holds the horizontal start position offset value within the page mode print area for the station selected by the **PageModeStation** property, expressed in the unit of measure given by the **MapMode** property.

The horizontal direction is the same as the actual **PageModePrintDirection** property. If the exact position cannot be supported, the position is set to the closest supported value.

This property will return the horizontal position offset last set and not the current position.

The **PageModeStation** property must be set to a valid station before accessing this property, otherwise the value 0 is returned.

This property is initialized to 0 by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode #2 function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

~~For the TRST-A10-S, P, U and the TRST-A15-S, P, U, only the receipt station provides the page mode print function. When the **Page ModeStation** property is set to a value other than PTR_S_RECEIPT, 0 is set.~~

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

PageModePrintArea Property**Type****String PageModePrintArea;****Mutability****Read / Write****Remarks**

Holds the page mode print area for the station selected by the **PageModeStation** property, expressed in the unit of measure given by **MapMode**. The page mode print area cannot be larger than the page mode area.

The property value consists of four numbers separated by commas (",") in the following order: horizontal start, vertical start, horizontal size, and vertical size. For example, if the string is "50,100,200,400" and MapModeProperty Value is PTR_MM_DOTS, the page mode print area is a rectangle beginning at the point (50,100), and continuing up to (249,499).

The **PageModeStation** property must be set to a valid station before accessing this property, otherwise an empty string ("") is returned.

As soon as the **PageModeStation** property is set to a valid station, this property is initialized to "0,0,0,0".

Text written to the right edge of the page mode print area will wrap to the next line. Any text or image written beyond the bottom of the page mode print area will be truncated.

This property is initialized to an empty string ("") by the **open** method.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode #2 function, this property is always set to empty string ("").

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

PageModePrintDirection Property**Type****int PageModePrintDirection;****Mutability****Read / Write****Remarks**

Holds the print direction for the page mode print area. This property has one of the following values:

Value	Meaning
PTR_PD_LEFT_TO_RIGHT	Prints from left to right, starting at the top left position of the page mode print area, i.e., normal printing.
PTR_PD_BOTTOM_TO_TOP	Prints from bottom to top, starting at the bottom left position of the page mode print area, i.e., rotated left 90° printing.
PTR_PD_RIGHT_TO_LEFT	Prints from right to left, starting at the bottom right position of the page mode print area, i.e., rotated 180° (upside down) printing.
PTR_PD_TOP_TO_BOTTOM	Prints from top to bottom, starting at the top right position of the page mode print area, i.e., rotated right 90° printing.

Setting this property may also change the print direction at a print starting position specified by the **PageModeHorizontalPosition** and **PageModeVerticalPosition** properties. Setting this property will have an effect on the current page mode print area. By changing the page mode print area, it is possible to generate a receipt or slip with text printed in multiple rotations.

This property is initialized to PTR_PD_LEFT_TO_RIGHT by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode #2 function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

PageModeStation Property**Type****int PageModeStation;****Mutability****Read / Write****Remarks**

Sets the print station for subsequent Page Mode properties. This property has one of the following values. If Page Mode is not supported on any station, the value should be zero.

Value	Meaning
PTR_S_RECEIPT	The receipt station is a Page Mode station.
PTR_S_SLIP	The slip station is a Page Mode station.

Setting this property changes the value of the **PageModeHorizontalPosition** and **PageModeVerticalPosition***** properties which hold a value for each station respectively. To control Page Mode for more than one station, this value will need to be changed between the stations.

This property is initialized to 0 by the **open** method. Other values can be set by the application. For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode #2 function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

PageModeVerticalPosition Property**Type****int PageModeVerticalPosition;****Mutability****Read / Write****Remarks**

Holds the vertical start position offset value, expressed in the unit of measure given by the **MapMode** property within the page mode print area by the station selected by the **PageModeStation** property.

The vertical direction is perpendicular to the direction specified in the actual **PageModePrintDirection** property. If the exact position cannot be supported, the position is set to the closest supported value.

This property will return the vertical position offset last set and not the current position.

The **PageModeStation** property must be set to a valid station before accessing this property, otherwise the value 0 is returned.

This property is initialized to 0 by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the page mode #2 function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

~~For the TRST-A10-S, P, U and the TRST-A15-S, P, U, only the receipt station provides the page mode print function. When the **PageModeStation** property is set to a value other than PTR_S_RECEIPT, 0 is set.~~

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

RotateSpecial Property**Type****int RotateSpecial;****Mutability****Read / Write****Remarks**

Holds the rotation orientation for bar codes. This property has one of the following values:

Value	Meaning
PTR_RP_NORMAL	Print subsequent bar codes in normal orientation.
PTR_RP_RIGHT90	Rotate printing 90° to the right (clockwise)
PTR_RP_LEFT90	Rotate printing 90° to the left (counter-clockwise)
PTR_RP_ROTATE180	Rotate printing 180° (upside-down)

This property is initialized to PTR_RP_NORMAL by the **open** method. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, only PTR_RP_NORMAL (barcode print in normal orientation) or PTR_RP_ROTATE180 (Rotate printing 180°) can be set.

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An attempt was made to set an invalid parameter value. Check the value being selected.

JrnLineChars Property**Type****int JrnLineChars;****Mutability****Read / Write****Remarks**

Holds a line character width (the number of 1-byte characters that may be printed on a journal line). If changed to a line character width that is supported, the width is set to the specified value. If the exact width cannot be supported and the specified value is smaller than the maximum value allowed for the printer, subsequent lines will be printed with a character size that is larger than and most closely supports the specified characters per line. For example, if the **JrnLineChars** property is set to 36 and the printer can print either 30 or 40 characters per line, the 40 characters per line size is selected.

If the character width is greater than the maximum value allowed for the printer and cannot be supported, a `JposException`, `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCodeExtended:0` may be thrown. For example, if the **JrnLineChars** property is set to 42 and the printer can print either 30 or 40 characters per line, an error occurs because the value is larger than 40, the maximum value allowed for the printer.

This property is initialized by the **open** method. Other values can be set by the application. For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a `JposException`, `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCodeExtended:0` may be thrown.

Errors

A `JposException` may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapJrnPresent property is false.	This function is not supported.

JrnLineCharsList Property**Type****String JrnLineCharsList;****Mutability****Read Only****Remarks**

Holds the line character widths (number of 1-byte characters printed per line) supported by the journal station, separated by commas (","),. For example, if the string is "32,36,40", the station supports line widths of 32, 36, and 40 characters. If the journal print function is not provided, an empty string ("") is set.

This property is initialized to the value below by the **open** method.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	"" (empty string)

Errors

When this property is accessed, no JavaPOS Exception is thrown.

JrnLineHeight Property**Type****int JrnLineHeight;****Mutability****Read / Write****Remarks**

Holds the journal print line height, expressed in the unit of measure given by **MapMode**.

If changed to a height that can be supported with the current character width, the line height is set to this value. If the exact height cannot be supported, the height is set to the closest supported value.

When the **JrnLineChars** property value is changed, the **JrnLineHeight** property value is updated to the default line height for the selected width.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a **JposException**, **ErrorCode:JPOS_E_ILLEGAL** or **ErrorCode Extended:0** may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapJrnPresent property is false.	This function is not supported.

JrnLineSpacing Property**Type****int JrnLineSpacing;****Mutability****Read / Write****Remarks**

Holds the spacing of each single-high print line (including both the printed line height plus the whitespace between each pair of lines) for journal print, expressed in the unit of measure given by **MapMode**.

If the **JrnLineSpacing** property value is changed to a spacing that can be supported by the printer, the line spacing is set to this value. If the spacing cannot be supported, the spacing is set to the closest supported value.

When a **JrnLineChars** or **JrnLineHeight** property value is changed, this property is updated to the default line spacing for the selected width or height.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a `JposException`, `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCodeExtended:0` may be thrown.

Errors

A `JposException` may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapJrnPresent property is false.	This function is not supported.

JrnLineWidth Property**Type****int JrnLineWidth;****Mutability****Read Only****Remarks**

Holds the width of a line of **JrnLineChars** property, expressed in the unit of measure given by **MapMode**.

Setting **JrnLineChars** may also update this property.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

JrnLetterQuality Property**Type****boolean JrnLetterQuality;****Mutability****Read / Write****Remarks**

Performs a journal print in high quality mode.

Value	Meaning
true	Performs a journal print in high quality mode.
false	Performs a journal print in high-speed print mode.

To make a column alignment more precise for the POS printers with bi-directional print capability, set this property to true to print in high quality mode (unidirectional mode).

Setting this property may also update the **JrnLineWidth**, **JrnLineHeight**, and **JrnLineSpacing** properties if the **MapMode** property is PTR_MM_DOTS. For details, please refer to the section, "1.1.7.2 Details of Properties, **MapMode** Property" in this Manual.

This property is initialized to false when the **deviceEnabled** property is set to true. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to false and cannot be set to true. If an attempt is made to select true, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapJrnPresent property is false.	This function is not supported.

JrnEmpty Property**Type****boolean JrnEmpty;****Mutability****Read Only****Remarks**

Identifies the presence of journal paper.

Value	Meaning
true	The journal is out of paper.
false	Journal paper is present.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to false.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

JrnNearEnd Property**Type****boolean JrnNearEnd;****Mutability****Read Only****Remarks**

Identifies if journal paper is paper near end or not.

Value	Meaning
true	The journal paper is in paper near end state.
false	The journal paper is not in paper near end state.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to false.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

JrnCartridgeState Property**Type****int JrnCartridgeState;****Mutability****Read Only****Remarks**

This property sets the status of the journal cartridge (ink, ribbon, or toner) currently selected by the JrnCurrentCartridge property. If several statuses exist, the priority is given to the status from the top to the bottom shown in the table below. (PTR_CART_UNKNOWN>PTR_CART_REMOVE>...>PTR_CART_NEAREND).

Value	Meaning
PTR_CART_UNKNOWN	Cannot determine the cartridge state, for one of the following reasons: <ul style="list-style-type: none"> • CapJrnCartridgeSensor=0 The Device does not support cartridge status notification. • CartridgeNotify=PTR_CN_DISABLED Cartridge status notifications are disabled. • DeviceEnabled=false Cartridge state monitoring does not occur until the Device is enabled.
PTR_CART_REMOVED	The cartridge selected by JrnCurrentCartridge has been removed.
PTR_CART_EMPTY	The cartridge selected by JrnCurrentCartridge is empty.
PTR_CART_CLEANING	The head selected by JrnCurrentCartridge is being cleaned.
PTR_CART_NEAREND	The cartridge selected by JrnCurrentCartridge is near end.
PTR_CART_OK	The cartridge selected by JrnCurrentCartridge is in normal condition.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to PTR_CART_UNKNOWN.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

JrnCurrentCartridge Property**Type****int JrnCurrentCartridge;****Mutability****Read / Write****Remarks**

Specifies the currently selected Journal cartridge.

If the **CapJrnPresent** property value is false, this property is set to 0. Otherwise, this value is guaranteed to be one of the color cartridges specified by the **CapJrnColor** property. (PTR_COLOR_FULL cannot be set.)

Setting the **JrnCurrentCartridge** property may also update **JrnCartridgeState**.

This property is initialized when the **deviceEnabled** property is set to true. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the journal print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapJrnPresent property is false.	This function is not supported.

RecLineChars Property**Type****int RecLineChars;****Mutability****Read / Write****Remarks**

Holds a line character width (the number of 1-byte characters that may be printed on a receipt line). If changed to a line character width that is supported, the width is set to the specified value. If the exact width cannot be supported and the specified value is smaller than the maximum value allowed for the printer, subsequent lines will be printed with a character size that is larger than and most closely supports the specified characters per line. For example, if the **RecLineChars** property is set to 36 and the printer can print either 30 or 40 characters per line, the 40 characters per line size is selected.

If the character width is greater than the maximum value allowed for the printer and cannot be supported, a `JposException`, `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCodeExtended:0` may be thrown. For example, if the **RecLineChars** property is set to 42 and the printer can print either 30 or 40 characters per line, an error occurs because the value is larger than 40, the maximum value allowed for the printer.

This property is initialized by the **open** method. Other values can be set by the application. For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line character width is determined based on font type, font size, and paper width. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	Check the value specified and specify a valid value.

RecLineCharsList Property**Type****String RecLineCharsList;****Mutability****Read Only****Remarks**

Holds the line character widths (number of 1-byte characters printed per line) supported by the receipt station, separated by commas (","),. For example, if the string is "32,36,40", the station supports line widths of 32, 36, and 40 characters. If the receipt print function is not provided, an empty string ("") is set.

This property is initialized to the value below by the **open** method.

Device Type	Value
TRST-A10-S, P, U, L	"48,36", "64,48", "42,32", or "56,42".
TRST-A15-S, P, U	

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line character width is determined based on paper width and font size. Depending on the combination of paper width and font size, any of the above values is selected. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecLineHeight Property**Type****int RecLineHeight;****Mutability****Read / Write****Remarks**

Holds the receipt print line height, expressed in the unit of measure given by **MapMode**.

If changed to a height that can be supported with the current character width, the line height is set to this value. If the exact height cannot be supported, the height is set to the closest supported value.

When the **RecLineChars** property value is changed, the **RecLineHeight** property value is updated to the default line height for the selected width.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L	24 or 28
TRST-A15-S, P, U	

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line height is determined based on the font size. Depending on the font size, this property is initialized to either of the above values. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	Check the value specified and specify a valid value.

RecLineSpacing Property**Type****int RecLineSpacing;****Mutability****Read / Write****Remarks**

Holds the spacing of each single-high print line (including both the printed line height plus the whitespace between each pair of lines) for receipt print, expressed in the unit of measure given by **MapMode**.

If the **RecLineSpacing** property value is changed to a spacing that can be supported by the printer, the line spacing is set to this value. If the spacing cannot be supported, the spacing is set to the closest supported value.

When the **RecLineChars** or **RecLineHeight** property value is changed, this property is updated to the default line spacing for the selected width or height.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	27 or 34

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line height is determined based on the font size. Depending on the font size, this property is initialized to either of the above values. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer..
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapJrnPresent property is false.	This function is not supported.

RecLineWidth Property**Type****int RecLineWidth;****Mutability****Read Only****Remarks**

Holds the width of a line of **RecLineChars** property, expressed in the unit of measure given by **MapMode**.

Setting **RecLineChars** may also update this property.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	576, 432, 546, or 416

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line character width is determined based on font type, font size, and paper width. Depending on their combination, this value is initialized to any of the above values. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecLetterQuality Property**Type****boolean RecLetterQuality;****Mutability****Read / Write****Remarks**

Performs a receipt print in high quality mode.

Value	Meaning
true	Performs a receipt print in high quality mode.
false	Performs a receipt print in high-speed print mode.

To make a column alignment more precise for the POS printers with bi-directional print capability, set this property to true to print in high quality mode (unidirectional mode).

Setting this property may also update the **RecLineWidth**, **RecLineHeight**, and **RecLineSpacing** properties if **MapMode** is PTR_MM_DOTS. For details, please refer to the section, "1.1.7.2 Details of Properties, MapMode Property" in this Manual.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	true

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which only supports unidirectional print, this property is always set to true and cannot be set to false. ~~If an attempt is made to select true, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.~~^{#3}

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer..
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0 ^{#3}	This property is always set to true and cannot be set to false.	This function is not supported.

RecEmpty Property**Type****boolean RecEmpty;****Mutability****Read Only****Remarks**

Identifies the presence of receipt paper.

Value	Meaning
true	The receipt is out of paper.
false	Receipt paper is present.

This property is initialized when the **deviceEnabled** property is set to true.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecNearEnd Property**Type****boolean RecNearEnd;****Mutability****Read Only****Remarks**

Identifies if receipt paper is paper near end or not.

Value	Meaning
true	The receipt paper is in paper near end state.
false	The receipt paper is not in paper near end state.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, this function is available when the PAPER LOW SENSOR is enabled in the printer configuration setting. If the PAPER LOW SENSOR is disabled, this property is set to false.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecSidewaysMaxLines Property**Type****int RecSidewaysMaxLines;****Mutability****Read Only****Remarks**

Holds the maximum number of lines that may be printed in sideways mode (CapRecLeft90 or CapRecRight90).

If the **CapRecLeft90** and **CapRecRight90** properties are both false, this property is 0.

Changing the properties **RecLineHeight**, **RecLineSpacing**, and **RecLineChars** may cause this property to change.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	21, 16, or 12

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line character width is determined based on font type, font size, and paper width. Depending on their combination, this value is initialized to any of the above values. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecSidewaysMaxChars Property**Type****int RecSidewaysMaxChars;****Mutability****Read Only****Remarks**

Holds the maximum number of 1-byte characters that may be printed by the receipt on each line in sideways mode (CapRecLeft90 and CapRecRight90).

If the **CapRecLeft90** and **CapRecRight90** properties are both false, this property is 0.

Changing the properties **RecLineHeight**, **RecLineSpacing**, and **RecLineChars** may cause this property to change.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	166 or 153

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the line character width is determined based on font type, font size, and paper width. Depending on their combination, this value is initialized to any of the above values. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecLinesToPageCut Property**Type****int RecLinesToPageCut;****Mutability****Read Only****Remarks**

Holds the number of lines that must be advanced before the receipt paper is cut.

If the **CapRecPapercut** property is true, this is the line count before reaching the paper cut mechanism. Otherwise, this is the line count before the manual tear-off bar.

Changing the **RecLineSpacing** property value may cause the **RecSidewaysMaxChars** property value to change.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	Either of 6 or 5

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the **RecLineSpacing** property value is determined based on font type and font size. Depending on their combination, this value is initialized to any of the above values. For details, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 3) Font types and font sizes" in this Manual.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecBarCodeRotationList Property**Type****String RecBarCodeRotationList;****Mutability****Read Only****Remarks**

Holds the directions in which a receipt bar code may be rotated.

If the CapRecPresent property is false or the barcode print function is not supported, this property is set to an empty string (""). Otherwise, supported rotation string separated by commas (",") is set. For example, if the string is "0,180", the printer can print normal bar codes and upside down bar codes.

Value	Meaning
0	Bar code may be printed in the normal orientation.
R90	Bar code may be rotated 90° to the right.
L90	Bar code may be rotated 90° to the left.
180	Bar code may be rotated 180° (upside down).

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	"0,180"

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecCartridgeState Property**Type****int RecCartridgeState;****Mutability****Read Only****Remarks**

This property sets the status of the receipt cartridge (ink, ribbon, or toner) currently selected by the RecCurrentCartridge property. If several statuses exist, the priority is given to the status from the top to the bottom shown in the table below. (PTR_CART_UNKNOWN>PTR_CART_REMOVE>...>PTR_CART_NEAREND).

Value	Meaning
PTR_CART_UNKNOWN	Cannot determine the cartridge status, for one of the following reasons: <ul style="list-style-type: none"> • CapRecCartridgeSensor=0 The Device does not support cartridge status notification. • CartridgeNotify=PTR_CN_DISABLED Cartridge status notifications are disabled. • DeviceEnabled=false Cartridge status monitoring does not occur until the Device is enabled.
PTR_CART_REMOVED	The cartridge selected by RecCurrentCartridge has been removed.
PTR_CART_EMPTY	The cartridge selected by RecCurrentCartridge is empty.
PTR_CART_CLEANING	The head selected by RecCurrentCartridge is being cleaned.
PTR_CART_NEAREND	The cartridge selected by RecCurrentCartridge is near end.
PTR_CART_OK	The cartridge selected by RecCurrentCartridge is in normal condition.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, which do not provide the cartridge sensor function, this property is always set to PTR_CART_UNKNOWN.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

RecCurrentCartridge Property**Type****int RecCurrentCartridge;****Mutability****Read / Write****Remarks**

Specifies the currently selected receipt cartridge.

If the **CapRecPresent** property is false, this property is set to 0. Otherwise, this value is guaranteed to be one of the color cartridges specified by the CapRecColor property.

(PTR_COLOR_FULL cannot be set.)

Setting **RecCurrentCartridge** may also update **RecCartridgeState**.

This property is initialized when the **deviceEnabled** property is set to true. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, which do not provide the cartridge sensor function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapRecCartridgeSensor property is 0.	This function is not supported.

RecBitmapRotationList Property**Type****String RecBitmapRotationList;****Mutability****Read Only****Remarks**

Holds the directions in which a receipt bitmap may be rotated.

If the CapRecPresent property is false or the bitmap print function is not supported, this property is set to an empty string (""). Otherwise, supported rotation string separated by commas (",") is set. For example, if the string is "0,180", the printer can print normal bitmap and upside down bitmap.

Value	Meaning
0	Bitmap may be printed in the normal orientation.
R90	Bitmap may be rotated 90° to the right.
L90	Bitmap may be rotated 90° to the left.
180	Bitmap may be rotated 180° (upside down).

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	"0,180"

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpLineChars Property**Type****int SlpLineChars;****Mutability****Read / Write****Remarks**

Holds a line character width (the number of 1-byte characters that may be printed on a slip line). If changed to a line character width that is supported, the width is set to the specified value. If the exact width cannot be supported and the specified value is smaller than the maximum value allowed for the printer, subsequent lines will be printed with a character size that is larger than and most closely supports the specified characters per line. For example, if the **SlpLineChars** property is set to 36 and the printer can print either 30 or 40 characters per line, the 40 characters per line size is selected.

If the character width is greater than the maximum value allowed for the printer and cannot be supported, a `JposException`, `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCodeExtended:0` may be thrown. For example, if the **SlpLineChars** property is set to 42 and the printer can print either 30 or 40 characters per line, an error occurs because the value is larger than 40, the maximum value allowed for the printer.

This property is initialized by the **open** method. Other values can be set by the application. For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a `JposException`, `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCode Extended:0` may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapSlpPresent property is false.	This function is not supported.

SlpLineCharsList Property**Type****String SlpLineCharsList;****Mutability****Read Only****Remarks**

Holds the line character widths (number of 1-byte characters printed per line) supported by the slip station, separated by commas (","),. For example, if the string is "32,36,40", then the station supports line widths of 32, 36, and 40 characters. If the slip print function is not provided, an empty string ("") is set.

This property is initialized to the value below by the **open** method.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	"" (empty string)

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpLineHeight Property**Type****int SlpLineHeight;****Mutability****Read / Write****Remarks**

Holds the slip print line height, expressed in the unit of measure given by **MapMode**.

If changed to a height that can be supported with the current character width, the line height is set to this value. If the exact height cannot be supported, the height is set to the closest supported value.

When the **SlpLineChars** property value is changed, the **SlpLineHeight** property value is updated to the default line height for the selected width.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a **JposException**, **ErrorCode:JPOS_E_ILLEGAL** or **ErrorCode Extended:0** may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapSlpPresent property is false.	This function is not supported.

SlpLineSpacing Property**Type****int SlpLineSpacing;****Mutability****Read / Write****Remarks**

Holds the spacing of each single-high print line (including both the printed line height plus the whitespace between each pair of lines) for slip print, expressed in the unit of measure given by **MapMode**.

If the **SlpLineSpacing** property value is changed to a spacing that can be supported by the printer, the line spacing is set to this value. If the spacing cannot be supported, the spacing is set to the closest supported value.

When the **SlpLineChar** or **SlpLineHeight** property value is changed, this property is updated to the default line spacing for the selected width or height.

This property is initialized to the value below when the **deviceEnabled** property is set to true. Other values can be set by the application.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a **JposException**, **ErrorCode:JPOS_E_ILLEGAL** or **ErrorCode Extended:0** may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapSlpPresent property is false.	This function is not supported.

SlpLineWidth Property**Type****int SlpLineWidth;****Mutability****Read Only****Remarks**

Holds the width of a line of **SlpLineChars** property, expressed in the unit of measure given by **MapMode**.

Setting **SlpLineChars** may also update this property.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpLetterQuality Property**Type****boolean SlpLetterQuality;****Mutability****Read / Write****Remarks**

Performs a slip print in high quality mode.

Value	Meaning
true	Performs a slip print in high quality mode.
false	Performs a slip print in high-speed print mode.

To make a column alignment more precise for the POS printers with bi-directional print capability, set this property to true to print in high quality mode (unidirectional mode).

Setting this property may also update the **SlpLineWidth**, **SlpLineHeight** and **SlpLineSpacing** properties if the **MapMode** property is PTR_MM_DOTS. For details, please refer to the section, "1.1.7.2 Details of Properties, **MapMode** Property" in this Manual.

This property is initialized to false when the **deviceEnabled** property is set to true. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to false and cannot be set to true. If an attempt is made to select true, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A JposException may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapSlpPresent property is false.	This function is not supported.

SlpEmpty Property**Type****boolean SlpEmpty;****Mutability****Read Only****Remarks**

Identifies the presence of slip paper.

Value	Meaning
true	The slip is out of paper.
false	Slip paper is present.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to false.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpNearEnd Property**Type****boolean SlpNearEnd;****Mutability****Read Only****Remarks**

Identifies if slip paper is paper near end or not.

Value	Meaning
true	The slip paper is paper near end.
false	The slip paper is not paper near end.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to false.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpSidewaysMaxLines Property**Type****int SlpSidewaysMaxLines;****Mutability****Read Only****Remarks**

Holds the maximum number of lines that may be printed in sideways mode (CapSlpLeft90 or CapSlpRight90).

If the **CapSlpLeft90** and **CapSlpRight90** properties are both false, this property is 0.Changing the properties **SlpLineHeight**, **SlpLineSpacing**, and **SlpLineChars** may cause this property to change.This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpSidewaysMaxChars Property**Type****int SlpSidewaysMaxChars;****Mutability****Read Only****Remarks**

Holds the maximum number of 1-byte characters that may be printed by the slip on each line in sideways mode (CapSlpLeft90 and CapSlpRight90).

If the **CapSlpLeft90** and **CapSlpRight90** properties are both false, this property is 0.

Changing the properties **SlpLineHeight**, **SlpLineSpacing**, and **SlpLineChars** may cause this property to change.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpMaxLines Property**Type****int SlpMaxLines;****Mutability****Read Only****Remarks**

Holds the maximum number of lines that can be printed on a slip paper.

When the **CapSlpFullslip** property is true, this property is 0, indicating an unlimited maximum slip length. When the **CapSlpPresent** property is false, this property is also 0. A difference between them must be judged based on the CapSlpPresent property value.

When the **CapSlpPresent** property is true and **CapSlpFullslip** property is false, the **SlpMaxLines** property is set to a value other than 0.

Changing the properties **SlpLineHeight**, **SlpLineSpacing**, and **SlpLineChars** may cause this property to change.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpLinesNearEndToEnd Property**Type****int SlpLinesNearEndToEnd;****Mutability****Read Only****Remarks**

Holds the number of lines that may be printed after slip paper near end is detected but before the printer reaches the end of the slip.

This property may be used to optimize the use of the slip, so that the maximum number of lines may be printed.

Changing the properties **SlpLineHeight**, **SlpLineSpacing**, and **SlpLineChars** may cause this property to change.

This property is initialized to the value below when the **deviceEnabled** property is set to true.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	0

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpBarCodeRotationList Property**Type****String SlpBarCodeRotationList;****Mutability****Read Only****Remarks**

Holds the directions in which a slip barcode may be rotated.

If the CapRecPresent property is false or the barcode print function is not supported, this property is set to an empty string (""). Otherwise, supported rotation string separated by commas (",") is set. For example, if the string is "0,180", the printer can print normal bar codes and upside down bar codes.

Value	Meaning
0	Bar code may be printed in the normal orientation.
R90	Bar code may be rotated 90° to the right.
L90	Bar code may be rotated 90° to the left.
180	Bar code may be rotated 180° (upside down).

This property is initialized by the **open** method to the value below.

Device Type	Value
TRST-A10-S, P, U, L TRST-A15-S, P, U	""

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to 0.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpPrintSide Property**Type****int SlpPrintSide;****Mutability****Read Only****Remarks**

Holds the current side of the slip document on which printing will occur.

Value	Meaning
PTR_PS_UNKNOWN	Cannot determine the cartridge status, for one of the following reasons: <ul style="list-style-type: none"> ▪ CapSlpPresent=false The Device does not support slip print function. ▪ SlpEmpty=true Slip paper is not inserted. ▪ DeviceEnabled=false Cartridge status monitoring does not occur until the Device is enabled.
PTR_PS_SIDE1	Default print side. (After slip paper insertion, printer can print this side immediately.)
PTR_PS_SIDE2	The other side of the document to print on. (Reverse side of default.)

If slip paper is not present, the **SlpPrintSide** property is set to PTR_PS_UNKNOWN.

If the printer has both side print capability, the **CapSlpBothSidesPrint** property is true, and when a slip is inserted, the value stored here will be either PTR_PS_SIDE1 or PTR_PS_SIDE2. This property value may be changed when the **changePrintSide** method is executed.

If a printer does not have both side print capability, **CapSlpBothSidesPrint** is false, and when a slip is inserted, this property is always set to PTR_PS_SIDE1.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the slip print function, this property is always set to PTR_CART_UNKNOWN.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpCartridgeState Property**Type****int SlpCartridgeState;****Mutability****Read Only****Remarks**

This property sets the status of the slp cartridge (ink, ribbon, or toner) currently selected by the SlpCurrentCartridge property. If several statuses exist, the priority is given to the status from the top to the bottom shown in the table below. (PTR_CART_UNKNOWN>PTR_CART_REMOVE>...>PTR_CART_NEAREND).

Value	Meaning
PTR_CART_UNKNOWN	Cannot determine the cartridge status, for one of the following reasons: <ul style="list-style-type: none"> • CapSlpCartridgeSensor=0 The Device does not support cartridge status notification. • CartridgeNotify=PTR_CN_DISABLED Cartridge status notifications are disabled. • DeviceEnabled=false Cartridge status monitoring does not occur until the Device is enabled.
PTR_CART_REMOVED	The cartridge selected by SlpCurrentCartridge has been removed.
PTR_CART_EMPTY	The cartridge selected by SlpCurrentCartridge is empty.
PTR_CART_CLEANING	The head selected by SlpCurrentCartridge is being cleaned.
PTR_CART_NEAREND	The cartridge selected by SlpCurrentCartridge is near end.
PTR_CART_OK	The cartridge selected by SlpCurrentCartridge is in normal condition.

This property is initialized when the **deviceEnabled** property is set to true.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, which do not provide the cartridge sensor function, this property is always set to PTR_CART_UNKNOWN.

Errors

When this property is accessed, no JavaPOS Exception is thrown.

SlpCurrentCartridge Property**Type****int SlpCurrentCartridge;****Mutability****Read / Write****Remarks**

Specifies the currently selected Slp cartridge.

If the **CapSlpPresent** property is false, this property is set to 0. Otherwise, this value is guaranteed to be one of the color cartridges specified by the **CapSlpColor** property. (PTR_COLOR_FULL cannot be set.)

Setting this property may also update the **SlpCartridgeState** property.

This property is initialized when the **deviceEnabled** property is set to true. Other values can be set by the application.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U which do not provide the cartridge sensor function, this property is always set to 0 and cannot be set to any other value. If an attempt is made to set a value other than 0, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

A **JposException** may be thrown when this property is accessed.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	A value was set when the CapSlpCartridgeSensor property is 0.	This function is not supported.

1.1.8 Method Specifications

1.1.8.1 Methods

This Device Service covers the following methods.

Common Method	May Use After	Remarks
open	None	
close	open	
claim	open	
release	open & claim	
checkHealth	open, claim & enable	
clearOutput	open, claim	
compareFirmwareVersion	open, claim & enable	Not supported
directIO	open	
resetStatistics	open, claim & enable	Not supported
retrieveStatistics	open, claim & enable	Not supported
updateFirmware	open, claim & enable	Not supported
updateStatistics	open, claim & enable	Not supported
Specific Method	May Use After	Remarks
printNormal	open, claim & enable	
printTwoNormal	open, claim & enable	Not supported
printImmediate	open, claim & enable	
beginInsertion	open, claim & enable	Not supported
endInsertion	open, claim & enable	Not supported
beginRemove	open, claim & enable	Not supported
endRemove	open, claim & enable	Not supported
cutPaper	open, claim & enable	
rotatePrint	open, claim & enable	
printBarCode	open, claim & enable	
printBitmap	open, claim & enable	
transactionPrint	open, claim & enable	
validateData	open, claim & enable	
setBitmap	open, claim & enable	
setLogo	open, claim & enable	
changePrintSide	open, claim & enable	
markFeed	open, claim & enable	Not supported
clearPrintArea	open, claim & enable	
pageModePrint	open, claim & enable	
printMemoryBitmap	open, claim & enable	

Table 24 TRST-A10-S JavaPOS Device – Method List

1.1.8.2 Details of Methods

open Method

Type

void open(String logicalDeviceName) throws JposException;

Parameter	Remarks
logicalDeviceName	Specifies the Device name to open. An attribute, which is specified by logicalName in <JposEntry> under <JposEntries> in the jpos.xml file, must be specified. For this Device, specify "TECPOSPrinter".

Remarks

Opens the Device for subsequent I/O.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_ILLEGAL, 0	The Control is already open.	The Control is already open.
JPOS_E_NOEXIST, 0	The specified Device was not found.	The specified DeviceService was not found. Please check logicalDeviceName parameter value and jpos.xml setting.
JPOS_E_NOSERVICE, 0	An invalid DeviceService was specified.	The DeviceService does not support the method which it should. Or, the version is invalid. Make sure the correct module is used.

close Method

Type

void close() throws JposException;

Remarks

Releases the Device and its resources.

If the **DeviceEnabled** property is true, the Device will be disabled.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.

claim Method**Type**

void claim(int timeout) throws JposException;

Parameter	Remarks
timeout	Contains the maximum number of milliseconds to wait for exclusive access to be satisfied. This parameter can be -1 or 0 through 2147483647. If the timeout parameter is set to 0, the method attempts to claim the Device, and returns the appropriate status immediately. If any other value is selected, a JposException may be thrown. If this parameter is set to JPOS_ FOREVER(-1), waits until exclusive access is satisfied.

