TRST-A10/TRST-A15 POS Printer OPOS Control

Application User's Manual

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TOSHIBA TEC CORPORATION

This document describes the precautions for using the TEC OPOS Control and the application programming method.

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

- General characteristics of POS peripheral devices
- General characteristics of TEC POS terminals and TEC POS peripheral devices
- Terminology and architecture of OLE Control and OLE Automation
- OLE for Retail POS ("OPOS") Application Programmer's Guide ("APG")
- "UnifiedPOS Specification Version 1.8"

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TRST-A10/TRST-A15 POS Control - Application User's Manual

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1. TRST-A10/TRST-A15 POS Printer

1.1 TRSTA1x POS Printer Control

1.1.1 Applicable Models and Operating Systems

Model	Interface	Device Name (*1)
TRST-A10 Serial POS Printer (Single) TRST-A15 Serial POS Printer (Dual)	Serial	"TRSTA1S"
TRST-A10 USB POS Printer (Single) TRST-A15 USB POS Printer (Dual)	USB	"TRSTA1U"
TRST-A10 Parallel POS Printer (Single) TRST-A15 Parallel POS Printer (Dual)	Parallel	"TRSTA1P"
Operating System		
Windows XP Professional Windows 2000		

(*1) Device names are used by the Open method.

1.1.2 Software Structure

The software structure of this Control is as shown below.

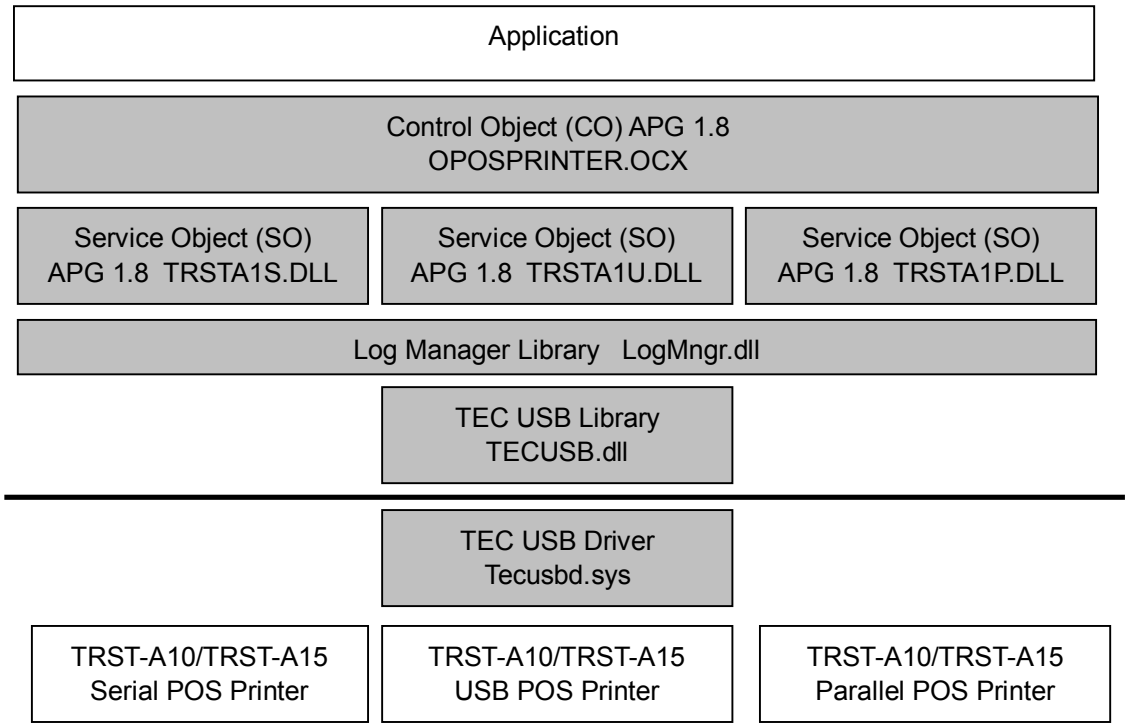


Table 1 TRSTA1x POS Printer Control – Software Structure

1.1.3 Functions

Printers supported	Printers not supported
Receipt printer	Journal printer Slip printer
Functions supported	**Functions not supported**
Synchronous/Asynchronous print Batch transaction Font type selection Bold print/Reversed character print Underline print Double width & height character print Center aligned/Right aligned Logo print Multiple line feed/Unit feed Partial paper cut Left90/Right90/180 rotation print Forward feed/180 rotation bar code print Forward feed/180 rotation bitmap print Cover open notification **(*3)** No paper notification Paper near end notification **(*3)** Two color print (red/black or blue/black) **(*1)** Red character print **(*1)** Dual side print (extended function) **(*2)** Two kinds of power status notification **(*4)**	Collection and submission of statistics Statistics reset Statistics change Simultaneous print to two kinds of printers Character set mapping Control of paper with mark Full paper cut Custom color print Color (full color) print Stamp print Shaded character print Reverse feed Cartridge status notification Cover open notification by stations Italic print Subscript/Superscript print Right90/Left90 rotation bar code print Right90/Left90 rotation bitmap print Embedded data transmission
Extended functions (DirectIO)	
Direct output to printer device Drawer control Dual side print Bitmap registration to flash ROM	
Extended functions (DirectIOEvent)	
Drawer status notification	

(*1) Red or blue is selected depending on the paper used. Color Paper should be selected in the printer configuration setting of the OPOS printer.
(*2) Supported by extending the functions which are not defined by OPOS.
(*3) Available only when "PAPER LOW SENSOR" is set to "Enable" in the printer configuration setting of the OPOS printer.
(*4) Available only for the USB POS Printer (TRSTA1U).

Table 2 TRSTA1x POS Printer Control – Functions

TRSTA1S properties (Items only defined by the device are listed.)

Common property	**Value**
ControlObjectDescription	"TEC OPOS POS Printer Control Object"
ControlObjectVersion	1008XXX **(*2)**
ServiceObjectDescription	"TEC TRST-A1x Serial POS Printer Service Object."
ServiceObjectVersion	1008XXX **(*2)**
DeviceDescription	"TRST-A1x-S Serial POS Printer"
DeviceName	"TEC TRST-A1x-S"
CapPowerReporting	OPOS_PR_NONE
CapStatisticsReporting	FALSE
CapUpdateStatistics	FALSE
Exclusive property	**Value**
CapCharacterSet	PTR_CCS_ASCII
CapConcurrentJrnRec	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentRecSlp	FALSE
CapCoverSenser	TRUE
CapMapCharacterSet	FALSE
CapTransaction	TRUE
CapJrnPresent	FALSE
CapJrn2Color	FALSE
CapJrnBold	FALSE
CapJrnDhigh	FALSE
CapJrnDwide	FALSE
CapJrnDwideDhigh	FALSE
CapJrnEmptySenser	FALSE
CapJrnItalic	FALSE
CapJrnNerEndSensor	FALSE
CapJrnUnderline	FALSE
CapJrnCartridgeSensor	0
CapJrnColor	0
CapRecPresent	TRUE
CapRec2Color	TRUE
CapRecBarCode	TRUE
CapRecBitmap	TRUE
CapRecBold	TRUE
CapRecDhigh	TRUE
CapRecDwide	TRUE
CapRecDwideDhigh	TRUE
CapRecEmptySenser	TRUE
CapRecItalic	FALSE
CapRecLeft90	TRUE
CapRecNearEndSensor	TRUE **(*6)**
CapRecPapercut	TRUE
CapRecRight90	TRUE
CapRecRotate180	TRUE
CapRecStamp	FALSE
CapRecUnderline	TRUE
CapRecCartridgeSensor	0
CapRecColor	OPOS_PR_NONE
CapRecMarkFeed	FALSE
CapSlpPresent	FALSE
CapSlpFullslip	FALSE

CapSlp2Color	FALSE	
CapSlpBarCode	FALSE	
CapSlpBitmap	FALSE	
CapSlpBold	FALSE	
CapSlpDhigh	FALSE	
CapSlpDwide	FALSE	
CapSlpDwideDhigh	FALSE	
CapSlpEmptySenser	FALSE	
CapSlpItalic	FALSE	
CapSlpLeft90	FALSE	
CapSlpNerEndSenser	FALSE	
CapSlpRight90	FALSE	
CapSlpRotate180	FALSE	
CapSlpUnderline	FALSE	
CapSlpBothSidesPrint	FALSE	
CapSlpCartridgeSensor	0	
CapSlpColor	0	
CharacterSet	"437"	
CharacterSetList	"437,850,852,857,858,860,863,865,866,1252"	
FontTypefaceList	"FontA ,FontB"	
JrnLineChars	0	
JrnLineCharsList	0	
JrnLineHeight	0	
JrnLineSpacing	0	
JrnLineWidth	0	
RecLineChars (*1)	48	36
RecLineCharsList (*1)	"48,64"	"36,48"
RecLineHeight	24	
RecLineSpacing	27 **(*5)**	
RecLineWidth (*1)	576	432
RecSidewaysMaxLines (*1)	21 **(*3)**	16 **(*3)**
RecSidewaysMaxChars (*7)	166	222
RecLinesToPaperCut	6 **(*4)**	
RecBarCodeRotationList	"0,180"	
RecBitmapRotationList	"0,180"	
SlpLineChars	0	
SlpLineCharsList	""	
SlpLineHeght	0	
SlpLineSpacing	0	
SlpLineWidth	0	
SlpSidewaysMaxChars	0	
SlpSidewayMaxLines	0	
SlpMaxLines	0	
SlpLinesNearEndToEnd	0	
SlpBarCodeRotationList	""	
SlpBitmapRotationList	""	

(*1) Changes depending on the printer's paper width. The given values are used when the printer's paper width is 80 mm and 58 mm.

(*2) Build version is indicated as "XXX" because this document may not be revised every time the module is updated.

(*3) Changes depending on the value of RecLineSpacing. The given values are used when the value of RecLineSpacing is 27. When it is 24, the printer can print up to 24 lines/18 lines.

(*4) Changes depending on the value of RecLineSpacing. The given values are used when the value of RecLineSpacing is 27.

(*5) The minimum value of RecLineSpacing is 24 which is equal to the value of RecLineHeight. Even when the value of RecLineSpacing is set to less than 24, it changes to 24.

(*6) CapRecNearEndSensor is always set to TRUE and available only when "PAPER LOW SENSOR" of the printer configuration setting of the OPOS printer is set to "Enable".

(*7) The value of RecSidewaysMaxChars changes depending of the font used. It is 166 for Font A and 222 for Font B.

Table 3 TRSTA1S POS Printer Control – Property Values (in part)

TRSTA1U properties (Items only defined by the device are listed.)

Common property	**Value**
ControlObjectDescription	"TEC OPOS POS Printer Control Object"
ControlObjectVersion	1008XXX **(*2)**
ServiceObjectDescription	"TEC TRST-A1x USB POS Printer Service Object."
ServiceObjectVersion	1008XXX **(*2)**
DeviceDescription	"TRST-A1x-S USB POS Printer"
DeviceName	"TEC TRST-A1x-S"
CapPowerReporting	**OPOS_PR_STANDARD (*8)**
CapStatisticsReporting	FALSE
CapUpdateStatistics	FALSE
Exclusive property	**Value**
CapCharacterSet	PTR_CCS_ASCII
CapConcurrentJrnRec	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentRecSlp	FALSE
CapCoverSenser	TRUE
CapMapCharacterSet	FALSE
CapTransaction	TRUE
CapJrnPresent	FALSE
CapJrn2Color	FALSE
CapJrnBold	FALSE
CapJrnDhigh	FALSE
CapJrnDwide	FALSE
CapJrnDwideDhigh	FALSE
CapJrnEmptySenser	FALSE
CapJrnItalic	FALSE
CapJrnNerEndSensor	FALSE
CapJrnUnderline	FALSE
CapJrnCartridgeSensor	0
CapJrnColor	0
CapRecPresent	TRUE
CapRec2Color	TRUE
CapRecBarCode	TRUE
CapRecBitmap	TRUE
CapRecBold	TRUE
CapRecDhigh	TRUE
CapRecDwide	TRUE
CapRecDwideDhigh	TRUE
CapRecEmptySenser	TRUE
CapRecItalic	FALSE
CapRecLeft90	TRUE
CapRecNearEndSensor	TRUE **(*6)**
CapRecPapercut	TRUE
CapRecRight90	TRUE
CapRecRotate180	TRUE
CapRecStamp	FALSE
CapRecUnderline	TRUE
CapRecCartridgeSensor	0
CapRecColor	OPOS_PR_NONE
CapRecMarkFeed	FALSE
CapSlpPresent	FALSE
CapSlpFullslip	FALSE

CapSlp2Color	FALSE	
CapSlpBarCode	FALSE	
CapSlpBitmap	FALSE	
CapSlpBold	FALSE	
CapSlpDhigh	FALSE	
CapSlpDwide	FALSE	
CapSlpDwideDhigh	FALSE	
CapSlpEmptySenser	FALSE	
CapSlpItalic	FALSE	
CapSlpLeft90	FALSE	
CapSlpNerEndSenser	FALSE	
CapSlpRight90	FALSE	
CapSlpRotate180	FALSE	
CapSlpUnderline	FALSE	
CapSlpBothSidesPrint	FALSE	
CapSlpCartridgeSensor	0	
CapSlpColor	0	
CharacterSet	"437"	
CharacterSetList	"437,850,852,857,858,860,863,865,866,1252"	
FontTypefaceList	"FontA ,FontB"	
JrnLineChars	0	
JrnLineCharsList	0	
JrnLineHeight	0	
JrnLineSpacing	0	
JrnLineWidth	0	
RecLineChars **(*1)**	48	36
RecLineCharsList **(*1)**	"48,64"	"36,48"
RecLineHeight	24	
RecLineSpacing	27 **(*5)**	
RecLineWidth **(*1)**	576	432
RecSidewaysMaxLines **(*1)**	21 **(*3)**	16 **(*3)**
RecSidewaysMaxChars **(*7)**	166	222
RecLinesToPaperCut	6 **(*4)**	
RecBarCodeRotationList	"0,180"	
RecBitmapRotationList	"0,180"	
SlpLineChars	0	
SlpLineCharsList	""	
SlpLineHeght	0	
SlpLineSpacing	0	
SlpLineWidth	0	
SlpSidewaysMaxChars	0	
SlpSidewayMaxLines	0	
SlpMaxLines	0	
SlpLinesNearEndToEnd	0	
SlpBarCodeRotationList	""	
SlpBitmapRotationList	""	

(*1) Changes depending on the printer's paper width. The given values are used when the printer's paper width is 80 mm and 58 mm.

(*2) Build version is indicated as "XXX" because this document may not be revised every time the module is updated.

(*3) Changes depending on the value of RecLineSpacing. The given values are used when the value of RecLineSpacing is 27. When it is 24, the printer can print up to 24 lines/18 lines.

(*4) Changes depending on the value of RecLineSpacing. The given values are used when the value of RecLineSpacing is 27.

(*5) The minimum value of RecLineSpacing is 24 which is equal to the value of RecLineHeight. Even when the value of RecLineSpacing is set to less than 24, it changes to 24.

(*6) CapRecNearEndSensor is always set to TRUE and available only when "PAPER LOW SENSOR" of the printer configuration setting of the OPOS printer is set to "Enable".

(*7) The value of RecSidewaysMaxChars changes depending of the font used. It is 166 for Font A and 222 for Font B.

(*8) The power status notification functions are available only for the USB POS Printer (TRSTA1U).

Table 4 TRSTA1U POS Printer Control – Property Values (in part)

TRSTA1P properties (Items only defined by the device are listed.)

Common property	**Value**
ControlObjectDescription	"TEC OPOS POS Printer Control Object"
ControlObjectVersion	1008XXX **(*2)**
ServiceObjectDescription	"TEC TRST-A1x Parallel POS Printer Service Object."
ServiceObjectVersion	1008XXX **(*2)**
DeviceDescription	"TRST-A1x-P Parallel POS Printer"
DeviceName	"TEC TRST-A1x-P"
CapPowerReporting	OPOS_PR_NONE
CapStatisticsReporting	FALSE
CapUpdateStatistics	FALSE
Exclusive property	**Value**
CapCharacterSet	PTR_CCS_ASCII
CapConcurrentJrnRec	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentRecSlp	FALSE
CapCoverSenser	TRUE
CapMapCharacterSet	FALSE
CapTransaction	TRUE
CapJrnPresent	FALSE
CapJrn2Color	FALSE
CapJrnBold	FALSE
CapJrnDhigh	FALSE
CapJrnDwide	FALSE
CapJrnDwideDhigh	FALSE
CapJrnEmptySenser	FALSE
CapJrnItalic	FALSE
CapJrnNerEndSensor	FALSE
CapJrnUnderline	FALSE
CapJrnCartridgeSensor	0
CapJrnColor	0
CapRecPresent	TRUE
CapRec2Color	TRUE
CapRecBarCode	TRUE
CapRecBitmap	TRUE
CapRecBold	TRUE
CapRecDhigh	TRUE
CapRecDwide	TRUE
CapRecDwideDhigh	TRUE
CapRecEmptySenser	TRUE
CapRecItalic	FALSE
CapRecLeft90	TRUE
CapRecNearEndSensor	TRUE **(*6)**
CapRecPapercut	TRUE
CapRecRight90	TRUE
CapRecRotate180	TRUE
CapRecStamp	FALSE
CapRecUnderline	TRUE
CapRecCartridgeSensor	0
CapRecColor	OPOS_PR_NONE
CapRecMarkFeed	FALSE
CapSlpPresent	FALSE
CapSlpFullslip	FALSE

CapSlp2Color	FALSE	
CapSlpBarCode	FALSE	
CapSlpBitmap	FALSE	
CapSlpBold	FALSE	
CapSlpDhigh	FALSE	
CapSlpDwide	FALSE	
CapSlpDwideDhigh	FALSE	
CapSlpEmptySenser	FALSE	
CapSlpItalic	FALSE	
CapSlpLeft90	FALSE	
CapSlpNerEndSenser	FALSE	
CapSlpRight90	FALSE	
CapSlpRotate180	FALSE	
CapSlpUnderline	FALSE	
CapSlpBothSidesPrint	FALSE	
CapSlpCartridgeSensor	0	
CapSlpColor	0	
CharacterSet	"437"	
CharacterSetList	"437,850,852,857,858,860,863,865,866,1252"	
FontTypefaceList	"FontA ,FontB"	
JrnLineChars	0	
JrnLineCharsList	0	
JrnLineHeight	0	
JrnLineSpacing	0	
JrnLineWidth	0	
RecLineChars **(*1)**	48	36
RecLineCharsList **(*1)**	"48,64"	"36,48"
RecLineHeight	24	
RecLineSpacing	27 **(*5)**	
RecLineWidth **(*1)**	576	432
RecSidewaysMaxLines **(*1)**	21 **(*3)**	16 **(*3)**
RecSidewaysMaxChars **(*7)**	166	222
RecLinesToPaperCut	6 **(*4)**	
RecBarCodeRotationList	"0,180"	
RecBitmapRotationList	"0,180"	
SlpLineChars	0	
SlpLineCharsList	""	
SlpLineHeght	0	
SlpLineSpacing	0	
SlpLineWidth	0	
SlpSidewaysMaxChars	0	
SlpSidewayMaxLines	0	
SlpMaxLines	0	
SlpLinesNearEndToEnd	0	
SlpBarCodeRotationList	""	
SlpBitmapRotationList	""	

(*1) Changes depending on the printer's paper width. The given values are used when the printer's paper width is 80 mm and 58 mm.