Remarks

Requests exclusive access to the Device.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	The timeout parameter was set to an invalid value. Check the value.
JPOS_E_TIMEOUT, 0	Another application has exclusive access to the Device and did not relinquish control before timeout milliseconds expired.	Execute this property again after another application releases exclusive access.

release Method**Type**

void release() throws JposException;

Remarks

Releases exclusive access to the Device.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	The application does not have exclusive access to the Device.	Exclusive access has been released.

checkHealth Method**Type**

void checkHealth(int level) throws JposException;

Parameter	Remarks
level	Indicates the type of health check to be performed on the Device. The level parameter has one of the following values:
Value	Meaning
JPOS_CH_INTERNAL	Perform a health check that does not physically change the Device.
JPOS_CH_EXTERNAL	Perform a more thorough test that may change the Device.
JPOS_CH_INTERACTIVE	Perform an interactive test of the Device.

Remarks

This Device Service supports Internal level, External level, and Interactive level health check.

Errors

Regardless of level, the following JposException may be thrown.

JposException's parameter ErrorCode, ErrorCodeExtended	checkHealthText Property Value	Meaning	Error Handling
JPOS_E_CLOSED, 0	"[Error]"	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	"HCheck:Exclusive"	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	"HCheck:Disabled"	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	"HCheck:Illegal"	An invalid parameter value was used.	The level parameter is invalid. Check the value.

1) Internal Level (level=JPOS_CH_INTERNAL)

Remarks

Checks a connection status of the Device.

If connected, no JposException is thrown and the checkHealth property is set to "Internal HCheck:Successful".

Errors

The checkHealth method at Internal level may throw the following JposException:

JposException's parameter ErrorCode, ErrorCodeExtended	checkHealthText Property Value	Meaning	Error Handling
JPOS_E_ILLEGAL, 0	"Internal Hcheck: not supported"	The Device is not supported.	

2) External Level (level=JPOS_CH_EXTERNAL)

Remarks

This checks a device status by printing a fixed character string given below.

"TEC POSPrinter JPOS checkHealth:External<LF (line feed)>"

If the test was completed successfully, no JposException is thrown and the checkHealth property is set to "External HCheck:Successful".

Errors

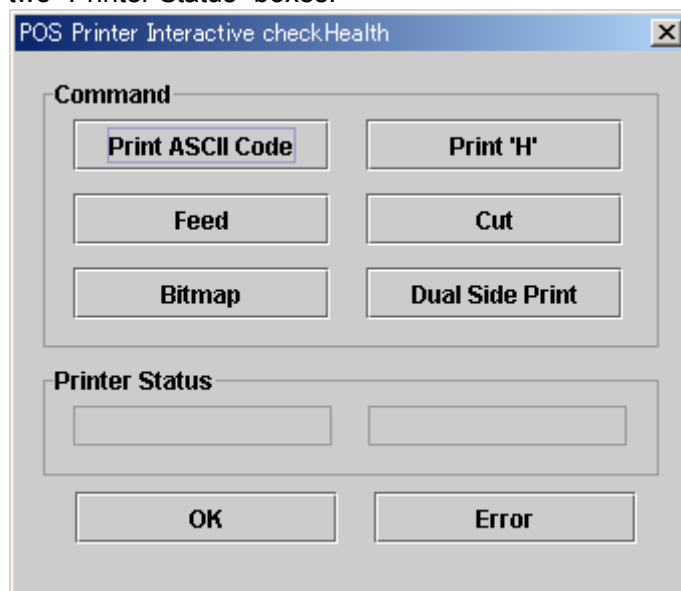
The checkHealth method at External level may throw the following JposException:

JposException's parameter ErrorCode, ErrorCodeExtended	checkHealthText Property Value	Meaning	Error Handling
– (No exception is thrown.)	"External HCheck: Successful"	Test print was completed successfully.	
JPOS_E_FAILURE, 0	"External HCheck: Error"	Test print was not completed successfully.	

3) Interactive Level (level=JPOS_CH_INTERACTIVE)

Remarks

Executing the checkHealth method at Interactive Level displays the following dialog box. Pressing each command button performs the corresponding operation of the POS printer and displays a printer status in the two "Printer Status" boxes.



Pressing each command button on the dialog performs the corresponding operation given below:

Button	Meaning
[Print ASCII Code] button	Prints one line with alphanumeric characters.
[Print 'H'] button	Prints one line with the character "H".
[Feed] button	Performs a paper feed.
[Cut] button	Performs a paper cut.
[Bitmap] button	Prints a bitmap image (192-dot height x full print width).
[Dual Side] button	Performs a dual-side print. (*1)

(*1) Only the TRST-A15-S, P, and U printers, which are capable of dual-side printing, allow you to check if dual-side printing functions properly. If the [Dual Side] button is pressed when a printer other than the above models is used, all pages will be printed on the front side of the paper. Consequently, dual-side printing cannot be checked.

Each of the two "Printer Status" boxes shows a printer status. The right box shows a printer status in idle mode (before the printer started an operation), and the left box shows a printer status occurred after the printer started the operation (when the command was in process).

After visually checking the print result, press the [OK] (successfully completed) or [NG] button (abnormally completed).

Pressing the [OK] or [NG] button closes the dialog and the process returns to the application.

Errors

The checkHealth method at Interactive level may throw the following JposException:

JposException's parameter ErrorCode, ErrorCodeExtended	checkHealthText Property Value	Meaning	Error Handling
– (No exception is thrown.)	"Interactive HCheck: Successful"	Completed with [OK] button.	
JPOS_E_FAILURE, 0 – (No exception is thrown.)	"Interactive HCheck: Error"	Completed with [NG] button.	

clearOutput Method

Type

void clearOutput() throws JposException;

Remarks

Called to clear all buffered output data, including all asynchronous output. Also, when possible, halts outputs that are in progress.

Any output error events that were enqueued (usually waiting for **FreezeEvents** to be set to false) are also cleared.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.

compareFirmWareVersion Method**Type**

void compareFirmWareVersion(String FirmWareFileName, int result) throws JposException;

Parameter	Remarks
FirmWareFileName	Specifies either the name of the file containing the firmware or a file containing a set of firmware files whose versions are to be compared against those of the Device.
result	Location in which to return the result of the comparison.
After this method is completed, the result parameter is set to one of the following values:	
Value	Meaning
JPOS_CFV_FIRMWARE_OLDER	Indicates that the version of one or more of the firmware files is older than the firmware in the Device and that none of the firmware files is newer than the firmware in the Device.
JPOS_CFV_FIRMWARE_SAME	Indicates that the versions of all of the firmware files are the same as the firmware in the Device.
JPOS_CFV_FIRMWARE_NEWER	Indicates that the version of one or more of the firmware files is newer than the firmware in the Device and that none of the firmware files is older than the firmware in the Device.
JPOS_CFV_FIRMWARE_DIFFERENT	Indicates that the version of one or more of the firmware files is different than the firmware in the Device, but either: <ul style="list-style-type: none"> • The chronological relationship cannot be determined, or • The relationship is inconsistent -- one or more are older while one or more are newer.
JPOS_CFV_FIRMWARE_UNKNOWN	Indicates that a relationship between the two firmware versions could not be determined.

Remarks

This method determines whether the version of the firmware contained in the file specified by the FirmWareFileName parameter is “newer than”, “older than”, or “the same as” the version of the firmware in the physical device.

Any output error events that were enqueued (usually waiting for the **FreezeEvents** property to be set to false) are also cleared.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

directIO Method**Type**

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	Command number
data	An array of one mutable integer whose specific values vary
object	Additional data
Any of the command, data, and object parameter varies by the Device Service.	

Remarks

This method provides a means to provide functionality to the application that is not otherwise supported by methods or properties.

This Device Service supports some extended functions using the directIO method, but may not be used depending on the Device being used. For details of directIO method, please refer to the section, "1.1.8.3 Details of directIO Method" in this Manual.

Errors

Regardless of command, the following exception may be thrown:

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	The command parameter is set to an invalid value. Check the value.

resetStatistics Method**Type**

void resetStatistics(String statisticsBuffer) throws JposException;

Parameter	Remarks
statisticsBuffer	Defines the statistics that are to be reset. This is a comma-separated list of name(s), where an empty string ("") means ALL resettable statistics are to be reset, "U_" means all UnifiedPOS defined resettable statistics are to be reset, "M_" means all manufacturer defined resettable statistics are to be reset, and "name1, name2, ..., namen" means that the specifically defined resettable statistic(s) are to be reset.

Remarks

Resets the defined resettable statistics in the Device to zero. All the requested statistics must be successfully reset in order for this method to complete successfully, otherwise a JposException, ErrorCode:JPOS_E_EXTENDED or ErrorCodeExtended:JPOS_ESTATS_ERROR is returned.

Both the properties **CapStatisticsReporting** and **CapUpdateStatistics** must be true in order to successfully use this method.

This method is always executed synchronously.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

retrieveStatistics Method**Type**

void retrieveStatistics(String[] statisticsBuffer) throws JposException;

Parameter	Remarks
statisticsBuffer	<p>The data buffer defining the statistics to be retrieved and in which the retrieved statistics are placed.</p> <p>This is a comma-separated list of name(s), where an empty string ("") means ALL statistics are to be retrieved, "U_" means all UnifiedPOS defined statistics are to be retrieved, "M_" means all manufacturer defined statistics are to be retrieved, and "name1, name2, ..., namen" means that the specifically defined resettable statistic(s) are to be reset.</p>

Remarks

Retrieves the requested statistics from the Device.

The **CapStatisticsReporting** property must be true in order to successfully use this method.

This method is always executed synchronously.

All calls to retrieveStatistics will return the following XML as a minimum:

```
<?xml version='1.0' ?>
<UPOSStat version="1.11.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/UPOSStat.xsd">
  <UnifiedPOSStatisticsContext>
    <Parameter>
      <Name>RequestedStatistic</Name>
      <Value>StatisticValue</Value>
    </Parameter>
  </UnifiedPOSStatisticsContext>
  <DeviceInformation>
    <ManufacturerName>
      <Name>Device Manufacturer</Name>
    </ManufacturerName>
    <ModelName>Device Model Name</ModelName>
    <DeviceCategory UPOS="DeviceCategoryName"/>
  </DeviceInformation>
</UPOSStat>
```

If the application requests a statistic name that the Device does not support, the <Parameter> entry will be returned with an empty <Value>.

```
<Parameter>
  <Name>RequestedStatistic</Name>
  <Value></Value>
</Parameter>
```

All statistics that are manufacturer specific and not defined in the schema will be returned in a <ManufacturerSpecific> tag instead of a <Parameter> tag.

```
<ManufacturerSpecific>
  <Name>TheAnswer</Name>
  <Value>42</Value>
</ManufacturerSpecific>
```

When an application requests all statistics from the Device, the Device will return a <Parameter> entry for every defined statistic for the device category as defined by the XML schema version specified by the version attribute in the <UPOSStat> tag. If the Device does not record any of the statistics, the <Value> tag will be empty.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the Device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

updateFirmware Method**Type**

void updateFirmware(String FirmWareFileName) throws JposException;

Parameter	Remarks
FirmWareFileName	Specifies either the name of the file containing the firmware or a file containing a set of firmware files that are to be downloaded into the Device.

Remarks

This method updates the firmware of the physical device with the version of the firmware contained or defined in the file specified by the FirmWareFileName parameter regardless of whether that firmware's version is newer than, older than, or the same as the version of the firmware already in the physical device.

If the FirmWareFileName parameter specifies a file list, all of the component firmware files should reside in the same directory as the firmware list file. This will allow for distribution of the updated firmware without requiring a modification to the firmware list file.

When this method is invoked, the Device Service should check that the method is ready to be executed, specified firmware file exists, and that its contents are valid for this device. If so, this method should return immediately and the remainder of the update firmware process should continue asynchronously.

The Device Service should notify the application of the status of the update firmware process by firing StatusUpdateEvents with values of SUE_UF_PROGRESS plus an integer between 1 and 99 indicating the completion percentage of the update firmware process. For application convenience, the StatusUpdateEvent value SUE_UF_COMPLETE is defined to be the same value as SUE_UF_PROGRESS + 100.

For consistency, the update firmware process is complete after the new firmware has been downloaded into the physical device, any necessary physical device reset has completed, and the Device Service and the physical device have been returned to the state they were in before the update firmware process began. If the firmware update process fails, the Device Service notifies a cause of the error and status of the Device by firing StatusUpdateEvent. For details, please refer to the section, "1.1.9.2 Details of Events, StatusUpdateEvent Event".

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

updateStatistics Method**Type**

void updateStatistics(String statisticsBuffer) throws JposException;

Parameter	Remarks
statisticsBuffer	Defines the statistics with values that are to be updated. This is a comma-separated list of name-value pair(s), where an empty string name ("=""=value1") means ALL resettable statistics are to be set to the value "1", "U_=value2" means all UnifiedPOS defined resettable statistics are to be set to the value "2", "M_=value3" means all manufacturer defined resettable statistics are to be set to the value "3", and "name1=value4, name2=value5, ..., namen=Valuem" means that the specifically defined resettable statistic(s) are to be set to the specified value(s) (name1=value4, name2=value5, namen=Valuem).

Remarks

Updates the defined resettable statistics in a device.

All the requested statistics must be successfully updated in order for this method to complete successfully, otherwise a JposException, ErrorCode:JPOS_E_EXTENDED or ErrorCodeExtended:JPOS_E_STATS_ERROR is returned.

Both the properties **CapStatisticsReporting** and **CapUpdateStatistics** must be true in order to successfully use this method.

This method is always executed synchronously.

Errors

A JposException may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

printNormal Method**Type**

void printNormal(int station, String data) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
data	The characters to be printed. May consist of printable characters, escape sequences, carriage returns (13 decimal), and line feeds (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property".
The station parameter has one of the following values:	
Value	Meaning
PTR_S_JOURNAL	Prints data on the journal printer station.
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
Special character values within data are:	
Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Print any data in the line buffer, and feed to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, then it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line. Otherwise, the line buffer is printed and the printer does not feed to the next print line. On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported. If the printer does not support either of these features, then Carriage Return acts like a Line Feed. The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.

Remarks

Prints data specified by the data parameter on the printer specified by the station parameter.

This method is performed synchronously if the **AsyncMode** property is false, and asynchronously if it is true.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Specified station does not exist.	This Device Service does not support this function.
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) This exception is thrown only when the AsyncMode property = false.

(*2) This exception is thrown only when the AsyncMode property = false. If the AsyncMode property =true, an ErrorEvent event notification is generated.

printTwoNormal Method**Type**

void printTwoNormal(int stations, String data1, String data2) throws JposException;

Parameter	Remarks
stations	Specifies the printer station to be used.
data1	The characters to be printed on the first station. May consist of printable characters, escape sequences, carriage return (13 decimal), and line feed (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property". Prints two strings on two print stations simultaneously (one string/printer station).
data2	The characters to be printed on the second station. May consist of printable characters, escape sequences, carriage return (13 decimal), and line feed (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property". If this string is the empty string (""), print the same data as data1. On some printers, using this format may give additional increased print performance.

The stations parameter has one of the following values:

Value	Meaning
PTR_S_JOURNAL_RECEIPT (*1)	Prints data on the journal and receipt printer stations.
PTR_S_JOURNAL_SLIP (*1)	Prints data on the journal and slip printer stations.
PTR_S_RECEIPT_SLIP (*1)	Prints data on the receipt and slip printer stations.
PTR_TWO_RECEIPT_JOURNAL	Prints data on the receipt and journal printer stations.
AL	Prints characters specified by the data1 parameter on the receipt printer station and characters specified by the data2 parameter on the journal printer station.
PTR_TWO_SLIP_JOURNAL	Prints data on the slip and journal printer stations. Prints characters specified by the data1 parameter on the slip printer station and characters specified by the data2 parameter on the journal printer station.
PTR_TWO_SLIP_RECEIPT	Prints data on the slip and receipt printer stations. Prints characters specified by the data1 parameter on the slip printer station and characters specified by the data2 parameter on the receipt printer station.

(*1) These values are provided to be in accordance with the documentation release 1.2. Documentation release 1.2 was not sufficiently clear as to the meaning of "first" and "second" station so Device Service implementations varied on the following:

- Assign stations based on the order within the constants.
For example, PTR_S_JOURNAL_RECEIPT prints characters specified by the data1 parameter on the journal station and characters specified by the data2 parameters on the receipt station.
- Assign stations based upon physical device characteristics or internal print order.

Due to this inconsistency, the application should use the new constants, PTR_TWO_XXX if the Device Control and Device Service versions indicate Release 1.3 or later.

Special character values within data1 are:

Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Print any data in the line buffer, and feed to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	<p>If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line.</p> <p>On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported.</p> <p>If the printer does not support either of these features, Carriage Return acts like a Line Feed.</p> <p>The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.</p>

Special character values within data2 are:

Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Print any data in the line buffer, and feed to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	<p>If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line.</p> <p>On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported.</p> <p>If the printer does not support either of these features, Carriage Return acts like a Line Feed.</p> <p>The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.</p>

Remarks

Prints data specified by the data1 parameter or by the data1 and data2 parameters on two printers simultaneously..

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

printImmediate Method**Type**

void printImmediate(int station, String data) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
data	Specifies characters to be printed. May consist of printable characters, escape sequences, carriage return (13 decimal), and line feed (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property".

The station parameter has one of the following values:

Value	Meaning
PTR_S_JOURNAL	Prints data on the journal printer station.
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.

Special character values within data are:

Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Print any data in the line buffer, and feed to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line. On some printers, print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported. If the printer does not support either of these features, Carriage Return acts like a Line Feed. The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.

Remarks

Prints data specified by the data parameter on the printer specified by the station parameter.

This method tries to print its data immediately – that is, as the very next printer operation.

It may be called when asynchronous output is outstanding.

This method is primarily intended for use in exception conditions when asynchronous output is outstanding, such as within an error event handler.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Specified station does not exist.	This Device Service does not support this function.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*1)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*1)	The printer is out of paper.	

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

beginInsertion Method

Type

void beginInsertion(int timeout) throws JposException;

Parameter	Remarks
timeout	Specifies a maximum wait time in milliseconds for paper insertion. If this parameter is 0, the method initiates the begin insertion mode and returns the appropriate status immediately. If JPOS_FOREVER is specified, the method initiates the begin insertion mode, then waits as long as needed until either the form is inserted or an error occurs.

Remarks

Initiates slip processing.

When this method is called, the slip station is made ready to receive a form by opening the form insertion slot.

This method is paired with the **endInsertion** method for controlling form insertion.

If the printer device cannot be placed into insertion mode, an exception is raised. Otherwise, form insertion is monitored until either:

- The form is successfully inserted.
- The form is not inserted before timeout milliseconds have elapsed, or an error is reported by the printer device.

In this case, an exception is raised with an ErrorCode of JPOS_E_TIMEOUT, ErrorCodeExtended:0, or another value.

The printer device remains in form insertion mode.

This allows an application to perform some user interaction and reissue the **beginInsertion** method without altering the form handling mechanism.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

endInsertion Method**Type****void endInsertion() throws JposException;****Remarks**

Ends form insertion processing.

When this method is called, the printer is taken out of form insertion mode.

If the slip device has a form insertion slot, the slot is closed by this method.

If no form is present, an exception, `ErrorCode:JPOS_E_EXTENDED` or `ErrorCodeExtended:JPOS_EPTR_SLP_EMPTY` is raised.

This method is paired with the **beginInsertion** method for controlling form insertion.

The application may choose to call this method immediately after a successful **beginInsertion** if it wants to use the printer sensors to determine when a form is positioned within the slip printer.

Alternatively, the application may prompt the user and wait for a key press before calling this method.

Initiates slip processing.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

beginRemoval Method**Type**

void beginRemoval(int timeout) throws JposException;

Parameter	Remarks
timeout	Specifies a maximum wait time in milliseconds for paper ejection. If this parameter is 0, the method initiates the begin removal mode, then returns the appropriate status immediately. If FOREVER (-1), the method initiates the begin removal mode, then waits as long as needed until either the form is removed or an error occurs.

Remarks

Initiates form removal processing.

When this method is called, the printer is made ready to remove a form by opening the form insertion slot or activating a form ejection mode.

This method is paired with the **endRemoval** method for controlling form removal.

If the printer device cannot be placed into removal or ejection mode, an exception is raised. Otherwise, form removal is monitored until either:

- The form is successfully removed.
- The form is not removed before timeout milliseconds have elapsed, or an error is reported by the printer device.

In this case, an exception is raised with an ErrorCode of JPOS_E_TIMEOUT, ErrorCodeExtended:0, or another value.

The printer device remains in form removal mode.

This allows an application to perform some user interaction and reissue the **beginRemoval** method without altering the form handling mechanism.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

endRemoval Method**Type****void endRemoval() throws JposException;****Remarks**

Ends form removable processing.

When this method is called, the printer is taken out of form removal or ejection mode.

If the slip device has form insertion slot, the slot is closed by this method.

If a form is present, an exception, `ErrorCode:JPOS_E_EXTENDED` or `ErrorCodeExtended:JPOS_EPTR_SLP_FORM` is raised.This method is paired with the **beginRemoval** method for controlling form removal.The application may choose to call this method immediately after a successful **beginRemoval** if it wants to use the printer sensors to determine when the form has been removed.

Alternatively, the application may prompt the user and wait for a key press before calling this method.

ErrorsA **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.

cutPaper Method**Type**

void cutPaper(int percentage) throws JposException;

Parameter	Remarks
percentage	The percentage of paper to cut. The constant identifier PTR_CP_FULLLCUT or the value 100 causes a full paper Other values request a partial cut percentage.

Remarks

Cuts the receipt paper.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

Many printers with paper cut capability can perform both full and partial cuts. Some offer gradations of partial cuts, such as a perforated cut and an almost-full cut. Although the exact type of cut will vary by printer capabilities, the following general guidelines apply:

Value	Meaning
100	Full cut.
90	Leave only a small portion of paper for very easy final separation.
70	Perforate the paper for final separation that is somewhat more difficult and unlikely to occur by accidental handling.
50	Partial perforation of the paper.

The Device Service will select an appropriate type of cut based on the capabilities of its Device and these general guidelines.

Due to the device's architecture (regardless of a value selected by the percentage parameter), the TRST-A10-S, P, U, L and the TRST-A15-S, P, U always perform a partial cut leaving 5 mm at an end. An escape sequence embedded in a printNormal or printImmediate method call may also be used to cause a paper cut.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

rotatePrint Method**Type****void rotatePrint(int station, int rotation) throws JposException;**

Parameter	Remarks
station	Specifies the printer station to be used.
rotation	Specifies the direction of rotation.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
The rotation parameter value is a logical OR combination of any of the following values.	
Value	Meaning
PTR_RP_RIGHT90	Starts rotated printing 90° to the right (clockwise).
PTR_RP_LEFT90	Starts rotated printing 90° to the left (counter-clockwise).
PTR_RP_ROTATE180	Starts rotated printing 180°, that is, prints upside-down.
PTR_RP_BARCODE	Starts rotated bar code printing. This value is ORed with one of the above start rotated print values.
PTR_RP_BITMAP	Starts rotated bitmap printing. This value is ORed with one of the above start rotated print values.
PTR_RP_NORMAL	End rotated printing.

Remarks

Enters or exits rotated print mode.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

If the rotation parameter includes PTR_RP_ROTATE180, upside-down print mode is entered. Subsequent calls to the **printNormal** or **printImmediate** methods will print the data upside-down until the **rotatePrint** method is called with rotation set to PTR_RP_NORMAL.

Each print line is rotated by 180°. Lines are printed in the order that they are sent, with the start of each line justified at the right margin of the printer station. Only the print methods **printNormal** and **printImmediate** may be used while in upside-down print mode.

If rotation includes PTR_RP_RIGHT90 or PTR_RP_LEFT90, sideways print mode is entered. Subsequent calls to the **printNormal** method will buffer the print data and does not initiate printing until the **rotatePrint** method is called with rotation set to PTR_RP_NORMAL. Also, the value of the AsyncMode property does not affect its operation: No OutputID will be assigned to the request, nor will an OutputCompleteEvent be enqueued. Each print line is rotated by 90°. If the lines are not all the same length, they are justified at the start of each line. Only **printNormal** may be used while in sideways print mode.

If the **rotation** parameter includes PTR_RP_NORMAL, rotated print mode is exited. If sideways-rotated print mode was in effect and some data was buffered by calls to the **printNormal** method, the buffered data is printed. The entire rotated block of lines are treated as one message. If rotation includes PTR_RP_BARCODE and/or PTR_RP_BITMAP, any bar codes printed with the **printBarcode** method or printed with the barcode print escape sequence and/or bitmaps printed with the **printBitmap** method or printed with the bitmap print escape sequence submitted for printing during the **rotatePrint** processing cycle will also be rotated. Such rotation will be within the limitations that may be specified by the RecBarcodeRotationList and RecBitmapRotationList properties for a receipt print and SlpBarcodeRotationList and SlpBitmapRotationList properties for a slip print.

If rotation includes PTR_RP_BARCODE, the contents of RotateSpecial are ignored.

Changing the rotation mode may also change the station's line height, line spacing, line width, and other metrics.

Calling the **clearOutput** method cancels rotated print mode. Any buffered sideways rotated print lines are also cleared.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

printBarcode Method**Type**

**void printBarcode(int station, String data,int symbology, int height, int width, int alignment
, int textPosition) throws JposException;**

Parameter	Remarks
station	Specifies the printer station to be used.
data	Specifies character string to be bar coded.
symbology	Specifies bar code symbol type to use.
height	Specifies bar code height. Expressed in the unit of measure given by the MapMode property.
width	Specifies bar code width. Expressed in the unit of measure given by the MapMode property.
alignment	Specifies placement of the bar code.
textPosition	Specifies placement of the human readable information (HRI) character string.

The station parameter has one of the following values:

Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.

The symbology parameter has one of the following values:

[One Dimensional Symbolologies]

Value	Meaning
PTR_BCS_UPCA	UPC-A
PTR_BCS_UPCA_S	UPC-A with supplemental barcode
PTR_BCS_UPCE	UPC-E
PTR_BCS_UPCE_S	UPC-E with supplemental barcode
PTR_BCS_UPCD1	UPC-D1
PTR_BCS_UPCD2	UPC-D2
PTR_BCS_UPCD3	UPC-D3
PTR_BCS_UPCD4	UPC-D4
PTR_BCS_UPCD5	UPC-D5
PTR_BCS_EAN8	EAN8(JAN8)
PTR_BCS_JAN8	JAN8(EAN8)
PTR_BCS_EAN8_S	EAN 8 with supplemental barcode
PTR_BCS_EAN13	EAN13(JAN13)
PTR_BCS_JAN13	EAN13(JAN13)
PTR_BCS_EAN13_S	EAN 13 with supplemental barcode
PTR_BCS_EAN128	EAN-128
PTR_BCS_TF	Standard (or discrete) 2 of 5
PTR_BCS_ITF	Interleaved 2 of 5
PTR_BCS_Codabar	Codabar
PTR_BCS_Code39	Code 39
PTR_BCS_Code93	Code 93
PTR_BCS_Code128	Code 128 (*1)
PTR_BCS_OCRA	OCR "A"
PTR_BCS_OCRB	OCR "B"
PTR_BCS_Code128_Parsed	Code 128 Parsed (*1)
PTR_BCS_RSS14	GS1 CodaBar(RSS(Reduced Space Symbology))
PTR_BCS_RSS_EXPANDED	GS1 CodaBar Expanded(RSS Expanded)

(*1) In the case of "PTR_BCS_Code128", to keep compatibility with the version of under 1.8, print Code128 barcode of CodeA if there is NO code set at the beginning of the data string. the code set is CodeA("{A"}), CodeB("{B}") and CodeC("{C"}).
In the case of "PTR_BCS_Code128_Parsed", an error occurs if there is NO code set at the beginning of the data string.

[Two Dimensional Symbolologies]

Value	Meaning
PTR_BCS_PDF417	PDF417
PTR_BCS_MAXICODE	MAXICODE

[Special Cases]

Value	Meaning
PTR_BCS_OTHER	Defines additional symbologies to the above. Actual value is PTR_BCS_OTHER+α.

The alignment parameter has one of the following values.

Value	Meaning
PTR_BC_LEFT	Aligns bar code with the left-most print column and prints it.
PTR_BC_CENTER	Aligns bar code in the center of the station and prints it.
PTR_BC_RIGHT	Aligns bar code with the right-most print column and prints it.
Other Values	Prints bar code at a specified distance from the left-most print column. Expressed in the unit of measure given by the MapMode property.

The textPosition parameter has one of the following values:

Value	Meaning
PTR_BC_TEXT_NONE	Prints no HRI characters.. Only prints the bar code.
PTR_BC_TEXT_ABOVE	Prints the HRI characters above the bar code.
PTR_BC_TEXT_BELOW	Prints the HRI characters below the bar code.

Remarks

Prints bar codes on a printer station specified by the station parameter.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

If the RotateSpecial property indicates that the bar code is to be rotated, perform the rotation. The height, width, and textPosition parameters are applied to the bar code before the rotation. For example, if PTR_BC_TEXT_BELOW is specified and the bar code is rotated left, the text will appear on the paper to the right of the bar code.

Special Considerations for Code 128

The Code 128 Bar Code symbology is comprised of three code sets and also includes some special characters that denote either a change in code set, a function code, or a shift code. The characters for each code set are:

Code Set	Character Set
Code A	0x00-0x5f, FNC1, FNC2, FNC3, FNC4, SHIFT, CODE B, CODE C
Code B	0x20-0x7f, FNC1, FNC2, FNC3, FNC4, SHIFT, CODE A, CODE C
Code C	0x00-0x63 for decimal values 00-99, FNC1, CODE A, CODE B

A sentinel character, the left curly bracket "{", followed by a certain value, is used to indicate a special characters, SHIFT, CODE A, CODE B, CODE C, FNC1, FNC2, FNC3, FNC4 and {. The following table lists the character pairs for encoding the special characters:

Special Characters	ASCII Representation
SHIFT	{S
CODE A	{A
CODE B	{B
CODE C	{C
FNC1	{1
FNC2	{2
FNC3	{3
FNC4	{4
{	{{

[Release 1.7 and earlier]

The data format to be supplied by the application was not specified in these releases. Therefore, the default code set and data content varied by vendor. An application that sends Code 128 data to a 1.7 or earlier service will need to conform to that service's requirements.

[Release 1.8 and later]

For migration of current applications, the symbology PTR_BCS_Code128 is maintained so that a service may continue to support the data format that it used with earlier releases.

New service implementations should handle this symbology as with PTR_BCS_Code128_Parsed. The new symbology PTR_BCS_Code128_Parsed standardizes the data format with consistent parsing. Data is comprised of ASCII characters, which the service maps to the corresponding value for the selected code set.

In Code Sets A and B, this will be a one to one mapping. In Code Set C, each pair of digits is converted to a single Code C data character in the range 0x00 (00) through 0x63 (99). If the Code Set C data contains an odd number of digits, a leading zero digit is added by the Device Service before conversion.

The default Code Set may differ by vendor, so a starting code set is required at the start of the data.

For details of bar code print for the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 6) Bar code print" in this Manual.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

printBitmap Method**Type**

```
void printBitmap( int station, String fileName, int width, int alignment )
throws JposException;
```

Parameter	Remarks
station	Specifies the printer station to be used.
fileName	Specifies a file name or URL of bitmap file. Various file formats may be supported, such as bmp, gif, or jpeg files.
width	Specifies printed width of the bitmap to be performed.
alignment	Specifies placement of the bitmap.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
The width parameter has one of the following values:	
Value	Meaning
PTR_BM_ASIS	Prints the bitmap with one bitmap pixel per printer dot.
Other Values	Prints the bitmap at a specified distance from the left-most print column. Expressed in the unit of measure given by the MapMode property. Prints the bitmap with specified width. Expressed in the unit of measure given by the MapMode property.
The alignment parameter has one of the following values:	
Value	Meaning
PTR_BM_LEFT	Aligns the bitmap with the left-most print column and prints it.
PTR_BM_CENTER	Aligns the bitmap in the center of the station and prints it.
PTR_BM_RIGHT	Aligns the bitmap with the right-most print column and prints it.
Other Values	Prints the bitmap at a distance from the left-most print column. Expressed in the unit of measure given by the MapMode property.

Remarks

Prints a bitmap on the printer station specified by the station parameter.

If a partial text line has been sent (for example, via the **printNormal** method) but not yet printed, an implicit line feed is added to this text and the line is printed before the bitmap is printed.

Text data sent after this **printBitmap** method begins on the line following the bitmap.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

The width parameter controls transformation of the bitmap. If width is PTR_BM_ASIS, no transformation is performed. The bitmap is printed with one bitmap pixel per printer dot.

Advantages of this option are that it:

- Provides the highest performance bitmap printing.
- Works well for bitmaps tuned for a specific printer's aspect ratio between horizontal dots and vertical dots.

If width is not 0, the bitmap will be transformed by stretching or compressing the bitmap such that its width is the specified width and the aspect ratio is unchanged. Advantages of this option are:

- Sizes a bitmap to fit a variety of printers.
- Maintains the bitmap's aspect ratio.

Disadvantages are:

- Lowers performance than untransformed data.
- Some lines and images that are smooth in the original bitmap may show some ratcheting.

For details of bitmap print for the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 7) Bitmap print" in this Manual.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_NOEXIST, 0	Filename specified by the fileName parameter was not found.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

transactionPrint Method**Type**

void transactionPrint(int station, int control) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
control	Specifies a transaction control.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_JOURNAL	Prints data on the journal printer station.
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
The control parameter has one of the following values:	
Value	Meaning
PTR_TP_TRANSACTION	Begins a transaction.
PTR_TP_NORMAL	Ends a transaction by printing the buffered data.

Remarks

Enters or exits transaction mode.

If the control parameter is PTR_TP_TRANSACTION, transaction mode is entered. Subsequent calls to the **printNormal**, **cutPaper**, **rotatePrint**, **printBarCode**, **printBitmap**, and **markFeed** methods will buffer the print data until the **transactionPrint** method is called with the control parameter set to PTR_TP_NORMAL and do not initiate printing.

Also, the value of the AsyncMode property does not affect their operation: No OutputID will be assigned to the request, nor will an OutputCompleteEvent be enqueued.

If the control parameter is PTR_TP_NORMAL, transaction mode is exited. If some data was buffered by calls to the **printNormal**, **cutPaper**, **rotatePrint**, **printBarCode**, **printBitmap** and **markFeed** methods, the buffered data is printed. If no data was buffered, this method completes successfully without initiating printing. The entire transaction is treated as one message. This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

Calling the **clearOutput** method cancels rotated print transaction mode. Any buffered rotated print lines are also cleared.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

validateData Method**Type**

void validateData(int station, String data) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
data	The data to be validated. May include printable data and escape sequences.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_JOURNAL	Prints data on the journal printer station.
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
Special character values within data are:	
Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Prints any data in the line buffer, and feeds to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line. On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported. If the printer does not support either of these features, Carriage Return acts like a Line Feed. The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.

Remarks

Determines whether a data sequence, possibly including one or more escape sequences, is valid for the specified station, before calling the **printImmediate**, **printNormal**, or **printTwoNormal** method.

This method does not cause any printing, but is used to determine the capabilities of the station.

As a result of validation on data specified by the data parameter, the exception's `ErrorCode` property will be `ErrorCode:JPOS_E_ILLEGAL` or `ErrorCodeExtended:0` if some of the data is not precisely supported and `ErrorCode:JPOS_E_FAILURE` or `ErrorCodeExtended:0`, if some of the data is not supported. For details, please refer to the subsequent tables.

Cases which cause `ErrorCode` of `JPOS_E_ILLEGAL`:

Escape Sequence	Status
Paper cut	The percentage “#” is not precisely supported. Device Service will select the closest supported value.
Feed and Paper cut	The percentage “#” is not precisely supported. Device Service will select the closest supported value.
Feed, Paper cut, and Stamp	The percentage “#” is not precisely supported. Device Service will select the closest supported value.
Feed units	The unit count “#” is not precisely supported. Device Service will select the closest supported value.
Feed reverse	The line count “#” is too large. Device Service will select the maximum supported value.
Underline	The thickness “#” is not precisely supported. Device Service will select the closest supported value.
Shading	The percentage “#” is not precisely supported. Device Service will select the closest supported value.

Escape Sequence	Status
Scale horizontally	The scaling factor “#” is not supported. Device Service will select the closest supported value.
Scale vertically	The scaling factor “#” is not supported. Device Service will select the closest supported value.
Custom color	The color “#” is not supported. Device Service will select the closest supported value.
RGB color	The color “#” is not supported. Device Service will select the closest supported value.

Data	Status
data1<CR>data2<LF> (<CR> is a Carriage Return and <LF> is a Line Feed.)	In order to print data data1 and remain on the same line, the Service Object will print with a line advance, then perform a reverse line feed. The data data2 will then overprint data1.

Cases which cause ErrorCode of JPOS_E_FAILURE:

Escape Sequence	Status
(General)	The escape sequence format is not valid.
Paper cut	Not supported.
Feed and Paper cut	Not supported.
Feed, Paper cut, and Stamp	Not supported.
Print bitmap	Bitmap printing is not supported, or the bitmap number “#” is out of range.
Feed reverse	Not supported.
Font typeface	The typeface “#” is not supported.
Bold	Not supported.
Underline	Not supported.
Italic	Not supported.
Red color	Not supported.
Reverse video	Not supported.
Shading	Not supported.
Single high and wide	Not supported.
Double wide	Not supported.
Double high	Not supported.
Double high and wide	Not supported.
RGB color	Not supported.
Data	Status
data1<CR>data2<LF> (<CR> is a Carriage Return and <LF> is a Line Feed.)	Not able to remain on the same line after printing data. The data data1 will print on one line, and the data data2 will print on the next line.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Some of the data is not precisely supported by the printer station, but the Device Service can select valid alternatives.	
JPOS_E_FAILURE, 0	Some of the data is not supported. No alternatives can be selected.	

setBitmap Method**Type**

void setBitmap(int bitmapNumber, int station, String fileName, int width, int alignment)
throws JposException;

Parameter	Remarks
bitmapNumber	Specifies the number to be assigned to the bitmap. For the TRST-A10-S, P, U and the TRST-A15-S, P, U, valid bitmap numbers are 1 through 11. Assigning the numbers 4 through 11 to the bitmap must be done between start bitmap registration to flash ROM and end bitmap registration to flash ROM of the DirectIO method.
station	Specifies the printer station to be used.
fileName	Specifies a file name or URL of bitmap file. Various file formats may be supported, such as bmp, gif, or jpeg files.
width	Specifies printed width of the bitmap to be performed.
alignment	Specifies placement of the bitmap.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
The width parameter has one of the following values:	
Value	Meaning
PTR_BM_ASIS	Prints the bitmap with one bitmap pixel per printer dot.
Other Values	Prints the bitmap at a distance from the left-most print column. Expressed in the unit of measure given by the MapMode property. Prints the bitmap with specified width. Expressed in the unit of measure given by the MapMode property.
The alignment parameter has one of the following values:	
Value	Meaning
PTR_BM_LEFT	Aligns the bitmap with the left-most print column and prints it.
PTR_BM_CENTER	Aligns the bitmap in the center of the station and prints it.
PTR_BM_RIGHT	Aligns the bitmap with the right-most print column prints it.
Other Values	Prints a distance from the left-most print column. Expressed in the unit of measure given by the MapMode property.

Remarks

Saves information about a bitmap for later printing.

The bitmap may then be printed by calling the **printNormal** or **printImmediate** method with the bitmap print escape sequence in the print data.

The bitmap print escape sequence will typically be included in a string for printing top and bottom transaction headers.

If a partial text line has been sent before the bitmap print escape sequence is encountered, an implicit line feed is added to this text and the line is printed before the bitmap is printed. Text data sent after the bitmap print escape sequence begins on the line following the bitmap.

The Device Service may choose to cache the bitmap for later use to provide better performance. Regardless, the bitmap file and parameters are validated for correctness by this method.

The Device Service will use the bitmapNumber parameter to determine how best to store the bitmaps. The most frequently used bitmaps should be assigned a small bitmapNumber (close to 1), while occasionally used bitmaps should be assigned the larger bitmapNumbers.

It may download them to the Device when possible, or cache them in Device Service memory, or simply remember the fileName and associated properties for use when it is printed.

The application must ensure that the printer station metrics, such as character width, line height, and line spacing are set for the station before calling this method. The Device Service may perform transformations on the bitmap in preparation for later printing based upon the current values.

The application may set bitmaps numbered 1 through 20 for each of the two valid stations, receipt and slip stations. If desired, the same bitmap fileName may be set to the same bitmapNumber for each station, so that the same print bitmap escape sequence may be used for either station.

For the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, the application can set bitmaps 1 through 11 only for the receipt printer. Assigning the numbers 4 through 11 to the bitmap must be done between start bitmap registration to flash ROM and end bitmap registration to flash ROM of the DirectIO method. For details of bitmap registration and print for the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 8) Bitmap print" in this Manual.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_NOEXIST, 0	A file specified by the fileName parameter was not found.	
JPOS_E_BUSY, 0	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	

setLogo Method**Type**

void setLogo(int location, String data) throws JposException;

Parameter	Remarks
location	Specifies the logo to be set.
data	Specifies the characters that produce the logo. May consist of printable characters, escape sequences, carriage return (13 decimal), and line feed (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property".
The location parameter has one of the following values:	
Value	Meaning
PTR_L_TOP	Saves a data string as the top logo.
PTR_L_BOTTOM	Saves a data string as the bottom logo.
Special character values within data are:	
Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Prints any data in the line buffer, and feeds to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line. On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported. If the printer does not support either of these features, Carriage Return acts like a Line Feed. The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.

Remarks

Saves a data string specified by the data parameter as the top or bottom logo.

A logo may then be printed by calling the **printNormal**, **printTwoNormal**, or **printImmediate** method with the print top logo or print bottom logo escape sequence in the print data.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid location was specified.	

changePrintSide Method**Type**

void changePrintSide(int side) throws JposException;

Parameter	Remarks
side	Indicates the side on which to print.
The side parameter has one of the following values:	
Value	Meaning
PTR_PS_SIDE1	Indicates that the default print side of the document is selected. Default print side is the side where printing will occur immediately after a document has been inserted. Therefore, PTR_PS_SIDE1 is selected after the beginInsertion or endInsertion method is executed.
PTR_PS_SIDE2	Indicates that the opposite side of the document from the one that the printer defaults to is to be selected. (Reverse side of PTR_PS_SIDE1.)
PTR_PS_OPPOSITE	Indicates that the current printing side is switched. Printing will now occur on the opposite side of the slip. e.g., if SlpPrintSide was PTR_PS_SIDE1, it is to be changed to PTR_PS_SIDE2.

Remarks

Selects the side of the document where printing is to occur.

This allows a print operation to occur on both sides of a document. This may be accomplished by mechanical paper handling of the document or by using multiple print heads that are positioned to print on each side of the document.

If a document is not inserted, an error is returned.

If the print side is not the one specified by the **SlpPrintSide** property, that is, PTR_PS_OPPOSITE, the side of the document is changed and the document is fed to the top of form. If the print side is the one specified by the **SlpPrintSide** property, nothing occurs and this method is exited.

Executing this method may cause the **SlpPrintSide** property to change.

Usually, this method is effective for printing on the slip printer, but the TRST-A15-S, P, U which supports dual-side print on the receipt printer uses the extended function of this method.

For the dual-side print with the TRST-A15-S, P, U, please refer to the section, "1.1.12.2 Restrictions and Cautions for TRST-A15-S, P, U 1) Dual-side print" in this Manual.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Specified print side is invalid.	
JPOS_E_BUSY, 0	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	

markFeed Method**Type**

void markFeed(int type) throws JposException;

Parameter	Remarks
type	Indicates the type of mark sensed paper handling.
The type parameter has one of the following values:	
Value	Meaning
PTR_MF_TO TAKEUP	Feeds the mark sensed paper to the paper take-up position.
PTR_MF_TO CUTTER	Feeds the mark sensed paper to the autocutter cutting position.
PTR_MF_TO CURRENT_TOF	Feeds the mark sensed paper to the present paper's top of form. Reverse feeds if required.
PTR_MF_TO NEXT_TOF	Feeds the mark sensed paper to the paper's next op of form.

Remarks

This method is used to feed the mark sensed receipt paper using the printer's mark sensor.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

If the type parameter is PTR_MF_TO TAKEUP, the printer will feed the mark sensed paper to the position where it can be manually removed by the operator.

If the type parameter is PTR_MF_TO CUTTER, the printer will feed the mark sensed paper so that the present form is in a position to be cut off by the auto cutter. This will usually be followed by a call to the cutPaper method.

If the type parameter is PTR_MF_TO CURRENT_TOF, the printer will feed the mark sensed paper to the print head position, usually in reverse direction.

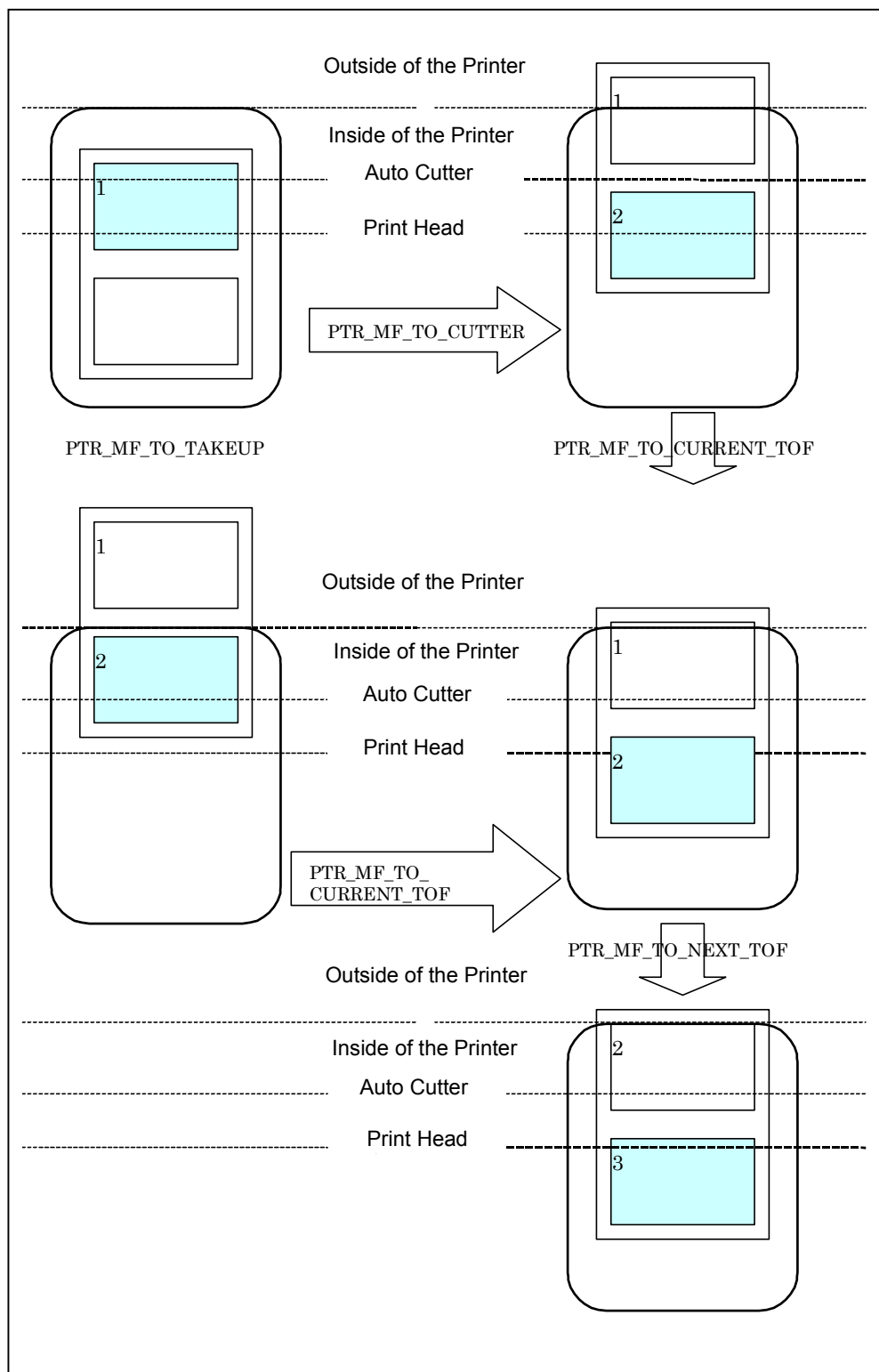
If the type parameter is PTR_MF_TO NEXT_TOF, the printer will feed the mark sensed paper so that print head points to the top of the next form.

The following diagram provides a pictorial representation of the functions performed by this method.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Unsupported function was called.	This Device Service does not support this function.



clearPrintArea Method**Type****void clearPrintArea() throws JposException;****Remarks**

Clears the print data in the page mode print area defined by the PageModePrintArea property. The entire page may be cleared by setting the PageModePrintArea property to be the same as the PageModeArea property and by calling the pageModePrint method with PTR_PM_CANCEL. The PageModeStation property must be set to a valid station prior to invoking this method.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	No valid station is set to the PageModeStation property.	

pageModePrint Method**Type**

void pageModePrint(int control) throws JposException;

Parameter	Remarks
control	Specifies a page mode control.
The control parameter has one of the following values:	
Value	Meaning
PTR_PM_PAGE_MODE	Enters page mode.
PTR_PM_PRINT_SAVE	Prints the print data in the page mode print area, then saves it. Used for printing of repeated pages.
PTR_PM_NORMAL	Prints the print data in the page mode print area, clears it, then exits the page mode.
PTR_PM_CANCEL	Clears the print data in the page mode print area and exits the page mode without printing any print data.

Remarks

Enters or exits page mode for the station specified in the PageModeStation property.

Calling the **pageModePrint** method with the control parameter set to PTR_PM_PAGE_MODE enters the Page mode. Subsequent calls to the **printNormal**, **printBarCode**, **printBitmap**, and **printMemoryBitmap** methods will buffer the print data until the **pageModePrint** method is called with the control parameter set to PTR_PM_PRINT_SAVE, PTR_PM_NORMAL, or PTR_PM_CANCEL. In this case, the print methods only buffer the data – they do not initiate printing. Also, the value of the AsyncMode property does not affect their operation. No OutputID will be assigned to the request, nor will an OutputCompleteEvent be enqueued.

If the **pageModePrint** method is called with the control parameter set to PTR_PM_PRINT_SAVE, Page Mode is not exited. If some data is buffered by calls to the methods **printNormal**, **printBarCode**, **printBitmap**, and **printMemoryBitmap**, then the buffered data is saved and printed. This control is used to print the same page layout with additional print data inside of the page mode area.

If the **pageModePrint** method is called with the control parameter set to PTR_PM_NORMAL, Page Mode is exited and the printer enters a normal state. If some data is buffered by calls to the methods **printNormal**, **printBarCode**, **printBitmap**, and **printMemoryBitmap**, the buffered data is printed. The buffered data will not be saved.

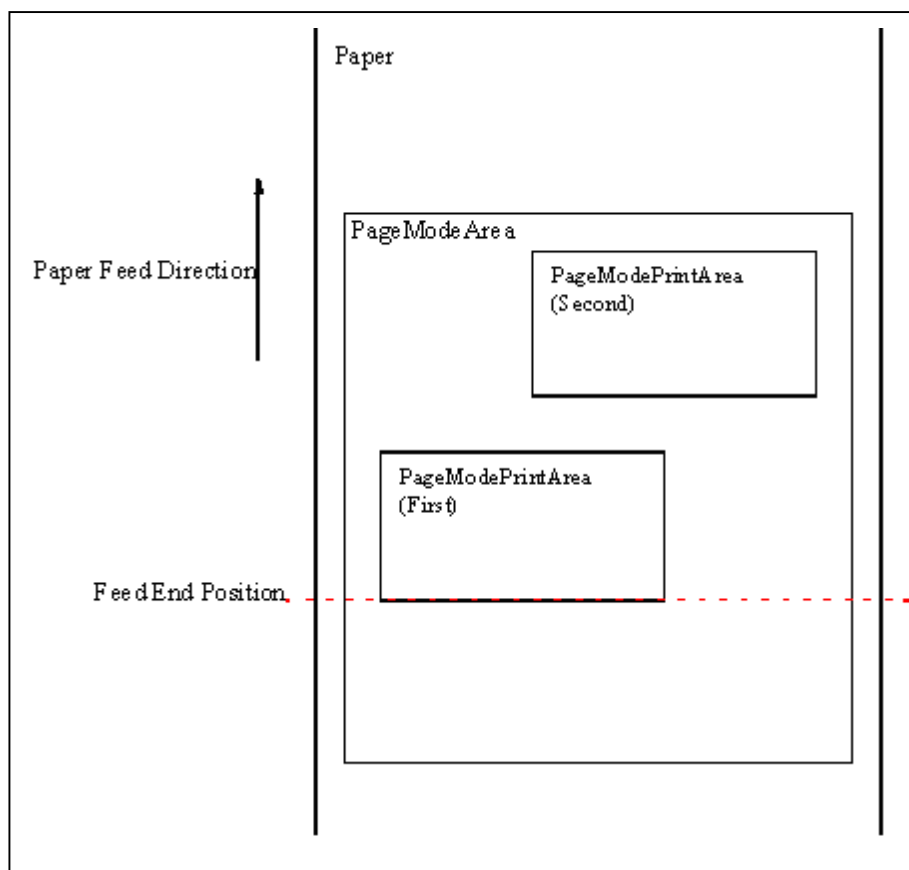
If the **pageModePrint** method is called with the control parameter set to PTR_PM_CANCEL, Page Mode is exited and the printer enters a normal state. If some data is buffered by calls to the methods **printNormal**, **printBarCode**, **printBitmap**, and **printMemoryBitmap**, the buffered data is not printed and is not saved.

Note that when the **pageModePrint** method is called, all of the print data that is to be printed in the page mode print area will be printed and the paper is fed to the end of the page mode print area. If more than one page mode print area is defined, all of the data that is to be printed in the respective page mode print area(s) will be printed and the paper will be fed to the end of the page mode print area located the farthest down the sheet of paper. (See figure in the next page).

The entire Page Mode transaction is treated as one message. This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true. Calling the **clearOutput** method cancels Page Mode and the printer enters a normal state. Any buffered print lines are also cleared.

The page mode function can be used within a transaction print, but not within a rotate print.

The PageModeStation property must be set to a valid station prior to invoking this method.



Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	No valid station is set to the PageModeStation property.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

printMemoryBitmap Method**Type**

```
void printBitmap( int station, byte[] data, int type, int width, int alignment )  
throws JposException;
```

Parameter	Remarks
station	Specifies the printer station to be used.
data	Specifies the bitmap data. Specifies a file name or URL of bitmap file. Various file formats may be supported, such as bmp, gif, or jpeg files.
type	Specifies a bitmap format. Various bitmap formats may be supported, such as bmp, gif, or jpeg files. At least black and white uncompressed bitmaps are supported. (Black pixels are printed, while white pixels are not printed.)
width	Specifies printed width of the bitmap to be performed.
alignment	Specifies placement of the bitmap.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
The type parameter has one of the following values:	
Value	Meaning
PTR_BMT_BMP	The data parameter contains a BMP format bitmap.
PTR_BMT_JPEG	The data parameter contains a JPEG format bitmap.
PTR_BMT_GIF	The data parameter contains a GIF format bitmap.
The width parameter has one of the following values:	
Value	Meaning
PTR_BM_ASIS	Prints the bitmap with one bitmap pixel per printer dot.
Other Values	Prints the bitmap at a distance from the left-most print column. Expressed in the unit of measure given by the MapMode property. Prints the bitmap with specified width. Expressed in the unit of measure given by the MapMode property.
The alignment parameter has one of the following values:	
Value	Meaning
PTR_BM_LEFT	Aligns the bitmap with the left-most print column and prints it.
PTR_BM_CENTER	Aligns the bitmap in the center of the station and prints it.
PTR_BM_RIGHT	Aligns the bitmap with the right-most print column prints it.
Other Values	Prints the bitmap at a distance from the left-most print column. Expressed in the unit of measure given by the MapMode property.

Remarks

This method is called to print a memory-stored bitmap on the specified printer station.

If a partial text line has been sent (for example, via printNormal) but not yet printed, an implicit line feed is added to this text and the line is printed before the bitmap is printed. Text data sent after this printMemoryBitmap begins on the line following the bitmap.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

The width parameter controls transformation of the bitmap. If width is PTR_BM_ASIS, no transformation is performed. The bitmap is printed with one bitmap pixel per printer dot.

Advantages of this option are that it:

- Provides the highest performance bitmap printing.
- Works well for bitmaps tuned for a specific printer's aspect ratio between horizontal dots and vertical dots.

If width is not 0, the bitmap will be transformed by stretching or compressing the bitmap such that its width is the specified width and the aspect ratio is unchanged. Advantages of this option are:

- Sizes a bitmap to fit a variety of printers.
- Maintains the bitmap's aspect ratio.

Disadvantages are:

- Lowers performance compared to untransformed data.
- Some lines and images that are smooth in the original bitmap may show some ratcheting.

For details of Print bitmap for the TRST-A10-S, P, U, L and the TRST-A15-S, P, U, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, and L 7) Bitmap print" in this Manual.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_NOEXIST, 0	A file specified by the fileName parameter was not found.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

1.1.8.3 Details of directIO Method

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	Specifies a command number.
data	Specifies an array of one mutable integer.
object	Specifies additional data.

Any of the command, data, or object parameter value may vary by the Device Service.

Remarks

This Device Service supports the following extended functions using the directIO method.

command Parameter	Function	Functions supported by						
		TRST-A10-S	TRST-A10-P	TRST-A10-U	TRST-A10-L	TRST-A15-S	TRST-A15-P	TRST-A15-U
TPTR_CMD_DIRECT_OUTPUT	Direct output to printer device	○	○	○	○	○	○	○
TPTR_CMD_FILE_OUTPUT	File data output	○	○	○	○	○	○	○
TPTR_CMD_DRAWER_OPEN	Drawer open	○	○	○	○	○	○	○
TPTR_CMD_DRAWER_STATUS	Get drawer status	○	○	○	○	○	○	○
TPTR_CMD_SETBITMAP_FLASH_START	Start bitmap registration to flash ROM	○	○	○	○	○	○	○
TPTR_CMD_SETBITMAP_FLASH_END	End bitmap registration to flash ROM	○	○	○	○	○	○	○
TPTR_2STCMD_SET_PRINTINGMODE	Print mode selection					○	○	○
TPTR_2STCMD_SET_PRINTINGSIDE	Print side selection					○	○	○
TPTR_2STCMD_SET_UPSIDEDOWN	Upside-down print setup					○	○	○
TPTR_2STCMD_SWAPPRINTINGSIDE	Swap print side					○	○	○
TPTR_2STCMD_PREDEFINE	Start/End back-side print data predefine					○	○	○

○: Indicates the printer model supports the applicable function.

Errors

Regardless of command parameter, the following JposException is thrown.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_ILLEGAL, 0	An invalid parameter value was used.	An invalid parameter value was used for the command parameter. Check the value.

- 1) Direct output to printer device

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_CMD_DIRECT_OUTPUT
data	Not used. (Specify 0 (zero).)
object	object[0] : byte[] Specifies a character string to be sent to the printer with escape sequence specific to the printer.

Remarks

Directly sends a character string specified by the pString parameter to the printer device. This Device Service only sends the character string directly to the printer without processing it. Some escape sequences, specific to the printer to which the character string is to be output, may affect the JavaPOS properties and performance of methods.

Errors

This command throws the following JposException.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

2) File data output

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_CMD_FILE_OUTPUT
data	Not used. (Specify 0 (zero).)
object	object[0] : String Specifies a name of file with full path, which stores the data to be output to the printer with escape sequence specific to the printer.

Remarks

Directly sends a character string in the file specified by the pString parameter to the printer device. This Device Service only sends the character string directly to the printer without processing it. Some escape sequences, specific to the printer to which the character string is to be output, may affect the JavaPOS properties and performance of methods.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_NOEXIST, 0	The file does not exist.	Check the value specified by pString and make sure the filename is correct.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

3) Drawer open

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_CMD_DRAWER_OPEN
data	Not used. (Specify 0 (zero).)
object	Not used. (Specify an empty string ("").)

Remarks

Opens a cash drawer connected to the printer. In Drawer Open state, the Drawer Open function ends successfully without accessing the printer device. No checks, to see whether or not the cash drawer has been opened, are performed. Only a drawer open command is executed.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

4) Get drawer status

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_CMD_DRAWER_STATUS
data	Not used. (Specify 0 (zero).) A cash drawer open/close status data is stored.
object	Not used. (Specify an empty string ("").)

The data parameter has one of the following values:

Value	Meaning
TPTR_DRAWER_CLOSED	The cash drawer is closed.
TPTR_DRAWER_OPEN	The cash drawer is open.

Remarks

Obtains an open/close status of the cash drawer connected to the printer. If failed to obtain the open/close status for some reason, such as printer failure, the data parameter is set to POS_DRAWER_CLOSED.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

5) Start bitmap registration to flash ROM

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_CMD_SETBITMAP_FLASH_START
data	Not used. (Specify 0 (zero).)
object	Not used. (Specify an empty string ("").)

Remarks

Requests the printer device to start bitmap registration to flash ROM.

This clears all bitmap data stored in the flash ROM. By using this method and **SetBitmap** method, bitmaps of Bitmap No. 4 through 11 can be registered, which can be retained even after the printer power is turned off

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

6) End bitmap registration to flash ROM

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_CMD_SETBITMAP_FLASH_END
data	Not used. (Specify 0 (zero).)
object	Not used. (Specify an empty string ("").)

Remarks

Requests the printer device to end bitmap registration to flash ROM. After this method is completed, bitmaps of Bitmap No. 4 through 11 cannot be registered.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

(*1) This error may occur only on the TRST-A10-U or TRST-A15-U.

7) Print mode selection

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_2STCMD_SET_PRINTINGMODE
data	Sets a print mode to be used.
object	Not used. (Specify an empty string ("").)
The data parameter has one of the following values:	
Value	Meaning
0	Single-side print mode This mode only prints on a front side of paper. This is a default mode.
1	Dual-side print – auto divide mode This mode automatically performs printing on both of the front and back sides of paper. In this mode, the print method does not immediately starts printing. Based on a Paper Cut command or a change in print mode, print lines processed by the print method are automatically divided approximately in half and former and latter half of data is printed on the front and back sides of paper respectively.
2	Dual-side print –print side selection mode This mode performs printing on the front/back side of paper specified by the print method or by the print side selection function of the DirectIO method. In this mode, the print method does not immediately starts printing. Based on a Paper Cut command or a change in print mode, all print lines processed by the print method are collectively printed.
3	Dual-side print – back-side print data predefine This mode automatically prints a predefined back side print data on the back side of paper. In this mode, the print method does not immediately starts printing. Based on a Paper Cut command or a change in print mode, print lines processed by the print method are printed on the front side of paper and predefined back side data is printed on the back side automatically.

Remarks

Sets a print mode. This function dynamically changes the print mode that can be set by the means such as print mode registry setting and printer device configuration setting.

This command can be used only by the TRST-A15-S, P, and U. If this command is invoked by other printer models, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

8) Print side selection

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_2STCMD_SET_PRINTINGSIDE
data	Specifies the print side, front or back, if the station parameter is set to PTR_S_RECEIPT by the print method after this setting.
object	Not used. (Specify an empty string ("").)
The data parameter has one of the following values:	
Value	Meaning
0	Front side If the station parameter is set to PTR_S_RECEIPT by the print method after this setting, printing is performed on the front side of paper.
1	Back side If the station parameter is set to PTR_S_RECEIPT by the print method after this setting, printing is performed on the back side of paper.

Remarks

Switches the print side to the opposite side from the one currently selected in dual-side print – print side selection mode. If the Station parameter specified by the print method is PTR_S_RECEIPT, this command can set the print side to PTR_S_RECEIPT2.

This command can be used only by the TRST-A15-S, P, and U. If this command is invoked by other printer models, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

9) Upside-down print setup

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_2STCMD_SET_UPSIDEDOWN
data	Specifies upside-down print in dual-side print mode.
object	Not used. (Specify an empty string ("").)
The data parameter has one of the following values:	
Value	Meaning
0	Normal printing and no upside-down print.
1	Upside-down print only on the front side of paper
2	Upside-down print only on the back side of paper
3	Upside-down print on both sides of paper

Remarks

Sets upside-down print on the front and/or back side of paper in dual-side print mode.

This command can be used only by the TRST-A15-S, P, and U. If this command is invoked by other printer models, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

10) Print side swap

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_2STCMD_SWAPPRINTINGSIDE
data	Specifies a print head for dual-side print.
object	Not used. (Specify an empty string ("").)
The data parameter has one of the following values:	
Value	Meaning
0	Default setting
1	Swaps print heads (heads for front/back side)

Remarks

Specifies a print head for dual-side print. This command specifies the print head to be used for printing on the front/back side of paper. In default setting, a 41-mm top margin is given on the back side of paper. This margin is given on the front side if the print heads are swapped.

This command can be used only by the TRST-A15-S, P, and U. If this command is invoked by other printer models, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

11) Start/End back side print data predefine

Type

void directIO(int command, int[] data, Object object) throws JposException;

Parameter	Remarks
command	TPTR_2STCMD_PREDEFINE
data	Specifies a start and end to predefine print data to be printed on the back side of paper.
object	Not used. (Specify an empty string ("").)
The data parameter has one of the following values:	
Value	Meaning
0	Clears the predefined data.
1	Starts predefining print data.
2	Ends predefining print data.

Remarks

In dual-side print – back-side print data predefine mode, specifies a start or end to predefine a data as back side data. After “start” is specified, all data, set by the print method, is predefined as back side data until “end” is specified. Therefore, the print method does not initiate printing once the “start” is specified.

This command can be used only by the TRST-A15-S, P, and U. If this command is invoked by other printer models, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

Errors

This command throws the following JposException.

JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_BUSY, 0	An asynchronous output is in progress. (A synchronous output was performed while an asynchronous output was in progress.)	Wait until the asynchronous output is completed or cancel it, then execute this property again.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

1.1.9 Event Specifications**1.1.9.1 Event List**

This Device Service throws the following events.

Event Class	Description
DirectIOEvent	Used by the Service Object to directly communicate with the application.
ErrorEvent	Notifies that an error has been detected.
OutputCompleteEvent	Notifies that previous asynchronous output request has been completed successfully.
StatusUpdateEvent	Notifies that the device's operation status was changed.

Table 25 POSPrinter JavaPOS Device – Event List

1.1.9.2 Details of Events

DirectIOEvent Event

Type

```
void directIOOccurred( DirectIOEvent e );
```

Parameter	Remarks
e	Sets a parameter that indicates a DirectIOEvent event thrown.

DirectIOEvent class is given to the “e” parameter. This DirectIOEvent class contains the following properties.

Property	Type	Remarks
EventNumber	int	An event number is assigned. Sets a specific value assigned by the Device Service.
Data	int	Sets additional numeric data. Specific values vary by the EventNumber property and Device Service. This property can be set by the application.
Object	Object	Sets additional data. Usage varies by the EventNumber property and the Device Service. This property can be set by the application.

Any of the EventNumber, Data, or Object property value may vary by the Device Service.

Remarks

This event is to be used only for those types of vendor specific functions that are not described by the JavaPOS standard. Use of this event may restrict the application program from being used with other vendor's POS Printer devices which may not specify the use of this event.

This Device Service provides some extended functions using the DirectIOEvent Event. Some functions may not be supported depending on the printer device. For details of the DirectIOEvent event, please refer to the section, “1.1.9.3 Details of DirectIOEvent Event” in this Manual.