(*2) Build version is indicated as "XXX" because this document may not be revised every time the module is updated.

(*3) Changes depending on the value of RecLineSpacing. The given values are used when the value of RecLineSpacing is 27. When it is 24, the printer can print up to 24 lines/18 lines.

(*4) Changes depending on the value of RecLineSpacing. The given values are used when the value of RecLineSpacing is 27.

(*5) The minimum value of RecLineSpacing is 24 which is equal to the value of RecLineHeight. Even when the value of RecLineSpacing is set to less than 24, it changes to 24.

(*6) CapRecNearEndSensor is always set to TRUE and available only when "PAPER LOW SENSOR" of the printer configuration setting of the OPOS printer is set to "Enable".

(*7) The value of RecSidewaysMaxChars changes depending of the font used. It is 166 for Font A and 222 for Font B.

Table 5 TRSTA1P POS Printer Control – Property Values (in part)

Escape sequence operable only when specified

Name	Data	Description
Paper cut	ESC|#P	Operable The character "#" signifies the percentage cut desired. 0 : No cut 1-100 : Partial cut
Feed and Paper cut	ESC|#fP	Operable The character "#" signifies the percentage cut. 0 : No cut 1-100 : Partial cut Paper is fed by the RecLinesToPaperCut lines.
Feed & Paper cut & Stamp print	ESC|#sP	Not operable Only Feed and Paper cut are executed and Stamp Print is ignored.
Bitmap print	ESC|#B	Operable The character "#" signifies the bitmap number specifed by the SetBitmap method. Bit numbers "1" to "10" can be specified. These bitmaps (bitmap numbers 1 to 10) are saved using the SetBitmap method. 1–3 : A bitmap is saved in the RAM. 4-10 : A bitmap is saved in the flash ROM. The extended function of DirectIO is used to save a bitmap in the flash ROM.
Top logo print	ESC|tL	Operable
Bottom logo print	ESC|bL	Operable
Stamp print	ESC|sL	Not operable Ignored
Multiple line feed	ESC|#lF	Operable The character "#" signifies the number of lines to be fed.
Unit feed	ESC|#uF	Operable The character "#" signifies the number of lines to be fed by MapMode units.
Reverse feed	ESC|#rF	Not operable Ignored
Embedded data transmission	ESC|#E	Not operable Ignored

Escape sequence operable during printing

Name	Data	Description
Font type selection	ESC|#fT	Operable The character "#" signifies a value that specifies a font type. 1: Font A 2: Font B

Escape sequence operable while printing characters

Name	Data	Description
Bold	ESC|bC	Operable
Underline	ESC|#uC	Operable The character "#" signifies the underline thickness. 0: No underline 1: Thin underline 2-: Thick underline
Italic	ESC|iC	Not operable Ignored
Custom color	ESC|#rC	Not operable Ignored
Red character	ESC|rC	Operable **(*1)**
Reversed character	ESC|rvC	Operable
Shaded character	ESC|#sC	Not operable Ignored
Single width & height character	ESC|1C	Operable
Double width character	ESC|2C	Operable
Double height character	ESC|3C	Operable
Double width & height character	ESC|4C	Operable
Horizontal scale	ESC|#hC	Operable The character "#" signifies a horizontal scale. 0 – 150: x1 151 – 250: x2 251 – 350: x3 351 – 450: x4 451 – 550: x5 551 – 650: x6 651 – 750: x7 751 - : x8
Vertical scale	ESC|#vC	Operable The character "#" signifies a vertical scale. 0 – 150: x1 151 – 250: x2 251 – 350: x3 351 – 450: x4 451 – 550: x5 551 – 650: x6 651 – 750: x7 751 - : x8
Color selection	ESC|#fC	Not operable Ignored
Center aligned	ESC|cA	Operable
Right aligned	ESC|rA	Operable
Normal	ESC|N	Operable
Subscript	ESC|tbC	Not operable Ignored

Superscript	ESC|tpC	Not operable Ignored

(*1) Blue character is selected depending on the paper used.

Table 6 TRSTA1x POS Printer Control – Escape Sequence

1.1.4 CheckHealth Method Specifications

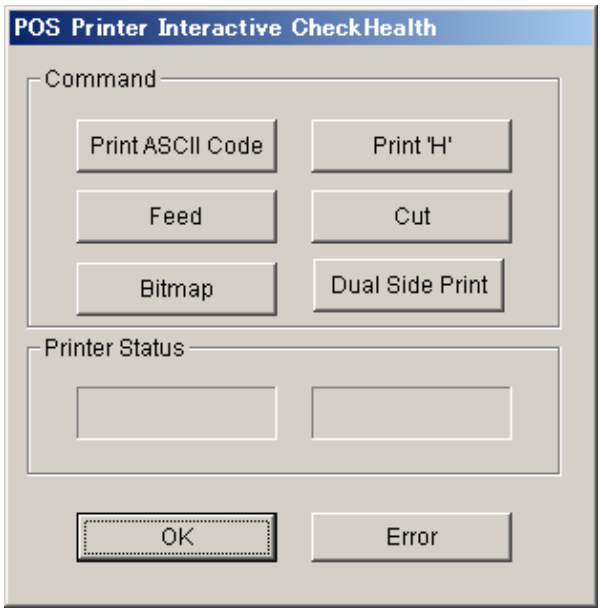
1) Internal Level (OPOS_CH_INTERNAL)
This only checks a connection status of the device.

Value (ResultCode)	CheckHealthText	Meaning
OPOS_SUCCESS	"Internal Hcheck: Successful"	Connected
OPOS_E_FAILURE	"Internal Hcheck: Error"	Not connected
OPOS_E_NOTCLAIMED	"Hcheck: Exclusive"	Exclusive error
OPOS_E_DISABLED	"Hcheck: Disabled"	Disabled

2) External Level (OPOS_CH_EXTERNAL)
This checks a device status by printing a fixed character string given below.
"TEC POS Printer OPOS CheckHealth:External"

Value (ResultCode)	CheckHealthText	Meaning
OPOS_SUCCESS	"External Hcheck: Successful"	Completed successfully
OPOS_E_FAILURE	"External Hcheck: Error"	Completed abnormally
OPOS_E_BUSY	"External Hcheck: Busy"	Device busy
OPOS_E_NOTCLAIMED	"Hcheck: Exclusive"	Exclusive error
OPOS_E_DISABLED	"Hcheck: Disabled"	Disabled

3) Interactive Level (OPOS_CH_INTERACTIVE)
This displays the following dialog box. Clicking each command button starts the corresponding operation of the POS printer and shows a printer status in the two "Printer Status" boxes.



Each command does the following:

[Print ASCII Code]: Prints one line with alphanumeric characters.
[Print 'H']: Prints one line with the character "H".
[Feed]: Performs a paper feed.
[Cut]: Performs a paper cut.
[Bitmap]: Prints a bitmap image (192-dot height x full print width).
[Dual Side]: Performs a dual-side print.

Each of the two "Printer Status" boxes shows a printer status. The right box shows a printer status in idle mode (when the printer is not in operation), and the left box shows a printer status when a command process is completed.
After visually checking the print result, press "OK" or "Error".
The dialog box shows no printer statuses in either of the right or left box while the command is being processed.

Value (ResultCode)	CheckHealthText	Meaning
OPOS_SUCCESS	"Interactive HCheck:Successful"	Completed successfully (with the OK button clicked)
OPOS_E_FAILURE	"Interactive Hcheck: Error"	Completed abnormally (with the Error button clicked)
OPOS_E_BUSY	"Interactive HCheck: Busy"	Device busy
OPOS_E_NOTCLAIMED	"HCheck: Exclusive"	Exclusive error
OPOS_E_DISABLED	"HCheck: Disabled"	Disabled

1.1.5 Dual Side Print (Extended Function)

The TRST-A15 printer provides the Dual Side print function.
As the OPOS printer does not provide a dual side print function for receipt, this Control provide such function by defining it using the OPOS standard methods.

Method	Description of Extended Function
TransactionPrint	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 Batch Transaction for Dual Side Print in any of 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.
PrintNormal	In response to a request, printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the *Station* paramter. PTR_S_RECEIPT2 becomes available when the TransactionPrint method is called and the PTR_TP_TRANSACTION2 mode is entered.
PrintBarcode	In response to a request, printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the *Station* paramter. PTR_S_RECEIPT2 becomes available when the TransactionPrint method is called and the PTR_TP_TRANSACTION2 mode is entered.
PrintBitmap	In response to a request, printing on the back side of paper is made available by defining PTR_S_RECEIPT2 to the *Station* paramter. PTR_S_RECEIPT2 becomes available when the TransactionPrint method is called and the PTR_TP_TRANSACTION2 mode is entered.
ChangePrintSide	Generally, this method is effective for Dual Side Print on a slip printer. This method is also available for the TRST-A15 receipt printer.
SetLogo	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 busing a print logo escape sequence specific to Dual Side Print.

Table 7 TRSTA1x POS Printer Control – Extended Methods for Dual Side Print

LONG TransactionPrint (**LONG** *Station*, **LONG** *Control*);

Parameter	Description
Station	The POS printer to be used. PTR_S_JOURNAL, PTR_S_RECEIPT, or PTR_S_SLIP.
Control	Batch transaction. Vales are as follows:

Value	Meaning
PTR_TP_TRANSACTION	Starts Batch Transaction in Single Side Print mode.
PTR_TP_TRANSACTION1	Starts Batch Transaction in Transaction1 mode where print data is automatically divided in half and each of half data is printed on the front side and back side of paper respectively.
PTR_TP_TRANSACTION2	Starts Batch Transaction in Transaction2 mode where Batch Transaction is performed on a print side specified.
PTR_TP_TRANSACTION3	Starts Batch Transaction in Transaction3 mode where Batch Transaction is performed on the back side of paper if the print data is predefined as back side print data.
PTR_TP_PREDEFINE	Enters the Back Side Print Data Predefine mode.
PTR_TP_NORMAL	Prints the buffered data and ends Batch Transaction.

Remarks This method is called to enter or exit from Batch Transaction mode. If *Control* is PTR_TP_NORMAL, Batch Transaction is performed and Batch Transaction mode is exited. If Control is PTR_TP_PREDEFINE, printing is not initiated, but data to be printed on the back side of paper in PRT_TP_TRANSATION3 mode is saved in the POS printer and Back Side Print Data Predefine mode is exited.

LONG PrintNormal (**LONG** *Station*, **BSTR** *Data*);
PrintBarCode (**LONG** *Station*, **BSTR** *Data*, **LONG** *Symbology*, **LONG** *Height*, **LONG** *Width*, **LONG** *Alignment*, **LONG** *TextPosition*);
LONG PrintBitmap (**LONG** *Station*, **BSTR** *FileName*, **LONG** *Width*, **LONG** *Alignment*);
LONG RotatePrint (**LONG** *Station*, **LONG** *Rotation*);

Parameter	Description
Station	The POS printer to be used. PTR_S_JOURNAL, PTR_S_RECEIPT, or PTR_S_SLIP. Only when the TransactionPrint method is called with the *Control* parameter set to PTR_TP_TRANSACTION2, **PTR_S_RECEIPT2** can be specified. **PTR_S_RECEIPT2** is to print on the back side of paper.

LONG ChangePrintSide (**LONG** *Side*);

The *Side* parameter indicates the current print side. If a *Side* value is PTR_PS_SIDE1, it means that the default print side of paper is selected.

If a *Side* value is PTR_PS_SIDE 2, it means that the opposite side of paper from the one that the POS printer defauts to after power on is selected. (The opposite side from the one selected by PTR_PS_SIDE1.)

If a *Side* value is PTR_PS_OPPOSITE, it means that the current printing side is switched and printing is performed on the opposite side of paper.

This method ends successfully even when the same side as the one currently selected is selected.

If *Side* is PRT_PS_SIDE2, printing is performed on the print side specified by PTR_S_RECEIPT2 when the TransactionPrint method is called with the *Control* parameter set to PTR_TP_TRANSACTION2, even when the *Station* parameter of the print method is PTR_S_RECEIPT.

This method is also available for normal printing when a method other than the TransactionPrint is called. (i.e. Dual Side Print specified by the POS printer configuration setting, by the registry, or by the DirectIO method.)

The *Side* value is automatically set to PTR_PS_SIDE1 after the DeviceEnabled property is set to TRUE, or right after the TransactionPrint method is called with the C*ontrol* parameter set to PTR_TP_TRANSACTION2 or to PTR_TP_NORMAL.

LONG SetLogo (LONG *Location*, **BSTR** *Data***);**

Parameter	Description
Location	The logo to be set. PTR_L_TOP or PTR_L_BOTTOM. PTR_TP_2STL_TOP(BackSide), PTR_TP_2STL_BOTTOM(FrontSide), or PTR_2STL_ERROR_TOP(Front Side) for Dual Side Print.
Data	The characters used for producing the logo.

Location	**Usable *Data***
PTR_L_TOP PTR_L_BOTTOM	Printable characters, escape sequences, carriage returns, newline/line feed
PTR_TP_2STL_TOP PTR_TP_2STL_BOTTOM PTR_TP_2STL_ERROR_TOP	Printable characters, characters of font style exclusively used for dual side printers, carriage returns, newline/line feed

During Dual Side Print, logos cannot be printed using the escape sequences defined by OPOS. Regarding font styles, the following font style characters, exclusively used for the dual side printers, are used (6 fixed font style characters). If an invalid value is set, an error will result. (For example, when the value, "2" or "3" is selected for Reversed Character, an error will result.

Byte	Font Style	Value		
		'0' (0x30)	'1' (0x30)	'2' (0x32)
1	Reversed character	Not effective	Reversed	Error
2	Red character	Black	Red	Error
3	Bold character	Not effective	Bold	Error
4	Double width character	Not effective	Double width	Error
5	Double height character	Not effective	Double height	Error
6	Underlined character	Not effective	1-dot underline	2-dot underline

Table 8 SetLogo Font Style Characters for Dual Side Print

Remarks PTR_L_TOP or PTR_L_BOTTOM is called to save a data string as the top or bottom logo. A logo can be printed by calling the **PrintNormal** or **PrintImmediate** method with the top log or bottom log escape sequence in the print data. RTP_TP_2STL_TOP, PTR_TP_2STL_BOTTOM, or PTR_TP_2STL_ERROR_TOP is called to save a data string as the top logo on the back side of paper or bottom logo on the front side of paper during Dual Side Print.
A logo can be printed by calling the **PrintNormal** method with the following escape sequence in the print data.

Name	Data	Description
Top logo print for dual side print	ESC|2tL	SetLogo method Prints a logo as specified by PTR_2STL_TOP(BackSide).
Bottom logo print for dual side print	ESC|2bL	SetLogo method Prints a logo as specified by PTR_2STL_BOTTOM(Front Side).
Error logo print for dual side print	ESC|etL	SetLogo method Print a logo as specified by PTR_2STL_ERROR_TOP(Front Side) to cause a print error.

1.1.6 DirectIO Method Specifications/DirectIOEvent Specifications

This Control supports the following extended functions using the DirectIO method.

Common for Single Side Printer / Dual Side Printer

Command	Function
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	Acquisition of drawer status
TPTR_CMD_SETBITMAP_FLASH_START	Start of bitmap registration to flash ROM
TPTR_CMD_SETBITMAP_FLASH_END	End of bitmap registration to flash ROM

Only for Dual Side Printer

Command	Function
TPTR_2STCMD_SET_PRINTINGMODE	Print mode setting
TPTR_2STCMD_SET_PRINTINGSIDE	Print side setting
TPTR_2STCMD_SET_UPSIDEDOWN	Upside-down print setting
TPTR_2STCMD_SWAPPRINTINGSIDE	Print side switch setting
TPTR_2STCMD_PREDEFINE	Start/end of back side print data predefine

Table 9 TRSTA1x POS Printer Control – DirectIO Methods

This control supports the following extended functions using the DirectIOEvent event.

Data	Function
TPTR_DIE_DRAWER_LOW	Drawer Close notification
TPTR_DIE_DRAWER_HIGH	Drawer Open notification

Table 10 TRSTA1x POS Printer Control – DirectIO Events

1) Direct Output To Printer Device

Function Directly sends a character string specified by pString to the printer device. The OPOS Control directly sends the character string without processing it. Some escape sequences, specific to the printer to which the character string is to be output, may affect the OPOS properties and performance of methods.

Format	Parameter	Description
	Command	TPTR_CMD_DIRECT_OUTPUT
	pData	Not used (Set "0" (zero).)
	pString	Specifies character string to be sent to the printer with escape sequence specific to the printer.

2) File Data Output

Function Outputs data in a specified file.
Directly sends a specified character string in a file to the printer device. The OPOS Control directly sends the character string without processing it. Some escape sequences, specific to the printer to which the character string is to be output, may affect the OPOS properties and performance of methods.

Format	Parameter	Description
	Command	TPTR_CMD_FILE_OUTPUT
	pData	Not used (Set "0" (zero).)
	pString	Specifies a name of file with full path, which stores the data to be output to the printer.

3) Drawer Open

Function Opens a cash drawer connected to the printer.
Opens a cash drawer. In Drawer Open status, the Drawer Open function ends successfully without accessing the printer device. No checks, to see whether or not the cash drawer is opened, are performed. Only a drawer open command is executed.

Format	Parameter	Description
	Command	TPTR_CMD_DRAWER_OPEN
	pData	Not used (Set "0" (zero).)
	pString	Not used (Set null ("").)

4) Acquisition of Drawer Status

Function Obtains an open/close status of a cash drawer connected to the printer.

Format	Parameter	Description
	Command	TPTR_CMD_DRAWER_STATUS
	pData	A cash drawer open/close status data is stored. 0: The cash drawer is closed. 1: The cash drawer is open.
	pString	Not used (Set null ("").)