ErrorEvent Event**Type**

```
void errorOccurred( ErrorEvent e );
```

Parameter	Remarks
e	Sets a parameter that indicates an ErrorEvent event thrown.

ErrorEvent class is given to the “e” parameter. This ErrorEvent class contains the following properties.

Property	Type	Remarks
ErrorCode	int	Sets an error code causing the error event.
ErrorCodeExtended	int	Sets an extended error code causing the error event.
ErrorLocus	int	Sets a location of the error. This Device Service sets JPOS_EL_OUTPUT that indicates the error occurred while processing asynchronous output.
ErrorResponse	int	Sets an error response to an error event. This property can be set by the application.

The ErrorResponse property is set to JPOS_ER_RETRY and the application can set one of the following values. If other value is set, the Device Service regards the value as JPOS_ER_CLEAR.

Value	Meaning
JPOS_ER_RETRY	Retries the asynchronous output. The error state is exited before retry.
JPOS_ER_CLEAR	Clears all buffered output data, including all asynchronous outputs. (The effect is the same as when clearOutput is called.) The error state is exited.

Remarks

Notifies the application that a printer error was detected and a proper response from the application is required to clear the error.

OutputCompleteEvent Event**Type****void outputCompleteOccurred(OutputCompleteEvent e);**

Parameter	Remarks
e	Sets a parameter that indicates an OutputCompleteEvent event thrown.

OutputCompleteEvent class is given to the “e” parameter. This OutputCompleteEvent class contains the following properties.

Property	Type	Remarks
OutputID	int	The ID number of the asynchronous output request that is complete.

The ErrorResponse property is set to JPOS_ER_RETRY and the application can set either of the following values. If other value is set, the Device Service regards the value as JPOS_ER_CLEAR.

Value	Meaning
JPOS_ER_RETRY	Retries the asynchronous output. The error state is exited before retry.
JPOS_ER_CLEAR	Clears all buffered output data, including all asynchronous outputs. (The effect is the same as when clearOutput is called.) The error state is exited.

Remarks

This event is enqueued after the request's data was sent and the Device Service has confirmed that the data was processed by the device successfully.

StatusUpdateEvent Event**Type**

```
void statusUpdateOccurred( StatusUpdateEvent e );
```

Parameter	Remarks
e	Sets a parameter that indicates a StatusUpdateEvent event thrown.

StatusUpdateEvent class is given to the “e” parameter. This StatusUpdateEvent class contains the following properties.

Property	Type	Remarks
Status	int	Sets the type of operation status change.

The Status property sets one of the following values:

Value	Meaning
JPOS_SUE_POWER_ONLINE	The device is powered on and ready for use. Can be set if CapPowerReporting property value = JPOS_PR_STANDARD or JPOS_PR_ADVANCED.
JPOS_SUE_POWER_OFF	The device is off or detached from the terminal. Can be set only if CapPowerReporting property value = JPOS_PR_ADVANCED.
JPOS_SUE_POWER_OFFLINE	The device is powered on but is either not ready or not able to respond to requests. Can be set only if CapPowerReporting property value = JPOS_PR_ADVANCED.
JPOS_SUE_POWER_OFF_OFFLINE	The device is either off or offline. Can be set only if CapPowerReporting property value = JPOS_PR_STANDARD.
PTR_SUE_COVER_OPEN	The printer cover is open. Can be set if CapCoverSensor property value=true.
PTR_SUE_COVER_OK	The printer cover is closed. Can be set if CapCoverSensor property value=true.
PTR_SUE_JRN_EMPTY	There are no journal papers. Can be set if CapJrnEmptySensor property value=true.
PTR_SUE_JRN_NEAREMPTY	Journal paper is low. Can be set if CapJrnNearEndSensor property value=true.
PTR_SUE_JRN_PAPEROK	Journal paper is ready. Can be set if CapJrnEmptySensor property or CapJrnNearEndSensor property value=true.
PTR_SUE_REC_EMPTY	There are no receipt papers. Can be set if CapRecEmptySensor property value=true.
PTR_SUE_REC_NEAREMPTY	Receipt paper is low. Can be set if CapRecNearEndSensor property value=true.
PTR_SUE_REC_PAPEROK	Receipt paper is ready. Can be set if CapRecEmptySensor property or CapRecNearEndSensor property value=true.

Value	Meaning
PTR_SUE_SLP_EMPTY	No slip form is inserted, and no slip form has been detected at the entrance to the slip station. Can be set if CapSlpEmptySensor property value=true.
PTR_SUE_SLP_NEAREMPTY	Almost at the bottom of the slip form. Can be set if CapSlpNearEndSensor property value=true.
PTR_SUE_SLP_PAPEROK	Slip form is inserted. Can be set if CapSlpEmptySensor property or CapSlpNearEndSensor property value=true.
PTR_SUE_IDLE	All asynchronous output has finished, either successfully or because output has been cleared. The printer State is now JPOS_S_IDLE. The FlagWhenIdle property must be true for this event to be delivered, and the property is automatically reset to false just before the event is delivered.
PTR_SUE_JRN_CARTRIDGE_EMPTY	A journal cartridge needs to be replaced. Cartridge is empty or not present. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapJrnCartridgeSensor property value is either PTR_CART_REMOVED or PTR_CART_EMPTY.
PTR_SUE_JRN_HEAD_CLEANING	A journal cartridge has begun cleaning. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapJrnCartridgeSensor property value is PTR_CART_CLEANING.
PTR_SUE_JRN_CARTRIDGE_NEAREMPTY	A journal cartridge is near end. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapJrnCartridgeSensor property value is PTR_CART_NEAREND.
PTR_SUE_JRN_CARTRIDGE_OK	All journal cartridges are ready. It gives no indication of the amount of media in the cartridge. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapJrnCartridgeSensor property value is not 0.
PTR_SUE_REC_CARTRIDGE_EMPTY	A receipt cartridge needs to be replaced. Cartridge is empty or not present. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapRecCartridgeSensor property value is either PTR_CART_REMOVED or PTR_CART_EMPTY.
PTR_SUE_REC_HEAD_CLEANING	A receipt cartridge has begun cleaning. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapRecCartridgeSensor property value is PTR_CART_CLEANING.
PTR_SUE_REC_CARTRIDGE_NEAREMPTY	A receipt cartridge is near end. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapRecCartridgeSensor property value is PTR_CART_NEAREND.
PTR_SUE_REC_CARTRIDGE_OK	All receipt cartridges are ready. It gives no indication of the amount of media in the cartridge. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapRecCartridgeSensor property value is not 0.

Value	Meaning
PTR_SUE_SLP_CARTRIDGE_EMPTY	A slip cartridge needs to be replaced. Cartridge is empty or not present. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapSlpCartridgeSensor property value is either PTR_CART_REMOVED or PTR_CART_EMPTY.
PTR_SUE_SLP_HEAD_CLEANNING	A slip cartridge has begun cleaning. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapSlpCartridgeSensor property value is PTR_CART_CLEANING.
PTR_SUE_SLP_CARTRIDGE_NEAREMPTY	A slip cartridge is near end. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapSlpCartridgeSensor property value is PTR_CART_NEAREND.
PTR_SUE_SLP_CARTRIDGE_OK	All slip cartridges are ready. It gives no indication of the amount of media in the cartridge. Can be set if CartridgeNotify property is PTR_CN_ENABLED and CapSlpCartridgeSensor property value is not 0.

Starting with Release 1.8, StatusUpdateEvents for specific stations' covers are supported. If a printer has only one cover or if the printer cannot determine/report which covers are open, only the original PTR_SUE_COVER_OPEN and PTR_SUE_COVER_OK events should be fired.

For printers supporting multiple covers, the original events should also be fired for compatibility with current applications. In these cases, the station-specific event should be fired first, followed by the original event. If more than one cover is open, the original PTR_SUE_COVER_OPEN event should only be fired once after a cover is opened. A PTR_SUE_COVER_OK event should only be fired after all the covers are closed.

The event's Status attribute can contain one of the following additional values to indicate a status change.

Value	Meaning
PTR_SUE_JRN_COVER_OPEN	Journal station cover is open.
PTR_SUE_JRN_COVER_OK	Journal station cover is closed.
PTR_SUE_REC_COVER_OPEN	Receipt station cover is open
PTR_SUE_REC_COVER_OK	Receipt station cover is closed.
PTR_SUE_SLP_COVER_OPEN	Slip station cover is open
PTR_SUE_SLP_COVER_OK	Slip station cover is closed.

Example A: Suppose that a printer includes two cover sensors, but reports "cover open" if either is open. The following are the actions and StatusUpdateEvent events that should be fired.

Action	StatusUpdateEvent Event
Open front cover.	PTR_SUE_COVER_OPEN
Open rear cover.	No additional StatusUpdateEvent event.
Close front cover.	No additional StatusUpdateEvent event.
Close rear cover.	PTR_SUE_COVER_OK

Example B: Suppose that a printer includes two sensors which report their statuses independently. The following are the actions and StatusUpdateEvents that should be fired.

Action	StatusUpdateEvent Event
Open slip cover.	PTR_SUE_SLP_COVER_OPEN, then PTR_SUE_COVER_OPEN
Open receipt cover.	PTR_SUE_REC_COVER_OPEN
Close slip cover.	PTR_SUE_SLP_COVER_OK
Close receipt cover.	PTR_SUE_REC_COVER_OK, then PTR_SUE_COVER_OK

This status reporting allows the migration of applications written to Release 1.7 and earlier, plus additional functionality for applications written to the Release 1.8 and later:

An application that either ignores the new statuses or was written before Release 1.8 continues to respond to the PTR_SUE_COVER_OPEN and PTR_SUE_COVER_OK StatusUpdateEvents. (It is assumed that the application will ignore statuses that are not expected.)

An application written to support the new statuses can respond to the station-specific status (PTR_SUE_xxx_COVER_OK).

The general status (PTR_SUE_COVER_OK) will not provide any additional information. But if it receives a general status without a preceding station-specific status, it processes the general status.

Remarks

Enqueued when a significant status event has occurred.

1.1.9.3 Details of DirectIOEvent Event

Type

```
void directIOOccurred( DirectIOEvent e );
```

Parameter	Remarks
e	Sets a parameter that indicates a DirectIOEvent event thrown.

DirectIOEvent class is given to the “e” parameter. This DirectIOEvent class contains the following properties.

Property	Type	Remarks
EventNumber	int	An event number is assigned. Sets a specific value assigned by the Device Service.
Data	int	Sets additional numeric data. Specific values vary by the EventNumber property and Device Service. This property can be set by the application.
Object	Object	Sets additional data. Usage varies by the EventNumber property and the Device Service. This property can be set by the application.

Any of the EventNumber, Data, or Object property value may vary by the Device Service.

Remarks

This Device Service supports the following extended functions using the directIOEvent.

EventNumber Property	Data Property	Function	Supported functions by						
			TRST-A10-S	TRST-A10-P	TRST-A10-U	TRST-A10-L	TRST-A15-S	TRST-A15-P	TRST-A15-U
TPTR_EventNumber_Nibble	TPTR_DIE_DRAWER_LOW	Drawer close	○	○	○	○	○	○	○
	TPTR_DIE_DRAWER_HIGH	Drawer open	○	○	○	○	○	○	○

○: Indicates the printer model supports the applicable function.

1) Drawer close

Type**void directIOOccurred(DirectIOEvent e);**

Parameter	Remarks
e	Sets a parameter that indicates a DirectIOEvent event thrown.

DirectIOEvent class is given to the “e” parameter. This DirectIOEvent class contains the following properties.

Property	Type	Remarks
EventNumber	int	TPTR_EventNumber_Nibble
Data	int	TPTR_DIE_DRAWER_LOW
Object	Object	"DRAWER CLOSE"

Remarks

Drawer is closed.

2) Drawer open

Type**void directIOOccurred(DirectIOEvent e);**

Parameter	Remarks
e	Sets a parameter that indicates a DirectIOEvent event thrown.

DirectIOEvent class is given to the “e” parameter. This DirectIOEvent class contains the following properties.

Property	Type	Remarks
EventNumber	int	TPTR_EventNumber_Nibble
Data	int	TPTR_DIE_DRAWER_HIGH
Object	Object	"DRAWER OPEN"

Remarks

Drawer is open.

1.1.10 Exception Specifications

This Device Service throws the following exception.

For the exception specifications, refer to the UPOS Specification.

Exception	Remarks
JposException	Method execution or a property setting failed.

Table 26 TRST-A10-S JavaPOS Device – Exception List

1.1.10.1 JposException Exception Specifications

Syntax: JposException(int errorCode);

JposException(int errorCode, int errorCodeExtended);

JposException(int errorCode, String description);

JposException(int errorCode, int errorCodeExtended, String description);

JposException(int errorCode, String description, Exception origException);

**JposException(int errorCode, int errorCodeExtended, String description,
Exception origException);**

1.1.10.2 Exceptions Thrown by Methods

This Device Service throws the following exceptions when methods are invoked.

Method	ErrorCode, ErrorCodesExtended	Meaning	Error Handling
open	JPOS_E_ILLEGAL,0	The Control is already open.	The Control is already open.
	JPOS_E_NOEXIST,0	The specified Device was not found.	The specified DeviceService was not found. Check the logicalDeviceName parameter value and the jpos.xml setting.
	JPOS_E_NOSERVICE,0	An invalid DeviceService was used.	The DeviceService does not support the method which it should. Or, version error. Make sure the correct module is used.
close	JPOS_E_CLOSED,0	The Device has been closed.	—
claim	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	This Device Service does not support this function.
release	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.
checkHealth	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_DISABLED,0	The device is disabled.	Execute this property again after setting setDeviceEnabled to true.
	JPOS_E_ILLEGAL,0	An invalid parameter value was used.	Check the value specified to the parameter and specify a valid value.
		Unsupported function was called.	The function is not supported.
	JPOS_E_FAILURE,0	A health check failed.	A health check failed as a result of a visual inspection or due to internal error. Check the device status and execute this method again. If the error still occurs, investigate it.
compareFirmwareVersion	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.
directIO	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.
resetStatistics	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.
retrieveStatistics	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.
updateFirmware	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.
updateStatistics	JPOS_E_CLOSED,0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
	JPOS_E_ILLEGAL,0	Unsupported function was called.	The function is not supported.

1.1.11 Setup Information

Setup information of this Device Service is set in the XML file called "jpos.xml".

The setup items under the <prop> tag in the XML file are specific to this Device. For details of other tags, <creation>, <vendor>, <jpos>, and <product>, please refer to the UPOS Specification.

1.1.11.1 TRST-A10-S POSPrinter's Setup Information

<JposEntries>

<JposEntry logicalName="TRSTA10S">

<creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"

serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>

<vendor name="TOSHIBA TEC Corporation" url="<http://www.toshibatec.co.jp/>">

<jpos category="POSPrinter" version="1.11"/>

<product description="TEC POSPrinter JavaPOS"

name="TECPOSPrinter " url="<http://www.toshibatec.co.jp/>">

<prop name="modelName" type="String" value="TRSTA1x"/>

<prop name="deviceBus" type="String" value="RS232C"/>

<prop name="portName" type="String" value="{port name}"/>

<prop name="BaudRate" type="String" value="{baud rate}"/>

<prop name="country" type="String" value="{country code}"/>

<prop name="fontSize" type="String" value="{font size}"/>

<prop name="fontType" type="int" value="{font type}"/>

<prop name="paperWidthMode" type="String" value="{paper width}"/>

<prop name="printBarCodeMode" type="String" value="{bar code print mode}"/>

</JposEntry>

</JposEntries>

Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A10-S
deviceBus	Specifies a method to connect with the device. "RS232" for the TRST-A10-S
portName	Specifies a communication port name. Windows : "COM1" ~ "COM10" Linux : "/dev/ttyS0" ~ "/dev/ttyS9" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "COM1" is specified. Please specify the name of the port which connects the TRST-A10-S. If any other device is also connected to the port specified, operation cannot be guaranteed.
BaudRate	Specifies a baud rate. "9600", "19200", "38400", "57600", or "115200" for the TRST-A10-S If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "9600" is specified. The baud rate must be the same as that specified for the Device. If not, operations cannot be guaranteed.
country	Specifies a country code. "US", "France", "Germany", "UK", "Denmark 1", "Sweden", "Italy", "Spain", "Japan", "Norway", "Denmark 2", "Spain 2", "Latin", "Korea", or "China" for the TRST-A10-S If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "US" is specified. For details of country code, please refer to the section, "1.1.12 Restrictions and Cautions, 2) Universal character set" in this Manual.
fontSize	Specifies a default font size. "0" or "1" or "2" for the TRST-A10-S 0: fontSize1 1: fontSize1 2: fontSize2 If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font size, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
fontType	Specifies a default font type. "1" or "2" for the TRST-A10-S 1: fontA 2: fontB If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font type, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
paperWidthMode	Specifies the width of paper used. "0" or "1" for the TRST-A10-S 0: 80 mm 1: 58 mm If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.

printBarCodeMode	<p>Specifies a bar code print mode.</p> <p>“Standard” or “TEC” or “Option1” for the TRST-A10-S</p> <p>Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed.</p> <p>TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width.</p> <p>Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “Standard” is specified.</p> <p>For details of bar code print, please refer to the section, “1.1.12 Restrictions and Cautions, 6) Bar code print” in this Manual.</p>
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Table 27 TRST-A10-S JavaPOS Device – Setup Information List

1.1.11.2 TRST-A10-P POSPrinter's Setup Information

```
<JposEntries>
  <JposEntry logicalName="TRSTA10P">
    <creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"
      serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>
    <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
    <jpos category="POSPrinter" version="1.11"/>
    <product description=" TEC POSPrinter JavaPOS"
      name="TECPOSPrinter " url="http://www.toshibatec.co.jp"/>

    <prop name="modelName" type="String" value="TRSTA1x"/>
    <prop name="deviceBus" type="String" value="Parallel"/>

    <prop name="portName" type="String" value="{port name}"/>
    <prop name="country" type="String" value="{country code}"/>
    <prop name="fontSize" type="String" value="{font size}"/>
    <prop name="fontType" type="int" value="{font type}"/>
    <prop name="paperWidthMode" type=" String " value="{paper width}"/>
    <prop name="printBarCodeMode" type=" String " value="{bar code print mode}"/>
  </JposEntry>
</JposEntries>
```


Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A10-P
deviceBus	Specifies a method to connect with the Device. "Parallel " for the TRST-A10-P
portName	Specifies a communication port name. "LPT1" or "LPT2" for the TRST-A10-P If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "LPT1" is specified. Please specify the name of the port which connects the TRST-A10-P. If any other device is also connected to the port specified, operation cannot be guaranteed.
country	Specifies a country code. "US", "France", "Germany", "UK", "Denmark 1", "Sweden", "Italy", "Spain", "Japan", "Norway", "Denmark 2", "Spain 2", "Latin", "Korea", or "China" for the TRST-A10-P If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "US" is specified. For details of country code, please refer to the section, "1.1.12 Restrictions and Cautions, 2) Universal character set" in this Manual.
fontSize	Specifies a default font size. "0" or "1" or "2" for the TRST-A10-P 0: fontSize1 1: fontSize1 2: fontSize2 If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font size, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
fontType	Specifies a default font type. "1" or "2" for the TRST-A10-P 1: fontA 2: fontB If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font type, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
paperWidthMode	Specifies the width of paper used. "0" or "1" for the TRST-A10-P 0: 80 mm 1: 58 mm If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.

printBarCodeMode	<p>Specifies a bar code print mode.</p> <p>"Standard" or "TEC" or "Option1" for the TRST-A10-P</p> <p>Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed.</p> <p>TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width.</p> <p>Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "Standard" is specified.</p> <p>For details of bar code print, please refer to the section, "1.1.12 Restrictions and Cautions, 6) Bar code print" in this Manual.</p>
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Table 28 TRST-A10-P JavaPOS Device – Setup Information List

1.1.11.3 TRST-A10-U POSPrinter's Setup Information

```
<JposEntries>
  <JposEntry logicalName="TRSTA10U">
    <creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"
      serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>
    <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
    <jpos category="POSPrinter" version="1.11"/>
    <product description=" TEC POSPrinter JavaPOS"
      name="TECPOSPrinter " url="http://www.toshibatec.co.jp"/>

    <prop name="modelName" type="String" value="TRSTA1x"/>
    <prop name="deviceBus" type="String" value="USB"/>

    <prop name="vendorID" type=" String " value="{vendor ID}"/>
    <prop name="productID" type=" String " value="{product ID}"/>
    <prop name="country" type="String" value="{country code}"/>
    <prop name="fontSize" type="String" value="{font size}"/>
    <prop name="fontType" type="int" value="{font type}"/>
    <prop name="paperWidthMode" type=" String " value="{paper width}"/>
    <prop name="printBarCodeMode" type=" String " value="{bar code print mode}"/>

    <prop name="tecusbJNILogLevel" type="int"
      value="{TEC general-purpose USB JNI library log level}"/>
    <prop name="tecusbLibLogLevel" type="int"
      value="{TEC general-purpose USB library log level}"/>
  </JposEntry>
</JposEntries>
```


Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A10-U
deviceBus	Specifies a method to connect with the Device. "USB" for the TRST-A10-U
vendorID	Specifies a vendor ID of the USB device. "2214" for the TRST-A10-U If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "2214" is specified.
productID	Specifies a product ID of the USB device. TRST-A10-U-QM-R : "61" TRST-A10-U-CN-R : "70" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "61" is specified.
country	Specifies a country code. "US", "France", "Germany", "UK", "Denmark 1", "Sweden", "Italy", "Spain", "Japan", "Norway", "Denmark 2", "Spain 2", "Latin", "Korea", or "China" for the TRST-A10-U If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "US" is specified. For details of country code, please refer to the section, "1.1.12 Restrictions and Cautions, 2) Universal character set" in this Manual.
fontSize	Specifies a default font size. "0" or "1" or "2" for the TRST-A10-U 0: fontSize1 1: fontSize1 2: fontSize2 If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font size, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
fontType	Specifies a default font type. "1" or "2" for the TRST-A10-U 1: fontA 2: fontB If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font type, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
paperWidthMode	Specifies the width of paper used. "0" or "1" for the TRST-A10-U 0: 80 mm 1: 58 mm If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.

printBarCodeMode	<p>Specifies a bar code print mode.</p> <p>"Standard" or "TEC" or "Option1" for the TRST-A10-U</p> <p>Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed.</p> <p>TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width.</p> <p>Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "Standard" is specified.</p> <p>For details of bar code print, please refer to the section, "1.1.12 Restrictions and Cautions, 6) Bar code print" in this Manual.</p>
tecusbJNILogLevel	<p>Specifies a log level of TEC USB general-perpose JNI library. The log is output to standard output. This item is effective for only Linux environment. (*1)</p> <p>"0 to "99999" for the TRST-A10-U.</p> <p>0 : Output no logs.</p> <p>1 : Output error level logs.</p> <p>2 : Output warning level logs.</p> <p>3 : Output information level logs.</p> <p>4~99999 : Output debug level logs.</p> <p>JavaPOS works the same behavior in case of "0", if this item is omitted or a value except above values is specified.</p>
tecusbLibLogLevel	<p>Specifies a log level of TEC USB general-perpose library. The log is output to standard output. This item is effective for only Linux environment. (*1)</p> <p>"0 to "99999" for the TRST-A10-U.</p> <p>0 : Output no logs.</p> <p>1 : Output information level logs.</p> <p>2~99999 : Output debug level logs.</p> <p>JavaPOS works the same behavior in case of "0", if this item is omitted or a value except above values is specified.</p>

(*1) In the Windows environment, set TEC USB general-perpose JNI library log level and TEC USB general-perpose JNI library log level with Windows registry. For details of these, please refer to the section, "1.1.12.5 TRST-A1x-U -Restrictions and Cautions, 1) About the log output of Library/Process" in this Manual.

Table 29 TRST-A10-U JavaPOS Device – Setup Information List

1.1.11.4 TRST-A10-L POSPrinter's Setup Information

```
<JposEntries>
  <JposEntry logicalName="TRSTA10L">
    <creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"
      serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>
    <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
    <jpos category="POSPrinter" version="1.11"/>
    <product description=" TEC POSPrinter JavaPOS"
      name="TECPOSPrinter " url="http://www.toshibatec.co.jp"/>

    <prop name="modelName" type="String" value="TRSTA1x"/>
    <prop name="deviceBus" type="String" value="LAN"/>

    <prop name="IPAddress" type=" String " value="{IP address}"/>
    <prop name="TCPPortNo" type=" String " value="{TCP port number}"/>
    <prop name="UDPPortNo" type=" String " value="{UDP port number}"/>
    <prop name="connectionTimeout" type=" String " value="{connection timeout period}"/>
    <prop name="sendTimeout" type=" String " value="{send timeout period}"/>
    <prop name="recvTimeout" type=" String " value="{receive timeout period}"/>
    <prop name="sendBufferSize" type=" String " value="{send buffer size}"/>
    <prop name="country" type="int" value="{country code}"/>
    <prop name="fontSize" type="int" value="{font size}"/>
    <prop name="fontType" type="int" value="{font type}"/>
    <prop name="paperWidthMode" type="int" value="{paper width}"/>
    <prop name="printBarCodeMode" type="int" value="{bar code print mode}"/>
  </JposEntry>
</JposEntries>
```


Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A10-L
deviceBus	Specifies a method to connect with the Device. "LAN" for the TRST-A10-L
IPAddress	Specifies an IP address of the device with IPv4(Internet Protocol Version 4), which is represented in dot-decimal notation (four numbers, each ranging from 0 to 255, separated by dots, e.g. 1.2.3.4). The IP address is not omissible. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "192.168.1.1" is specified. Please specify the IP address to identify the TRST-A10-L printer. If another device is connected to the specified IP address, operation cannot be guaranteed.
TCPPortNo	Specifies a port number used in TCP communication. For the TRST-A10-L, an acceptable value range is between 1024 and 65535. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "9100" is specified. The value specified here must be same as the one specified in the printer device configuration. If not, operation cannot be guaranteed.
UDPPortNo	Specifies a port number used in UDP communication. For the TRST-A10-L, an acceptable value range is between 1024 and 65535. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "3000" is specified. The value specified here must be same as the one specified in the printer device configuration. If not, operation cannot be guaranteed.
connectionTimeout	Specifies a timeout period in the unit of msec when connecting to the device. For the TRST-A10-L, an acceptable value range is between 1 and 20000. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "10000" is specified. Please specify an appropriate timeout period. Otherwise, the operation of the commands will be affected.
sendTimeout	Specifies waiting time in the unit of msec until the data transmission to the device is completed. For the TRST-A10-L, an acceptable value range is between 1 and 9223372036854775807. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "3000" is specified. Please specify an appropriate timeout period. Otherwise, the operation of the commands will be affected.
recvTimeout	Specifies waiting time in the unit of msec until the data reception from the device is completed. For the TRST-A10-L, an acceptable value range is between 1 and 9223372036854775807. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "3000" is specified. Please specify an appropriate timeout period. Otherwise, the operation of the commands will be affected.

Definition Name	Value
sendBufferSize	<p>Specifies the size of the send buffer used for data transmission to the device.</p> <p>For the TRST-A10-L, an acceptable value range is between 2000 and 2147483647.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “128000” is specified.</p> <p>As the buffer is more extended, the application will be restricted by data transmission for a shorter period of time. However, the risk of data loss will become higher in the event of a communication failure.</p>
country	<p>Specifies a country code.</p> <p>“US”, “France”, “Germany”, “UK”, “Denmark 1”, “Sweden”, “Italy”, “Spain”, “Japan”, “Norway”, “Denmark 2”, “Spain 2”, “Latin”, “Korea”, or “China” (*1) for the TRST-A10-L</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “US” is specified.</p> <p>For details of country code, please refer to the section, “1.1.12 Restrictions and Cautions, 2) Universal character set” in this Manual.</p>
fontSize	<p>Specifies a default font size.</p> <p>“0” or “1” or “2” for the TRST-A10-L</p> <p>0: fontSize1 1: fontSize1 2: fontSize2</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “1” is specified.</p> <p>For details of font size, please refer to the section, “1.1.12 Restrictions and Cautions, 3) Font types and font sizes” in this Manual.</p>
fontType	<p>Specifies a default font type.</p> <p>“1” or “2” for the TRST-A10-L</p> <p>1: fontA 2: fontB</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “1” is specified.</p> <p>For details of font type, please refer to the section, “1.1.12 Restrictions and Cautions, 3) Font types and font sizes” in this Manual.</p>
paperWidthMode	<p>Specifies the width of paper used.</p> <p>“0” or “1” for the TRST-A10-L</p> <p>0: 80 mm 1: 58 mm</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “0” is specified.</p>
printBarcodeMode	<p>Specifies a bar code print mode.</p> <p>“Standard” or “TEC” or “Option1” for the TRST-A10-L</p> <p>Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed.</p> <p>TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width.</p> <p>Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when “Standard” is specified.</p> <p>For details of bar code print, please refer to the section, “1.1.12 Restrictions and Cautions, 6) Bar code print” in this Manual.</p>

(*1) The existing TRST-A10-L model does not support Chinese. Therefore, “China” cannot be selected from among the country codes.

Table 30 TRST-A10-L JavaPOS Device – Setup Information List

1.1.11.5 TRST-A15-S POSPrinter's Setup Information

<JposEntries>

<JposEntry logicalName="TRSTA15S">

<creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"
serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>

<vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>

<jpos category="POSPrinter" version="1.11"/>

<product description="TEC POSPrinter JavaPOS"

name="TECPOSPrinter " url="http://www.toshibatec.co.jp"/>

<prop name="modelName" type="String" value="TRSTA1x"/>

<prop name="deviceBus" type="String" value="RS232C"/>

<prop name="portName" type="String" value="{port name}"/>

<prop name="BaudRate" type="String" value="{baud rate}"/>

<prop name="country" type="String" value="{country code}"/>

<prop name="fontSize" type="String" value="{font size}"/>

<prop name="fontType" type="int" value="{font type}"/>

<prop name="paperWidthMode" type="String" value="{paper width}"/>

<prop name="printBarCodeMode" type="String" value="{bar code print mode}"/>

<prop name="2STPrintingMode" type="String" value="{dual-side print mode}"/>

<prop name="2STUpsideDown" type="String" value="{upside-down print setup in dual-side print}"/>

<prop name="2STSwapFrontBackSide" type="String" value="{print side swap in dual-side print}"/>

<prop name="2STMinRecLength" type="String" value="{min. print dots on front side in dual-side print}"/>

</JposEntry>

</JposEntries>

Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A15-S
deviceBus	Specifies a method to connect with the device. "RS232C" for the TRST-A15-S
portName	Specifies a communication port name. Windows : "COM1" ~ "COM10" Linux : "/dev/ttyS0" ~ "/dev/ttyS9" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "COM1" is specified. Please specify the name of the port which connects the TRST-A15-S. If any other device is also connected to the port specified, operation cannot be guaranteed.
BaudRate	Specifies a baud rate. "9600", "19200", "38400", "57600", or "115200" for the TRST-A15-S If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "9600" is specified. The baud rate must be the same as that specified for the Device. If not, operations cannot be guaranteed.
country	Specifies a country code. "US", "France", "Germany", "UK", "Denmark 1", "Sweden", "Italy", "Spain", "Japan", "Norway", "Denmark 2", "Spain 2", "Latin", "Korea", or "China" for the TRST-A15-S If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "US" is specified. For details of country code, please refer to the section, "1.1.12 Restrictions and Cautions, 2) Universal character set" in this Manual.
fontSize	Specifies a default font size. "0" or "1" or "2" for the TRST-A15-S 0: fontSize1 1: fontSize1 2: fontSize2 If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font size, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
fontType	Specifies a default font type. "1" or "2" for the TRST-A15-S 1: fontA 2: fontB If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font type, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
paperWidthMode	Specifies the width of paper used. "0" or "1" for the TRST-A15-S 0: 80 mm 1: 58 mm If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.

Definition Name	Value
printBarCodeMode	<p>Specifies a bar code print mode.</p> <p>"Standard" or "TEC" or "Option1" for the TRST-A15-S</p> <p>Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed.</p> <p>TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width.</p> <p>Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "Standard" is specified.</p> <p>For details of bar code print, please refer to the section, "1.1.12 Restrictions and Cautions, 6) Bar code print" in this Manual.</p>
2STPrintingMode	<p>Specifies a print mode in dual-side print mode.</p> <p>"0", "1", "2", or "3" for the TRST-A15-S</p> <p>0: Single-side print (normal) mode</p> <p>1: Dual-side print – auto divide mode</p> <p>2: Dual-side print– print side selection mode</p> <p>3: Dual-side print– back-side print data predefine</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.</p> <p>For details, please refer to the section, "1.1.8.3 Details of directIO Method, 7) Print mode selection" in this Manual.</p>
2STUpsideDown	<p>Specifies upside-down print on front/back side in dual-side print mode.</p> <p>"0", "1", "2", or "3" for the TRST-A15-S</p> <p>0: Normal print</p> <p>1: Upside-down print only on the front side</p> <p>2: Upside-down print only on the back side</p> <p>3: Upside-down print both on the front and back sides</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.</p> <p>For details, please refer to the section, "1.1.8.3 Details of directIO Method, 9) Upside-down print setup" in this Manual.</p>
2STSwapFrontBackSide	<p>Specifies a print head used to print on front/back side in dual-side print mode.</p> <p>"true" or "false" for the TRST-A15-S</p> <p>false: In normal way</p> <p>true: Heads, each of which is used for printing on the front or back side, are swapped.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "false" is specified.</p> <p>For details, please refer to the section, "1.1.8.3 Details of directIO Method, 10) Print side swap" in this Manual.</p>
2STMinRecLength	<p>Specifies the minimum print dots to be printed on the front side in dual-side print - auto divide mode.</p> <p>"0" to "65535" for the TRST-A15-S</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.</p>

Table 31 TRST-A15-S JavaPOS Device – Setup Information List

1.1.11.6 TRST-A15-P POSPrinter's Setup Information

<JposEntries>

<JposEntry logicalName="TRSTA15P">

<creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"

serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>

<vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>

<jpos category="POSPrinter" version="1.11"/>

<product description="TEC POSPrinter JavaPOS"

name="TECPOSPrinter " url="http://www.toshibatec.co.jp"/>

<prop name="modelName" type="String" value="TRSTA1x"/>

<prop name="deviceBus" type="String" value="Parallel"/>

<prop name="portName" type="String" value="{port name}"/>

<prop name="country" type="String" value="{country code}"/>

<prop name="fontSize" type="String" value="{font size}"/>

<prop name="fontType" type="int" value="{font type}"/>

<prop name="paperWidthMode" type="String" value="{paper width}"/>

<prop name="printBarCodeMode" type="String" value="{bar code print mode}"/>

<prop name="2STPrintingMode" type="String" value="{dual-side print mode}"/>

<prop name="2STUpsideDown" type="String" value="{upside-down print setup in dual-side print}"/>

<prop name="2STSwapFrontBackSide" type="String" value="{print side swap in dual-side print}"/>

<prop name="2STMinRecLength" type="String" value="{min. print dots on front side in dual-side print}"/>

</JposEntry>

</JposEntries>

Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A15-P
deviceBus	Specifies a method to connect with the device. "Parallel " for the TRST-A15-P
portName	Specifies a communication port name. "LPT1" or "LPT2" for the TRST-A15-P If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "LPT1" is specified. Please specify the name of the port which connects the TRST-A15-P. If any other device is also connected to the port specified, operation cannot be guaranteed.
country	Specifies a country code. "US", "France", "Germany", "UK", "Denmark 1", "Sweden", "Italy", "Spain", "Japan", "Norway", "Denmark 2", "Spain 2", "Latin", "Korea", or "China" for the TRST-A15-P If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "US" is specified. For details of country code, please refer to the section, "1.1.12 Restrictions and Cautions, 2) Universal character set" in this Manual.
fontSize	Specifies a default font size. "0" or "1" or "2" for the TRST-A15-P 0: fontSize1 1: fontSize1 2: fontSize2 If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font size, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
fontType	Specifies a default font type. "1" or "2" for the TRST-A15-P 1: fontA 2: fontB If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font type, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
paperWidthMode	Specifies the width of paper used. "0" or "1" for the TRST-A15-P 0: 80 mm 1: 58 mm If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.
printBarCodeMode	Specifies a bar code print mode. "Standard" or "TEC" or "Option1" for the TRST-A15-P Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed. TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width. Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "Standard" is specified. For details of bar code print, please refer to the section, "1.1.12 Restrictions and Cautions, 6) Bar code print" in this Manual.

Definition Name	Value
2STPrintingMode	<p>Specifies a print mode in dual-side print mode. "0", "1", "2", or "3" for the TRST-A15-P 1: Dual-side print – auto divide mode 2: Dual-side print– print side selection mode 3: Dual-side print– back-side print data predefine If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified. For details, please refer to the section, "1.1.8.3 Details of directIO Method, 7) Print mode selection" in this Manual.</p>
2STUpsideDown	<p>Specifies upside-down print on front/back side in dual-side print mode "0", "1", "2", or "3" for the for the TRST-A15-P 0: Normal print 1: Upside-down print only on the front side 2: Upside-down print only on the back side 3: Upside-down print both on the front and back sides If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified. For details, please refer to the section, "1.1.8.3 Details of directIO Method, 9) Upside-down print setup" in this Manual.</p>
2STSwapFrontBackSide	<p>Specifies a print head used to print on front/back side in dual-side print mode. "true" or "false" for the TRST-A15-P false: In normal way true: Heads, each of which is used for printing on the front or back side, are swapped. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "false" is specified. For details, please refer to the section, "1.1.8.3 Details of directIO Method, 10) Print side swap" in this Manual.</p>
2STMinRecLength	<p>Specifies the minimum print dots to be printed on the front side in dual-side print - auto divide mode. "0" to "65535" for the TRST-A15-P If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.</p>

Table 32 TRST-A15-P JavaPOS Device – Setup Information List

1.1.11.7 TRST-A15-U POSPrinter's Setup Information

<JposEntries>

<JposEntry logicalName="TRSTA15U">

<creation factoryClass="jpos.toshibatec.loader.JavaPOSServiceFactory"

serviceClass="jpos.toshibatec.posprinter.services.POSPrinterService"/>

<vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>

<jpos category="POSPrinter" version="1.11"/>

<product description="TEC POSPrinter JavaPOS"

name="TECPOSPrinter " url="http://www.toshibatec.co.jp"/>

<prop name="modelName" type="String" value="TRSTA1x"/>

<prop name="deviceBus" type="String" value="USB"/>

<prop name="venderID" type="int" value="{vendor ID}"/>

<prop name="productID" type="int" value="{product ID}"/>

<prop name="country" type="String" value="{country code}"/>

<prop name="fontSize" type="String" value="{font size}"/>

<prop name="fontType" type="int" value="{font type}"/>

<prop name="paperWidthMode" type="String" value="{paper width}"/>

<prop name="printBarCodeMode" type="String" value="{bar code print mode}"/>

<prop name="tecusbJNILogLevel" type="int"

value="{TEC general-purpose USB JNI library log level}"/>

<prop name="tecusbLibLogLevel" type="int"

value="{TEC general-purpose USB library log level}"/>

<prop name="2STPrintingMode" type="String" value="{dual-side print mode}"/>

<prop name="2STUpsideDown" type="String" value="{upside-down print setup in dual-side print}"/>

<prop name="2STSwapFrontBackSide" type="String" value="{print side swap in dual-side print}"/>

<prop name="2STMinRecLength" type="String" value="{min. print dots on front side in dual-side

</JposEntry>

</JposEntries>

Definition Name	Value
modelName	Specifies a device model name (number). "TRSTA1x" for the TRST-A15-U
deviceBus	Specifies a method to connect with the device. "USB " for the TRST-A15-U
vendorID	Specifies a vendor ID of the USB device. "2214" for the TRST-A15-U If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "2214" is specified.
productID	Specifies a product ID of the USB device. TRST-A15-U-QM-R : "61" TRST-A15-U-CN-R : "70" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "61" is specified.
country	Specifies a country code. "US", "France", "Germany", "UK", "Denmark 1", "Sweden", "Italy", "Spain", "Japan", "Norway", "Denmark 2", "Spain 2", "Latin", "Korea", or "China" for the TRST-A15-U If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "US" is specified. For details of country code, please refer to the section, "1.1.12 Restrictions and Cautions, 2) Universal character set" in this Manual.
fontSize	Specifies a default font size. "0" or "1" or "2" for the TRST-A15-U 0: fontSize1 1: fontSize1 2: fontSize2 If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font size, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
fontType	Specifies a default font type. "1" or "2" for the TRST-A15-U 1: fontA 2: fontB If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "1" is specified. For details of font type, please refer to the section, "1.1.12 Restrictions and Cautions, 3) Font types and font sizes" in this Manual.
paperWidthMode	Specifies the width of paper used. "0" or "1" for the TRST-A15-U 0: 80 mm 1: 58 mm If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.
printBarCodeMode	Specifies a bar code print mode. "Standard" or "TEC" or "Option1" for the TRST-A15-U Standard: Determines the width of bar code to be printed by comparing the width parameter value and the width of bar code actually printed. TEC: Determines the width of bar code to be printed by calculating a percentage of bar code width specified by the width parameter that occupies the paper width. Option1: Print barcode with special module width depending on the kind of the barcode and the digits of barcode data. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "Standard" is specified. For details of bar code print, please refer to the section, "1.1.12 Restrictions and Cautions, 6) Bar code print" in this Manual.

Definition Name	Value
tecusbJNILogLevel	<p>Specifies a log level of TEC USB general-perpose JNI library. The log is output to standard output. This item is effective for only Linux environment. (*1)</p> <p>“0 to “99999” for the TRST-A15-U.</p> <p>0 : Output no logs.</p> <p>1 : Output error level logs.</p> <p>2 : Output warning level logs.</p> <p>3 : Output information level logs.</p> <p>4~99999 : Output debug level logs.</p> <p>JavaPOS works the same behavior in case of "0", if this item is omitted or a value except above values is specified.</p>
tecusbLibLogLevel	<p>Specifies a log level of TEC USB general-perpose library. The log is output to standard output. This item is effective for only Linux environment. (*1)</p> <p>“0 to “99999” for the TRST-A15-U.</p> <p>0 : Output no logs.</p> <p>1 : Output information level logs.</p> <p>2~99999 : Output debug level logs.</p> <p>JavaPOS works the same behavior in case of "0", if this item is omitted or a value except above values is specified.</p>

(*1) In the Windows environment, set TEC USB general-perpose JNI library log level and TEC USB general-perpose JNI library log level with Windows registry. For details of these, please refer to the section, “1.1.12.5 TRST-A1x-U -Restrictions and Cautions, 1) About the log output of Library/Process” in this Manual.

Definition Name	Value
2STPrintingMode	<p>Specifies a print mode in dual-side print mode. 0, "1", "2", or "3" for the for the TRST-A15-U 0: Single-side print (normal) mode 1: Dual-side print – auto divide mode 2: Dual-side print – print side selection mode 3: Dual-side print – back-side print data predefine If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified. For details, please refer to the section, "1.1.8.3 Details of directIO Method, 7) Print mode selection" in this Manual.</p>
2STUpsideDown	<p>Specifies upside-down print on front/back side in dual-side print mode "0", "1", "2", or "3" for the for the TRST-A15-U 0: Normal print 1: Upside-down print only on the front side 2: Upside-down print only on the back side 3: Upside-down print both on the front and back sides If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified. For details, please refer to the section, "1.1.8.3 Details of directIO Method, 9) Upside-down print setup" in this Manual.</p>
2STSwapFrontBackSide	<p>Specifies a print head used to print on front/back side in dual-side print mode. "true" or "false" for the TRST-A15-U false: In normal way true: Heads, each of which is used for printing on the front or back side, are swapped. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "false" is specified. For details, please refer to the section, "1.1.8.3 Details of directIO Method, 10) Print side swap" in this Manual.</p>
2STMinRecLength	<p>Specifies the minimum print dots to be printed on the front side in dual-side print - auto divide mode. "0" to "24360" for the TRST-A15-U If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "0" is specified.</p>

Table 33 TRST-A15-U JavaPOS Device – Setup Information List

1.1.12 Restrictions and Cautions

This section describes the restrictions and cautions for using this Device Service as well as the differences from the UPOS Specifications.

This Device Service supports multiple Devices. Some specifications are common to all Devices and some are different for each Device. The table below explains the sections to be referenced for each Device. Please refer to the section marked with “O” for each Device.

Section Number and Title	Device Type												
	TRST-A10-S-QM-R	TRST-A10-P-QM-R	TRST-A10-U-QM-R	TRST-A10-L-QM-R	TRST-A15-S-QM-R	TRST-A15-P-QM-R	TRST-A15-U-QM-R	TRST-A10-S-CN-R	TRST-A10-P-CN-R	TRST-A10-U-CN-R	TRST-A15-S-CN-R	TRST-A15-P-CN-R	TRST-A15-U-CN-R
1.1.12.1 TRST-A1x-S, P, U, L – Restrictions and Cautions	○	○	○	○	○	○	○	○	○	○	○	○	○
1.1.12.2 TRST-A15-S, P, U – Restrictions and Cautions					○	○	○				○	○	○
1.1.12.3 TRST-A1x-S, P, U, L -QM-R – Restrictions and Cautions	○	○	○	○	○	○	○						
1.1.12.4 TRST-A1x-S, P, U -CN-R – Restrictions and Cautions								○	○	○	○	○	○
1.1.12.5 TRST-A1x-L -QM-R – Restrictions and Cautions				○									

○: Indicates the applicable section should be referenced.

1.1.12.1 TRST-A1x-S, P, U, L – Restrictions and Cautions

This section describes the common restrictions and cautions for using the TRST-A10-S, P, U, L and the TRST-A15-S, P, U.

1) Character (Code Page)

This Device supports the characters, Code Page: 437, 850, 852, 857, 858, 860, 863, 865, 866, and 1252 as given below:

Code Page 437.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 850.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 852.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 857														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 858.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 860.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 863.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...
03	#	3	C	S	c	s	â	...	...	...	...	...	...	...
04	\$	4	D	T	d	t	â	...	...	...	...	...	...	...
05	%	5	E	U	e	u	â	...	...	...	...	...	...	...
06	&	6	F	V	f	v	â	...	...	...	...	...	...	...
07	'	7	G	W	g	w	ç	...	...	...	...	...	...	...
08	<	8	H	X	h	x	ç	...	...	...	...	...	...	...
09	>	9	I	Y	i	y	ç	...	...	...	...	...	...	...
0A	*	:	J	Z	j	z	ç	...	...	...	...	...	...	...
0B	+	;	K	L	k	l	ç	...	...	...	...	...	...	...
0C	,	<	L	\	l	l	ç	...	...	...	...	...	...	...
0D	-	=	M	]	m	]	ç	...	...	...	...	...	...	...
0E	.	>	N	^	n	^	ç	...	...	...	...	...	...	...
0F	/	? 0						...	...	...	...	...	...	...

Code Page 865.														
	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	p	Ç	É	á	...	...	...	...	...	...	...
01	!	1	A	Q	a	q	ü	æ	í	ó	...	...	...	...
02	"	2	B	R	b	r	é	...	...	...	...	...	...	...

Code Page 1252.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	`	p	€		°	À	á	â	ã	ä	å
01	!	1	À	Q	a	q		í	±	Á	Ñ	á	ñ	
02	"	2	B	R	b	r		¢	²	Â	Ô	â	ô	
03	#	3	C	S	c	s		£	³	Ã	Ö	ã	ö	
04	\$	4	D	T	d	t		¤	⁴	Ä	Ö	ä	ö	
05	%	5	E	U	e	u		¥	µ	Å	Ö	å	ö	
06	&	6	F	V	f	v		¦	¶	Æ	Ö	æ	ö	
07	'	7	G	W	g	w		§	·	Ç	×	ç	+	
08	(	8	H	X	h	x		¨	ˆ	È	Ø	è	ø	
09	)	9	I	Y	i	y		©	˜	É	Ú	é	ú	
0A	*	:	J	Z	j	z		ª	˚	Ê	Û	ê	û	
0B	+	;	K	I	k	{		<	>	«	»	Ë	Ü	ë
0C	,	<	L	\	l	|		œ	-	¼	ı	Ü	ı	ü
0D	-	=	M	]	m	}		-	½	ı	Ý	ı	ý	
0E	.	>	N	^	n	~		ž	ž	ı	ı	ı	ı	ı
0F	/	?	0	_	o	ɑ		Ÿ	-	ı	ı	ı	ı	ı

Table 34 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Code Page List

2) Universal character set

This Device supports the following universal character sets (character set for each country): USA, France, Germany, UK, Denmark I, Sweden, Italy, Spain, Japan, Norway, Denmark II, Spain II, Latin America, Republic of Korea. Graphic characters are assigned to some character codes (23h, 24h, 40h, 5Bh through 5Eh, 60h, 7Bh through 7Eh) for each country (or, for business use). A universal character set to be used can be set using the Country setup information. The following table shows the universal character set.

	23h	24h	40h	5Bh	5Ch	5Dh	5Eh	60h	7Bh	7Ch	7Dh	7Eh
USA	#	\$	@	[	\	\]	^	`	{	|	}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
UK	£	\$	@	[	\	\]	^	`	{	|	}	~
Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ı
Spain	¤	\$	@	ı	Ñ	¿	^	`	~	ñ	}	~
Japan	#	\$	@	[	¥	]	^	`	{	|	}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	\$	á	ı	Ñ	¿	é	`	ı	ñ	ó	ú
Latin America	#	\$	á	ı	Ñ	¿	é	ü	ı	ñ	ó	ú
Republic of Korea	#	\$	@	[	₩	]	^	`	{	|	}	~

3) Font types and font sizes

This Device determines the font specifications based on font size and font type. Font sizes are FontSize1 and FontSize2 and font types are FontA and FontB. The font specifications are as given in the table below:

Font Size	Font Type	1-byte Character Size (width x height)	Default Line Feed Amount
FontSize1	FontA	12 x 24 [dots]	27 [dots]
	FontB	9 x 24 [dots]	
FontSize2	FontA	13 x 28 [dots]	34 [dots]
	FontB	10 x 28 [dots]	

Table 35 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Font Specification List

This Device uses 80-mm and 58-mm wide paper and the number of characters that can be printed in one line differs between them. The value of the **RecLineChars**, **RecLineCharsList**, **RecSidewaysMaxLines**, and **RecSidewaysMaxChars** properties is determined based on the above-mentioned font size and font type and paper width. Each property is set to the value given in the table below.

Font Size	Paper Width	Font Type	RecLineChars Property	RecLineCharsList Property	RecSidewaysMaxLines Property	RecSidewaysMaxChars Property
FontSize1	80mm	FontA	48	"48,64"	21	166
		FontB	64		21	222
	58mm	FontA	36	"36,48"	16	166
		FontB	48		16	222
FontSize2	80mm	FontA	42	"42,56"	16	153
		FontB	56		16	200
	58mm	FontA	32	"32,42"	12	153
		FontB	42		12	200

Table 36 TRST-A1x-S,P,U,L POSPrinter JavaPOS – List of Properties of Which Value Varies Depending on Font Type, Font Size, and Paper Width

In addition, for the **RecLineHeight**, **RecLineSpacing**, and **RecLineWidth** properties of which value is set in the unit specified by the **MapMode** property, the value is determined based on font size, font type, paper width, and **MapMode** property value. Each property is set to the value given in the table below.

MapMode Property	Font Size	Paper Width	Font Type	RecLineHeight Property	RecLineSpacing Property	RecLineWidth Property
PTR_MM_DOTS (dot width)	FontSize1	80mm	FontA	24	27	576
			FontB			576
		58mm	FontA			432
			FontB			432
	FontSize2	80mm	FontA	28	34	546
			FontB			560
		58mm	FontA			416
			FontB			420
PTR_MM_TWIPS (1/1440 of an inch)	FontSize1	80mm	FontA	170	191	4082
			FontB			4082
		58mm	FontA			3061
			FontB			3061
	FontSize2	80mm	FontA	198	240	3869
			FontB			3968
		58mm	FontA			2948
			FontB			2976

MapMode Property	Font Size	Paper Width	Font Type	RecLineHeight Property	RecLineSpacing Property	RecLineWidth Property
PTR_MM_ENGLISH (0.001 inch)	FontSize1	80mm	FontA	118	132	2834
			FontB			2834
		58mm	FontA			2125
			FontB			2125
	FontSize2	80mm	FontA	137	167	2686
			FontB			2755
		58mm	FontA			2047
			FontB			2066
PTR_MM_METRIC (0.01mm)	FontSize1	80mm	FontA	300	337	7200
			FontB			7200
		58mm	FontA			5400
			FontB			5400
	FontSize2	80mm	FontA	350	425	6825
			FontB			7000
		58mm	FontA			5200
			FontB			5250

Table 37 TRST-A1x-S,P,U,L POSPrinter JavaPOS – List of Properties of Which Value Varies Depending on Font Type, Font Size, Paper Width, and MapMode

4) Switch of font type by property setting

Font type can be changed by changing the **RecLineChars** property value.

The **RecLineChars** property value is larger than and closest to the specified value, and accordingly, the font type changes. For this Device, the number of characters to be printed on one line varies depending on font size and paper width, and accordingly, the font type varies depending on the RecLineChars property value, font size, and paper width. The table below explains the font type based on the RecLineChars property value.

Font Size	Paper Width	RecLineChars Property Value	Font Type
FontSize1	80 mm	01 to 48	FontA
		49 to 64	FontB
	58 mm	01 to 36	FontA
		37 to 48	FontB
FontSize2	80 mm	01 to 42	FontA
		43 to 56	FontB
	58 mm	01 to 32	FontA
		33 to 42	FontB

Table 38 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Font Type Based on ReclineChars Property Setup

5) Escape sequences

Using escape sequence, special print data, the **printNormal**, **printTwoNormal**, and **printImmediate** methods provide various functions. Every escape sequence begins with the escape character ESC (whose value is 27 decimal and 1B in hex) followed by a vertical bar. This is followed by 0 or more digits and/or lowercase alphabetic characters and terminated by an uppercase alphabetic character.

If a sequence does not begin with "ESC |", or it begins with "ESC |" but is not a valid JPOS escape sequence, it is passed to the printer as it is. However, not all such sequences can be distinguished from printable data, so unexpected results may occur.

If a sequence character is not the first character of the sequence, but is in the middle of the sequence, for example, PrintNormal (PTR_S_RECEIPT,"123<ESC>|100P") where a line feed escape sequence is inserted immediately after "123", a line feed may automatically be performed. The table below explains the operations when the sequence does not begin with ESC.

Escape Sequence	Operation
Paper cut	Prints the print data, automatically feeds line(s), then performs paper cut.
Print bar code	Prints the print data, automatically feeds line(s), then prints bar code.
Print bitmap	Prints the print data, automatically feeds line(s), then prints bitmap.
Center	Character string before escape sequence is also centered, which means entire line is centered. If "Center", "Right justify", and "Left justify" escape sequences exist in one line, last escape sequence takes effect.
Right justify	Character string before escape sequence is also right justified, which means entire line is right justified. If "Center", "Right justify", and "Left justify" escape sequences exist in one line, last escape sequence takes effect.
Left justify	Character string before escape sequence is also left justified, which means entire line is left justified. If "Center", "Right justify", and "Left justify" escape sequences exist in one line, last escape sequence takes effect.

Table 39 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Operations When A Sequence Does Not Begin with ESC

6) Bar code print

This Device supports the following barcode symbologies: UPC-A, UPC-E, JAN-8(EAN-8), JAN-13(EAN-13), ITF(Interleaved 2 of 5), Codabar (NW-7), Code39, Code93, Code128, Code128 with parsing, and PDF417. The table below shows the number of bar code digits and usable characters.

Bar Code Symbology	Number of Digits	Usable Characters
UPC-A	11,12	Numeric characters ("0" to "9")
UPC-E	11,12	Numeric characters ("0" to "9")
JAN-8(EAN-8)	7,8	Numeric characters ("0" to "9")
JAN13(EAN-13)	12,13	Numeric characters ("0" to "9")
ITF(Interleaved 2 of 5)	2 to 254 (even digits)	Numeric characters ("0" to "9")
Codabar(NW-7)	1 to 255	Numeric characters ("0" to "9"), "A" to "D", "\$", "+", "-", ".", "/", "."
Code39	1 to 255	Numeric characters ("0" to "9"), uppercase alphabetic characters ("A" to "Z"), space (" "), "\$", "%", "*", "+", "-", ".", "/", "
Code93	1 to 255	00h to 7Fh
Code128	1 to 255	Depends on code set: <ul style="list-style-type: none"> CodeA 00h to 5Fh, SHIFT("{S"), FNC1("{1"), FNC2("{2"), FNC3 ("{3"), FNC4("{4"), CODE B("{B"), CODE C("{C") CodeB 20h to 7Fh, SHIFT("{S"), FNC1("{1"), FNC2("{2"), FNC3 ("{3"), FNC4("{4"), CODE A("{A"), CODE C("{C") CodeC 00h to 63h, FNC1("{1"), CODE A("{A"), CODE C("{C")
Code128 with parsing	1 to 255	Depends on code set: <ul style="list-style-type: none"> CodeA 00h to 5Fh, SHIFT("{S"), FNC1("{1"), FNC2("{2"), FNC3 ("{3"), FNC4("{4"), CODE B("{B"), CODE C("{C") CodeB 20h to 7Fh, SHIFT("{S"), FNC1("{1"), FNC2("{2"), FNC3 ("{3"), FNC4("{4"), CODE A("{A"), CODE C("{C") CodeC Numeric characters ("0" to "9"), FNC1("{1"), CODE A("{A"), CODE C("{C")
PDF417	1 to 255	00h to FFh

Table 40 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Printable Bar Codes

For some bar code symbologies, care must be taken for bar code data to be specified by the **printBarCode** method's **Data** parameter or print bar code escape sequence attributes between d and e. The care must be taken to use the following bar code symbologies as explained below:

Barcode Symbology	Cautions for Bar Code Data
Codabar(NW-7)	Start code, "A", "B", "C", or "D" and stop code, "A", "B", "C", or "D" should be affixed. Even when neither of start code nor stop code is affixed, the printBarCode method completes successfully without throwing JPOS exception, but bar code is not printed.
Code39	If neither start code ("*") nor stop code ("*") are present, the Device automatically adds them and prints bar codes.

Table 41 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Cautions for Bar Code Data

This Device can print bar codes in six module levels. The module here means the minimum unit for the multi-level black and white bar codes (various black and white bar code widths).

If the PrintBarCodeMode value for the setup information is "Standard", a bar code print is processed in accordance with the JPOS specification. After comparing the bar code widths between the width specified by the **printBarCode** method's width parameter and bar code print escape sequence parameters w through e and the width of bar code to be printed, the largest bar code within the height specified is printed. If the bar code is less than the minimum module width or it is larger than the print area, a JposException, ErrorCode:JPOS_E_ILLEGAL or ErrorCode Extended:0 may be thrown.

For example, UPC-A bar code can be printed in six-level widths: 95, 190, 285, 380, 475, or 570 dot width. If the **printBarCode** method's width parameter value (or the bar code print escape sequence parameter w to a value) is 300, the bar code is printed in 285-dot width (bar code module width 3) which is the largest but less than 300.

The following table gives bar code widths for each bar code symbology.

Bar Code Symbology	Module Width	Bar Code Width [dots]
UPC-A	1	95
	2	190
	3	285
	4	380
	5	475
	6	570
UPC-E	1	51
	2	102
	3	153
	4	204
	5	255
	6	306
JAN-8(EAN-8)	1	67
	2	134
	3	201
	4	268
	5	335
	6	402
JAN13(EAN-13)	1	95
	2	190
	3	285
	4	380
	5	475
	6	570

Bar Code Symbology	Module Width	Bar Code Width [dots]
ITF (Interleaved 2 of 5)	1	Number of characters x 7 + 8
	2	(Number of characters x 7 + 8) x 2
	3	(Number of characters x 7 + 8) x 3
	4	(Number of characters x 7 + 8) x 4
	5	(Number of characters x 7 + 8) x 5
	6	(Number of characters x 7 + 8) x 6
Codabar(NW-7)	1	Number of characters x 10 + Number of characters ^(see notes below) x 1 ".", "/", ".", "+", "A", "B", "C", "D"
	2	(Number of characters x 10 + Number of characters ^(see notes below) x 1) x 2 ".", "/", ".", "+", "A", "B", "C", "D"
	3	(Number of characters x 10 + Number of characters ^(see notes below) x 1) x 3 ".", "/", ".", "+", "A", "B", "C", "D"
	4	(Number of characters x 10 + Number of characters ^(see notes below) x 1) x 4 ".", "/", ".", "+", "A", "B", "C", "D"
	5	(Number of characters x 10 + Number of characters ^(see notes below) x 1) x 5 ".", "/", ".", "+", "A", "B", "C", "D"
	6	(Number of characters x 10 + Number of characters ^(see notes below) x 1) x 6 ".", "/", ".", "+", "A", "B", "C", "D"
Code39	1	Number of characters (except for start & stop codes) x 13 + 25
	2	(Number of characters (except for start & stop codes) x 13 + 25) x 2
	3	(Number of characters (except for start & stop codes) x 13 + 25) x 3
	4	(Number of characters (except for start & stop codes) x 13 + 25) x 4
	5	(Number of characters (except for start & stop codes) x 13 + 25) x 5
	6	(Number of characters (except for start & stop codes) x 13 + 25) x 6
Code93	1	(Number of characters + 4) x 9
	2	((Number of characters + 4) x 9) x 2
	3	((Number of characters + 4) x 9) x 3
	4	((Number of characters + 4) x 9) x 4
	5	((Number of characters + 4) x 9) x 5
	6	((Number of characters + 4) x 9) x 6
Code128 (*1)	1	Number of characters x 11 +24
	2	(Number of characters x 11 +24) x 2
	3	(Number of characters x 11 +24) x 3
	4	(Number of characters x 11 +24) x 4
	5	(Number of characters x 11 +24) x 5
	6	(Number of characters x 11 +24) x 6
Code128 (*1), (*2)	1	Number of characters x 11 +24
	2	(Number of characters x 11 +24) x 2
	3	(Number of characters x 11 +24) x 3
	4	(Number of characters x 11 +24) x 4
	5	(Number of characters x 11 +24) x 5
	6	(Number of characters x 11 +24) x 6
PDF417	1	86
	2	172
	3	258
	4	344
	5	430
	6	516

(*1) SHIFT("{S"}, FNC1("{1"}, FNC2("{2"}, FNC3 ("{3"}, FNC4("{4"}, CODE A("{B"}, CODE B("{B"}, CODE C("{C"}: Count two characters as one character.

(*2) Code Set C data: Count two characters as one character.

Table 42 TRST-A1x-S,P,U,L POSPrinter JavaPOS– Bar Code Width To Be Printed

If the PrintBarcodeMode value for the setup information is “TEC”, the bar code module width is determined by the **printBarcode** method’s width parameter and bar code print escape sequence parameter w to a. For the bar code size to be actually printed, please refer to “Table 42 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Bar Code Width To Be Printed in TEC Mode”.

For example, when UPC-A bar code is to be printed on 80-mm wide paper, bar code of bar code module width 4 is printed. If the **printBarcode** method’s width parameter value (or the bar code print escape sequence parameter w to a value) is 300 because 300 is more than 1/2 but less than 3/4 of 576 bits which indicates 80-mm paper width.

The following table gives module width for each bar code to be printed.

Paper Width	Value Specified by Width Parameter	Module Width
80 mm	Less than 1/2 of paper width (000 to 287[dots])	2
	1/2 or larger but less than 3/4 of paper width (288 to 431[dots])	4
	3/4 or larger than paper width (432 to 576[dots])	6
58 mm	Less than 1/2 of paper width (000 to 215[dots])	2
	1/2 or larger but less than 3/4 of paper width (216 to 323[dots])	3
	3/4 or larger than paper width (324 to 432[dots])	4

Table 43 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Bar Code Width To Be Printed in TEC Mode

If the PrintBarcodeMode value for the setup information is “Option1”, the bar code module width is determined depending on the values input into the **printBarcode** method’s symbology parameter and data parameter. For the bar code size to be actually printed, please refer to “Table 44 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Bar Code Width To Be Printed in Option Mode”.

For example, when Code93 bar code is to be printed by 28 digits, the bar code is printed with bar code module width 1.

The following table gives module width for each bar code to be printed.

Bar Code Symbology	Module Width (dots) Specification.						Remarks
	1	2	3	4	5	6	
UPC-A	Not use	Printing	Not use	Not use	Not use	Not use	
UPC-E	Not use	Printing	Not use	Not use	Not use	Not use	
EAN-13	Not use	Printing	Not use	Not use	Not use	Not use	
EAN-8	Not use	Printing	Not use	Not use	Not use	Not use	
Code 39	21–42 digits	1–20 digits	Not use	Not use	Not use	Not use	
ITF	41–48 digits	1–40 digits	Not use	Not use	Not use	Not use	
Codabar (NW-7)	29–42 digits	1–28 digits	Not use	Not use	Not use	Not use	Including START/STOP codes
Code 93	28–44 digits	1–27 digits	Not use	Not use	Not use	Not use	
Code 128	24–48 digits	1–23 digits	Not use	Not use	Not use	Not use	
PDF417	Not use	Not use	Not use	Printing	Not use	Not use	

Table 444 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Bar Code Width To Be Printed in Option1 Mode

7) Bar code print using escape sequence

The application can use the ESC|#R escape sequence to print bar codes in-line with other print commands. The character “#” is the number of characters following “R” to use in the definition of the

characteristics of the bar code to be printed.

In the data following "R", other lowercase alphabetic characters that indicate attributes, numeric characters that indicate a value to be set, and 00h to FFh characters that forms bar code are used to define bar code characteristics. The same value definitions as defined for the **printBar Code** method can be used for the values.

Attribute symbols (alphabetic characters) are s, h, w, a, t, d, and e.

Characters except for e must be followed by setup value.

The meaning of attribute characters is as follows:

Attribute	Meaning	Remarks
s	<p>Symbology (Bar code type)</p> <p>Symbology is specified between s and h using a fixed value.</p>	<p>Fixed values, 101 to 104, 106 to 110, and 201 can be used. Each value means as follows:</p> <p>101 :UPC-A 102 :UPC-E 103 :JAN-8(EAN-8) 104 :JAN-13(EAN-13) 106 :ITF(Interleaved 2 of 5) 107 :Codabar(NW-7) 108 :Code39 109 :Code93 110 :Code128 123 :Code128 with parsing 201 :PDF417</p>
h	<p>height (Bar code height)</p> <p>Bar code height is specified between attributes h and w, expressed in the unit of measure given by the MapMode property.</p>	<p>[MapMode property=PTR_MM_DOT] 1 to 255 [MapMode property=PTR_MM_TWIPS] 1 to 1814 [MapMode property=PTR_MM_ENGLISH] 1 to 1259 [MapMode property=PTR_MM_METRIC] 1 to 3199</p>

Attribute	Meaning	Remarks
w	width (Bar code width) Bar code width is specified between attributes w and a, expressed in the unit of measure given by the MapMode property.	Values that can be specified vary depending on a paper used as follows: ●80-mm paper [MapMode property=PTR_MM_DOT] 1 to 576 [MapMode property=PTR_MM_TWIPS] 1 to 4089 [MapMode property=PTR_MM_ENGLISH] 1 to 2839 [MapMode property=PTR_MM_METRIC] 1 to 7212 ●58-mm paper [MapMode property=PTR_MM_DOT] 1 to 432 [MapMode property=PTR_MM_TWIPS] 1 to 3068 [MapMode property=PTR_MM_ENGLISH] 1 to 2130 [MapMode property=PTR_MM_METRIC] 1 to 5412
a	alignment (bar code position) Bar code position, a distance from the left edge where bar code print starts, is specified between attributes w and a, using a fixed value or expressed in the unit of measure given by the MapMode property.	Also a fixed value, -1, -2, or -3 can be specified. Each fixed value means as follows: -1: Right justify -2: Centering -3: Right justify Values that can be specified vary depending on a paper used as follows: ●80-mm paper [MapMode property=PTR_MM_DOT] 0 to 575 [MapMode property=PTR_MM_TWIPS] 0 to 4082 [MapMode property=PTR_MM_ENGLISH] 0 to 2834 [MapMode property=PTR_MM_METRIC] 0 to 7199 ●58-mm paper [MapMode property=PTR_MM_DOT] 0 to 431 [MapMode property=PTR_MM_TWIPS] 0 to 3061 [MapMode property=PTR_MM_ENGLISH] 0 to 2125 [MapMode property=PTR_MM_METRIC] 0 to 5399

Attribute	Meaning	Remarks
t	text position (HRI character position) HRI character position is specified between attributes t and d, using a fixed value.	Also a fixed value, -11, -12, or -13 can be specified. Each fixed value means as follows: -11: HRI character is not printed. Only bar code is printed. -12: HRI character is printed above the bar code. -13: HRI character is printed below the bar code.
d	Start of data (Bar code data start position) Bar code data start position is specified between attributes d and e using 00h and FFh values.	Usable values vary depending on bar code symbology. For details, please refer to the section, "1.1.12 Restrictions and Cautions, 6) Bar code print" in this Manual.
e	End of data (Bar code data end position)	

The attributes cannot be omitted and must appear in the order specified in the above list (s → h → ... → d → e).