5) Start of Bitmap Registration to Flash ROM

Function Requests to start Bitmap Registration to Flash ROM of the printer device. This clears all bitmap data stored in the flash ROM. By using this method and SetBitmap method, bitmaps of Bitmap No. 4 to 10 can be registered, which can be retained even after the printer power is turned off.

Format	Parameter	Description
	Command	TPTR_CMD_SETBITMAP_FLASH_START
	pData	Not used (Set "0" (zero).)
	pString	Not used (Set null ("").)

6) End of Bitmap Registration to Flash ROM

Function Requests to end Bitmap Registration to Flash ROM of the printer device. After this method is completed, bitmaps of Bitmap No. 4 to 10 cannot be registered.

Format	Parameter	Description
	Command	TPTR_CMD_SETBITMAP_FLASH_END
	pData	Not used (Set "0" (zero).)
	pString	Not used (Set null ("").)

7) Print Mode Setting

Function 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.

Format	Parameter	Description
	Command	TPTR_2STCMD_SET_PRINTINGMODE
	pData	Sets a print mode to be used. 0: Single Side Print Mode This mode only prints on a front side of paper. Default setting 1: Transaction1 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 side of paper respectively. 2: Transaction2 This mode performs printing on the front/back side specified by the print method or by the Print Side Setting 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, print lines processed by the print method are batch processed.

	3: Transaction3 This mode automatically print 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 automatically printed on the back side.
pString	Not used (Set null ("").)

8) Print Side Setting

Function Switches the print side to the opposite side from the one currently selected in Transaction2 mode. When the *Station* parameter of the print method is PTR_S_RECEIPT, this function sets the print side as specified by PTR_S_RECEIPT2.

Format	**Parameter**	**Description**
	Command	TPTR_2STCMD_SET_PRINTINGSIDE
	pData	Specifies the print side, front or back, by using the *Station* parameter, PTR_S_RECEIPT of the print method. 0: Front Printing is performed on the front side of paper. 1: Back Printing is performed on the back side of paper.
	pString	Not used (Set null ("").)

9) Upside-down Print Setting

Function Performs upside-down printing on the front and/or back side of paper in Dual Side Print mode.

Format	**Parameter**	**Description**
	Command	TPTR_2STCMD_SET_PRINTINGSIDE
	pData	0: Normal printing 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
	pString	Not used (Set null ("").)

10) Print Side Switch Setting

Function Selects a print head for Dual Side Print. This function specifies the print head to be used for printing on the front/back side of paper. The default setting gives a 41-mm top margin on the back side of paper. This margin is given on the font side after the print heads are switched.

Format	**Parameter**	**Description**
	Command	TPTR_2STCMD_SWAPPRINTINGSIDE
	pData	0: Default setting
		1: Switch of print heads (heads for front/back side)
	pString	Not used (Set null ("").)

11) Start/End of Back Side Print Data Predefine

Function In Transaction3 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 defined as back side data until "end" is specified. Therefore, the print method does not initiate printing once the "start" is specified.

Format	**Parameter**	**Description**
	Command	TPTR_2STCMD_PREDEFINE
	pData	0: Defined data clear
		1: Start of definition
		2: End of definition
	pString	Not used (Set null ("").)

1.1.7 OPOS Registry

TRSTA1S contains the following configuration information:

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter\TRSTA1S

General	"TEC.TRSTA1.S"
Service	"C:\OPOS\TEC\TRSTA1S.dll"
Description	"TEC TRSTA1 Serial POS Printer"
Version	"1.8"
DeviceName	"TRSTA1S"
Port **(*2)**	"COM1" – "COM8"
BaudRate **(*2)**	"9600" | "19200" | "38400" | "57600" | "115200"
TimeoutConstant **(*2)**	"0" –
TimeoutMultiplier **(*2)**	"0" –
Override	"Off" | "On"
Country	"US" | "France" | "Germany" | "UK" | "Denmark 1" "Sweden" | "Italy" | "Spain" | "Japan" | "Norway" "Denmark 2" | "Spain 2" | "Latin " | "Korea"
PaperWidthMode	"0" | "1"
BitmapAspect	"0" | "1"
PrintBarCodeMode	"TEC" | "Standard"
WatchEndedThreadTimeout	"0" –
2STPrintingMode **(*1)**	"0" | "1" | "2" | "3"
2STUpsideDown **(*1)**	"0" | "1" | "2" | "3"
2STSwapFrontBackSide **(*1)**	"TRUE" | "FALSE"
2STMinRecLength **(*1)**	"0" –
DebugLogLevel	"0" | "1" | "2"
DebugLogFile	"C:\TEC\OPOS\LOG\TRSTA1S.LOG"

(*1) For Dual Side Print
(*2) Only for the serial devices

Table 11 TRSTA1S POS Printer Control – Registries

TRSTA1U contains the following configuration information:

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter\TRSTA1U

General	"TEC.TRSTA1.U"
Service	"C:\OPOS\TEC\TRSTA1U.dll"
Description	"TEC TRSTA1 USB POS Printer"
Version	"1.8"
DeviceName	"TRSTA1U"
VenderID **(*2)**	"2214"
ProductID **(*2)**	"61"
InputInterface **(*2)**	"0"
OutputInterface **(*2)**	"0"
InputEndPoint **(*2)**	"2"
OutputEndPoint **(*2)**	"1"
Override	"Off" | "On"
Country	"US" | "France" | "Germany" | "UK" | "Denmark 1" "Sweden" | "Italy" | "Spain" | "Japan" | "Norway" "Denmark 2" | "Spain 2" | "Latin " | "Korea"
PaperWidthMode	"0" | "1"
BitmapAspect	"0" | "1"
PrintBarCodeMode	"TEC" | "Standard"
WatchEndedThreadTimeout	"0" –
2STPrintingMode **(*1)**	"0" | "1" | "2" | "3"
2STUpsideDown **(*1)**	"0" | "1" | "2" | "3"
2STSwapFrontBackSide **(*1)**	"TRUE" | "FALSE"
2STMinRecLength **(*1)**	"0" –
UnKnownRetryCount **(*2)**	"0" | "1"
UnKnownRetryTimeout **(*2)**	"4000"
DebugLogLevel	"0" | "1" | "2"
DebugLogFile	"C:\TEC\OPOS\LOG\TRSTA1U.LOG"

(*1) For Dual Side Print
(*2) Only for the USB devices

Table 12 TRSTA1U POS Printer Control – Registries

TRSTA1P contains the following configuration information:

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter\TRSTA1P

General	"TEC.TRSTA1.P"
Service	"C:\OPOS\TEC\TRSTA1P.dll"
Description	"TEC TRSTA1 Parallel POS Printer"
Version	"1.8"
DeviceName	"TRSTA1P"
Port **(*2)**	"LPT1" – "LPT2"
Override	"Off" | "On"
Country	"US" | "France" | "Germany" | "UK" | "Denmark 1" "Sweden" | "Italy" | "Spain" | "Japan" | "Norway" "Denmark 2" | "Spain 2" | "Latin " | "Korea"
PaperWidthMode	"0" | "1"
BitmapAspect	"0" | "1"
PrintBarCodeMode	"TEC" | "Standard"
WatchEndedThreadTimeout	"0" –
2STPrintingMode **(*1)**	"0" | "1" | "2" | "3"
2STUpsideDown **(*1)**	"0" | "1" | "2" | "3"
2STSwapFrontBackSide **(*1)**	"TRUE" | "FALSE"
2STMinRecLength **(*1)**	"0" –
DebugLogLevel	"0" | "1" | "2"
DebugLogFile	"C:\TEC\OPOS\LOG\TRSTA1U.LOG"

(*1) For Dual Side Print
(*2) Only for the parallel devices

Table 13 TRSTA1P POS Printer Control – Registries

Common Registries for Single Side Printers / Dual Side Printers

Service	Filename of Service Object
Description	Brief explanation of Service Object
Version	Version number of Service Object
DeviceName	Connected device
Port (*1)	Name of communication port Can be set from the Control Panel.
BaudRate (*2)	Communication speed Can be set from the Control Panel. Should be consistent with the baud rate setting of the device.
VendorID (*3)	Vendor ID of the USB device
ProductID (*3)	Product ID of the USB device
InputInterface (*3)	Specifies an interface to be used for inputting data from a USB device
OutputInterface (*3)	Specifies an interface to be used for outputting data from a USB device
InputEndPoint (*3)	Specifies an end point to be used for inputting data from a USB device
OutputEndPoint (*3)	Specifies an end point to be used for outputting data from a USB device
Override	For Left90/Right90 Rotation Print, specifies whether or not standard characters are to be printed on two lines which are used for printing double height characters. Off: Not printed On: Printed Can be set from the Control Panel.
Country	Country code Can be set from the Control Panel.
PaperWidthMode	Type of paper by paper width 0: 80 mm 1: 58 mm Can be set from the Control Panel. Should be consistent with the paper width setting of the device.
BitmapAspect	Bitmap aspect ratio setting 0: Not supproted 1: Fixed
PrintBarCodeMode	Specifies the print mode for bar code printing. When "TEC" is specified, the print width of bar code is determined based on the ratio of width specified by the Width parameter to the paper width. When "Standard" is selected, the print width of bar code is determined by comparing the print width speficied by the Width parameter to the width of bar code to be printed. (For details, refer to the section "Limitations and Precautions" in this chapter.)
WatchEndedThreadTimeout	Timeout for forced thread termination
UnKownRetryCount (*3)	Specifies whether or not a retry process is to be performed when a connection with the device fails due to Unknow. When this item is not contained in the registry list, no values are given, or something other than a numeric value is specified, zero (0) is selected as a default. 0: Retry process is not executed for Unknown (Default) Other than 0: Retry process is executed for UnKnown
UnKownRetryTimeout (*3)	Effective only when a value other than zero (0) is set for

	UnKnownRetryCount. To identify UnKnown from device not connected (Power OFF) for retries, a time is set in milliseconds. This module resets the device hardware to recover from UnKnown and identifies UnKnown from device not connected (Power OFF) depending on whether or not the device can be connected within a specified time of period. When this item is not contained in the registry list, no values are given, or something other than a numeric value is specified, 4000 (4 sec.) is selected as a default.
DebugLogLevel	Specifies a level for recording a log in a file specified by DebugLogFile. 0: Log is not output. 1: Level where a log is recorded mainly at a time of error 2: Level where OPOS operations can be traced using a log.
DebugLogFile	Specifies a log file with path which records OPOS operations. If a folder does not exist, no log is kept.

(*1) Used by the TRSTA1S/TRSTA1P
(*2) Used by the TRSTA1S
(*3) Used by the TRSTA1U

Table 14 TRSTA1x POS Printer Control – Common Registries for Single/Dual Printers

Registries Specific to Dual Side Printers

2STPrintingMode **(*1)**	Print mode 0: Single Side Print mode (Default) 1: Transaction1 2: Transaction2 3: Transaction3 Can be set from the Control Panel.
2STUpsideDown **(*2)**	Upside-down Print on the front/back side of paper for Dual Side Print 0: Normal printing 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 Can be set from the Control Panel.
2STSwapFrontBackSide **(*3)**	Switches the print side to print on the front/back side of paper by specifying a print head. FALSE: Default TRUE: Print side is switched. Can be set from the Control Panel.
2STMinRecLine	Minimum number of dots to be printed on the front side in Transaction1 mode. (in units of 1/203 inch) Can be set from the Control Panel.

(*1) For details, refer to print mode setting of DirectIO method.
(*2) For details, refer to upside-down print setting of DirectIO method.
(*3) For details, refer to print side switch setting of DirectIO method.

Table 15 TRSTA1x POS Printer Control – Registries for Dual Side Printers

1.1.8 Limitations and Precautions

1) Property that changes with the MapMode property setting
MapMode can change the unit type for such as font size.
Based on the value of MapMode, the default value of each property is as follows:

MapMode	RecLineHeight	RecLineSpacing	RecLineWidth(*1)
PTR_MM_DOTS (dot width)	24	27	576(432)
PTR_MM_TWIPS (1/1440 inch)	170	191	2948(3061)
PTR_MM_ENGLISH (0.001 inch)	118	132	2047(2125)
PTR_MM_METRIC (0.01 millimeter)	300	337	5199(5400)

(*1) Changes depending on paper width. The value in the parentheses shows the value when the paper width is 58 mm.

Table 16 Properties that Change with the MapMode Property Setting

2) Writable property that can change font
A font changes in accordance with the change of a RecLineChars value.
The RecLineChars value is changed to the value larger than and as close as a specified value, and accordingly the font is changed.

3) Bar code print
This POS printer can print the following bar codes:

Barcode Type	Number of digits	Available Characters
UPC-A	11,12	Numeric characters 0 to 9
UPC-E	11,12	Numeric characters 0 to 9
JAN8(EAN8)	7,8	Numeric characters 0 to 9
JAN13(EAN13)	12,13	Numeric characters 0 to 9
ITF	Variable length Even digits	Numeric characters 0 to 9
Codabar(NW7)	Variable length	Numeric characters 0 to 9, "A" to "D", "$", "+", "-", ".", "/"
Code 39	Variable length	Numeric characters 0 to 9, uppercase alphabet characters A to Z,space (" "), "$", "%", "*", "+", "-", ".", "/"
Code 93	Variable length	0 – 127
Code 128	3 to 50	0 – 102: Data 103 – 105: Start code
PDF417	Variable length	0 – 255

Table 17 TRSTA1x POS Printer Control – Printable Bar Codes

For some bar code types, care must be taken when setting bar code data to the *Data* parameter of the PrintBarcode method.
Such bar code types and precautions are given in the table below:

Barcode Type	Precautions
Codabar(NW7)	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 OPOS method completes successfully, but bar code is not printed.
Code 39	If neither of start code "*" nor stop code "*" is affixed, the POS printer automatically affixes a start code and a stop code to print bar code.
Code 128	A start code, {A, {B, or {C should be affixed. Even when a start code is not affixed, the OPOS method completes successfully, but bar code is not printed.

Table 18 TRSTA1x POS Printer Control – Precautions for Setting Data Parameter

When a PrintBarCodeMode registry value is "Standard", bar code printing is performed in accordance with the specifications described in the APG.
By comparing the width specified by the Width parameter of the PrintBarCode method to that of the bar code to be printed, the bar code width is selected among the six levels of width, which is as close as the width of bar code to be printed and less than that specified by the Width parameter.
The module width changes depending on barcode type and width, and data as shown below. If all bar code digits cannot be printed on the printer, an error will result by the PrintBarCode method.

Barcode Type	Barcode Width (dots)	Module Width (dots)
UPC-A	95	1
	190	2
	285	3
	380	4
	475	5
	570	6
UPC-E	51	1
	102	2
	153	3
	204	4
	255	5
	306	6
JAN8(EAN8)	67	1
	134	2
	201	3
	268	4
	335	5
	402	6
JAN13(EAN13)	95	1
	190	2
	285	3
	380	4

	475	5
	570	6
ITF (Interleaved 2 of 5)	7 x number of characters + 8	1
	14 x number of characters + 16	2
	21 x number of characters + 24	3
	28 x number of characters + 32	4
	35 x number of characters + 40	5
	42 x number of characters + 48	6
Codabar(NW7)	10 x number of characters + 1 x number of the following characters (:, /, ., +, A, B, C, D)	1
	20 x number of characters + 2 x number of the following characters (:, /, ., +, A, B, C, D)	2
	30 x number of characters + 3 x number of the following characters (:, /, ., +, A, B, C, D)	3
	40 x number of characters + 4 x number of the following characters (:, /, ., +, A, B, C, D)	4
	50 x number of characters + 5 x number of the following characters (:, /, ., +, A, B, C, D)	5
	60 x number of characters + 6 x number of the following characters (:, /, ., +, A, B, C, D)	6
Code 39	13 x number of characters (other than start and stop codes) +25	1
	26 x number of characters (other than start and stop codes) +50	2
	39 x number of characters (other than start and stop codes) +75	3
	52 x number of characters (other than start and stop codes) +100	4
	65 x number of characters (other than start and stop codes) +125	5
	78 x number of characters (other than start and stop codes) +150	6
Code 93	9 x (number of characters + 4)	1
	18 x (number of characters + 4)	2
	27 x (number of characters + 4)	3
	36 x (number of characters + 4)	4
	45 x (number of characters + 4)	5
	54 x (number of characters + 4)	6
Code 128	5.5 x number of digits in Code Set C + 11 x number of characters in code sets other than Code Set C + 35 When counting the number of digits in Code Set C, one character equals to 2 digits.	1

	11 x number of digits in Code Set C + 22 x number of characters in code sets other than Code Set C + 70 When counting the number of digits in Code Set C, one character equals to 2 digits.	2
	16.5 x number of digits in Code Set C + 33 x number of characters in code sets other than Code Set C + 105 When counting the number of digits in Code Set C, one character equals to 2 digits.	3
	22 x number of digits in Code Set C + 44 x number of characters in code sets other than Code Set C + 140 When counting the number of digits in Code Set C, one character equals to 2 digits.	4
	27.5 x number of digits in Code Set C + 55 x number of characters in code sets other than Code Set C + 175 When counting the number of digits in Code Set C, one character equals to 2 digits.	5
	33 x number of digits in Code Set C + 66 x number of characters in code sets other than Code Set C + 210 When counting the number of digits in Code Set C, one character equals to 2 digits.	6
PDF417	Less than 1/6 of paper width	1
	1/6 or more, but less than 2/6 of paper width	2
	2/6 or more, but less than 3/6 of paper width	3
	3/6 or more, but less than 4/6 of paper width	4
	4/6 or more, but less than 5/6 of paper width	5
	5/6 or more, but less than paper width	6

Table 19 TRSTA1x POS Printer Control – Width of Bar Code to be Printed

When a PrintBarCodeMode registry value is "TEC", the module width of bar code data is determined based on the *Width* parameter value of the PrintBarCode method. The narrower the modlue width is, the more numbers of the bar code digits can be printed. For the 58-mm and 80-mm wide paper, module width is as shown in the table below. This mode is supported for this Control to have compatibility with the Toshiba TEC's existing OPOS Control.