For example, UPC-A bar code data 123456789012, height 200 dots, width 400 dots, center aligned, bottom HRI text, the command to print bar code is as follows:

ESC|33Rs101h200w400a-2t-13d123456789012e

8) Bitmap print

To print bitmap, use any of the following ways which is suitable for your purpose.

- Print using the **printBitmap** method.

Bitmap files processed by the **printBitmap** method are printed only in black and white.

It takes time to print bitmap when this method is used because the method sends bitmap image data to the printer whenever called. Try to use other ways.

- Register a bitmap to be printed using the **setBitmap** method, then print the registered bitmap using the bitmap print escape sequence.

The **setBitmap** method can print bitmaps in black and white and only bitmap no. 1 through 3 can be specified. Also, the bitmap size is limited. For details of limitations for bitmap size, please refer to the table, "Table 40 TRST-A1x-S,P,U POSPrinter JavaPOS – Registerable Size by setBitmap Method" in this Manual.

This way sends a bitmap image to the printer when the **setBitmap** method is called to register it in the printer device, then prints the bitmap registered by the Print bitmap's escape sequence. This way takes shorter time than the way using the **printBitmap** method to print bitmap because the bitmap image is sent to the printer only when the SetBitmap is called.

The bitmap registered by this way is overwritten when another bitmap is registered to the same bitmap number. Also, the bitmap data is cleared when the printer power is turned off. If the bitmap should be kept even after the printer power is turned off, register the bitmap to the flash ROM using the **directIO** method (Start bitmap registration to flash ROM) or **directIO** method (End bitmap registration to flash ROM) as described in the subsequent paragraph.

- Register a bitmap to the flash ROM using the **directIO** method (start bitmap registration to flash ROM), **setBitmap** method, and **directIO** method (end bitmap registration to flash ROM), then print the bitmap registered by the bitmap print escape sequence.

Bitmap files processed by the **setBitmap** method are printed only in black and white and bitmap numbers that can be specified are 4 through 11. Also, the bitmap size is limited. For details of bitmap size, please refer to the table, "Table 40 TRST-A1x-S,P,U POSPrinter JavaPOS – Registerable Size by setBitmap Method" in this Manual.

When the **directIO** method (end bitmap registration to flash ROM) is called, this way collectively sends the bitmaps to be registered by the **setBitmap** method called once or more after the **directIO** method (start bitmap registration to flash ROM) to the printer to register them to the printer device, then prints the registered bitmaps registered by the bitmap print escape sequence.

After clearing all bitmaps registered in the flash ROM, bitmap registration to the flash ROM is performed to register the bitmaps specified by the **setBitmap** method called between the **directIO** method (start bitmap registration to flash ROM) and the **directIO** method (end bitmap registration to flash ROM). In this way, the bitmaps registered to the flash ROM are kept even after the printer power is turned off.

The size (width and height) of bitmaps that can be registered by the **setBitmap** method is limited depending on paper width used. Please refer to the table below.

Font Size	Paper Width	Width	Height
FontSize1	80 mm	576 [dots]	512 [dots]
	58 mm	432 [dots]	
FontSize2	80 mm	560 [dots]	
	58 mm	424 [dots]	

Table 45 TRST-A1x-S,P,U,L POSPrinter JavaPOS – Registerable Size by setBitmap Method

9) Unidirectional print and bi-directional print

This printer only supports unidirectional print. Therefore, **RecLetterQuality** is always set to true.

10) Timing to report the end of print method

To report the completion of printing, this Device Service does not deliver the **OutputCompleteEvent** event when printing on a paper is completed, but delivers it when transmission of print data to the printer is completed. For this reason, a timing of such report may not be consistent with that when the printing is completed. Especially please note this when the amount of remaining paper becomes low. There may be the cases that No Paper will occur after the application finishes sending all print data. It is recommended to replace a paper when a red mark, that indicates the amount of remaining paper is low, appears. Or, it is recommended that the application can resume printing just in case the printer performed an abnormal printing.

11) Paper cut

Due to the device's architecture, this Device only performs partial paper cut, leaving 5-mm distance from the edge.

Regardless of paper cut percentage specified, partial paper cut is always performed when the **cutPaper** method is called or paper cut is performed using escape sequence. Please note the method is completed successfully without throwing any JavaPOS exceptions.

12) Cover status notification

Because this device has only one cover, **StatusUpdateEvent** event's PTR_SUE_REC_COVER_OPEN and PTR_SUE_REC_COVER_OK are not issued. **StatusUpdateEvent** event's PTR_SUE_COVER_OPEN and PTR_SUE_COVER_OK are issued as a cover open/close status as in a conventional way.

13) Retry after asynchronous batch transaction error

When an error occurs during an asynchronous batch transaction initiated by the **TransactonPrint** method and the **ErrorEvent** event is delivered, this Device Control resumes printing from the beginning of the batch transaction if the application sets a value of **pErrorResponse** to JPOS_ER_RETRY.

14) Notes for using the **clearOutput** method

When printing is terminated by the **ClearOutput** method, printing may stop before all data for the current line is printed. It is recommended to output a line feed escape sequence or LineFeed (10 decimal or 0A hex) if the **ClearOutput** method should be used to stop printing. Just in case, it may be safe to reset a line feed value using the **RecLineSpacing** property because the value might have been changed to 24. It is also recommended to reset the line feed after the Device has recovered from an error.

1.1.12.2 TRST-A15-S, P, U – Restrictions and Cautions

This section describes the common restrictions and cautions for using the TRST-A15-S, P, U.

1) Dual-side print

TRST-A15-S, P, U provides the dual-side print function.

The JPOS specification defines the specifications of the dual-side print on the slip station, but does not define the specifications of the dual-side print on the receipt printer. This Device Service performs a dual-side print by extending some functions as described below.

For details, please refer to the descriptions of each method in the subsequent pages.

Extended I/F	Description of Extended Function
printNormal method	Printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the station parameter. PTR_S_RECEIPT2 becomes available when the TransactionPrint method is called and the PTR_TP_TRANSACTION2 mode is entered.
printBarCode method	Printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the station parameter. Printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the station parameter.
printBitmap method	Printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the station parameter. Printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the station parameter.
transactionPrint method	Batch transaction for dual-side print is made available by defining PTR_TP_TRANSACTION1, PTR_TP_TRANSACTION2, PTR_TP_TRANSACTION3, and PTR_TP_PREDEFINE to the control parameter. This method starts a dual-side print in any of PTR_TP_TRANSACTION1, 2, or 3 mode. PTR_TP_NORMAL processes all of printNormal, printBarCode, printBitmap, and rotatePrint methods, which are called after any of the transaction modes is entered. PTR_TP_PREDEFINE is used to save a fixed print pattern to be printed on the back side of paper. PTR_TP_PREDEFINE can use the printNormal, printBarCode, and rotatePrint methods, but the printBitmap method is not supported.
setLogo method	This saves a top logo, bottom logo, or error logo, exclusively used for dual-side print by defining PTR_TP_2STL_TOP, PTR_TP_2STL_BOTTOM, and PTR_TP_2STL_ERROR_TOP to the location parameter. The logo saved can be printed by using the print top logo or print bottom logo escape sequence of the methods specific to dual-side print (printNormal method or printImmediate method whose station parameter is set to PTR_S_RECEIPT2).
changePrintSide method	Generally, this method is effective for a dual-side print on a slip printer, but it is also used for a dual-side print on the receipt printer.

Table 46 TRST-A15x-S,P,U POSPrinter JavaPOS – Extended Dual-side Print Function List

The subsequent pages describe the details of the methods which provide extended functions to perform dual-side print. The same descriptions as those written in the section, 1.1.8.2 Details of Methods are included. The extended functions for the dual-side print are shaded.

printNormal Method**Type**

void printNormal(int station, String data) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
data	Specifies characters to be printed. May consist of printable characters, escape sequences, carriage return (13 decimal), and line feed (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property".

The station parameter has one of the following values:

Value	Meaning
PTR_S_JOURNAL	Prints data on the journal printer station.
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
PTR_S_RECEIPT2	When a back-side print is specified, prints data on the receipt printer station.

Special character values within data are:

Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Print any data in the line buffer, and feed to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, then it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line. Otherwise, the line buffer is printed and the printer does not feed to the next print line. On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported. If the printer does not support either of these features, then Carriage Return acts like a Line Feed. The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.

Remarks

Prints the print data specified by the data parameter on the printer specified by the station parameter. This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

PTR_S_RECEIPT2 can be specified only when **PTR_TP_TRANSACTION2** is selected by TransactionPrint. **PTR_S_RECEIPT2** is to print on the back side of paper.

Errors

A JposException may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Specified station does not exist.	This Device Service does not support this function.
JPOS_E_BUSY, 0 (*1)	Cannot perform while output is in progress.	

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

printBarcode Method**Type**

void printBarcode(int station, String data,int symbology, int height, int width, int alignment , int textPosition) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
data	Specifies character string to be bar coded.
symbology	Specifies bar code symbol type to use.
height	Specifies bar code height. Expressed in the unit of measure given by the MapMode property.
width	Specifies bar code width. Expressed in the unit of measure given by the MapMode property.
alignment	Specifies placement of the bar code.
textPosition	Specifies placement of the human readable information (HRI) character string.

The station parameter has one of the following values:

Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
PTR_S_RECEIPT2	When a back-side print is specified, prints data on the receipt printer station.

The symbology parameter has one of the following values:

[One Dimensional Symbolologies]

Value	Meaning
PTR_BCS_UPCA	UPC-A
PTR_BCS_UPCA_S	UPC-A with supplemental barcode
PTR_BCS_UPCE	UPC-E
PTR_BCS_UPCE_S	UPC-E with supplemental barcode
PTR_BCS_UPCD1	UPC-D1
PTR_BCS_UPCD2	UPC-D2
PTR_BCS_UPCD3	UPC-D3
PTR_BCS_UPCD4	UPC-D4
PTR_BCS_UPCD5	UPC-D5
PTR_BCS_EAN8	EAN8(JAN8)
PTR_BCS_JAN8	JAN8(EAN8)
PTR_BCS_EAN8_S	EAN 8 with supplemental barcode
PTR_BCS_EAN13	EAN13(JAN13)
PTR_BCS_JAN13	EAN13(JAN13)
PTR_BCS_EAN13_S	EAN 13 with supplemental barcode
PTR_BCS_EAN128	EAN-128
PTR_BCS_TF	Standard (or discrete) 2 of 5
PTR_BCS_ITF	Interleaved 2 of 5
PTR_BCS_Codabar	Codabar
PTR_BCS_Code39	Code 39
PTR_BCS_Code93	Code 93
PTR_BCS_Code128	Code 128
PTR_BCS_OCRA	OCR "A"
PTR_BCS_OCRB	OCR "B"
PTR_BCS_Code128_Parsed	Code 128 Parsed
PTR_BCS_RSS14	GS1 CodaBar(RSS(Reduced Space Symbology))
PTR_BCS_RSS_EXPANDED	GS1 CodaBar Expanded(RSS Expanded)

[Two Dimensional Symbolologies]

Value	Meaning
PTR_BCS_PDF417	PDF417
PTR_BCS_MAXICODE	MAXICODE

[Special Cases]

Value	Meaning
PTR_BCS_OTHER	Defines additional symbologies to the above. Actual value is PTR_BCS_OTHER+α.

The alignment parameter has one of the following values.

Value	Meaning
PTR_BC_LEFT	Aligns bar code with the left-most print column and prints it.
PTR_BC_CENTER	Aligns bar code in the center of the station and prints it.
PTR_BC_RIGHT	Aligns bar code with the right-most print column and prints it.
Other Values	Prints bar code at a specified distance from the left-most print column. Expressed in the unit of measure given by the MapMode property.

The textPosition parameter has one of the following values:

Value	Meaning
PTR_BC_TEXT_NONE	Prints no HRI characters.. Only prints the bar code.
PTR_BC_TEXT_ABOVE	Prints the HRI characters above the bar code.
PTR_BC_TEXT_BELOW	Prints the HRI characters below the bar code.

Remarks

Prints bar codes on a printer station specified by the station parameter.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

If the RotateSpecial property indicates that the bar code is to be rotated, perform the rotation. The height, width, and textPosition parameters are applied to the bar code before the rotation. For example, if PTR_BC_TEXT_BELOW is specified and the bar code is rotated left, the text will appear on the paper to the right of the bar code.

PTR_S_RECEIPT2 can be specified only when PTR_TP_TRANSACTION2 is selected by TransactionPrint. **PTR_S_RECEIPT2** is to print on the back side of paper.

Special Considerations for Code 128

The Code 128 Bar Code symbology is comprised of three code sets and also includes some special characters that denote either a change in code set, a function code, or a shift code. The characters for each code set are:

Code Set	Character Set
Code A	0x00-0x5f, FNC1, FNC2, FNC3, FNC4, SHIFT, CODE B, CODE C
Code B	0x20-0x7f, FNC1, FNC2, FNC3, FNC4, SHIFT, CODE A, CODE C
Code C	0x00-0x63 for decimal values 00-99, FNC1, CODE A, CODE B

A sentinel character, the left curly bracket "{", followed by a certain value, is used to indicate a special characters, SHIFT, CODE A, CODE B, CODE C, FNC1, FNC2, FNC3, FNC4 and {. The following table lists the character pairs for encoding the special characters:

Special Characters	ASCII Representation
SHIFT	{S
CODE A	{A
CODE B	{B
CODE C	{C
FNC1	{1
FNC2	{2
FNC3	{3
FNC4	{4
{	{{

[Release 1.7 and earlier]

The data format to be supplied by the application was not specified in these releases. Therefore, the default code set and data content varied by vendor. An application that sends Code 128 data to a 1.7 or earlier service will need to conform to that service's requirements.

[Release 1.8 and later]

For migration of current applications, the symbology PTR_BCS_Code128 is maintained so that a service may continue to support the data format that it used with earlier releases.

New service implementations should handle this symbology as with PTR_BCS_Code128_Parsed. The new symbology PTR_BCS_Code128_Parsed standardizes the data format with consistent parsing. Data is comprised of ASCII characters, which the service maps to the corresponding value for the selected code set.

In Code Sets A and B, this will be a one to one mapping. In Code Set C, each pair of digits is converted to a single Code C data character in the range 0x00 (00) through 0x63 (99). If the Code Set C data contains an odd number of digits, a leading zero digit is added by the Device Service before conversion.

The default Code Set may differ by vendor, so a starting code set is required at the start of the data.

For details of bar code print for the TRST-A10-S, P, U and the TRST-A15-S, P, U, please refer to the section, “1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, 6) Bar code print” in this Manual.

Errors

A JposException may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

printBitmap Method**Type**

```
void printBitmap( int station, String fileName, int width, int alignment )
    throws JposException;
```

Parameter	Remarks
station	Specifies the printer station to be used.
fileName	Specifies a file name or URL of bitmap file. Various file formats may be supported, such as bmp, gif, or jpeg files.
width	Specifies printed width of the bitmap to be performed.
alignment	Specifies placement of the bitmap.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
PTR_S_RECEIPT2	When a back-side print is specified, prints data on the receipt printer station.
The width parameter has one of the following values:	
Value	Meaning
PTR_BM_ASIS	Prints the bitmap with one bitmap pixel per printer dot.
Other Values	Prints the bitmap at a specified distance from the left-most print column. Expressed in the unit of measure given by the MapMode property. Prints the bitmap with specified width. Expressed in the unit of measure given by the MapMode property.
The alignment parameter has one of the following values:	
Value	Meaning
PTR_BM_LEFT	Aligns the bitmap with the left-most print column and prints it.
PTR_BM_CENTER	Aligns the bitmap in the center of the station and prints it.
PTR_BM_RIGHT	Aligns the bitmap with the right-most print column and prints it.
Other Values	Prints the bitmap at a distance from the left-most print column. Expressed in the unit of measure given by the MapMode property.

Remarks

Prints a bitmap on the printer station specified by the station parameter.

If a partial text line has been sent (for example, via the **printNormal** method) but not yet printed, an implicit line feed is added to this text and the line is printed before the bitmap is printed.

Text data sent after this **printBitmap** method begins on the line following the bitmap.

This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

PTR_S_RECEIPT2 can be specified only when PTR_TP_TRANSACTION2 is selected by TransactionPrint. **PTR_S_RECEIPT2** is to print on the back side of paper.

The width parameter controls transformation of the bitmap. If width is PTR_BM_ASIS, no transformation is performed. The bitmap is printed with one bitmap pixel per printer dot. Advantages of this option are that it:

- Provides the highest performance bitmap printing.
- Works well for bitmaps tuned for a specific printer's aspect ratio between horizontal dots and vertical dots.

If width is not 0, the bitmap will be transformed by stretching or compressing the bitmap such that its width is the specified width and the aspect ratio is unchanged. Advantages of this option are:

- Sizes a bitmap to fit a variety of printers.
- Maintains the bitmap's aspect ratio.

Disadvantages are:

- Lowers performance than untransformed data.
- Some lines and images that are smooth in the original bitmap may show some ratcheting.

For details of bitmap print for the TRST-A10-S, P, U and the TRST-A15-S, P, U, please refer to the section, "1.1.12.1 Restrictions and Cautions for TRST-A1x-S, P, U, 7) Bitmap print" in this Manual.

Errors

A JposException may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_NOEXIST, 0	Filename specified by the fileName parameter was not found.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

transactionPrint Method**Type**

void transactionPrint(int station, int control) throws JposException;

Parameter	Remarks
station	Specifies the printer station to be used.
control	Specifies a transaction control.
The station parameter has one of the following values:	
Value	Meaning
PTR_S_JOURNAL	Prints data on the journal printer station.
PTR_S_RECEIPT	Prints data on the receipt printer station.
PTR_S_SLIP	Prints data on the slip printer station.
The control parameter has one of the following values:	
Value	Meaning
PTR_TP_TRANSACTION	Begins a transaction.
PTR_TP_TRANSACTION1	Begins a batch transaction in dual-side print – auto divide mode.
PTR_TP_TRANSACTION2	Begins a batch transaction in dual-side print – print side selection mode.
PTR_TP_TRANSACTION3	Begins a batch transaction in dual-side print – back-side print data predefine mode.
PTR_TP_PREDEFINE	Begins back-side print data predefine mode.
PTR_TP_NORMAL	Ends a transaction by printing the buffered data.

Remarks

Enters or exits transaction mode.

If the control parameter is PTR_TP_TRANSACTION, transaction mode is entered. Subsequent calls to the **printNormal**, **cutPaper**, **rotatePrint**, **printBarCode**, **printBitmap**, and **markFeed** methods will buffer the print data until the **transactionPrint** method is called with the control parameter set to PTR_TP_NORMAL and do not initiate printing.

If the control parameter is PTR_TP_PREDEFINE, printing is not initiated. Back-side print data is stored in the printer using PTR_TP_TRANSACTION3 and the back-side print data predefine mode is exited.

Also, the value of the AsyncMode property does not affect their operation: No OutputID will be assigned to the request, nor will an OutputCompleteEvent be enqueued.

If the control parameter is PTR_TP_NORMAL, transaction mode is exited. If some data was buffered by calls to the **printNormal**, **cutPaper**, **rotatePrint**, **printBarCode**, **printBitmap** and **markFeed** methods, the buffered data is printed. If no data was buffered, this method completes successfully without initiating printing. The entire transaction is treated as one message. This method is performed synchronously if the AsyncMode property is false, and asynchronously if the AsyncMode property is true.

Calling the **clearOutput** method cancels rotated print transaction mode. Any buffered rotated print lines are also cleared.

Errors

A JposException may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid percentage was specified.	
JPOS_E_BUSY, 0 (*1)	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN (*2)	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY (*2)	The printer is out of paper.	

(*1) These exceptions are thrown only when the AsyncMode property = false.

(*2) These exceptions are thrown only when the AsyncMode property = false. If the AsyncMode property = true, an ErrorEvent event notification is generated.

setLogo Method**Type**

void setLogo(int location, String data) throws JposException;

Parameter	Remarks
location	Specifies the logo to be set.
data	Specifies the characters that produce the logo. May consist of printable characters, escape sequences, carriage return (13 decimal), and line feed (10 decimal). The CapCharacterSet property value indicates printable characters. For details, please refer to the section, "1.1.7.2 Details of Properties, CapCharacterSet Property". If the location parameter value is PTR_TP_2STL_TOP, PTR_TP_2STL_BOTTOM, or PTR_TP_2STL_ERROR_TOP, a normal escape sequence which begins with "ESC" cannot be used. Character attribute will be specified using fixed six characters specific to dual-side print which is to be placed before this parameter.

The location parameter has one of the following values:

Value	Meaning
PTR_L_TOP	Saves a data string as the top logo.
PTR_L_BOTTOM	Saves a data string as the bottom logo.
PTR_TP_2STL_TOP	Saves a data string as the top logo to be printed on the back side.
PTR_TP_2STL_BOTTOM	Saves a data string as the bottom logo to be printed on the back side.
PTR_TP_2STL_ERROR_TOP	Saves an error log for the back side.

Special character values within data are:

Value	Meaning
Newline/LineFeed (10 decimal, 0A Hex)	Prints any data in the line buffer, and feeds to the next print line. (A Carriage Return is not required in order to cause the line to be printed.)
Carriage Return (13 decimal, 0C Hex)	If a Carriage Return immediately precedes a Line Feed, or if the line buffer is empty, it is ignored. Otherwise, the line buffer is printed and the printer does not feed to the next print line. On some printers, a print without feed may be directly supported. On others, a print may always feed to the next line, in which case the Device Service will print the line buffer and perform a reverse line feed if supported. If the printer does not support either of these features, Carriage Return acts like a Line Feed. The validateData method may be used to determine whether a Carriage Return without Line Feed is possible, and whether a reverse line feed is required to support it.
Character attribute specific to dual-side print	Specifies character attribute using fixed six characters before the data parameter. If the value is invalid, an error will result. (For example, 2 or 3 is specified for reverse video attribute)

Byte	Attribute	Specified Value		
		'0' (0x30)	'1' (0x31)	'2' (0x32)
1	Reverse video	None	Reverse video	Error
2	Red character	Black character	Red character	Error
3	Bold character	None	Bold	Error
4	Double wide character	None	Double wide	Error
5	Double high character	None	Double high	Error
6	Underlined character	None	1-dot underline	2-dot underline

Table 47 SetLogo Character Attributes for Dual Print

Remarks

Saves a data string specified by the data parameter as the top or bottom logo.

A logo may then be printed by calling the **printNormal**, **printTwoNormal**, or **printImmediate** method with the print top logo or print bottom logo escape sequence in the print data.

PTR_TP_2STL_TOP, PTR_TP_2STL_BOTTOM, or PTR_TP_2STL_ERROR_TOP is called to save the data string as the top logo on the back side or bottom logo on the front side in dual-print mode.

The logo can be printed by calling the PrintNormal method including the following escape sequence in the print data.

Error Sequence	Data	Description
Print top logo for dual-side print	ESC|2tL	SetLogo method Prints the logo specified by PTR_2STL_TOP(BackSide).
Print bottom logo for dual-side print	ESC|2bL	SetLogo method Prints the logo specified by PTR_2STL_BOTTOM(Front Side).
Print error logo for dual-side print	ESC|etL	SetLogo method Prints the logo specified by PTR_2STL_ERROR_TOP(Front Side) when an error occurs.

Errors

A **JposException** may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	An invalid location was specified.	

changePrintSide Method**Type**

void changePrintSide(int side) throws JposException;

Parameter	Remarks
side	Indicates the side on which to print.
The side parameter has one of the following values:	
Value	Meaning
PTR_PS_SIDE1	Indicates that the default print side of the document is selected. Default print side is the side where printing will occur immediately after a document has been inserted. Therefore, PTR_PS_SIDE1 is selected after the beginInsertion or endInsertion method is executed.
PTR_PS_SIDE2	Indicates that the opposite side of the document from the one that the printer defaults to is to be selected. (Reverse side of PTR_PS_SIDE1.)
PTR_PS_OPPOSITE	Indicates that the current printing side is switched. Printing will now occur on the opposite side of the slip. e.g., if SlpPrintSide was PTR_PS_SIDE1, it is to be changed to PTR_PS_SIDE2.

Remarks

Selects the side of the document where printing is to occur.

This allows a print operation to occur on both sides of a document. This may be accomplished by mechanical paper handling of the document or by using multiple print heads that are positioned to print on each side of the document.

If a document is not inserted, an error is returned.

If the print side is not the one specified by the **SlpPrintSide** property, that is, PTR_PS_OPPOSITE, the side of the document is changed and the document is fed to the top of form. If the print side is the one specified by the **SlpPrintSide** property, nothing occurs and this method is exited.

Executing this method may cause the **SlpPrintSide** property to change.

If the **transactionPrint** method is PTR_TP_TRANSACTION2, printing occurs on PTR_S_RECEIPT2 if PTR_PS_SIDE2 is selected even when the print method's station parameter is PTR_S_RECEIPT.

Also, this method is available for a normal print in the mode other than **transactionPrint** (when dual-side print is specified by the printer configuration setting, by jpos.xml setup information, or by the **directIO** method).

The side value is automatically set to PTR_PS_SIDE1 after the DeviceEnable property is set to true or immediately after the **transactionPrint** method is called with PTR_TP_TRANSACTION2 or PTR_TP_NORMAL.

Errors

A JposException may be thrown when this method is invoked.

JposException's parameter ErrorCode, ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED, 0	An attempt was made to access a closed printer.	Execute this property again after executing the open method.
JPOS_E_NOTCLAIMED, 0	An exclusive access has not been obtained.	Execute this property again after executing the claim method to get exclusive access to the printer.
JPOS_E_DISABLED, 0	Cannot perform this operation while the Device is disabled.	Execute this property again after setting the DeviceEnabled property to true to enable the device.
JPOS_E_ILLEGAL, 0	Specified print side is invalid.	
JPOS_E_BUSY, 0	Cannot perform while an asynchronous output is in progress.	
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	

1.1.12.3 TRST-A1x-S, P, U, L-QM-R – Restrictions and Cautions

This section describes the common restrictions and cautions for using the TRST-A10-S-QM-R, TRST-A10-P-QM-R, TRST-A10-U-QM-R, TRST-A10-L-QM-R, TRST-A15-S-QM-R, TRST-A15-P-QM-R, and TRST-A15-U-QM-R.

1) Code Page 949 (Korea)

The TRST-A10-S-QM-R, TRST-A10-P-QM-R, TRST-A10-U-QM-R, TRST-A10-L-QM-R, TRST-A15-S-QM-R, TRST-A15-P-QM-R, and TRST-A15-U-QM-R support Code Page 949 (Korea). When Code Page 949 is selected, only “Font A” font type and “FontSize1” font size are available and no other fonts are available.

Necessary setting must be made to the printer device and the Device Service to print the Korean characters.

- In the printer configuration, set DBCS & Font Size to “DBCS:INVALID/Font:Size1”.
- In the printer configuration, set Printer Mode ANK to DBCS? to the same value as DBCSMODE of the Device Service setup. If DBCSMODE=0, select “VALID”, and if DBCSMODE=1, select “1”.

1.1.12.4 TRST-A1x-S, P, U-CN-R – Restrictions and Cautions

This section describes the common restrictions and cautions for using the TRST-A10-S, P, U-CN-R and the TRST-A15-S, P, U-CN-R.

1) Code Page 54936 (China)

The TRST-A10-S, P, U-CN-R and the TRST-A15-S, P, U-CN-R support Code Page 54936 (China). When Code Page 54936 is selected, only “Font A” font type and “FontSize1” font size are available and no other fonts are available.

Necessary setting must be made to the Device Service to print the Chinese characters.

- In the Device Service setup information, set Country to “China”.
- In the Device Service setup information, set DBCSMode to “1”.

1.1.12.5 TRST-A1x-U – Restrictions and Cautions

This section describes the common restrictions and cautions for using the TRST-A10-U-QM-R, TRST-A15-U-QM-R, .TRST-A10-U-CN-R and the TRST-A15-U-CN-R.

1) About the log output of Library/Process

In case of TRST-A10-U, JavaPOS uses some libraries and processes, for example, TEC general-purpose USB JNI library, TEC general-purpose USB library, TEC USB power management process, and so on. These output unique log respectively. These logs are set with Windows registry in Windows environment, set with jpos.xml in Linux environment.

[Windows environment setting]

In Windows environment, set the logs of libraries/process with Windows Registry.

TEC general-purpose USB JNI library

HKEY_LOCAL_MACHINE¥SYSTEM¥TEC¥TECUSBJNI

DebugLogFile "C:¥OPOS¥TEC¥LOG"

DebugLogLevel "0" | "1" | "2" | "3" | "4" ~

Definition Name	Value
DebugLogFile	Specifies a TEC USB general-perpose JNI library log file with path which records JavaPOS operations. If this item is omitted or a folder does not exist, no log is kept.
DebugLogLevel	Specifies a log level of TEC USB general-perpose JNI library. 0 : Output no logs. 1 : Output error level logs. 2 : Output warning level logs. 3 : Output information level logs. 4~ : Output debug level logs. The log file is not output, if this item is omitted or a negative integer value is specified.

TEC USB power management process

HKEY_LOCAL_MACHINE¥SYSTEM¥TEC¥TECUSBPM

DebugLogFile "C:¥OPOS¥TEC¥LOG"

DebugLogLevel "0" | "1" | "2" | "3" | "4" ~

Definition Name	Value
DebugLogFile	Specifies a TEC USB power management process log file with path which records JavaPOS operations. If this item is omitted or a folder does not exist, no log is kept.
DebugLogLevel	Specifies a log level of TEC USB power management process. 0 : Output no logs. 1 : Output error level logs. 2 : Output warning level logs. 3 : Output information level logs. 4~ : Output debug level logs. The log file is not output, if this item is omitted or a negative integer value is specified.

[Linux environment setting]

In Linux environment, set the logs of libraries/process with jpos.xml setting file.

For details of these, please refer to "tecusbJNILogLevel / tecusbLibLogLevel" of the section, "1.1.11.3 TRST-A10-U POSPrinter's Setup Information" or "1.1.11.6 TRST-A15-U POSPrinter's Setup Information" in this Manual.

1.1.12.6 TRST-A1x-L – Restrictions and Cautions

This section describes the common restrictions and cautions for using the TRST-A10-L.

1) Use of multiple devices

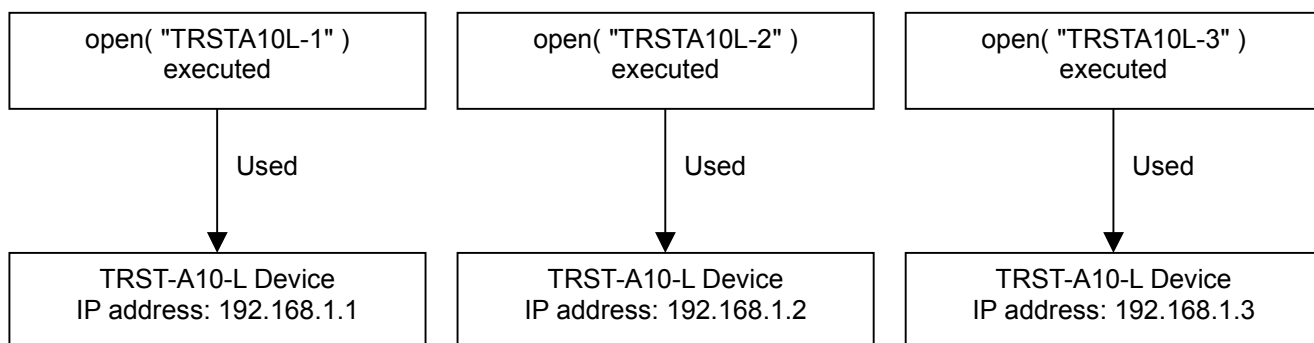
A maximum of 3 TRST-A1x-L devices can be connected to a single POS or PC. If multiple devices are used, they must have different IP addresses. In addition, the JposEntry elements and logical device name of each device are required to configure jpos.xml. The following box shows an example of the configuration of jpos.xml if 3 TRST-A10-L devices, whose IP addresses range from “192.168.1.1” to “192.168.1.3,” are used.

```
<JposEntries>
  <JposEntry logicalName="TRSTA10L-1">
    •• Omitted ••
    <prop name="IPAddress" type=" String " value="192.168.1.1"/>
    •• Omitted ••
  </JposEntry>

  <JposEntry logicalName="TRSTA10L-2">
    •• Omitted ••
    <prop name="IPAddress" type=" String " value="192.168.1.2"/>
    •• Omitted ••
  </JposEntry>

  <JposEntry logicalName="TRSTA10L-3">
    •• Omitted ••
    <prop name="IPAddress" type=" String " value="192.168.1.3"/>
    •• Omitted ••
  </JposEntry>
</JposEntries>
```

With jpos.xml configured as shown above, if the open method is executed and “TRSTA10L-1” is specified for the deviceName parameter, the device whose IP address is “192.168.1.1” can be used. Similarly, if “TRSTA10L-2” is specified for the deviceName parameter, the device whose IP address is “192.168.1.2” can be used. If “TRSTA10L-3” is specified for the deviceName parameter, the device whose IP address is “192.168.1.3” can be used.



2) Error during printing

If the connection to the printer device goes down, the device service will initiate the recovery operation automatically. If the connection goes down for a long period of time while printing is being performed on the printer, it may take the device service at least 5 minutes to recover automatically after the connection is recovered. Power the printer off and on again in order to make the device service recover within 5 minutes. However, please remember that the attribute information (e.g. data or fonts) that was sent before the error will be reset after the power-off and on of the printer.

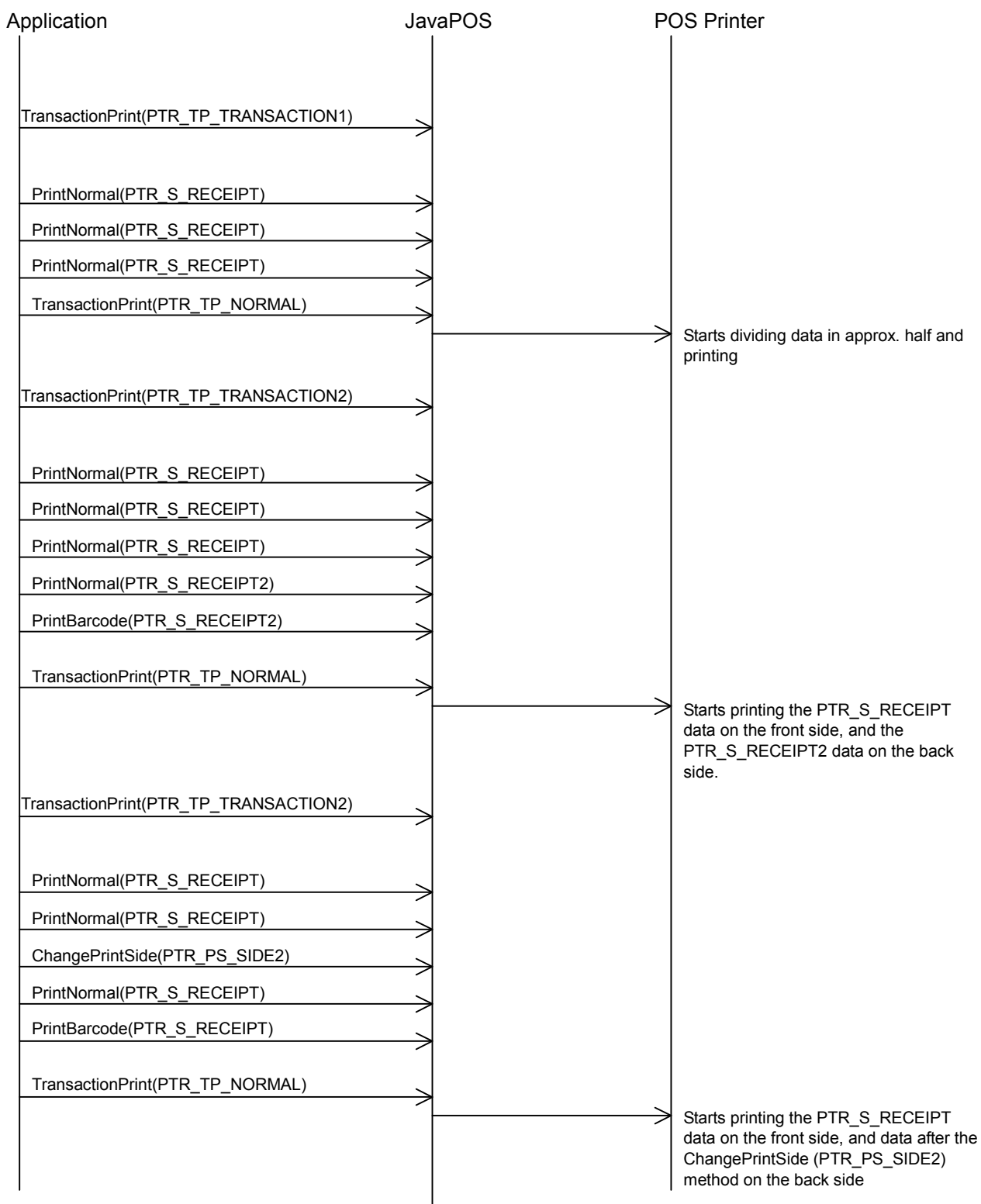
3) LAN model

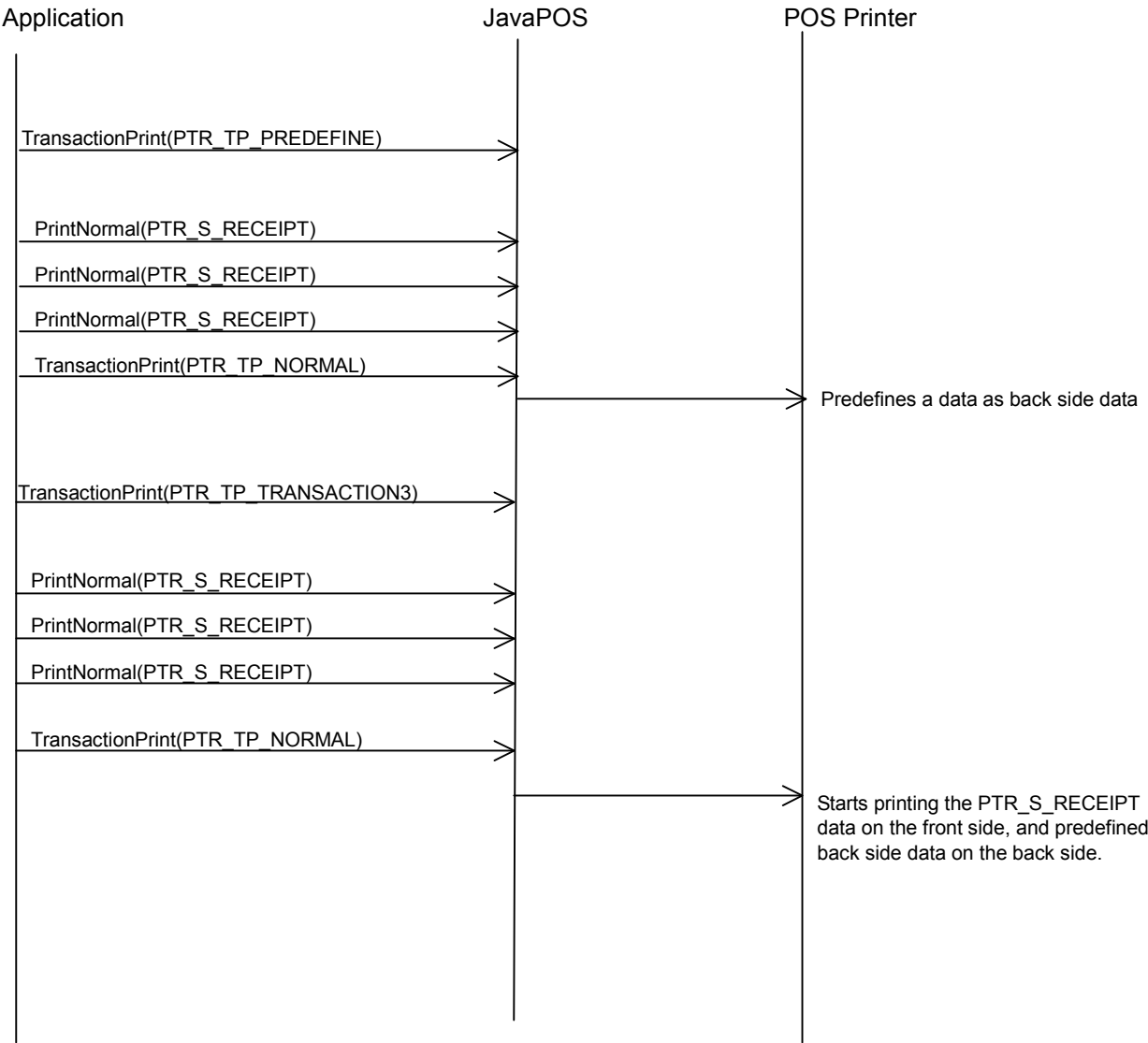
No existing LAN printer model supports dual side printing as of August 2009. In addition, the LAN printer model supports only the standard code page, but not DBCS (Double Byte Character Set).

1.1.13 Usage Example

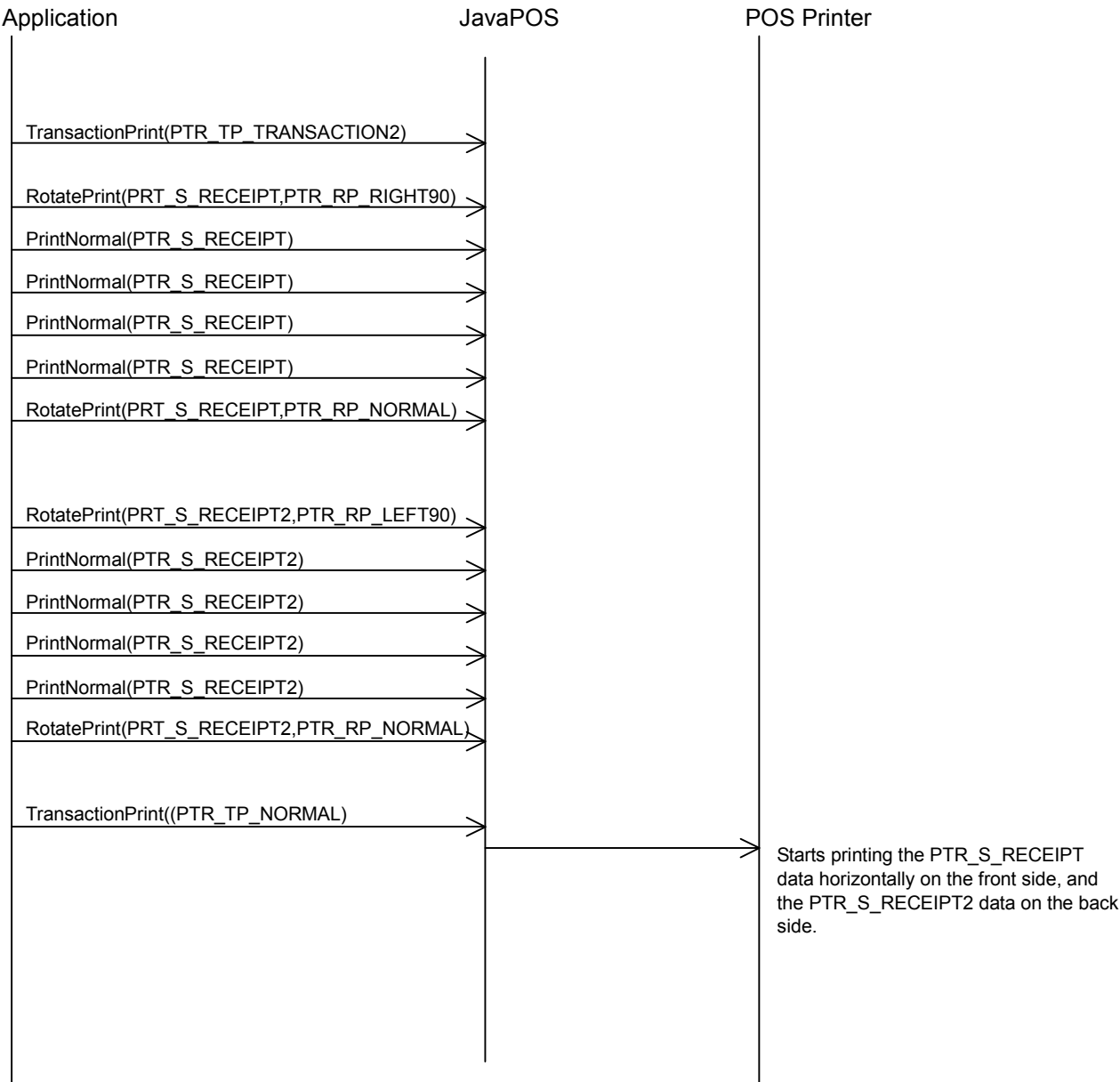
This section gives a sequence diagram for Dual Side Print of this Control. Please note this sequence diagram assumes Open method, Claim method, and DeviceEnabled property=true processes have been successfully completed.

1) Example of TransactionPrint for Dual Side Print

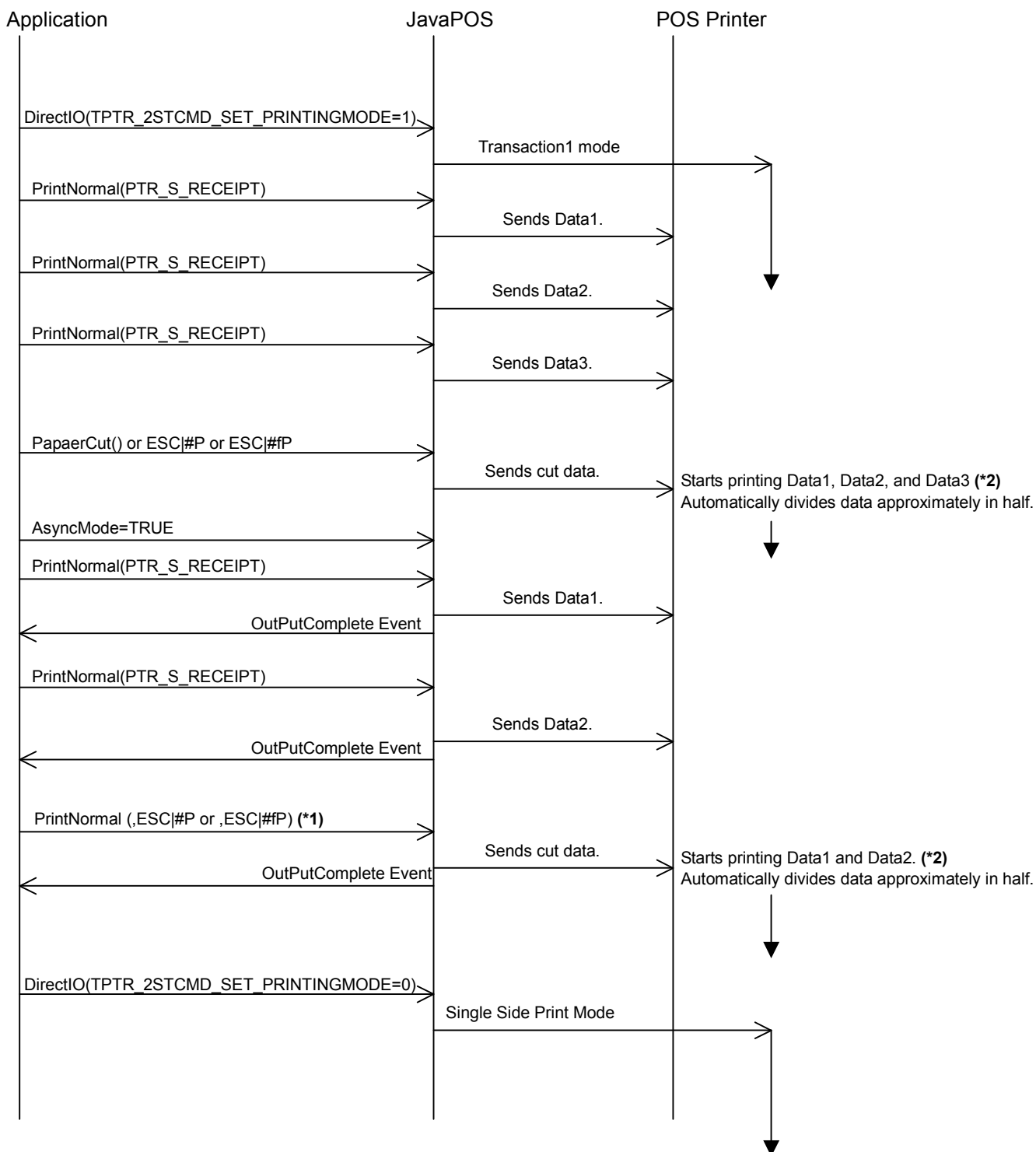




2) Example of TransactionPrint/RotatePrint for Dual Side Print



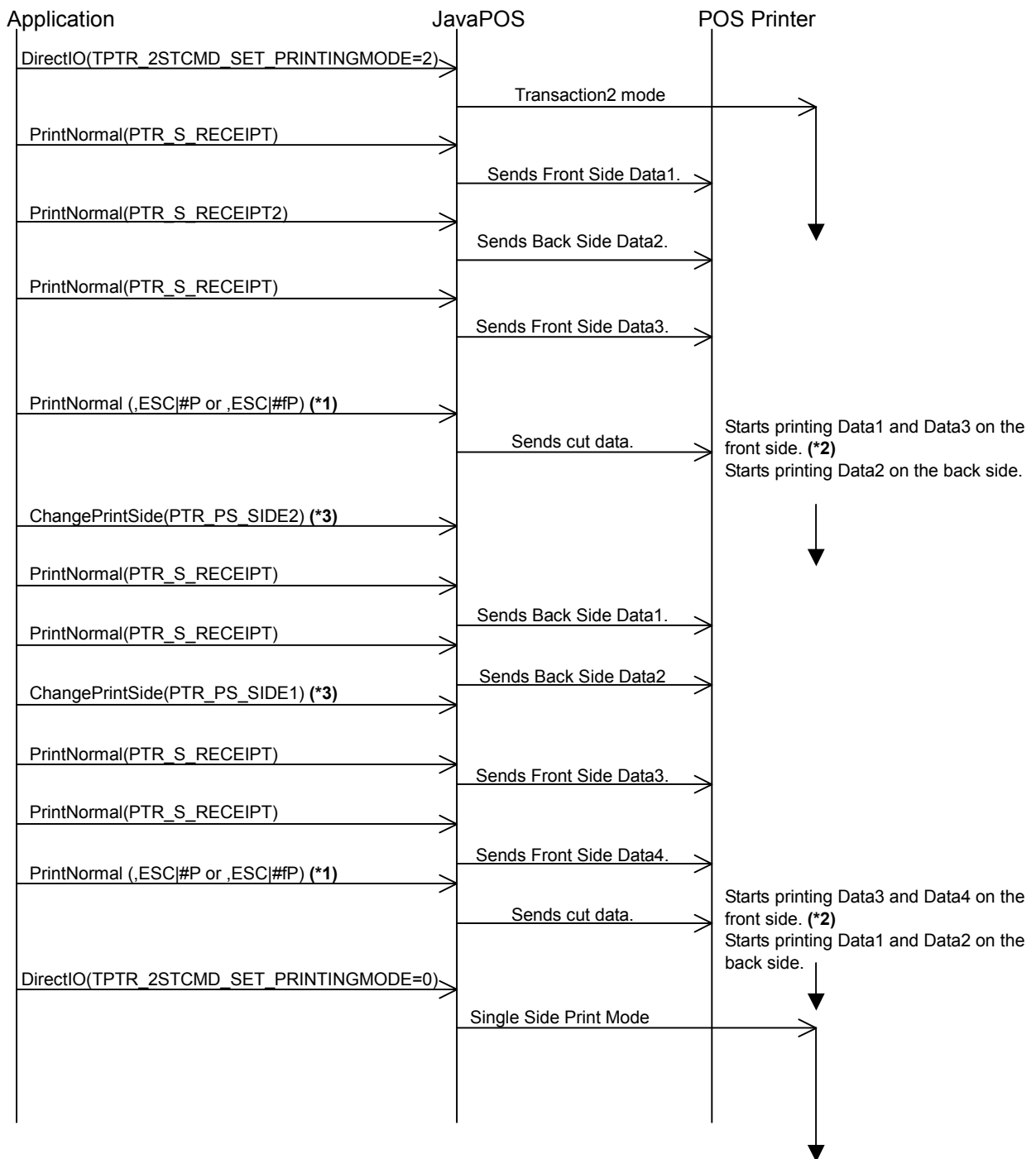
3) Example of Dual Side Print if JavaPOS registry 2STPrintingMode=1 or when TPTR_2STCMD_SET_PRINTINGMODE=1 is specified by DirectIO



(*1) An escape sequence which initiates paper cut or PaperCut method

(*2) An issue of a command which initiates paper cut or change in mode by the DirectIO method causes a Dual Side Print to start.

4) Example of Dual Side Print if JavaPOS registry 2STPrintingMode=2 or when TPTR_2STCMD_SET_PRINTINGMODE=2 is specified by DirectIO

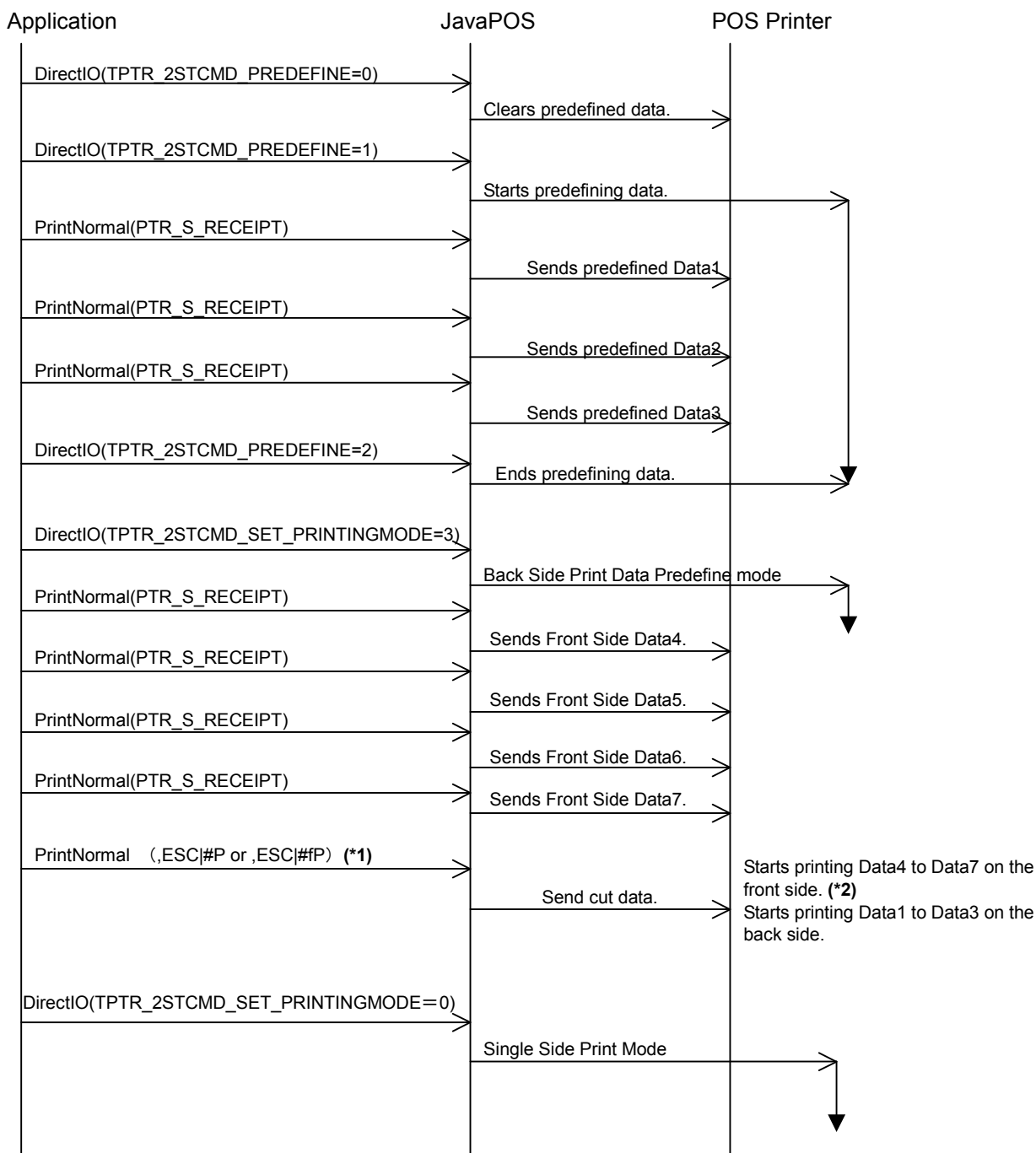


(*1) An escape sequence which initiates paper cut or PaperCut method

(*2) An issue of a command which initiates paper cut or change in mode by the DirectIO method causes a Dual Side Print to start.

(*3) Also the DirectIO TPTR_2STCMD_SET_PRINTINGSIDE function can be used.

5) Example of Dual Side Print if JavaPOS registry 2STPrintingMode=1 or when TPTR_2STCMD_SET_PRINTINGMODE=1 is specified by DirectIO



(*1) An escape sequence which initiates paper cut or PaperCut method

(*2) An issue of a command which initiates paper cut or change in mode by the DirectIO method causes a Dual Side Print to start.

1.1.14 Logs

This Device Service outputs logs using Commons Logging.
Depending on a situation, an "INFO", "WARN", or "ERROR" level log is output.

1.1.14.1 INFO level log

An INFO level log is output to check performance at a start and end of a method or a property setting and when an event is thrown.

1.1.14.2 WARN level log

A WARN level log is output when an error, which is so minor that there is no need to throw an exception, has occurred. For example, the Device operates using a default value in the module because an unexpected value has been specified to jpos.xml.

1.1.14.3 ERROR level log

An ERROR level log is output when a process in operation stops due to an error. Usually, this type of log is output when an exception is thrown.

2. CashDrawer

2.1 CashDrawer JavaPOS Device ["TECCashDrawer"]

A package name of this Device Service is as follows:

"jpos.toshibatec.cashdrawer"

In addition to the TECCashDrawer Service, this package also provides the TECCashDrawerEx Service.

2.1.1 Supported Operating Systems

This Device Service supports the following operating systems.

- Windows 2000
- Windows Embedded for Point of Service1.1(WEPOS1.1)
- Windows XP
- Windows Vista
- SUSE Linux Enterprise Desktop 10 SP1
- SUSE Linux Enterprise Desktop 11

2.1.2 Supported JavaVM

This Device Service runs on the following JavaVM.

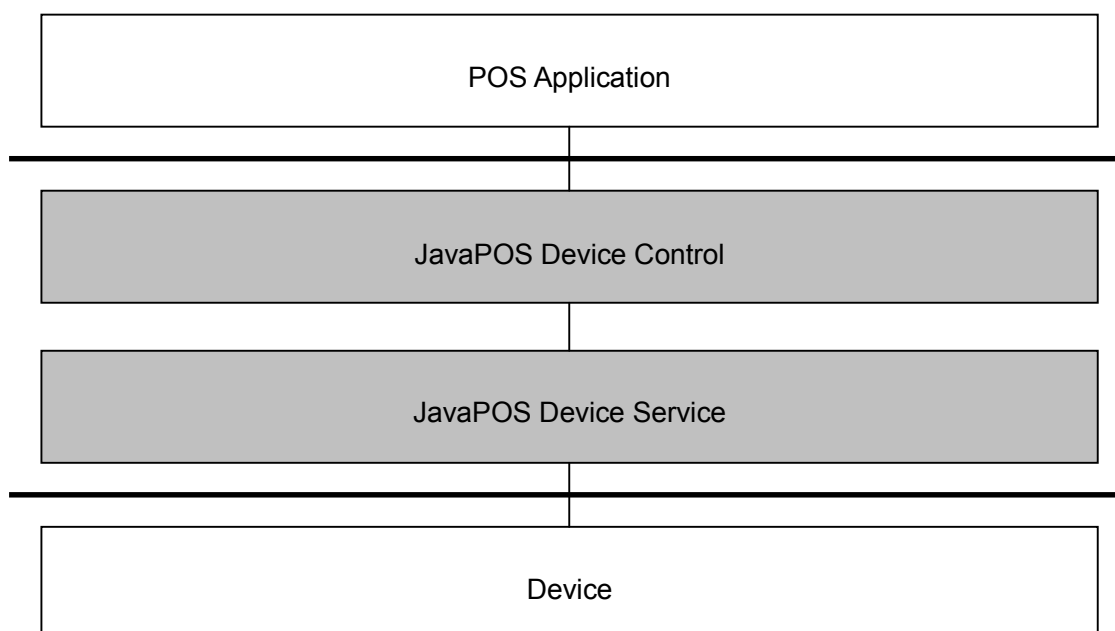
- Java2 Runtime Environment v1.4.2


2.1.3 Supported Device

This Device Service supports only the cash drawer(TRSTA1xDRW) produced by Epson of the TRST-A1x POS Printer connection.

2.1.4 Architecture Overview

The JavaPOS Device provides an Application Programming Interface (API) for the POS Application to communicate with the Device.

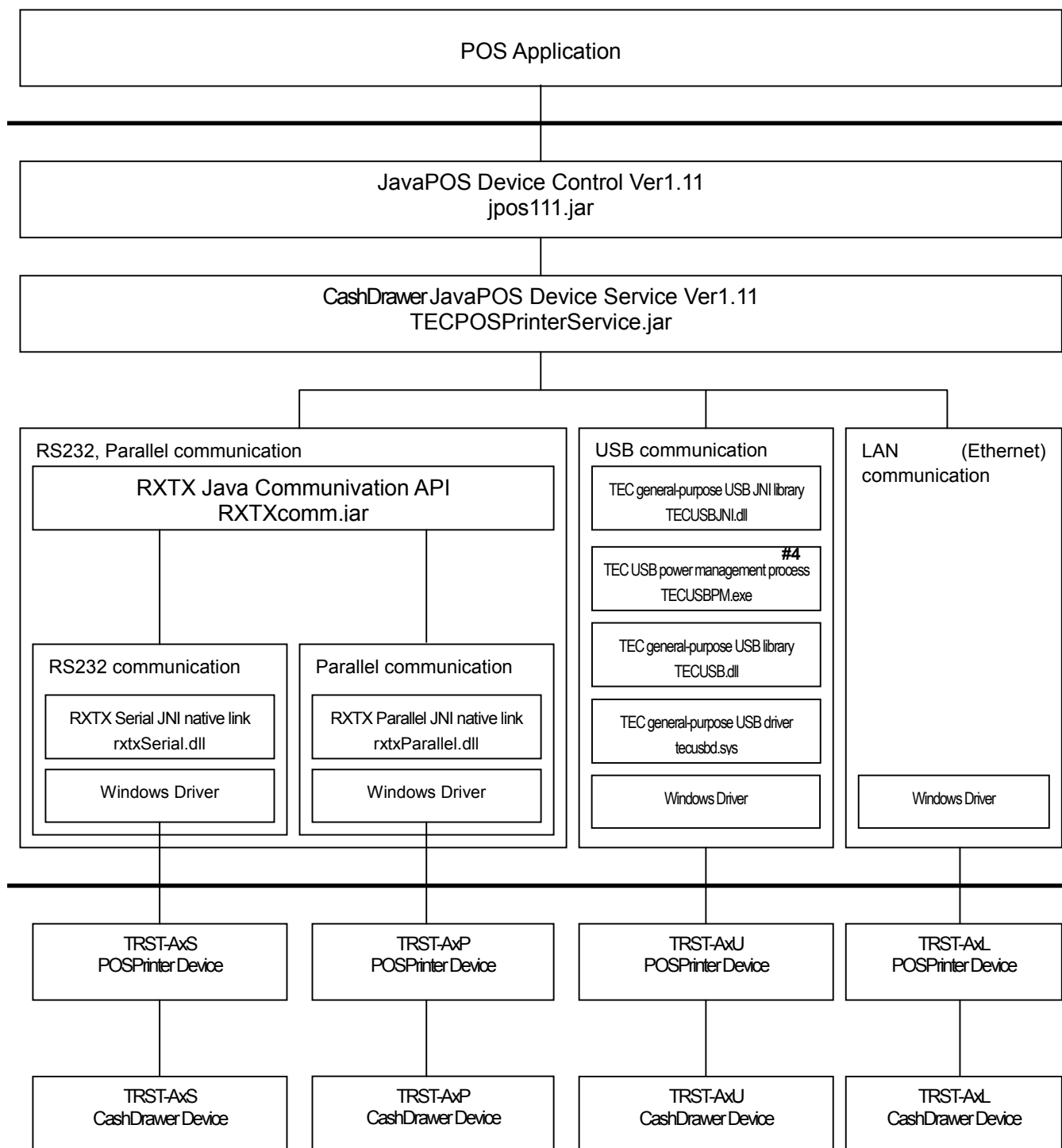


 : The gray area indicates the JavaPOS Device.