PrintBarcode Width Parameter	Module Width (dots)
Less than 1/2 of paper width	2
1/2 or more, but less than 3/4 paper width	3
3/4 or more, but less than paper width	4

Table 20 TRSTA1x POS Printer Control –
Width of Bar Code Printed in TEC Mode (58 mm paper wide)

PrintBarcode Width Parameter	Module Width (dots)
Less than 1/2 of paper width	2
1/2 more, but less than 3/4 paper width	4
3/4 or more, but less than paper width	6

Table 21 TRSTA1x POS Printer Control –
Width of Bar Code Printed in TEC Mode (80 mm paper wide)

4) Bitmap print

- Bitmap files processed by the SetBitmap and PrintBitmap methods are printed only in black and white.
- Bitmaps are registered in the printer by the SetBitmap method and printed by the Bitmap Print escape sequence (ESC|#B). A bitmap set by a process is shared by all processes opened.
- Using SetBitmap, bitmaps can be registered in the RAM or flash ROM of the POS printer: in the RAM for Bitmap Nos. 1 to 3, and in the flash ROM for Bitmap Nos. 4 to 10. To register a bitmap in the flash ROM, a Start of Bitmap Registration to Flash ROM request and an End of Bitmap Registration to Flash ROM request of the DirectIO method should be called. All bitmaps saved in the RAM will disappear when the printer power is turned off, but those saved in the flash ROM will be retained even after the printer power is turned off.
- All bitmaps should be collectively saved in the flash ROM. When a bitmap is re-defined, all bitmaps should be re-defined again because they are deleted. It is recommended to use a tool to write bitmaps into the flash ROM which is provided together with the POS printer Control.
- SetBitmap limits the size of a bitmap to be saved in the flash ROM. The maximum width and height are as follows: Bitmaps can be clearly printed if the width and height are multiples of 8 dots.

	Width (Max.)	Height (Max.)
80-mm wide paper	576(72*8)	512(64*8)
58-mm wide paper	432 (54*8)	512 (64*8)

Table 22 TRSTA1x POS Printer Control –
Max. Size of Bitmap Which Can be Saved Using SetBitmap

5) Notes for escape sequence
Operations, when an escape sequence is not specified at the head of line, but specified in the middle of character string, are as follows:

For example
When an escape sequence is specified after printing and without performing carriage returns as in the case with PrintNormal (Station, "111"):

Escape Sequence	Operation when Escape Sequence is not Specified at the Head of Line
Paper cut	Automatically performs carriage returns and cut a paper after printing a print data.
Barcode print	Automatically performs carrigage returns and prints bar code data after printing a print data.
Bitmap print	Automatically performs carrigage returns and prints bitmap data after printing a print data.
Center aligned	Whole line is center aligned including the character before an escape sequence. The last Center Aligned or Right Aligned escape sequence specified is effective.
Right aligned	Whole line is right aligned including the character before an escape sequence. The last Center Aligned or Right Aligned escape sequence specified is effective.

Table 23 TRSTA1x POS Printer Control – Notes for Escape Sequence

6) Unidirectional print and bi-directional print
This printer only supports unidirectional print.
Therefore, RecLetterQuality is always set to TRUE.

7) Difference in character set by countries and registry
This printer defines different characters for each country.
The Country registry specifies a character set for each country. Characters used only for certain countries and graphic characters for business use are assigned to the 12 characters: 0x23, 0x24, 0x40, 0x5B to 0x5E, 0x60, 0x7B to 0x7E.
This character set function is independent from the character setting by the CharacterSet property.

8) Timing of reporting the end of print method
This Control does not report the completion of printing when printing on a paper is completed, but reports 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 printable area 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 printable area is low, appears. Or, it is recommended that the application can resume printing when the POS printer performed an abnormal printing.

9) Operation at a time of TransactionPrint Method error
This Control resumes printing from the beginning of a print transaction when an error occurs during an asynchronous print initiated by the TransactonPrint method and the application sets a value of pErrorResponse from the ErrorEvent handler to OPOS_ER_RETRY. A receipt can be output properly by manually cutting a paper before a retry is performed by the ErrorEvent handler.

10) Notes for using the ClearOutput method

When printing is terminated by the ClearOutput method, printing may stop before all data for the line being printed is printed. It is recommended to output a feed escape sequence or LineFeed(10) when there is a need to stop printing by ClearOutput. Also, it is preferable that a line feed value of RecLineSpacing is reset to the default (27 dots) just in case the value has been changed to 24. It would be better to implement these solutions also for error recovery processes.

11) Paper cut

This printer only supports Partial Paper Cut due to its mechanical structure. When Paper Cut is performed by the CutPaper method or the escape sequence, Partial Cut is performed regardless of the percentage specified. Please note the method does not cause an error.

12) Paper status notification

Neither of the TRSTA1S (Serial POS Printer) nor the TRSTA1P (Parallel POS Printer) supports the power status notification function.

TRSTA1U (USB POS Printer) supports this function in accordance with the specifications described in the OPOS's APG.

TRSTA1U monitors and issues the two kinds of power status notifications: "Online" and "OFF or Offline".

When the Claim (ClaimDevice) method is executed, a power-off status is not issued or an error is not caused due to a disconnection of USB cable. However, OPOS_E_ILLEGAL error will result when a power-off status is returned or a USB cable is disconnected if DeviceEnabled property is set to TRUE.

13) Process at power recovery

When the power is turned off and on again, the TRSTA1U (USB POS Printer) tries to restore the status just before the power was shut off.

This Control initializes the device based on the current property value, but does not reset the user settings such as direct output of printer escape sequence using the DirectIO method which includes time-consuming processes such as registration of bitmap and writable characters using the SetBitmap method. For such user settings, the user should monitor the power status and perform an initialization.

14) Cover status notification for each station

This device has only one cover. Therefore, PTR_SUE_REC_COVER_ OPEN and PTR_SUE_ REC_COVER_OK events are not issued. Only the PTR_SUE_COVER_OPEN and PTR_SUE_ COVER_OK events are issued as a cover open status as in a conventional way

15) Left90/Right90 rotation print

- This Control supports neither of Left90/Right90 Rotation Bitmap print (PrintBitmap method) nor Left90/Right90 Rotation Barcode print (PrintBarcode method). Even though Bitmap Print escape sequence (ESC|#B) can be used with Left90/Right90 Rotation Print, a line feed is automatically performed and bitmap is printed as described in "Notes for escape sequence" above.
- This Control supports both Left90 and Right 90 Rotation Print, but there are limitations for escape sequences.

Escape sequence not operable (ignored)
• Embedded data transmission
• Subscript print
• Superscript print
• Italic print
• Custom color print
• Shaded character print
• Paper cut
• Reverse feed
• Font type selection
• Stamp print

Escape sequence whose operation is ot guaranteed
• Feed and Paper cut • Feed and Paper cut and Stamp cut
Available escape sequence
• Bitmap print • Single width & height character print • Double width print • Double height print • Double width & height character print • Horizontal scale • Vertical scale • Color selection • Center aligned • Right aligned • Normal print • Bold print • Underline print • Red character print • Reversed character print • Multiple line feed • Unit feed • Top logo print • Bottom logo print

Table 24 TRSTA1x POS Printer Control –
Print Escape Sequence for Left/Right Rotation

16) Dual side print

- For printing on the back side of paper in Dual Side Print mode, a 41-mm top margin is always provided.
- The RotatePrint method is not available in PTR_TP_TRANSACTION1 mode (Transaction1 mode) of the TransactionPrint.method. If the RotatePrint method is called, an OPOS_E_ILLEGAL error will result.
- In PTR_TP_TRANSACTION1 mode (Transaction1 mode) of the TransactionPrint method, printing is always performed on the front side of paper by the approximate number of lines specified by the RecLinesToPaperCut property ("RecLinesToPaperCut lines") from the last line. Data of the last RecLinesToPaperCut lines should be printed as a logo data for a next receipt, or a paper should be fed by the RecLinesToPaperCut lines.
- When the ChangePrintSide method is called while the RotatePrint method is being executed in PTR_TP_TRANSACTION2 mode (Transaction2 mode) of the TransactionPrint method, an OPOS_E_ILLEGAL error will result.

(Example: Abnormal)

```
TransactionPrint(PTR_TP_TRANSACTION2)
RotatePrint(PTR_RP_RIGHT90)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
ChangePrintSide(PTR_PS_SIDE2)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
RotatePrint((PTR_TP_NORMAL)
TransactionPrint(PTR_TP_NORMAL)
```

- In PTR_TP_TRANSACTION2 mode (Transaction2 mode) of the TransactionPrint method, select only one *Station* parameter of the PrintNormal method to execute a Left90/Right90 Rotation Print using the RotatePrint method.

(Example: Abnormal)

- TransactionPrint(PTR_TP_TRANSACTION2)
  RotatePrint(PTR_S_RECEIPT ,PTR_RP_RIGHT90)
  PrintNormal(PTR_S_RECEIPT)
  PrintNormal(PTR_S_RECEIPT2)
  PrintNormal(PTR_S_RECEIPT)
  PrintNormal(PTR_S_RECEIPT2)
  PrintNormal(PTR_S_RECEIPT)
  RotatePrint(PTR_S_RECEIPT ,PTR_TP_NORMAL)
  TransactionPrint(PTR_TP_NORMAL)

(Example: Normal)

TransactionPrint(PTR_TP_TRANSACTION2)
RotatePrint(PTR_S_RECEIPT ,PTR_RP_RIGHT90)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
RotatePrint(PTR_S_RECEIPT ,PTR_TP_NORMAL)
RotatePrint(PTR_S_RECEIPT 2,PTR_RP_RIGHT90)
PrintNormal(PTR_S_RECEIPT2)
PrintNormal(PTR_S_RECEIPT2)
RotatePrint(PTR_S_RECEIPT2 ,PTR_TP_NORMAL)
TransactionPrint(PTR_TP_NORMAL)

- In PTR_TP_TRANSACTION2 mode (Transaction2 mode) and PTR_TP_TRANSACTION3 mode (Transaction3 mode) of the TransactionPrint method, printing is performed using a longer side of paper as a reference. When the number of lines to be printed on the front side is more than that on the back side, feeding a paper by the RecLinesToPaperCut lines will move the last line to the cut position, but if the number of lines to be printed on the back side is more than that on the front side, the paper should be fed by more lines than the RecLinesToPaperCut lines.
- In PTR_TP_TRANSACTION2 mode (Transaction2 mode) and PTR_TP_TRANSACTION3 mode (Transaction3 mode) of the TransactionPrint method, printing is not performed if data amount to be printing on the front side is less than the RecLinesToPaperCut lines and there is no print data to be printed on the back side.
- In PTR_TP_PREDEFINE mode (Back Side Data Predefine mode) of the TransactionPrint method, an error will result if the PrintBitmap method is called.

- Available methods for the TransactionPrint method in Dual Side Print mode are as follows: Generally, all methods that can be used by the TransactionPrint method described in the OPOS's APG are available. There are limitations in the PrintBitmap method and RotatePrint method. In accordance with the OPOS's APG, the ChangePrintSide method cannot be used by the TransactionPrint method, but this Control allows it to be used in some modes.

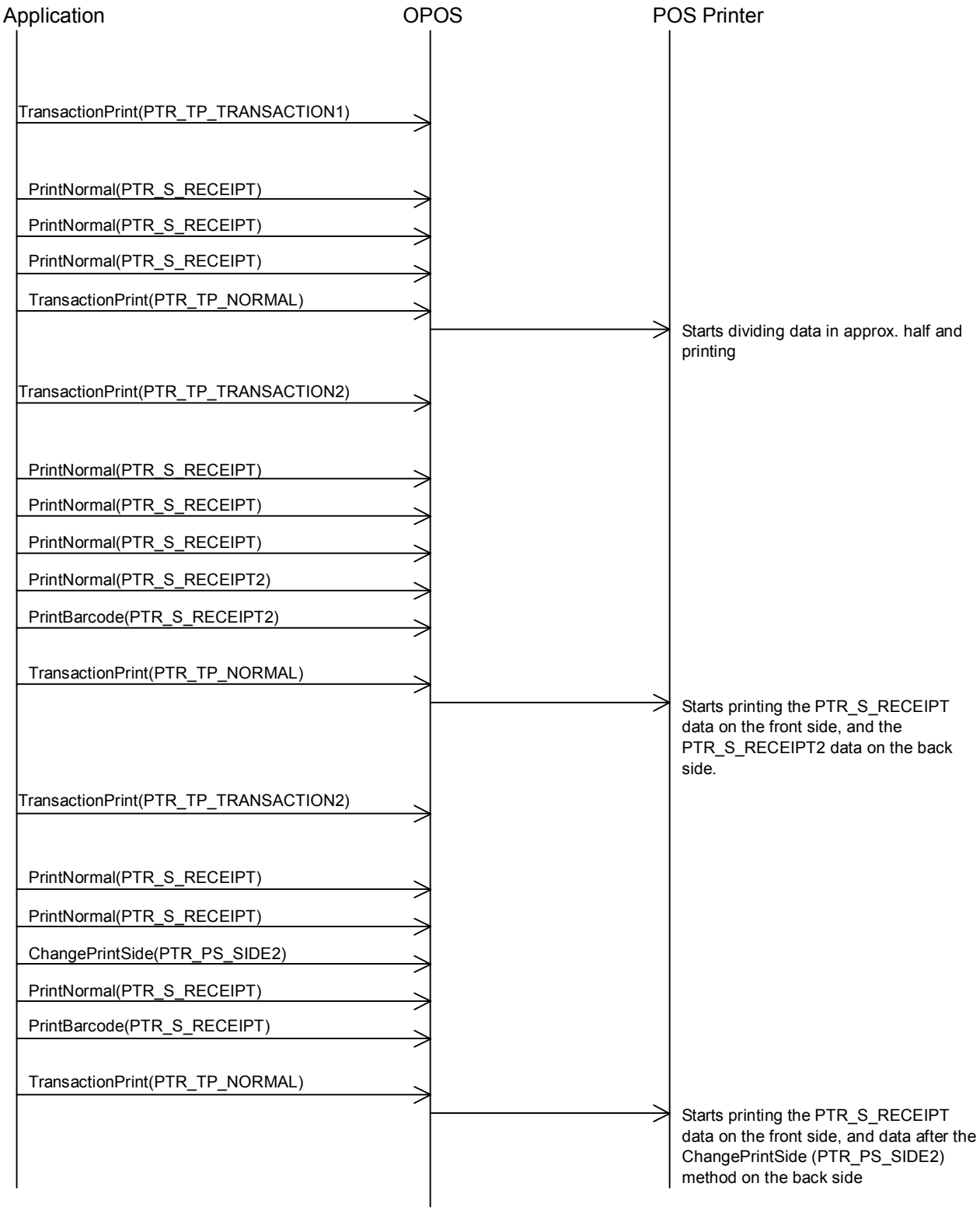
	TRANSACTION1	TRANSACTION2	TRANSACTION3	PREDEFINE
PrintNormal	Available	Available	Available	Available
PrintBitmap	Available	Available	Available	Not available
PrintBarcode	Available	Available	Available	Available
RotatePrint	Not available	Available	Available	Available
ChangePrintSide	Not available	Available	Not available	Not available

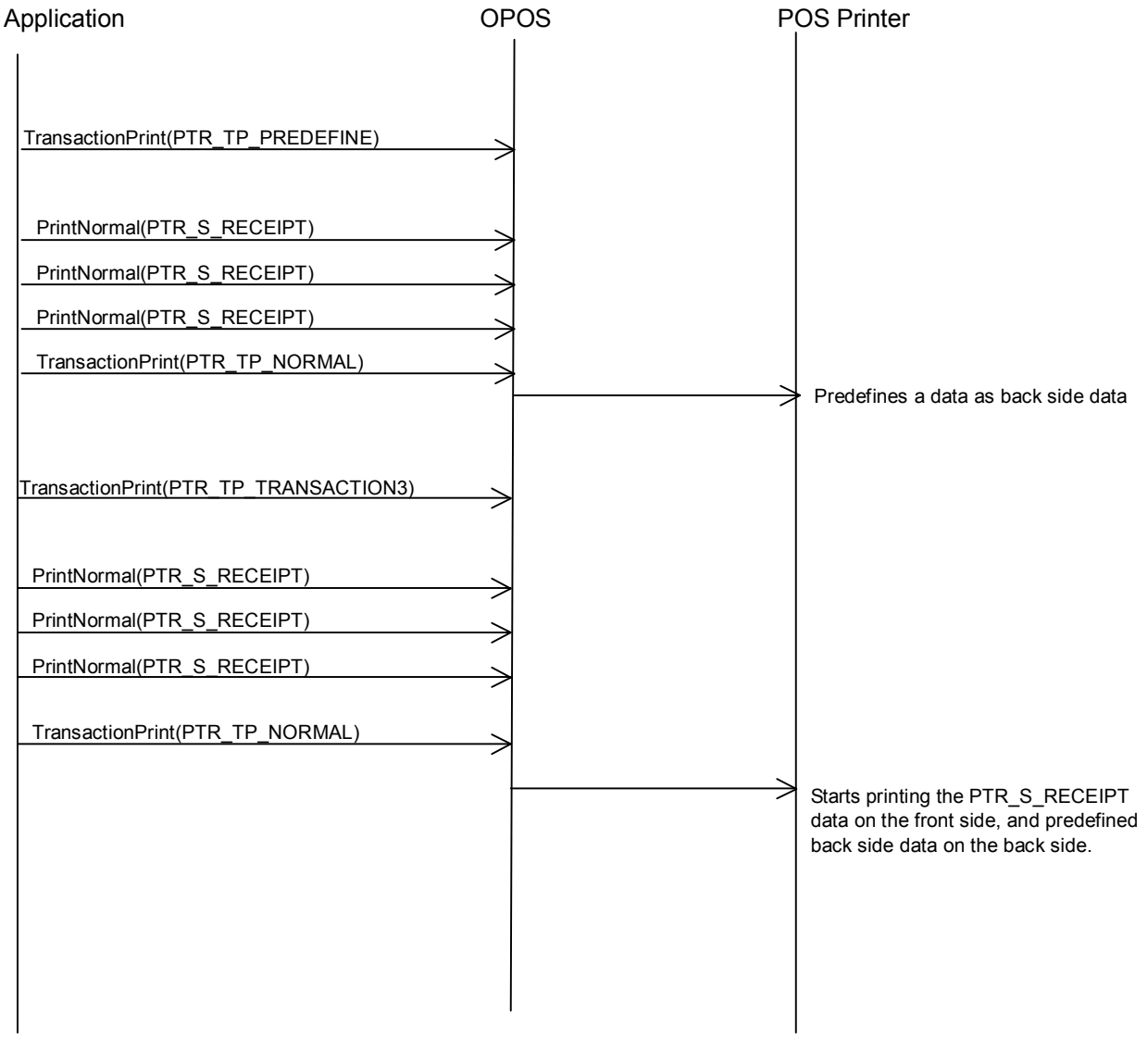
Table 25 TRSTA1x POS Printer Control – Available Methods for Dual Side Print