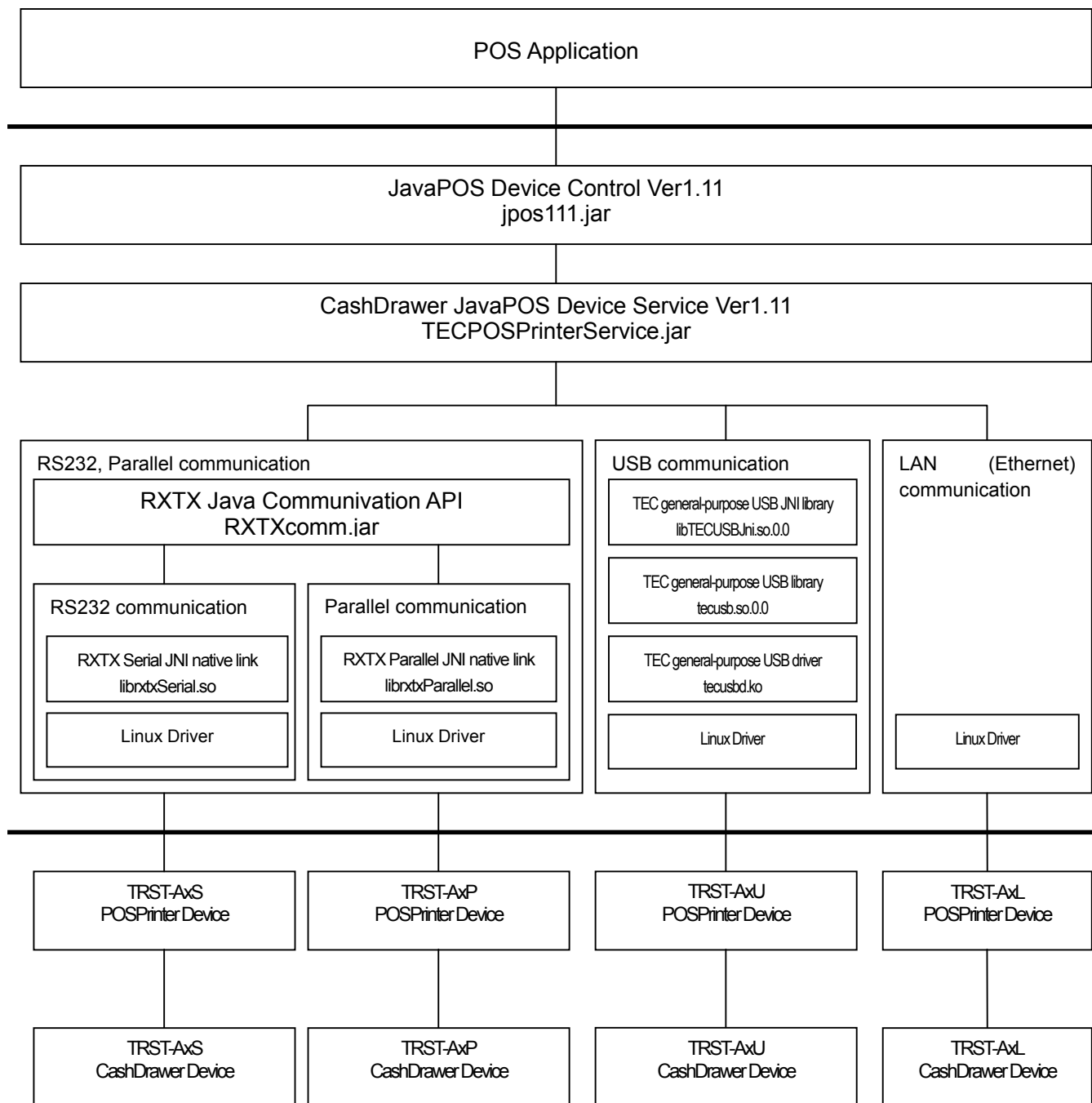
2.1.5 Architecture Structure

The CashDrawer JavaPOS Device uses some software to perform functions.
The software components shown below are required to build an execution environment.

- Windows 2000, WEPOS, XP, Vista Environment



- SuSE Linux Enterprise Desktop 10 SP1(SLE10SP1), SuSE Linux Enterprise Desktop 11(SLED11) Environment



2.1.6 Supported Functions

The TRSTA1XDRW functions, supported/not supported by this Device Service, are as follows:

Function	Supported or Not
Power status notification	Not supported
Accumulation of statistics	Not supported
Update of statistics	Not supported
Update of firmware	Not supported
Comparison of firmware version	Not supported
Open/close status report of cash drawer	Supported
Open/close status report of cash drawer in multiple cash drawer configuration	Not supported

Table 48 CashDrawer JavaPOS Device(TRSTA1xDRW) - Functions

2.1.7 Property Specifications

2.1.7.1 Initial Value of TRSTA1xDRW Properties (when opening the Service)

The initial value of each TRSTA1xDRW property is as follows:

Common Property	Value
CapCompareFirmwareVersion	false
CapPowerReporting	JPOS_PR_NONE
CapStatisticsReporting	false
CapUpdateFirmware	false
CapUpdateStatistics	false
CheckHealthText	""
Claimed	false
DeviceEnabled	false
FreezeEvents	false
PowerNotify	JPOS_PN_DISABLED
PowerState	JPOS_PS_UNKNOWN
State	JPOS_S_IDLE
DeviceControlDescription	"JavaPOS Cash Drawer Device Control"
DeviceControlVersion	"1011000"
DeviceServiceDescription	"TEC JavaPOS Cash Drawer Device Service"
DeviceServiceVersion	"1011XXX" (*1)
PhysicalDeviceDescription	"TEC TRSTA1x Cash Drawer "
PhysicalDeviceName	"TRSTA1x"
Exclusive Property	Value
CapStatus	true
CapStatusMultiDrawerDetect	false
DrawerOpened	false

(*1) Build version is indicated as "XXX" because this manual may not be revised as soon as the module is updated.

Table 49 CashDrawer JavaPOS Device(TRSTA1xDRW) – Property Initial Value List

2.1.7.2 Details of Properties

This section details the properties of the TRSTA1xDRW.

2.1.7.2.1 Common Properties

CapCompareFirmwareVersion Property

Type

boolean CapCompareFirmwareVersion;

Mutability

Read Only

Remarks

Always set to FALSE because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

Error Code & Error Code Extended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

CapPowerReporting Property**Type****boolean CapPowerReporting;****Mutability****Read Only****Remarks**

Always set to JPOS_PR_NONE because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

CapStatisticsReporting Property**Type****boolean CapStatisticsReporting;****Mutability****Read Only****Remarks**

Always set to FALSE because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

CapUpdateFirmware Property**Type****boolean CapUpdateFirmware;****Mutability****Read Only****Remarks**

Always set to FALSE because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

CapUpdateStatistics Property**Type****boolean CapUpdateStatistics;****Mutability****Read Only****Remarks**

Always set to FALSE because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

CheckHealthText Property**Type****String CheckHealthText;****Mutability****Read Only****Remarks**

Holds the result of the most recent call to the checkHealth method.

A CheckHealthText property value is initialized to empty string by the open method.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

Claimed Property**Type****boolean Claimed;****Mutability****Read Only****Remarks**

If TRUE, an exclusive access to the Device has been obtained.

If FALSE, the Device is released for sharing with other applications. A Claimed property value is initialized to FALSE by the **open** method.**Exception**

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

DeviceEnabled Property**Type****boolean DeviceEnabled;****Mutability****Read / Write****Remarks**

If TRUE, the Device is enabled.

If FALSE, the Device is disabled.

Before using the Device, the application must set this property to TRUE.

This property is initialized to FALSE by the **open** method.**Exception**

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_NOEXIST,0	Loading of the JNI library failed.	Check the JNI library.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

FreezeEvents Property**Type****boolean FreezeEvents;****Mutability****Read / Write****Remarks**

If TRUE, the Control does not deliver events.

The Control holds the events until the FreezeEvents state is cleared.

If FALSE, the Control delivers events. If there are some events which have been held in a **FreezeEvents** state, changing this property to FALSE will allow these events to be delivered.

If an interruption by an event is not desirable, the application can choose whether or not the event is to be frozen.

This property is initialized to FALSE by the **open** method.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

PowerNotify Property**Type****int PowerNotify;****Mutability****Read / Write****Remarks**

Always set to JPOS_PN_DISABLED because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_ILLEGAL,0	An invalid parameter value was specified.	Check the specified value and specify a valid one.
	The Device is enabled.	Try again after executing setDeviceEnabled(false).
	Unsupported function was specified.	This function is not supported.

PowerState Property**Type****int PowerState;****Mutability****Read Only****Remarks**

Always set to JPOS_PS_UNKNOWN because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

State Property**Type****int State;****Mutability****Read Only****Remarks**

Indicates a current state of the Control.

This property is always readable as long as the Service is loaded.

Value	Meaning
JPOS_S_CLOSED	The Control is closed.
JPOS_S_IDLE	The Control is in a normal state and is not busy.

Exception

If the module has been successfully loaded, no exceptions will be thrown when this property is accessed.

DeviceControlDescription Property**Type****String DeviceControlDescription;****Mutability****Read Only****Remarks**

This property describes a Device Control class.

This property is always readable as long as the Service is loaded.

"JavaPOS CashDrawer Device Control" is set to the Device.

Exception

If the module has been successfully loaded, no exceptions will be thrown when this property is accessed.

DeviceControlVersion Property**Type****int DeviceControlVersion;****Mutability****Read Only****Remarks**

This property indicates the version number of the Device Control class.

This property is always readable as long as the Service is loaded.

The version number of the Device is 1011000, which indicates the Device is in accordance with the JPOS 1.11.000.

Exception

If the module has been successfully loaded, no exceptions will be thrown when this property is accessed.

DeviceServiceDescription Property**Type****String DeviceServiceDescription;****Mutability****Read Only****Remarks**

This property describes the Device Service class.

It is "TEC JavaPOS CashDrawer Device Service" for the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

DeviceServiceVersion Property**Type****int DeviceServiceVersion;****Mutability****Read Only****Remarks**

This property indicates the version number of the Device Service class.

The version number of the Device is "1011XXX".

The value, "XXX" indicates a build version, which is incremented from 001.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

PhysicalDeviceDescription Property**Type****String PhysicalDeviceDescription;****Mutability****Read Only****Remarks**

This property describes a Physical Device.

It is set to "TEC TRSTA1x CashDrawer" for the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

PhysicalDeviceName Property**Type****String PhysicalDeviceName;****Mutability****Read Only****Remarks**

This property describes a name of the Physical Device.

It is set to "TRSTA1x" for the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

2.1.7.2.2 Specific Properties

CapStatusProperty

Type

boolean CapStatus;

Mutability

Read Only

Remarks

If TRUE, an open/close status of the cash drawer can be reported.
 If FALSE, an open/close status of the cash drawer cannot be reported.
 This property is initialized by the **open** method.
 For this Device, this property is set to TRUE.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

CapStatusMultiDrawerDetect Property

Type

boolean CapStatusMultiDrawerDetect;

Mutability

Read Only

Remarks

Always set to FALSE because this function is not supported by the Device.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

DrawerOpened Property

Type

boolean DrawerOpened;

Mutability

Read Only

Remarks

If TRUE, the cash drawer is open.
 If FALSE, the cash drawer is closed.

This property is initialized when the Device becomes enabled and kept updated while the Device is enabled.

Exception

In case of an error when this property is accessed, a Java exception is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.

2.1.8 Method Specifications

2.1.8.1 Supported/Unsupported Method List

Supported/unsupported methods by this Device (TRSTA1XDRW) are as follows:

Common Method	Supported or Not
open	Supported
close	Supported
claim	Supported
release	Supported
checkHealth	Only Interactive Check Health is supported
clearInput	Not supported
clearInputProperties	Not supported
clearOutput	Not supported
directIO	Not supported
compareFirmwareVersion	Not supported
resetStatistics	Not supported
retrieveStatistics	Not supported
updateFirmware	Not supported
updateStatistics	Not supported
Exclusive Method	Supported or Not
openDrawer	Supported
waitForDrawerClose	Supported

Table 50 CashDrawer JavaPOS Device(TRSTA1xDRW) – Method List

2.1.8.2 Details of Methods

This section details the methods of the TRSTA1xDRW.

2.1.8.2.1 Common Properties

open Method

Type

open (String *logicalDeviceName*) throws JPOSException;

Remarks

This method is called to open the Device.

The ***logicalDeviceName*** specifies a name of the Device to be opened.

An attribute value specified by the attribute name “logicalName” in the <JposEntry> element under the <JposEntries> element of the jpos.xml file must be specified to this value.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

Error Code & Error Code Extended	Meaning	Error Handling
JPOS_E_ILLEGAL,0	The Device is open.	The Device has been open.
JPOS_E_NOEXIST,0	The Device was not detected.	DeviceService was not found. Check the logicalDeviceName parameter value and jpos.xml setting.
JPOS_E_NOSERVICE,0	DeviceService is invalid.	DeviceService does not support the method which it should. Or, the version number is invalid. Check the correct module is used.

close Method**Type****close () throws JPOSException;****Remarks**

This method is called to release the Device and its resources.

If the **DeviceEnabled** property is TRUE, then the Device is disabled.

If the **Claimed** property is TRUE, then exclusive access to the Device is released.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	–

claim Method**Type****claim (int *Timeout*) throws JPOSException;****Remarks**

This method is called to obtain an exclusive access to the Device.

The *Timeout* parameter indicates the maximum wait time in milliseconds to obtain an exclusive access.

If “0”, then immediately either returns (if successful) or throws an appropriate exception.

If JPOS_FOREVER (-1), this method waits as long as needed until the exclusive access is obtained.

When the exclusive access is successfully obtained, the **Claimed** property is changed to TRUE.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_ILLEGAL,0	An invalid parameter value was specified.	Check the specified value and specify a valid one.
JPOS_E_TIMEOUT,0	A specified timeout period expired.	Execute the claim method again.

release Method**Type****release () throws JPOSException;****Remarks**

This method is called to release an exclusive access to the Device.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_ILLEGAL,0	An exclusive access to the Device has not been obtained.	

checkHealth Method

Type

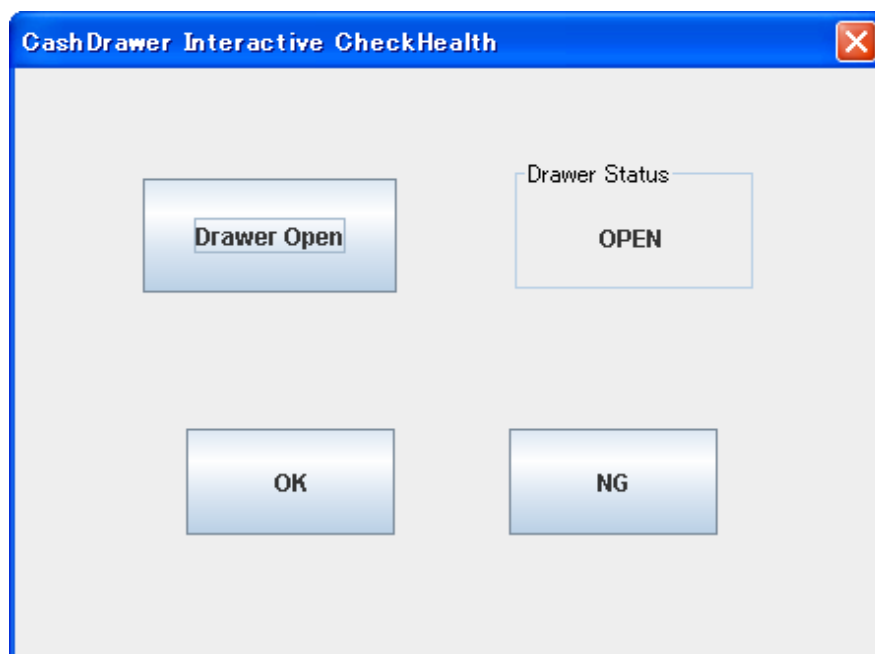
checkHealth (int Level) throws JPOSException;

Remarks

The *Level* parameter indicates the following types of health check to be performed on the Device.

Value	Meaning
JPOS_CH_INTERNAL	Performs a health check that does not physically use the Device. The Device is tested by internal tests to the extent possible. This parameter is not supported.
JPOS_CH_EXTERNAL	Performs a thorough test using the Device. This parameter is not supported.
JPOS_CH_INTERACTIVE	Performs an interactive test with the Device. The supporting Device Service will typically display a modal dialog box to present test options and results.

When the checkHealth method is performed at an interactive level, the following dialog box is displayed.



An open/close status of the cash drawer is shown in the Drawer Status area. Clicking the Drawer Open button can check the cash drawer opens.

Visually check the display and press the button, either "OK" or "NG" to complete the check.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_CLAIMED,0	The Device is claimed by other instance.	Try again after other instance releases the Device.
JPOS_E_ILLEGAL,0	An invalid level parameter value was specified	Try again after setting the level parameter to JPOS_CH_INTERACTIVE.
JPOS_E_FAILURE,0	An error occurred during CheckHealth.	Not a JavaPOS exception. Read a message and take necessary action. Try again after checking the Device status. If the error persists, investigate the error.

The checkHealthText property values vary as shown below.

Exception's ErrorCode	CheckHealthText Property
JPOS_E_CLOSED	No change
JPOS_E_DISABLED	"HCheck:Disabled"
JPOS_E_CLAIMED	"HCheck:Exclusive"
JPOS_E_ILLEGAL	"HCheck:Illegal"
JPOS_E_FAILURE	"HCheck:failure"

1) Internal Level (level=JPOS_CH_INTERNAL)

This Device Service does not support the checkHealth method of Internal level.

The following exception is thrown when the checkHealth method of Internal level is invoked.

Exception's ErrorCode	CheckHealthText Property	Meaning
JPOS_E_ILLEGAL	"Internal HCheck:Illegal"	Not supported

2) External Level (level=JPOS_CH_EXTERNAL)

This Device Service does not support the checkHealth method of External level.

The following exception is thrown when the checkHealth method of External level is invoked.

Exception's ErrorCode	CheckHealthText Property	Meaning
JPOS_E_ILLEGAL	"External HCheck:Illegal"	Not supported

3) Interactive Level (level=JPOS_CH_INTERACTIVE)

The checkHealthText property values vary as shown below.

Exception's ErrorCode	CheckHealthText Property	Meaning
– (No exceptions are thrown.)	"Interactive HCheck: Successful"	Completed with the "OK " button
– (No exceptions are thrown.)	"Interactive HCheck: Error"	Completed with the "NG " button

directIO Method**Type**

directIO (int *Command*, int *pData*, Object *pString*) throws JPOSException;

Remarks

An exception is always thrown when this method is called because the Device does not support this function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_ILLEGAL,0	Unsupported function was specified.	This function is not supported..

compareFirmwareVersion Method**Type**

compareFirmwareVersion(String *firmwareFileName*, int *result*) throws JPOSException;

Remarks

An exception is always thrown when this method is called because the Device does not support this function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_NOTCLAIMED,0	The Device is not claimed.	Try again after claiming the Device.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_ILLEGAL,0	Unsupported function was specified.	This function is not supported..

resetStatistics Method**Type**

resetStatistics(String *statisticsBuffer*) throws JPOSException;

Remarks

An exception is always thrown when this method is called because the Device does not support this function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_NOTCLAIMED,0	The Device is not claimed.	Try again after claiming the Device.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_ILLEGAL,0	Unsupported function was specified.	This function is not supported.

retrieveStatistics Method**Type****retrieveStatistics(String StatisticsBuffer) throws JPOSException;****Remarks**

An exception is always thrown when this method is called because the Device does not support this function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_NOTCLAIMED,0	The Device is not claimed.	Try again after claiming the Device.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_ILLEGAL,0	Unsupported function was specified.	This function is not supported.

updateFirmware Method**Type****updateFirmware(String firmwareFileName) throws JPOSException;****Remarks**

An exception is always thrown when this method is called because the Device does not support this function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_NOTCLAIMED,0	The Device is not claimed.	Try again after claiming the Device.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_ILLEGAL,0	Unsupported function was specified.	This function is not supported.

updateStatistics Method**Type**

updateStatistics(String statisticsBuffer) throws JPOSException;

Remarks

An exception is always thrown when this method is called because the Device does not support this function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_NOTCLAIMED,0	The Device is not claimed.	Try again after claiming the Device.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_ILLEGAL,0	Unsupported function was specified.	This function is not supported.

2.1.8.2.2 Exclusive Methods

openDrawer Method

Type

openDrawer () throws JPOSException;

Remarks

Opens the drawer.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

ErrorCode & ErrorCodeExtended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_CLAIMED,0	The Device is claimed by other instance.	Try again after other instance releases the Device.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_COVER_OPEN	The printer cover is open.	Check that the printer cover is not open. If the printer cover is open, close it, then execute this property again. If the error occurs even when the printer cover is closed, investigate the error.
JPOS_E_EXTENDED, JPOS_EPTR_REC_EMPTY	The printer is out of paper.	Check that paper is in the printer. If not, load paper and execute this property again. If the error occurs even when the paper is in the printer, investigate the error.

waitForDrawerClose Method**Type**

waitForDrawerClose (int beepTimeout, int beepFrequency, int beepDuration, int beepDelay) throws JPOSException;

Remarks

Waits until the cash drawer is closed. If the cash drawer is still open after a beepTimeout period in milliseconds expires, the beep sounds as an alert (if the alert beep function is supported). This Device, having no such function, does not beep.

Unless a JposException is thrown, this method does not return the control to the application while the drawer is open. Also if the CapStatusMultiDrawerDetect property is FALSE in a multiple cash drawer configuration, this method does not return the control to the application while one or more cash drawers are open. When all cash drawers are closed, the system alert beep stops.

If the CapStatus property is FALSE, this method returns the control to the application immediately because the Device does not support the status reporting function.

Exception

In case of an error when this method is invoked, a JPOSException is thrown.

Error Code & Error Code Extended	Meaning	Error Handling
JPOS_E_CLOSED,0	The Device has been closed.	Try again after executing the open method.
JPOS_E_DISABLED,0	The Device has been disabled.	Try again after setting the DeviceEnabled property to TRUE.
JPOS_E_CLAIMED,0	The Device is claimed by other instance.	Try again after other instance releases the Device.
JPOS_E_ILLEGAL,0	An invalid parameter value was specified.	Check the specified value and specify a valid one.
JPOS_E_NOHARDWARE, 0	The printer is not powered on or is not connected to the system. (*1)	Check that the printer power is on and the printer is connected to the system. If either or both of them are not, correct the situation, then execute this property again. If the error occurs even when the printer power is on and the printer is connected, investigate the error.

2.1.9 Event Specifications

This Device Service throws the following events.

Supported/unsupported events by this Device (TRSTA1xDRW) are as follows:

2.1.9.1 Event List

Event	Remarks
DataEvent	Not Supported
DirectIOEvent	Not Supported
ErrorEvent	Not Supported
OutputCompleteEvent	Not Supported
StatusUpdateEvent	

Table 51 CashDrawer JavaPOS Device(TRSTA1xDRW) – Event List

2.1.9.2 Details of Events

DirectIOEvent Event

Type

directIOOccurred (DirectIOEvent e);

Remarks

The Device does not support this function.

StatusUpdateEvent Event

Type

StatusUpdateOccurred (StatusUpdateEvent e);

Remarks

Notifies the application when the status of the cash drawer changes.

This event uses the following property.

Property	Type	Remarks
Status	int	The status of the cash drawer

The Status property has one of the following values:

Value	Meaning
CASH_SUE_DRAWERCLOSED(=0)	The cash drawer is closed.
CASH_SUE_DRAWEROPEN(=1)	The cash drawer is open.

2.1.10 Exceptions

This Device Service throws the following exceptions.

Exception	Remarks
JposException	Exceptions are thrown when method execution or a property setting failed, or a process error occurred.

Table 52 CashDrawer JavaPOS Device(TRSTA1xDRW) – Exception List

2.1.10.1 JposException Specifications

Syntax: JposException(int errorCode);
JposException(int errorCode, int errorCodeExtended);
JposException(int errorCode, String description);
JposException(int errorCode, int errorCodeExtended, String description);
JposException(int errorCode, String description, Exception origException);
JposException(int errorCode, int errorCodeExtended, String description,
Exception origException);

2.1.11 Setup Information

Setting information of this Device Service is set in the XML file called "jpos.xml".

The <prop> tag in the XML file is a setting item specific to this Device. For details of other tags, <creation>, <vendor>, <jpos>, and <product> tags, refer to the UPOS Specification.

<JposEntries>

```
<JposEntry logicalName="SerialCashDrawer">
  <creation factoryClass="jpos.toshibatec.posprinterloader.JavaPOSServiceFactory"
    serviceClass="jpos.toshibatec.posprinter.services.CashDrawerService"/>
  <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
  <jpos category="CashDrawer" version="1.11"/>
  <product description="TEC TRST-A1x Cash Drawer"
    name="TECCashDrawer" url="http://www.toshibatec.co.jp"/>

  <prop name="modelName" type="String" value="TRSTA1x"/>
  <prop name="deviceBus" type="String" value="RS232C"/>

  <prop name="portName" type="String" value="{port name}"/>
  <prop name="BaudRate" type="int" value="{baud rate}"/>
</JposEntry>
```

```
<JposEntry logicalName="ParallelCashDrawer">
  <creation factoryClass="jpos.toshibatec.posprinterloader.JavaPOSServiceFactory"
    serviceClass="jpos.toshibatec.posprinter.services.CashDrawerService"/>
  <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
  <jpos category="CashDrawer" version="1.11"/>
  <product description="TEC TRST-A1x Cash Drawer"
    name="TECCashDrawer" url="http://www.toshibatec.co.jp"/>

  <prop name="modelName" type="String" value="TRSTA1x"/>
  <prop name="deviceBus" type="String" value="Parallel"/>

  <prop name="portName" type="String" value="{port name}"/>
</JposEntry>
```

#1

```
<JposEntry logicalName="USBCashDrawer">
  <creation factoryClass="jpos.toshibatec.cashdrawer.loader.JavaPOSServiceFactory"
    serviceClass="jpos.toshibatec.posprinter.services.CashDrawerService"/>
  <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
  <jpos category="CashDrawer" version="1.11"/>
  <product description="TEC TRST-A1x Cash Drawer"
    name="TECCashDrawer" url="http://www.toshibatec.co.jp"/>

  <prop name="modelName" type="String" value="TRSTA1x"/>
  <prop name="deviceBus" type="String" value="USB"/>

  <prop name="venderID" type="int" value="{vendor ID}"/>
  <prop name="productID" type="int" value="{product ID}"/>
</JposEntry>
```

</JposEntries>


```
<JposEntry logicalName="LANCashDrawer">
  <creation factoryClass="jpos.toshibatec.cashdrawer.loader.JavaPOSServiceFactory"
    serviceClass="jpos.toshibatec.posprinter.services.CashDrawerService"/>
  <vendor name="TOSHIBA TEC Corporation" url="http://www.toshibatec.co.jp"/>
  <jpos category="CashDrawer" version="1.11"/>
  <product description="TEC TRST-A1x Cash Drawer"
    name="TECCashDrawer" url="http://www.toshibatec.co.jp"/>

  <prop name="modelName" type="String" value="TRSTA1x"/>
  <prop name="deviceBus" type="String" value="LAN"/>

  <prop name="printerLogicalName" type="String" value="{LogicalName of POS printer JavaPOS}"/>
  <prop name="IPAddress" type="String" value="{IP address}"/>
  <prop name="TCPPortNo" type="String" value="{TCP port number}"/>
  <prop name="UDPPortNo" type="String" value="{UDP port number}"/>
  <prop name="connectionTimeout" type="String" value="{Connection timeout period}"/>
  <prop name="sendTimeout" type="String" value="{Send timeout period}"/>
  <prop name="recvTimeout" type="String" value="{Receive timeout period}"/>
  <prop name="sendBufferSize" type="String" value="{Send buffer size}"/>
</JposEntry>
</JposEntries>
```


Item Name (JposEntry)	Remarks
logicalName	Specifies the logical name that the application uses. The application specifies this value for the parameter of the open method.

Item Name (product)	Remarks
name	Specifies the physical name. Please specify TECCashDrawer.

Item Name (prop)	Remarks
modelName	Specifies a device model name (number). Please specify "TRSTA1x."
deviceBus	Specifies a method to connect with the device. Please specify from either of the following options depending on the printer device: Printer device = TRST-A1x-S: "RS232C" Printer device = TRST-A1x-P: "Parallel" Printer device = TRST-A1x-U: "USB" Printer device = TRST-A1x-L: "LAN" Please specify a method to connect to the printer rather than a method to connect to the drawer. ("Printer" in this context refers to the one that the drawer is connected to.)
portName	(Usage in case of deviceBus = "RS232" or "Parallel") Specifies a communication port name. Please specify either of the following port names depending on the combination of the printer device and OS: Printer device = TRST-A1x-S Windows : "COM1" - "COM10" Linux : "/dev/ttyS0" - "/dev/ttyS9" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "COM1" is specified. Printer device = TRST-A1x-P Windows : "LPT1" - "LPT2" Linux : "/dev/lp0" - "/dev/lp1" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "LPT1" is specified. Please specify the name of the port to which the printer is connected rather than the port to which the drawer is connected. ("Printer" in this context refers to the one that the drawer is connected to.) If another device is also connected to the port specified, operation cannot be guaranteed.
BaudRate	(Usage in case of deviceBus = "RS232") Specifies a baud rate. "9600", "19200", "38400", "57600", or "115200" for the TRST-A10-S If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "9600" is specified. Please specify the baud rate of the printer rather than that of the drawer. ("Printer" in this context refers to the one that the drawer is connected to.) The baud rate must be the same as the one specified in the device configuration. If not, operation cannot be guaranteed.

Item Name (prop)	Remarks
venderID	<p>(Usage in case of deviceBus = "USB") Specifies a vendor ID of the USB device. Please specify "2214." If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "2214" is specified. Please specify the vendor ID of the printer rather than that of the drawer. ("Printer" in this context refers to the one that the drawer is connected to.)</p>
productID	<p>(Usage in case of deviceBus = "USB") Specifies a product ID of the USB device. Please specify either of the following product IDs depending on the printer device: TRST-A1x-U-QM-R : "61" TRST-A1x-U-CN-R : "70" If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "61" is specified. Please specify the product ID of the printer rather than that of the drawer. ("Printer" in this context refers to the one that the drawer is connected to.)</p>
printerLogicalName	<p>(Usage in case of deviceBus = "LAN") Specifies the logical device name of POS printer JavaPOS, which controls the printer that the drawer is connected to. If any value is specified for printerLogicalName, IPAddress, TCPPortNo, UDPPortNo, connectionTimeout, sendTimeout, recvTimeout, and sendBufferSize will be received from the POS printer JavaPOS setup information based on the specified value. If no value is specified for printerLogicalName, or if the specified logical device name cannot be found, the setup information of this device service will take effect.</p>
IPAddress	<p>(Usage in case of deviceBus = "LAN") Specifies an IP address of the device. Please specify the IP address of the printer rather than that of the drawer. ("Printer" in this context refers to the one that the drawer is connected to.) An IP address of the device (IPv4 or Internet Protocol Version 4) is represented in dot-decimal notation (four numbers, each ranging from 0 to 255, separated by dots, e.g. 1.2.3.4). The IP address is not omissible. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "192.168.1.1" is specified. If another device is connected to the specified IP address, operation cannot be guaranteed.</p>
TCPPortNo	<p>(Usage in case of deviceBus = "LAN") Specifies a port number used in TCP communication. Please specify the IP address of the printer rather than that of the drawer. ("Printer" in this context refers to the one that the drawer is connected to.) If the printer device is TRST-A10-L, an acceptable value range is between 1024 and 65535. If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "9100" is specified. The value specified here must be same as the one specified in the printer device configuration. If not, operation cannot be guaranteed.</p>

Item Name (prop)	Remarks
UDPPortNo	<p>(Usage in case of deviceBus = "LAN")</p> <p>Specifies a port number used in UDP communication. Please specify the port number of the printer rather than that of the drawer. ("Printer" in this context refers to the one that the drawer is connected to.)</p> <p>If the printer device is TRST-A10-L, an acceptable value range is between 1024 and 65535.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "3000" is specified.</p> <p>The value specified here must be same as the one specified in the printer device configuration. If not, operation cannot be guaranteed.</p>
connectionTimeout	<p>(Usage in case of deviceBus = "LAN")</p> <p>Specifies a timeout period in the unit of msec when connecting to the device.</p> <p>If the printer device is TRST-A10-L, an acceptable value range is between 1 and 20000.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "10000" is specified.</p> <p>Please specify an appropriate timeout period. Otherwise, the operation of the commands will be affected.</p>
sendTimeout	<p>(Usage in case of deviceBus = "LAN")</p> <p>Specifies waiting time in the unit of msec until the data transmission to the device is completed.</p> <p>If the printer device is TRST-A10-L, an acceptable value range is between 1 and 9223372036854775807.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "3000" is specified.</p> <p>Please specify an appropriate timeout period. Otherwise, the operation of the commands will be affected.</p>
recvTimeout	<p>(Usage in case of deviceBus = "LAN")</p> <p>Specifies waiting time in the unit of msec until the data reception from the device is completed.</p> <p>If the printer device is TRST-A10-L, an acceptable value range is between 1 and 9223372036854775807.</p> <p>If no value is specified or if any value other than the above is specified, the device will behave in the same manner as when "3000" is specified.</p> <p>Please specify an appropriate timeout period. Otherwise, the operation of the commands will be affected.</p>

Table 53 CashDrawer JavaPOS Device – Setup Information List

2.1.12 Restrictions and Cautions

This section describes the restrictions and cautions for using this Device Service as well as the differences from the UPOS Specifications.

1) Operation when the printer device is powered off

When the power supply of TRST-A1x POS Printer is off, it is impossible to use CashDrawer Service.

2) Operation while printing is being performed on the printer device

While printing is being performed on TRST-A1x POS Printer in synchronization mode, it is impossible to open CashDrawer.

3) Error during printing

If the connection to the printer device (which the drawer is connected to) goes down, the device service will initiate the recovery operation automatically. If the connection goes down for a long period of time while printing is being performed on the printer, it may take the device service at least 5 minutes to recover automatically after the connection is recovered. Power the printer off and on again in order to make the device service recover within 5 minutes.

2.1.13 Logs

This Device Service outputs logs using Commons Logging.
Depending on a situation, an "INFO", "WARN", or "ERROR" level log is output.

2.1.13.1 INFO level log

An INFO level log is output to check performance at a start and end of a method or a property setting and when an event is thrown.

2.1.13.2 WARN level log

A WARN level log is output when an error, which is so minor that there is no need to throw an exception, has occurred. For example, the Device operates using a default value in the module because an unexpected value has been specified to jpos.xml.

2.1.13.3 ERROR level log

An ERROR level log is output when a process in operation stops due to an error. Usually, this type of log is output when an exception is thrown.