1.1.9 Usage Example

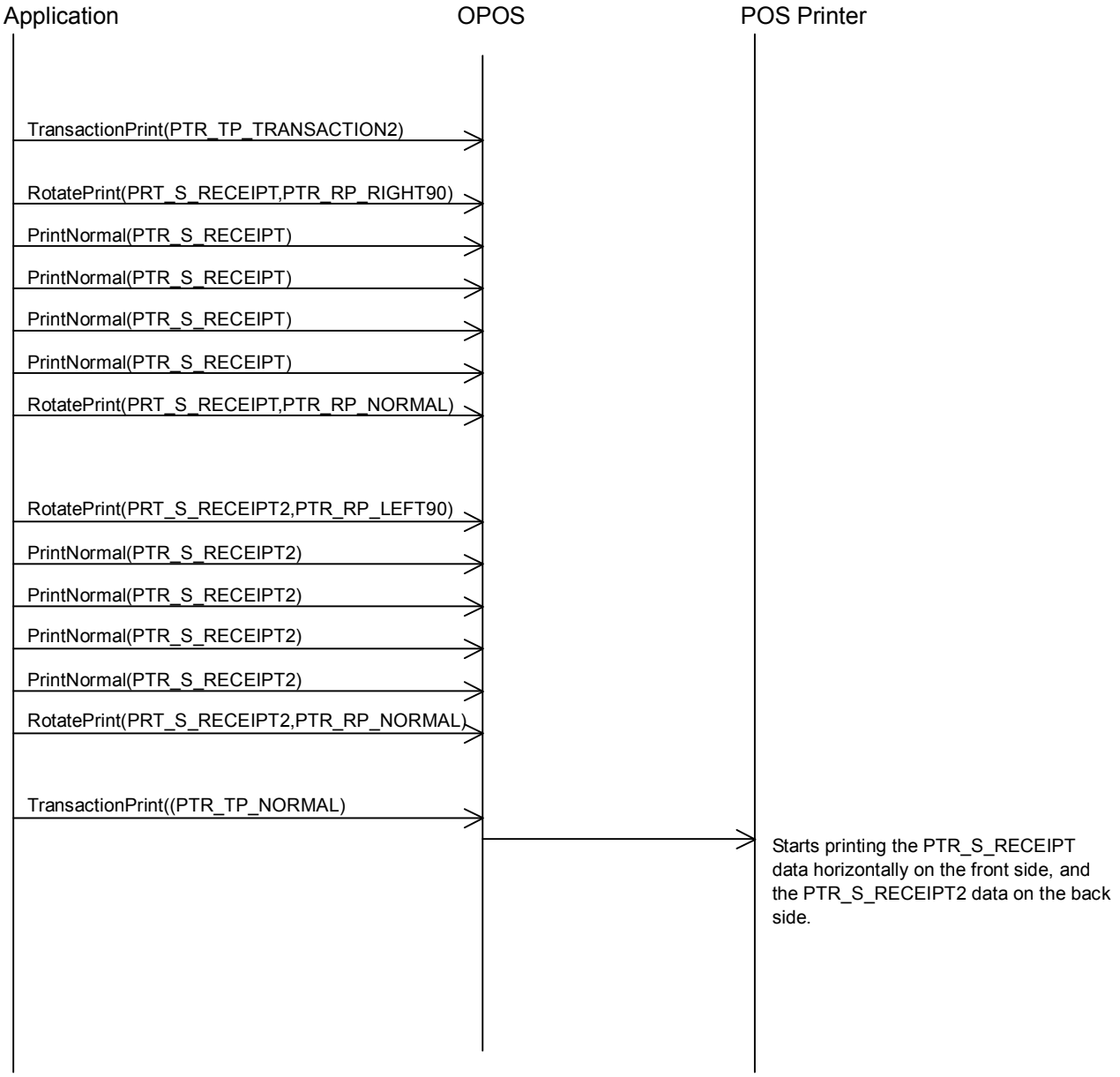
This section gives a sequence diagram for Dual Side Print of ths Control. Please note this sequence diagram assumes Open method, Claim or ClaimDevice method, and DeviceEnabled property=TRUE processes have been successfully completed.

1) Example of TransactionPrint for Dual Side Print

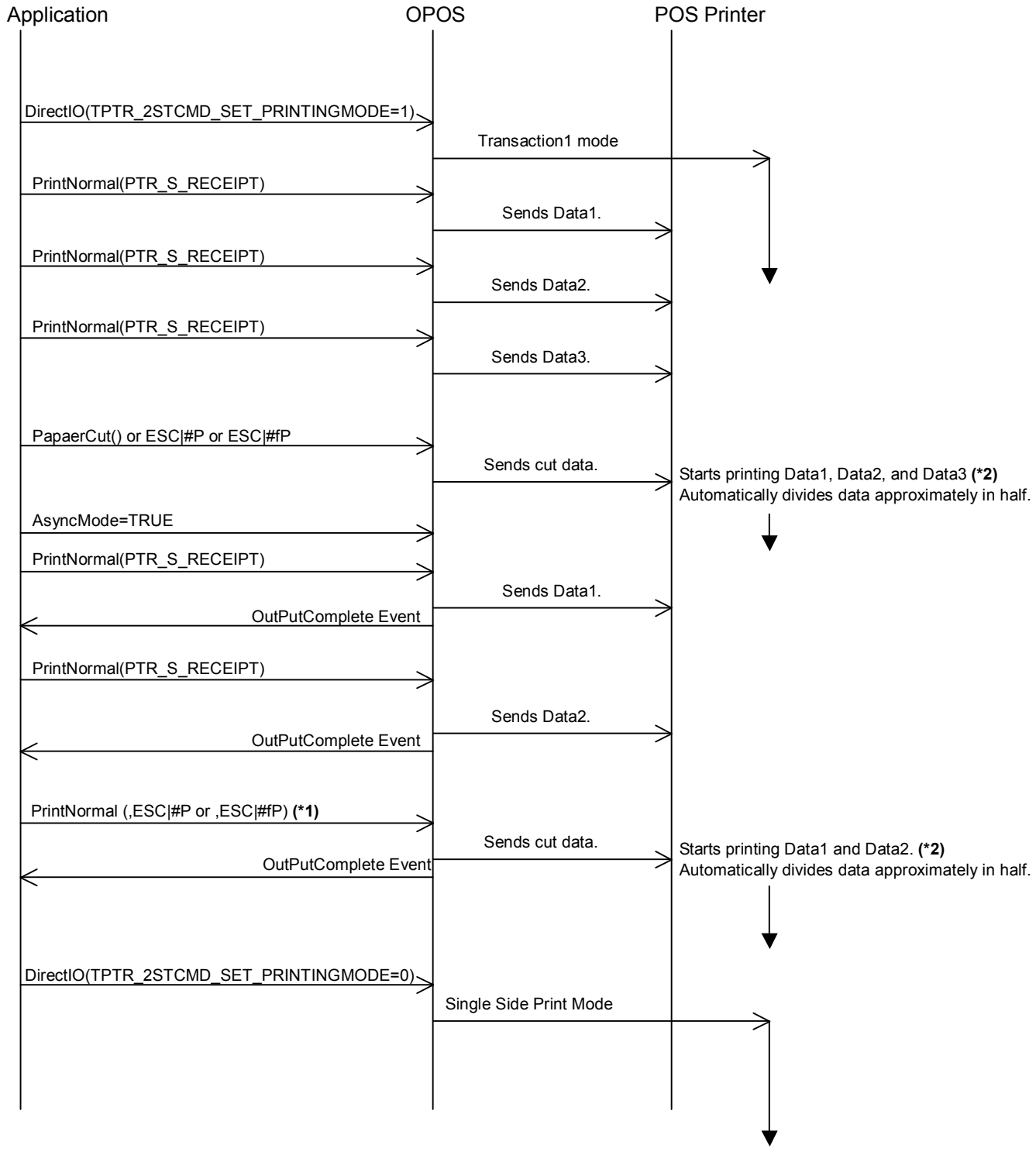



Application
OPOS
POS Printer
TransactionPrint(PTR_TP_PREDEFINE)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
TransactionPrint(PTR_TP_NORMAL)
Predefines a data as back side data
TransactionPrint(PTR_TP_TRANSACTION3)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
PrintNormal(PTR_S_RECEIPT)
TransactionPrint(PTR_TP_NORMAL)
Starts printing the PTR_S_RECEIPT data on the front side, and predefined back side data on the back side.

2) Example of TransactionPrint/RotatePrint for Dual Side Print



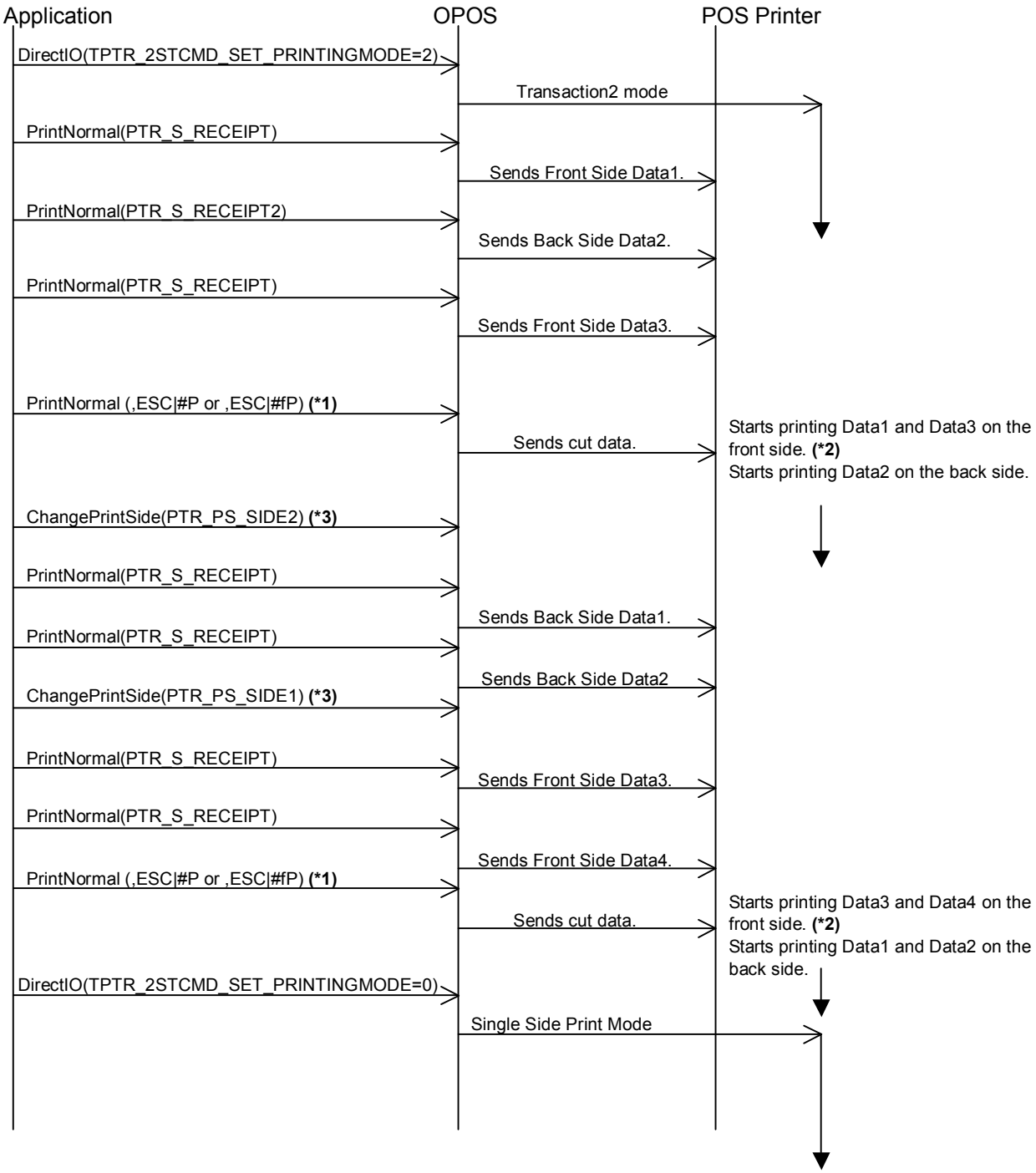
3) Example of Dual Side Print if OPOS registry 2STPrintingMode=1 or
when TPTR_2STCMD_SET_PRINTINGMODE=1 is specified by DirectIO



(*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 OPOS registry 2STPrintingMode=2 or when TPTR_2STCMD_SET_PRINTINGMODE=2 is specified by DirectIO

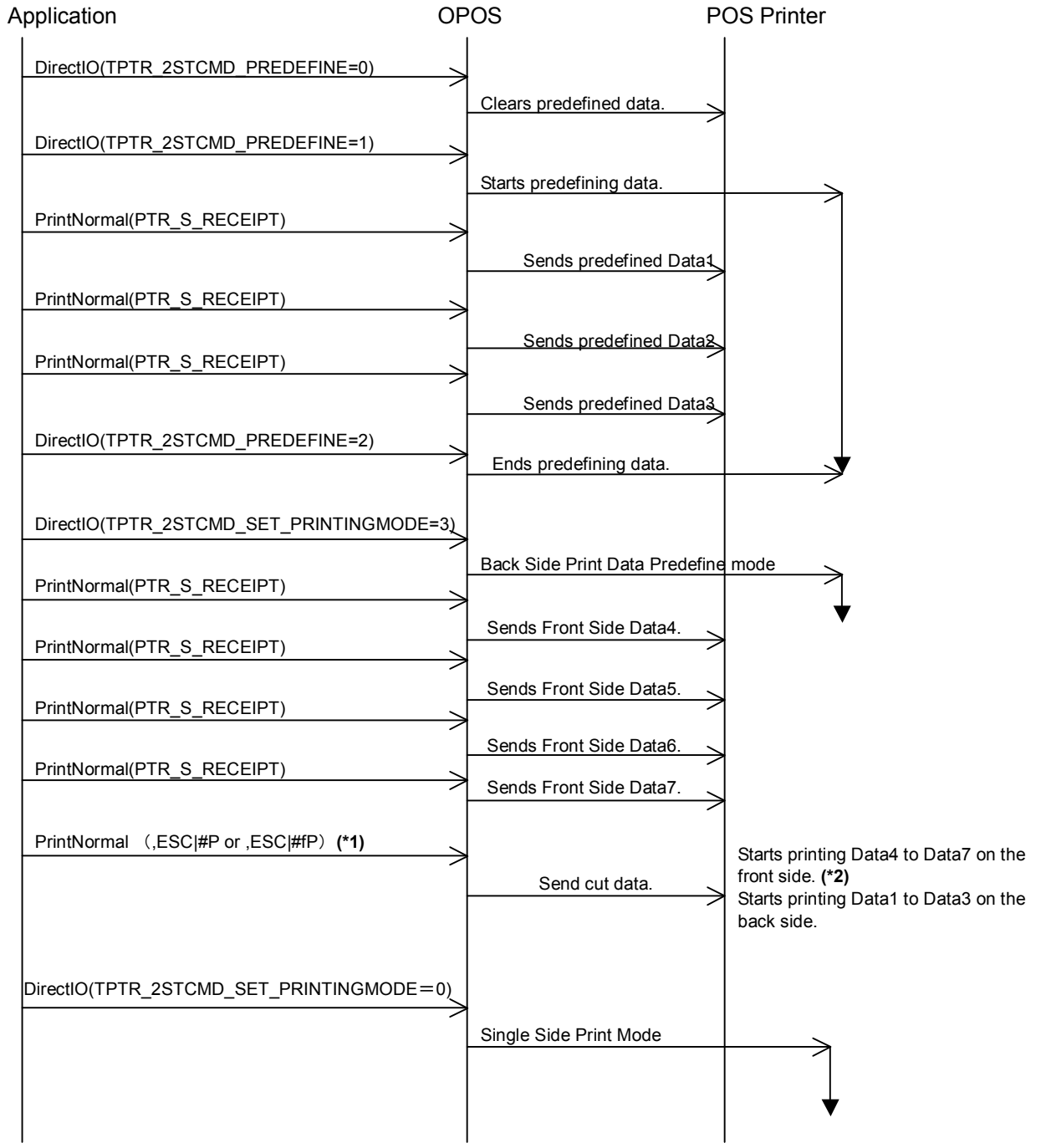


(*1) An escape sequence which initiates paper cut or PaperCut method

(*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 OPOS 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.

2. Header File for the Toshiba TEC Printers

TecPtr.h

```
////////////////////////////////////////////////////////////////////
//
// TecPtr.h
//
//   Nibble POS Printer header file for OPOS Applications.
//
// Modification history
// -----------------------------------------------------------------
// 98-01-07 OPOS Release 1.0                                  TEC
// 98-02-17 Add "DirectIO Method Command Constants"           TEC
// 98-02-17 Change "JAM ERROR" Status                         TEC
// 98-03-10 Add Printer Complete Status                       TEC
// 98-03-23 Add Error Continue Mode                           TEC
// 98-03-24 Add File Output Command                           TEC
// 98-04-16 Add Icon Bitmap Printing                          TEC
// 98-05-14 Add High Speed Image Print Interface              TEC
// 98-06-23 Add Color Print Command                           TEC
// 98-08-08 Add Printer Information Command                   TEC
// 98-08-12 Add Thermal Head Dot Broken Event                 TEC
// 98-08-18 Add PageMode management command                   TEC
// 98-08-26 Add Printer Reset Interface                       TEC
// 1999-04-07 Add DR209 Slip detail information               TEC
// 2000-01-11 Add High speed & ReverseBitmap                  TEC
// 2000-03-03 Add Set Print Position in PageMode              TEC
// 2000-03-15 Add Get Printer Hardware Status                 TEC
// 2000-03-17 Del Set Print Position in PageMode              TEC
// 2000-03-17 Add Set horizontal position(X2)                 TEC
// 2000-03-17 Add Set vertical   position(X2)                 TEC
// 2000-03-17 Add Set create new area's horizontal position   TEC
// 2000-03-17 Add Set create new area's vertical   position   TEC
// 2000-03-17 Add Set create new area's width                 TEC
// 2000-03-17 Add Set create new area's height                TEC
// 2000-03-17 Add Set create new area's direction             TEC
// 2000-03-17 Add Create new print area                       TEC
// 2000-03-21 Add Check Now Printer's Mode                    TEC
// 2000-03-22 Change Get Printer Hardware Status              TEC
// 2000-04-21 Add CutPaper Command                            TEC
// 2000-05-16 ADD Cancel no rotate PageMode data              TEC
// 2000-05-24 Add Invalid Paper Event                         TEC
// 2000-09-07 Add New Reset Printer(No Up Reset Event)        TEC
// 2000-12-05 Add TRST56 parallel printer multiple image      TEC
// 2001-03-06 Add Nibble Timeout Event                        TEC
// 2004-08-23 Add TPTR_StatusUpdate                           TEC
// 2006-11-30 Add dual side printing definition for TRST-A1x  TEC
////////////////////////////////////////////////////////////////////

////////////////////////////////////////////////////////////////////
// DirectIOEvent EventNumber Constants
////////////////////////////////////////////////////////////////////
const LONG TPTR_StatusUpdate = 1;
const LONG TPTR_EventNumber_Nibble = 1;
const LONG TPTR_EventNumber_DRS209 = 100;

////////////////////////////////////////////////////////////////////
// "DirectIOEvent" Event: "Data" Parameter Constants
////////////////////////////////////////////////////////////////////

const LONG TPTR_DIE_DRAWER_LOW      =  0x1200;
```

```
const LONG TPTR_DIE_DRAWER_HIGH    =  0x1204;

const LONG TPTR_DIE_ONLINE         =  0x1300;
const LONG TPTR_DIE_OFFLINE        =  0x1308;

const LONG TPTR_DIE_FEEDSW_OFF     =  0x1600;
const LONG TPTR_DIE_FEEDSW_ON      =  0x1640;

const LONG TPTR_DIE_RESET_OFF      =  0x2000;
const LONG TPTR_DIE_RESET_ON       =  0x2001;

const LONG TPTR_DIE_JRN_JAM_OK     =  0x2202;
const LONG TPTR_DIE_JRN_JAM_ERROR  =  0x2206;

const LONG TPTR_DIE_REC_JAM_OK     =  0x2200;
const LONG TPTR_DIE_REC_JAM_ERROR  =  0x2204;

const LONG TPTR_DIE_CUTTER_OK      =  0x2300;
const LONG TPTR_DIE_CUTTER_ERROR   =  0x2308;

const LONG TPTR_DIE_24VPOWER_OK    =  0x2500;
const LONG TPTR_DIE_24VPOWER_DOWN  =  0x2520;

const LONG TPTR_DIE_IDLE           =  0x2600;
const LONG TPTR_DIE_EXECUTE        =  0x2640;

const LONG TPTR_DIE_COMPLETE_ERR   =  0x3660;
const LONG TPTR_DIE_COMPLETE_OK    =  0x3640;

const LONG TPTR_DIE_HEAD_BROKEN    =  0x4001;
const LONG TPTR_DIE_HEAD_OK        =  0x4000;

const LONG TPTR_DIE_INVALID_PAPER        =  0x4501;

const LONG TPTR_DIE_NIBBLE_TIMEOUT  =  0x5001;
const LONG TPTR_DIE_NIBBLE_OK       =  0x5000;

//SLIP Printer Only
const LONG TPTR_DIE_SLIP_BOF_EMPTY     = 1001;
const LONG TPTR_DIE_SLIP_BOF_PAPEROK   = 1002;
const LONG TPTR_DIE_SLIP_TOF_EMPTY     = 1003;
const LONG TPTR_DIE_SLIP_TOF_PAPEROK   = 1004;
const LONG TPTR_DIE_SLIP_GAP_OPEN      = 1005;
const LONG TPTR_DIE_SLIP_GAP_CLOSE     = 1006;
const LONG TPTR_DIE_SLP_JAM_OK         = 0x2208;
const LONG TPTR_DIE_SLP_JAM_ERROR      = 0x2210;

//////////////////////////////////////////////////////////////////////
// DirectIO Method Command Constants
//////////////////////////////////////////////////////////////////////
const LONG TPTR_CMD_DIRECT_OUTPUT = 1;          // Direct Output
const LONG TPTR_CMD_SET_WRITETHREAD = 2;        // Set Async Write Thread Status
const LONG TPTR_CMD_GET_WRITETHREAD = 3;        // Get Async Write Thread Status
const LONG TPTR_CMD_SET_PTRREQUEST = 4;         // Set Printer Request
const LONG TPTR_CMD_FILE_OUTPUT = 5;            // Direct Output From File
const LONG TPTR_CMD_SET_ICONBMPNAME = 6;        // Set/Clear icon bitmap name
const LONG TPTR_CMD_GET_ICONBMPNUMBER = 7;      // Get icon bitmap number from name
const LONG TPTR_CMD_GET_ICONBMPNAME = 8;        // Get icon bitmap name from number
const LONG TPTR_CMD_GET_ICONBMPCOUNTER = 9;     // Get number of registered icon bitmap
const LONG TPTR_CMD_PRINT_TEXT_WITHICONBMP = 10;// Print text with icon bitmap
const LONG TPTR_CMD_BEGIN_MIXDATA_PAGE = 11;    // Begin Image/Text Mixed Page
const LONG TPTR_CMD_END_MIXDATA_PAGE = 12;      // End Image/Text Mixed Page
const LONG TPTR_CMD_ADD_ICONBMP_TO_PAGE = 13;   // Add Image data into Mixed Page
const LONG TPTR_CMD_ADD_TEXT_TO_PAGE = 14;      // Add Text data into Mixed Page
const LONG TPTR_CMD_SET_BITMAP_WIDTH = 15;      // Set Preset Bitmap Width
```

```
const LONG TPTR_CMD_GET_BITMAP_WIDTH = 16;      // Get Preset Bitmap Width
const LONG TPTR_CMD_SET_BITMAP_ALIGNMENT = 17;  // Set Preset Bitmap Alignment
const LONG TPTR_CMD_GET_BITMAP_ALIGNMENT = 18;  // Get Preset Bitmap Alignment
const LONG TPTR_CMD_SETBITMAP = 19;             // Set Preset Image(High speed)
const LONG TPTR_CMD_PRINTBITMAP = 20;           // Print Preset Image
const LONG TPTR_CMD_DEFINE_IMAGE_SLOT = 21;     // Define Image Slot Size for Preset Bitmap
const LONG TPTR_CMD_PAPER_KIND = 22;            // Set Paper Kind to Normal or Color
const LONG TPTR_CMD_DATA_COLOR = 23;            // Set Data Color to default or red(blue)
const LONG TPTR_CMD_GET_PRINTERINFORMATION = 24;// Get Printer Hardware Information
const LONG TPTR_CMD_BEGIN_PAGEMODE = 25;        // Begin no rotate PageMode data
const LONG TPTR_CMD_END_PAGEMODE = 26;          // End no rotate PageMode data
const LONG TPTR_CMD_RESET_PRINTER = 27;         // Reset Printer
const LONG TPTR_CMD_SETBITMAPEX = 28;           // Set Preset Image(High speed & ReverseBitmap)
const LONG TPTR_CMD_CHECK_PRINTERSTATUS = 29;   // Get Printer Hardware Status
const LONG TPTR_CMD_SET_HORIZONTAL_ABS = 30;    // Set horizontal position at absolute coordinate.(PageMode only)
const LONG TPTR_CMD_SET_VERTICAL_ABS = 31;              // Set vertical   position at absolute coordinate.(PageMode only)
const LONG TPTR_CMD_SET_HORIZONTAL_REL = 32;    // Set horizontal Position at relative coordinate.(PageMode only)
const LONG TPTR_CMD_SET_VERTICAL_REL = 33;              // Set Vertical   Position at relative coordinate.(PageMode only)
const LONG TPTR_CMD_SET_CHILDPG_HORIZONTAL= 34;         // Set create new area's horizontal position at absolute
coordinate.(PageMode only)
const LONG TPTR_CMD_SET_CHILDPG_VERTICAL = 35;  // Set create new area's vertical   position at absolute
coordinate.(PageMode only)
const LONG TPTR_CMD_SET_CHILDPG_WIDTH = 36;             // Set create new area's width.(PageMode only)
const LONG TPTR_CMD_SET_CHILDPG_HEIGHT = 37;    // Set create new area's height.(PageMode only)
const LONG TPTR_CMD_SET_CHILDPG_DIRECTION = 38; // Set create new area's direction.(PageMode only)
const LONG TPTR_CMD_CREATE_CHILDPG = 39;                // Create new print area.(PageMode only)
const LONG TPTR_CMD_CHECK_INPAGEMODE = 40;              // Check Now Printer's Mode.(PageMode or StandardMode)
const LONG TPTR_CMD_CUT_PAPER = 41;                                             // CutPaper Command
const LONG TPTR_CMD_CANCEL_PAGEMODE = 42;               // Cancel no rotate PageMode data
const LONG TPTR_CMD_RESET_PRINTER2 = 43;        // Reset Printer 2 (No Up Reset Event)

// dual side printing definition
const LONG TPTR_2STCMD_SET_PRITINGMODE =101;
const LONG TPTR_2STCMD_SET_PRINTINGSIDE =102;
const LONG TPTR_2STCMD_SET_UPSIDEDOWN = 103;
const LONG TPTR_2STCMD_SET_SWAPPRINTINGSIDE = 104;
const LONG TPTR_2STCMD_PREDEFINE = 105;

const LONG TPTR_CMD_DRAWER_OPEN = 111;
const LONG TPTR_CMD_DRAWER_STATUS = 112;

const LONG TPTR_CMD_SETBITMAP_FLASH_START = 115;
const LONG TPTR_CMD_SETBITMAP_FLASH_END = 116;


//for slip
const LONG TPTR_CMD_GET_SLIP_SPACE_BEFORE_TOF = 101;

                                                        // Available space before TOF on slip
const LONG TPTR_CMD_GET_SLIP_SPACE_AFTER_BOF = 102;

                                                        // Available space after BOF on slip

//for TSRT56 Printer
const LONG TPTR_CMD_SETBITMAP_MULTI = 201;              // Multiple image setup function
const LONG TPTR_CMD_PRINT_BITMAP_MULTI = 202;   // Multiple image printing function
const LONG TPTR_CMD_ALIGNMENT_BITMAP_MULTI = 203;
```

```
                                                                    // Multiple image execute alignment

//DirectIO Method "TPTR_CMD_SET_WRITETHREAD" Command Parameter Definition
const LONG TPTR_WT_SUSPEND = 1;              // Set to seupend
const LONG TPTR_WT_RESUME_AND_RETRY = 2;     // Set to resume and retry write data
const LONG TPTR_WT_CLEAR_AND_RESUME = 3;     // Clear queued data and resume
const LONG TPTR_WT_CLEAR_AND_RESET = 4;      // Clear queued data and reset printer device

//DirectIO Method "TPTR_CMD_GET_WRITETHREAD" Command Result Definition
const LONG TPTR_WT_STATE_SUSPEND = 1;        //Async write thread is suspended
const LONG TPTR_WT_STATE_RUN = 2;            //Async write thread is running

//DiretIO Methjod "TPTR_CMD_SET_PTRREQUEST" Command Parameter Definition
const LONG TPTR_PR_REPORT_COMPLETE = 1;      //Report when printer is idle
const LONG TPTR_PR_SKIP_WHEN_ERROR = 2;      //Skip print data after error occurred
const LONG TPTR_PR_CONTINUE_WHEN_ERROR = 3;  //Continue print data after error occurred

//DirectIO Method "TPTR_CMD_END_MIXDATA_PAGE" Command Parameter Definition
const LONG TPTR_EMP_PRINT_DATA = 1;          //Print Bufferred Data
const LONG TPTR_EMP_PURGE_DATA = 2;          //Purge Bufferred Data

//DirectIO Method "TPTR_CMD_PAPER_KIND" Command Parameter Definition
const LONG TPTR_PK_NORMAL = 1;               //Select Normal Paper
const LONG TPTR_PK_COLOR = 2;                //Select Color Paper

//DirectIO Method "TPTR_CMD_DATA_COLOR" Command Parameter Definition
const LONG TPTR_DC_DEFAULT = 1;              //Default Color(Black)
const LONG TPTR_DC_OTHER = 2;                //Other Color(Red / Blue)

//DirectIO Method "TPTR_CMD_GET_PRINTERINFORMATION" Command Parameter Definition
const LONG TPTR_GPI_ROM_VERSION = 1;         //Get Printer ROM Version

//DirectIO Method "TPTR_CMD_CHECK_PRINTERSUATUS" Command Parameter Definition
const LONG TPTR_CS_NOWSTATUS = 0;                                   // No Connect Check And Get Printer Status
const LONG TPTR_CS_CONNECTCHECK = 1;                                // Connect Check And Get Printer Status

//DirectIO Method "TPTR_CMD_SET_CHILDPG_DIRECTION" Command Parameter Definition
const LONG TPTR_PD_DIRECTION0 = 0;                                  // Create Page's Print Direction is Top To
Bottom To Send Paper direction
const LONG TPTR_PD_DIRECTION1 = 1;                                  // Create Page's Print Direction is Left To
Right To Send Paper direction
const LONG TPTR_PD_DIRECTION2 = 2;                                  // Create Page's Print Direction is Bottom To
Top To Send Paper direction
const LONG TPTR_PD_DIRECTION3 = 3;                                  // Create Page's Print Direction is Right To
Left To Send Paper direction

//DirectIO Method "TPTR_CMD_CUT_PAPER" Command Parameter Definition
const LONG TPTR_CP_NOMOVE_CUT = 0;                                  // No Move And PaperCut
const LONG TPTR_CP_JUSTIFY_CUT = 1;                                 // Move To Head And PaperCut

//DirectIO Method "TPTR_CMD_SETBITMAP_MULTI" Command Parameter Definition(TRST56 only)
const LONG TPTR_SBM_CREATE_MEMORY_IMAGE = 1;   //Create memory image
const LONG TPTR_SBM_SET_IMAGE_TO_PRINTER = 2;  //Setup image(s) to printer flash memory
const LONG TPTR_SBM_CANCEL_MEMORY_IMAGE = 3;   //Cancel All image(s) from memory(can not clear printer image)

////////////////////////////////////////////////////////////////////////
// 2ST Printer Station Constant
////////////////////////////////////////////////////////////////////////
const LONG PTR_S_RECEIPT2 = 0x800
////////////////////////////////////////////////////////////////////////
// 2ST "TransactionPrint" Method: "Control" Parameter Constants
////////////////////////////////////////////////////////////////////////
```

```
const LONG PTR_TP_TRANSACTION1 = 411
const LONG PTR_TP_TRANSACTION2 = 511
const LONG PTR_TP_TRANSACTION3 = 611
const LONG PTR_TP_PREDEFINE = 711

////////////////////////////////////////////////////////////////////////
// 2ST "SetLogo" Method: "Location" Parameter Constants
////////////////////////////////////////////////////////////////////////
const LONG PTR_TP_2STL_TOP = 401
const LONG PTR_TP_2STL_BOTTOM = 402
const LONG PTR_TP_2STL_ERROR_TOP = 403
```

3. Control Panel

This chapter describes the Control Panel which is installed by the installer.
For the setup details, please refer to the section, "1.1.7 OPOS Registry".

3.1 Overview

You can easily make the common registry settings for the TRSTA1x POS Printer OPOS Control by installing the OPOS in an execution environment.
Available settings are as follows:

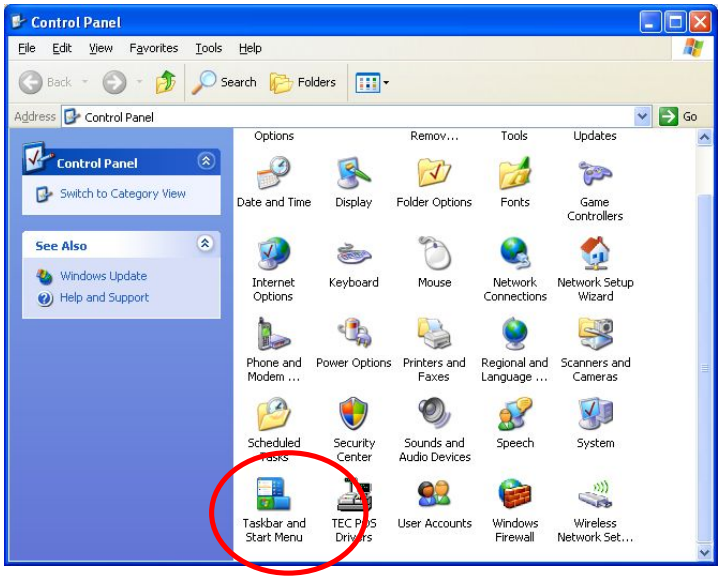
Value	Description
Port	A port, used to connect with the printer device, can be selected from the list box.
BaudRate	A communication speed with the printer can be selected from the list box. The value should be the same as the baud rate setting of the printer device.
Country	A country code can be selected from the list box.
Paper Width	Printer paper width can be selected either from 80 mm or 58 mm. The value should be the same as the paper width setting of the printer device.
Use Override Mode	An operational mode of the RotatePrint method can be set to Override mode by checking this checkbox.
Print Mode **(*1)**	A default print mode when using the OPOS can be selected from the front side mode (printing only on the front side) and the three back side print modes (printing only on the back side).
Swap Front Side and Back Side **(*1)**	A print side (front or back side) can be switched by checking this checkbox.
Upside Down **(*1)**	Upside Down Print on the front/back side is enabled by checking this checkbox
Minimum Receipt **(*1)**	A minimum receipt length for printing in Transaction1 mode can be specified in dots.

(*1) These values can be set using the printer device setting, but the OPOS Control ignores the printer device settings and enables the settings made from the Control Panel.

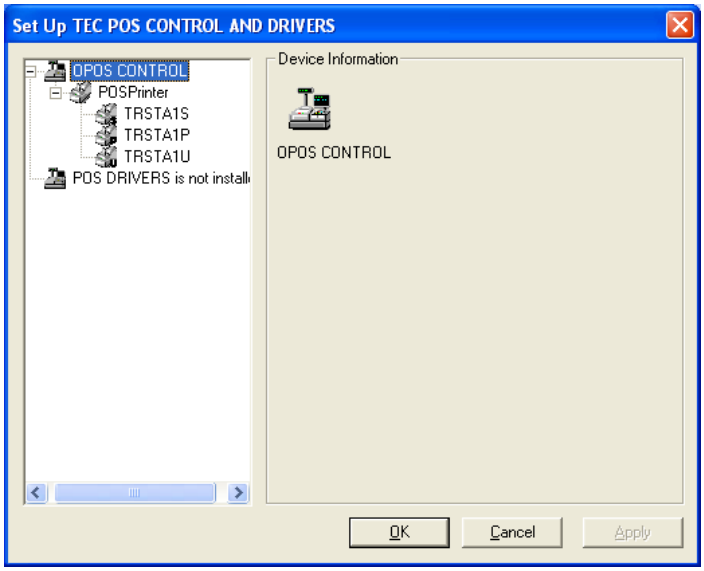
Table 26 TRSTA1x POS Printer Control – Available Settings from Control Panel

3.2 Startup and Operations

In order to make settings from the "Control Panel", open the "Control Panel" screen and double-click the "TEC POS Drivers" icon.



As shown below, the "Set Up TEC OPOS CONTROL AND DRIVERS" screen appears.
Under the "OPOS CONTROL" icon, device names are listed by device classes. Double-click a device name to make necessary settings.



For the TRSTA1x POS Printer Control, the following screen appears. Items which should not be set or unsupported items are grayed out.

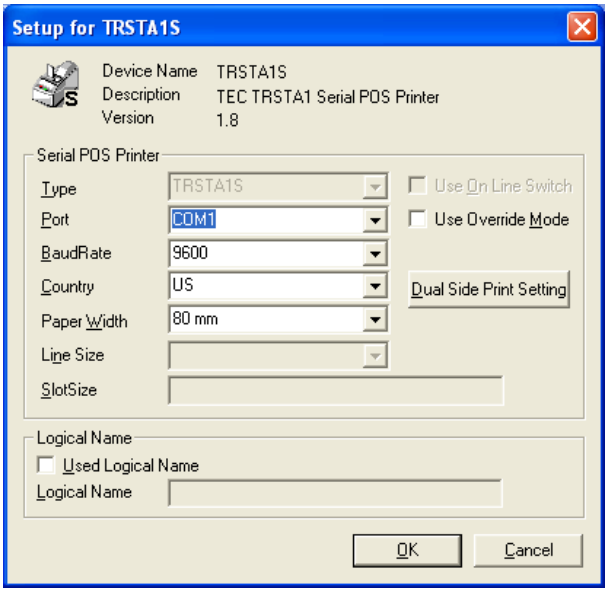


Table 27 TRSTA1S (Serial POS Printer) Setup Screen

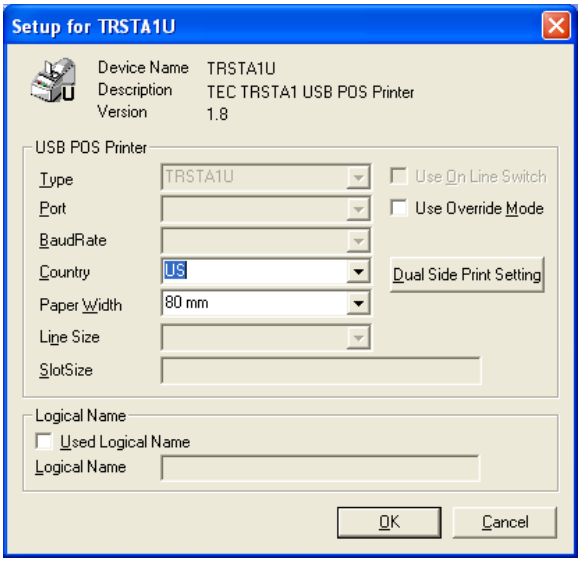


Table 28 TRSTA1U(USB POS Printer) Setup Screen

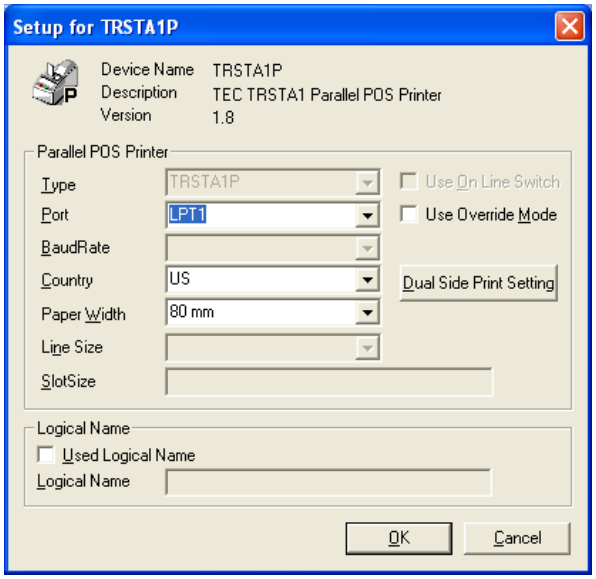


Table 29 TRSTA1P(Parallel POS Printer) Setup Screen

In order to make Dual Side Print settings to the TRSTA15 (Dual Side Printer), press the "Dual Side Print Setting" button, and the "Dual Side Print Setting" screen appears. Please make settings using this screen only when you want to fix the settings such as print mode. If you want to dynamically change the print mode using the program or when the Dual Side Print functions of the TransactionPrint method is used, it is recommended to leave the settings to the defaults.

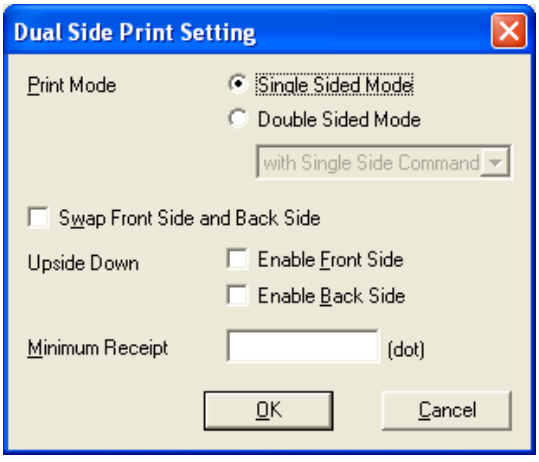


Table 30 TRSTA15(Dual Side POS Printer) Dual Side Print Setup Screen

4. Installer

This Chapter describes the installer for installing the TRSTA1x OPOS Control.

4.1 Procedure

1) Installation of Toshiba TEC's general-purpose USB driver (for the USB POS printer only)
When you connect the TRST-A10/TRST-A15 USB POS Printer, Windows displays the screen asking you to install the USB driver.
Install the USB driver by selecting the USBdriver folder and following the standard Windows procedures.
When the installation completes successfully, "Toshiba TEC TRST-A1x USB POS-Printer" appears under "TEC Bulk & Interrupt USB Device" in the Computer Management screen as shown below.

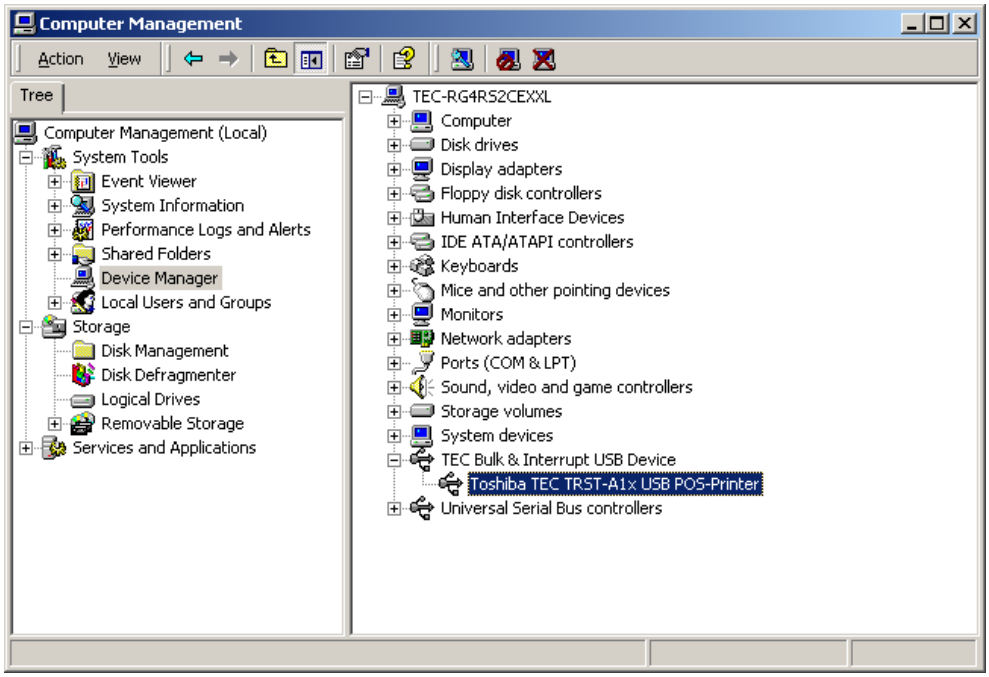
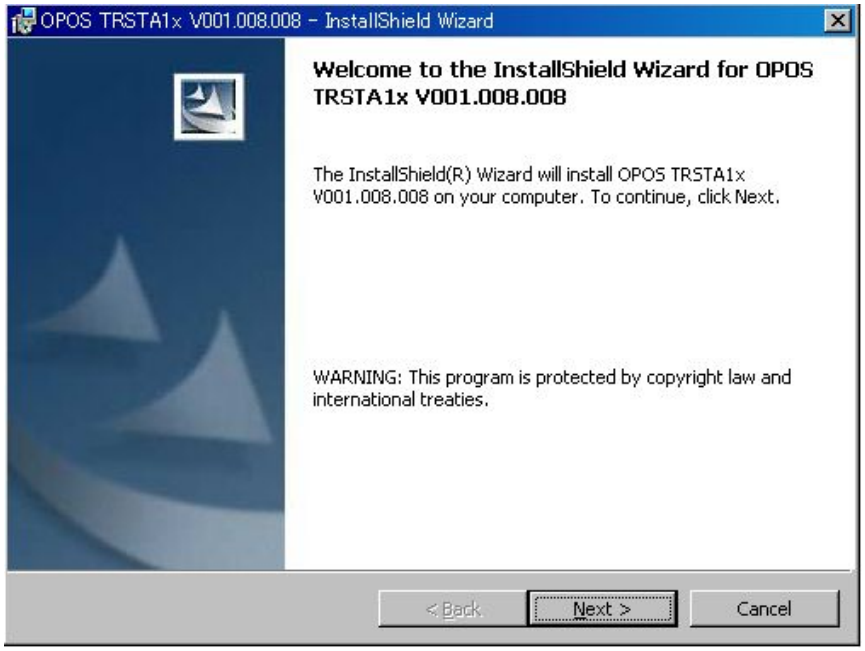
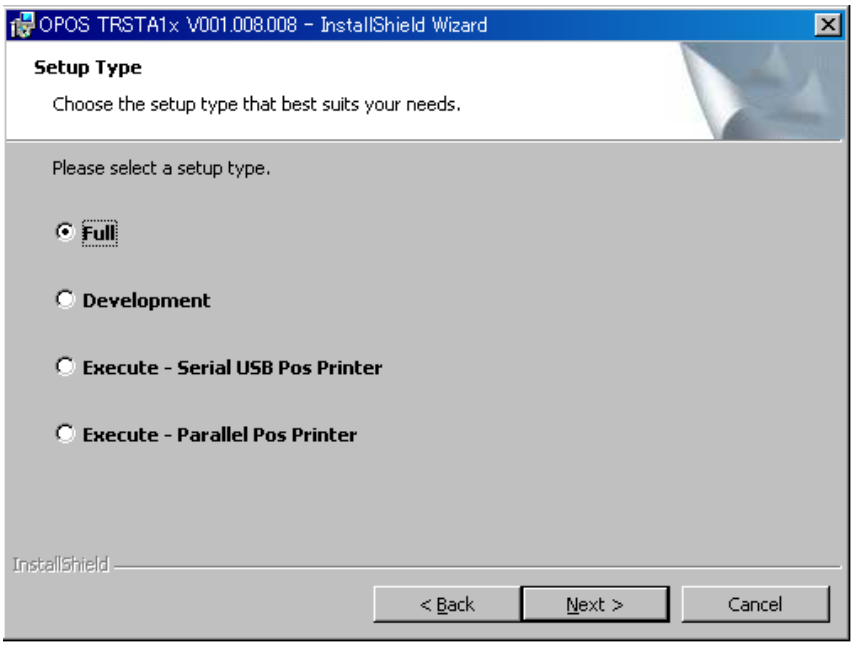


Table 31 Windows Device Manager after Installing the USB Driver

2) Installation of OPOS Control
Run the Setup.exe file in the OPOS folder, and the following screen appears. Read the description on the screen and press the Next button.



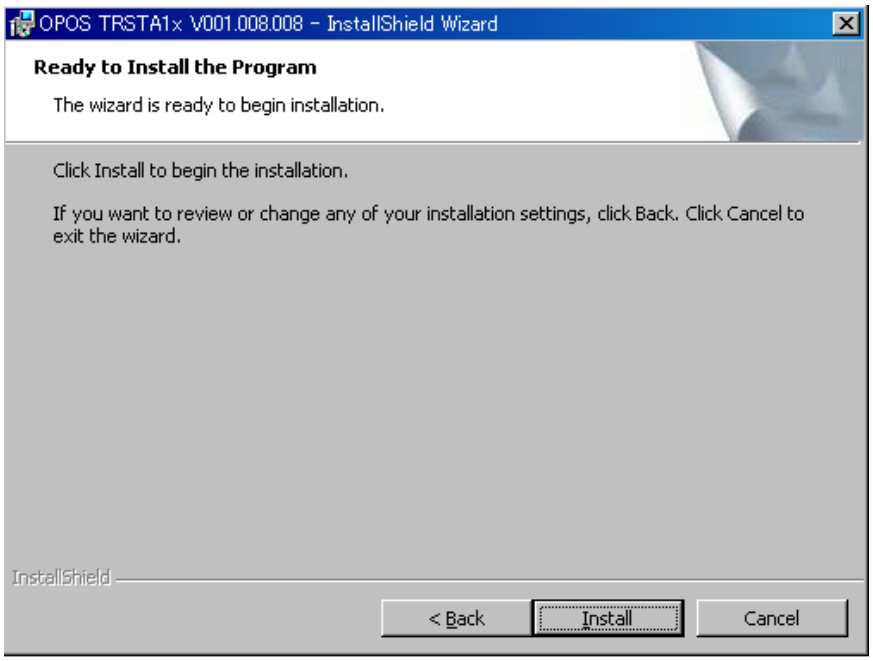
The Setup Type screen appears. Select a setup type.



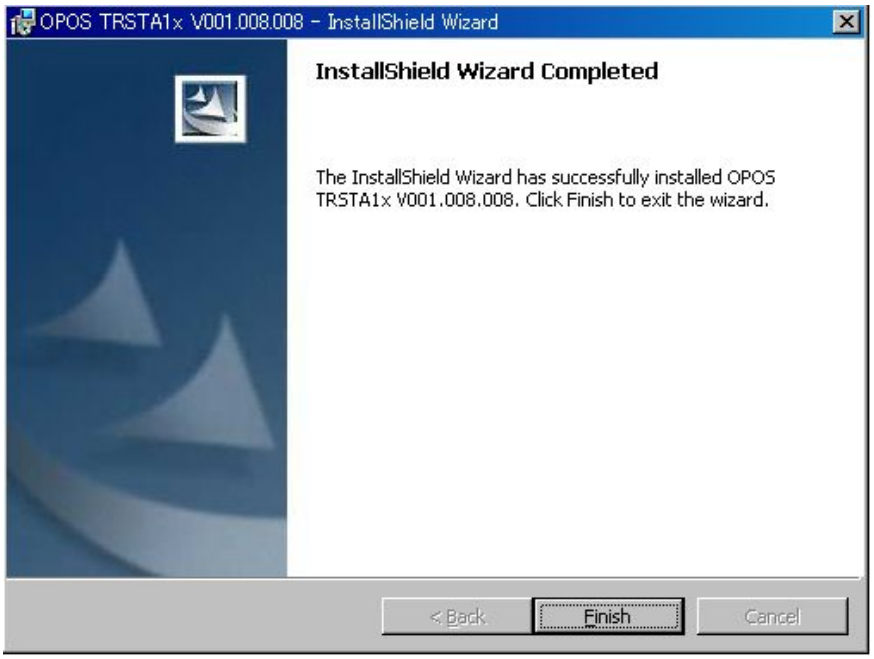
Setup type	Description	Installation File
Full	Installs the development environment and all execution environments.	POS Printer OPOS Control Control Object TRSTA1x USB POS Printer OPOS Service Object TRSTA1x Serial POS Printer OPOS Service Object TRSTA1x Parallel POS Printer OPOS Servie Object TEC POS Control Panel Bitmap Registration to Flash ROM (SetBitmapTool) Operation Check (CheckHealth Program) Header File for the Toshiba TEC Printers OPOS APG1.8 VB Header File
Development	Installs the development environment.	POS Printer OPOS Control Control Object Bitmap Registration to Flash ROM (SetBitmapTool) Header File for the Toshiba TEC Printers OPOS APG1.8 VB Header File
Execute Serial USB Pos Printer	Installs the OPOS Control which runs on the serial POS printer and USB POS printer.	POS Printer OPOS Control Control Object TRSTA1x USB POS Printer OPOS Service Object TRSTA1x Serial POS Printer OPOS Service Object TEC POS Control Panel Bitmap Registration to Flash ROM (SetBitmapTool) Operation Check (CheckHealth Program)
Execute Parallel Pos Printer	Installs the OPOS Control which runs on the parallel POS printer.	POS Printer OPOS Control Control Object TRSTA1x USB POS Printer OPOS Service Object TRSTA1x Serial POS Printer OPOS Service Object TEC POS Control Panel Bitmap Registration to Flash ROM (SetBitmapTool) Operation Check (CheckHealth Program)

Table 32 Setup Types of OPOS Control Installer

After selecting a setup type, press the Install button to start the installation.



When the installation completes successfully, the following screen appears.



5. Tool

This chapter describes the tools which are installed by the installer.

5.1 Bitmap Registration to Flash ROM (SetBitmapTool)

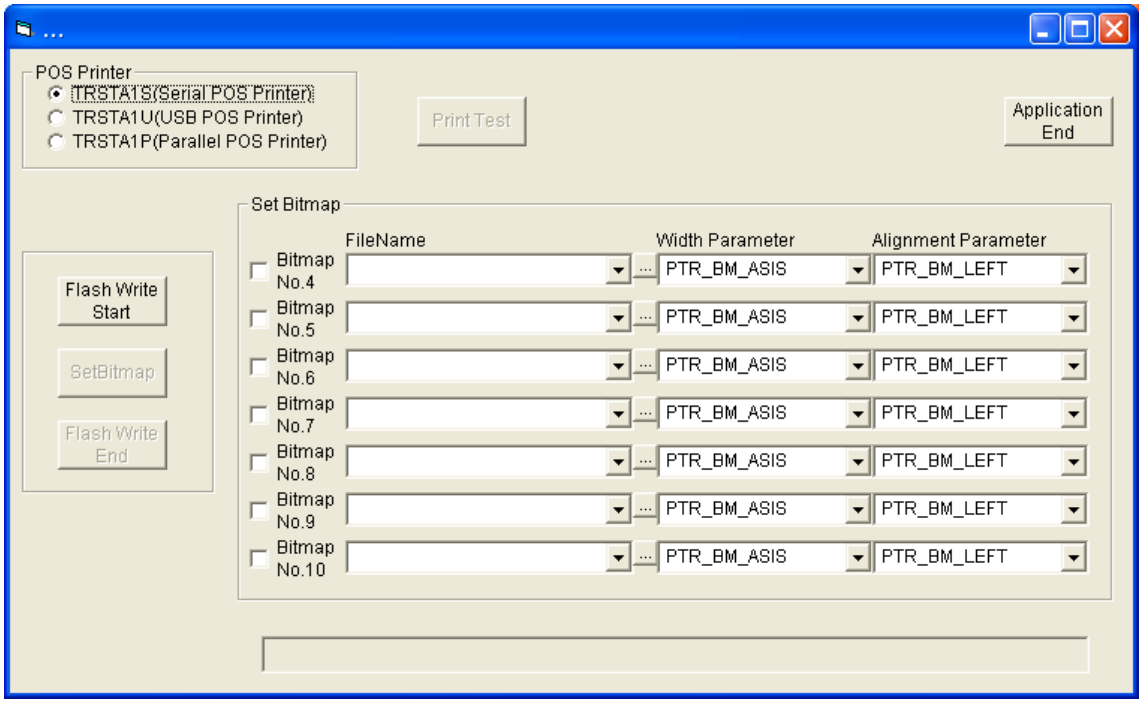
This tool saves a bitmap image file in the flash ROM of the printer device. The written bitmap image will not disappear even when the printer power is turned off and can be used without calling the SetBitmap method when the power is turned on again.
Bitmap images written into the flash ROM using this tool can be printed using the OPOS's bitmap print escape sequence [ESC|#B].

5.1.1 Operation Environment

This tool works as the application of the OPOS Control in the environment where the TRSTA1x POS Printer OPOS Control works.

5.1.2 Setup and Operations

Double-click the "SetBitmap.exe" file in the default folder, "C:\OPOS\TEC\TEST", and the following screen appears.



1. Select a device name of the POS printer connected.
2. Clicking the Flash Write Start button starts preparing to write a bitmap into the flash ROM of a specified POS printer, erasing all bitmaps stored in it.
3. Select a value of FileName, Width Parameter, and Alignment Parameter for each bitmap number. Width Parameter sets the horizontal width of a bitmap in dots which automatically reduces or enlarges a bitmap. When "ASIS" is selected, no reduction or enlargement is performed (same size as the bit map file).
   A numeric character entered in the Alignment Parameter box indicates the number of dots from the left edge of receipt paper.
4. Clicking the SetBitmap button disables the Flash Write End button and all bitmaps of the bitmap number checked are saved in the flash ROM.

5. When all selected bitmaps are saved, the SetBitmap button is disabled and the Flash Write End button is enabled.
6. Clicking the Flash Write End button disables bitmap registration to the flash ROM, and ends the process.

5.2 Operation Check (CheckHealth Program)

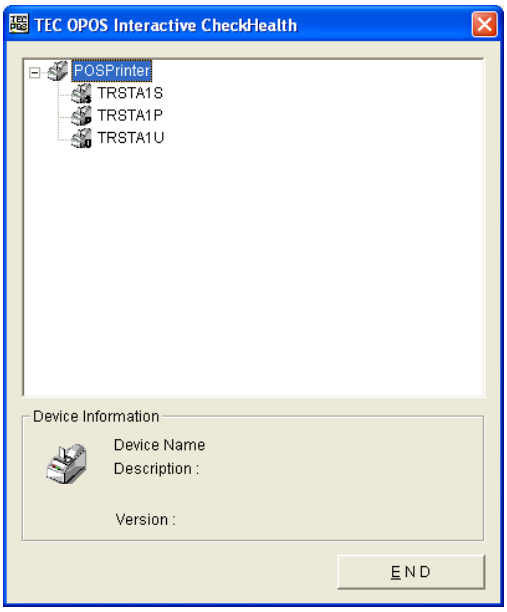
This program (OPOSCHK.exe) checks that each installation or each setting has been successfully completed, so that the device can operate properly after the installation or settings from the Control Panel. Running the OPOSCHK.exe file calls an interactive mode of the OPOS CheckHealth method.

5.2.1 Operation Environment

This tool works as the application of the OPOS Control in the environment where the TRSTA1x POS Printer OPOS Control works.

5.2.2 Setup and Operation

Double-click the "OPOSCHK.exe" file in the default folder, "C:\OPOS\TEC\TEST", and the following screen appears.
Names of the devices being installed are listed under the device class icon. Double-clicking a device you want to check will show the CheckHealth screen for that device.



For the details of the CheckHealth screen and the operation method, please refer to the section, "1.1.4 CheckHealth Method Specifications".

6. Appendix A Error Code List

The OPOS Control notifies the user of a result when the method is executed and a property setting is performed. The following pages give you error code lists, their meanings, and error handling method in case an error occurs.

This Control returns values below as error codes.

ResultCode	Value
OPOS_SUCCESS	0
OPOS_E_CLOSED	101
OPOS_E_CLAIMED	102
OPOS_E_NOTCLAIMED	103
OPOS_E_NOSERVICE	104
OPOS_E_DISABLED	105
OPOS_E_ILLEGAL	106
OPOS_E_NOHARDWARE	107
OPOS_E_OFFLINE	108
OPOS_E_NOEXIST	109
OPOS_E_FAILURE	111
OPOS_E_TIMEOUT	112
OPOS_E_BUSY	113
OPOS_E_EXTENDED	114

ResultCodeExtended	Value
OPOS_EPTR_COVER_OPEN	201
OPOS_EPTR_JRN_EMPTY	202
OPOS_EPTR_REC_EMPTY	203
OPOS_EPTR_REC_EMPTY	204
OPOS_EPTR_TOOBIG	206
OPOS_EPTR_BADFORMAT	207

OpenResult	Value
OPOS_ORS_CONFIG	403
OPOS_ORS_BADCO	451
OPOS_ORS_RESOURCEFAIL	452
OPOS_ORS_ALREADYOPEN	453

1) Open Method

Notifies a result using a return value and OpenResult property. One of the values is placed in the ResultCode: OPOS_SUCCESS when the method completed successfully, the same value as the current if the device has been already opened, then OPOS_E_CLOSED for other cases.

Method	Value	OpenResult	Meaning	Error Handling
Open	OPOS_SUCCESS	OPOS_SUCCESS	Completed successfully	–
	OPOS_E_NOSERVICE	OPOS_ORS_BADCO	CO is not supporting the required method.	Need investigation.
		OPOS_ORS_RESOURCEFAIL	Failed to obtain the OS version.	Need investigation.
	OPOS_E_ILLEGAL	OPOS_ORS_ALREADYOPEN	Already opened.	–
	OPOS_E_NOEXIST	OPOS_ORS_CONFIG	Incorrect registry	Need investigation.
	OPOS_E_FAILURE	OPOS_ORS_RESOURCEFAIL	Internal abnormality Failed to create system resource.	Restart the POS system. Need investigation if the same error repeats.

2) Close Method

Notifies a result using a return value and Result Code property.

Method	Value	ResultCode	Meaning	Error Handling
Close/CloseService	OPOS_SUCCESS	OPOS_E_CLOSED	Completed successfully	–
	OPOS_E_CLOSED	OPOS_E_CLOSED	Already closed.	–
	Value returned from Release/ReleaseDevice	ResultCode for Release/ReleaseDevice	Refer to the section, "Release/ReleaseDevice".	–

3) DirectIO Method

The DirectIO method is described for each command.

There are two types of commands: those that only operate synchronously and those that operate both synchronously and asynchronously. Regarding the latter commands, a notification method differs between when they operate synchronously and when they operate asynchronously. This document describes for both cases.

Commands that operate both synchronously and asynchronously are as follows:

TPTR_CMD_DIRECT_OUTPUT
TPTR_CMD_SET_PTRREQUEST
TPTR_CMD_FILE_OUTPUT
TPTR_CMD_PRINTBITMAP

- When the commands operate synchronously:

  The table below describes the synchronous operations for the both types of commands.

  Each method notifies a result using a return value, Result Code property, and ResultCodeExtended property.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_DIRECT_ OUTPUT	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_DIRECT_ OUTPUT	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_CMD_FILE_ OUTPUT	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_FILE_ OUTPUT	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_NOEXIST	0	The file does not exist.	Specify a correct filename.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_ OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_DRAWER_ OPEN	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_ OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_CMD_DRAWER_ STATUS	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_SET_ PRINTINGMODE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_2STCMD_SET_PR INTINGSIDE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_ NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_SET_PRINTINGSIDE	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_2STCMD_SET_UPSIDEDOWN	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_SET_ UPSIDEDOWN	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_2STCMD_ SWAPPRINTINGSIDE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_ PREDEFINE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_ SETBITMAP_FLASH_ START	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
TPTR_CMD_ SETBITMAP_FLASH_ END	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

- When the commands operate asynchronously:
  The table below describes the asynchronous operations of the commands that can operate both synchronously and asynchronously.
  Each command notifies a result of process reservation using a return value and ResultCode property, and ResultCodeExtended property and a result of the process using the following events: OutputCompleteEvent when the process completed successfully and ErrorEvent when the process failed.
  The ResultCode and ResultCodeExtended parameters indicate the reason of failure.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_DIRECT_ OUTPUT (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_DIRECT_ OUTPUT (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_CMD_FILE_ OUTPUT	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_FILE_ OUTPUT	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_NOEXIST	0	The file does not exist.	Specify a correct filename.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_DRAWER_ OPEN	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
TPTR_CMD_DRAWER_ STATUS	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
TPTR_2STCMD_SET_ PRINTINGMODE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_SET_ PRINTINGMODE	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_2STCMD_SET_ PRINTINGSIDE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_2STCMD_SET_ UPSIDEDOWN	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_SET_ UPSIDEDOWN	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_2STCMD_ SWAPPRINTINGSIDE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
TPTR_2STCMD_ PREDEFINE	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_2STCMD_ PREDEFINE	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TPTR_CMD_SETBITMAP _FLASH_START	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Command	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TPTR_CMD_SETBITMAP _FLASH_END	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Other Common Methods

Each method notifies a result using a return value, Result Code property, and ResultCodeExtended property.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
Claim / ClaimDevice	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_TIMEOUT	0	Other process has exclusive access to the device.	Wait until the exclusive access is released.
Release / ReleaseDevice	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	–
	OPOS_E_ILLEGAL	0	Does not have exclusive access to the device.	–
ClearOutput	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_EPTR_COVER_OPEN	0	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
	OPOS_EPTR_REC_EMPTY	0	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
ResetStatisTics	OPOS_E_ILLEGAL	0	Not supported	–
RetrieveStatisTics	OPOS_E_ILLEGAL	0	Not supported	–
UpdateStatisTics	OPOS_E_ILLEGAL	0	Not supported	–

4) Special Methods

There are two types of methods: those that only operate synchronously and those that operate both synchronously and asynchronously. Regarding the latter methods, a notification method differs between when they operate synchronously and when they operate asynchronously. This document describes for both cases.

Methods that operate both synchronously and asynchronously are as follows:

PrintNormal method
PrintTwoNormal method
CutPaper method
RotatePrint method
PrintBarCode method
PrintBitmap method
TransactionPrint method
MarkFeed method

- When the methods operate synchronously:

  The table below describes the synchronous operations for the both types of methods.

  Each method notifies a result using a return value, Result Code property, and ResultCodeExtended property.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintNormal	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintNormal	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintTwoNormal	OPOS_E_ILLEGAL	0	Not supported	–
PrintImmediate	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintImmediate	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
BeginInsertion	OPOS_E_ILLEGAL	0	Not supported	–
EndInsertion	OPOS_E_ILLEGAL	0	Not supported	–
BeginRemoval	OPOS_E_ILLEGAL	0	Not supported	–
EndRemoval	OPOS_E_ILLEGAL	0	Not supported	–
CutPaper	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
CutPaper	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
RotatePrint	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
RotatePrint	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintBarCode	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintBarCode	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
PrintBitmap	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintBitmap	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
TransactionPrint	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
TransactionPrint	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_BUSY	0	An asynchronous printing is in process.	Execute this method again after the asynchronous printing is completed.
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
ValidateData	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
ValidateData	OPOS_E_ILLEGAL	0	Illegal value	Check the *Station* parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
			An escape sequence which specifies an unsupported value to "#" was detected. The value is rounded to the nearest supported value.	Check the escape sequence specified by the Data parameter.
	OPOS_E_FAILURE	0	Failure such as illegal escape sequence (format error) or unsupported escape sequence	Check the escape sequence specified by the Data parameter.
SetBitmap	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_NOEXIST	0	The file does not exist.	Check the filename.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
SetBitmap	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established. Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
		OPOS_EPTR_TOOBIG	Bitmap is too big.	Change the slot size so that the bitmap can be registered or reduce the bitmap size.
		OPOS_EPTR_BADFORMAT	The specified file is not a bitmap file.	Check the specified file.
SetLogo	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
SetLogo	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_EPTR_COVER_ OPEN	0	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
	OPOS_EPTR_REC_EMPTY	0	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
ChangePrintSide	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_EPTR_COVER_ OPEN	0	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
	OPOS_EPTR_REC_EMPTY	0	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
MarkFeed	OPOS_E_ILLEGAL	0	Not supported	–

- When the methods operate asynchronously:

  The table below describes the asynchronous operations of the methods that can operate both synchronously and asynchronously. Each method notifies a result of process reservation using a return value and ResultCode property and ResultCodeExtended property and a result of the process using the following events: OutputCompleteEvent when the process completed successfully and ErrorEvent when the process failed. The ResultCode and ResultCodeExtended parameters indicate the reason of failure.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintNormal (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.

Method	ResultCode Parameter	ResultCodeExtended Parameter	Meaning	Error Handling
PrintNormal (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist.Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
PrintTwoNormal (Result of process reservation)	OPOS_E_ILLEGAL	0	Not supported	–

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
CutPaper (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
CutPaper (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error

Method	ResultCode Parameter	ResultCodeExtended Parameter	Meaning	Error Handling
CutPaper (Result of process reservation)	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
RotatePrint (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.

Method	ResultCode Parameter	ResultCodeExtended Parameter	Meaning	Error Handling
RotatePrint (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
Method	**Value ResultCode**	**ResultCodeExtended**	**Meaning**	**Error Handling**
PrintBarCode (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintBarCode (Result of process reservation)	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
Method	**ResultCode Parameter**	**ResultCodeExtended Parameter**	**Meaning**	**Error Handling**
PrintBarCode (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.

Method	Value ResultCode	ResultCodeExtended	Meaning	Error Handling
PrintBitmap (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.
Method	**ResultCode Parameter**	**ResultCodeExtended Parameter**	**Meaning**	**Error Handling**
PrintBitmap (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error

Method	ResultCode Parameter	ResultCodeExtended Parameter	Meaning	Error Handling
PrintBitmap (Result of process reservation)	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
Method	**Value ResultCode**	**ResultCodeExtended**	**Meaning**	**Error Handling**
TransactionPrint (Result of process reservation)	OPOS_SUCCESS	0	Process reservation accepted	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Illegal value	Check the parameter value.
			Failed to create system resource. (Failed to secure the memory area.)	Restart the POS system. Need investigation if the same error repeats.

Method	ResultCode Parameter	ResultCodeExtended Parameter	Meaning	Error Handling
TransactionPrint (Result of process reservation)	OPOS_E_NOHARDWARE	0	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
	OPOS_E_FAILURE	0	Failed due to the reason other than Cover Open and No Paper.	Check none of the following abnormalities exist. Need investigation if any such abnormality exists. • Paper jam • Cutter error
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
MarkFeed (Result of process reservation)	OPOS_E_ILLEGAL	0	Not supported	–

5) Property Setting

Each property notifies a result using a Result Code property and ResultCodeExtended property.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
BinaryConversion	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_ILLEGAL	0	Invalid value	Check the value.
DeviceEnabled	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_EXTENDED	OPOS_E_NOHARDWARE	The printer power is not turned on or printer is not connected.	Check the printer power is turned on and the connection with the printer has been established.Need investigation if there are no problems with the power and connection statuses.
		OPOS_EPTR_COVER_OPEN	Cover Open (The printer cover is open.)	Execute this method again after closing the printer cover.
		OPOS_EPTR_REC_EMPTY	No Paper (The receipt paper has run out.)	Execute this method again after loading a new receipt paper.
		OPOS_E_FAILURE	Failed to initialize communication with the printer.	Restart the POS system. Need investigation if the same error repeats.
	OPOS_E_FAILURE	0	Failed to initialize communication with the printer.	Restart the POS system. Need investigation if the same error repeats.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
DeviceEnabled	OPOS_E_BUSY	0	An enable request was made before the asynchronous output has not been completed.	Complete the asynchronous output or terminate it, then execute it again.
FreezeEvents	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
PowerNotify	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_ILLEGAL	0	The device is enabled.	Set the DeviceEnable property to FALSE to disable the device.
			Invalid value	Check the value.
			Not supported	–
AsyncMode	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
CartridgeNotify	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
CartridgeNotify	OPOS_E_ILLEGAL	0	The device is enabled.	Set the DeviceEnable property to FALSE to disable the device.
			Invalid value	Check the value.
			Not supported	–
CharacterSet	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Invalid value	Check the value.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
FlagWhenIdle	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
MapCharacterSet	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
MapMode	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_ILLEGAL	0	Invalid value	Check the value.
RotateSpecial	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Invalid value	Check the value.
JrnLineChars	OPOS_SUCCESS	0	Not supported	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
JrnLineHeight	OPOS_SUCCESS	0	Not supported	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
JrnLineSpacing	OPOS_SUCCESS	0	Not supported	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
JrnLetterQuality	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Not supported	–

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
JrnCurrentCartridge	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Not supported	–
RecLineChars	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Invalid value	Check the value.
RecLineHeight	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
RecLineSpacing	OPOS_SUCCESS	0	Completed successfully	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
RecLetterQuality	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Not supported	–
RecCurrentCartridge	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Not supported	–

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
SlpLineChars	OPOS_SUCCESS	0	Not supported	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
SlpLineHeight	OPOS_SUCCESS	0	Not supported	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
SlpLineSpacing	OPOS_SUCCESS	0	Not supported	–
	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.

Property	ResultCode	ResultCodeExtended	Meaning	Error Handling
SlpLetterQuality	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Not supported	–
SlpCurrentCartridge	OPOS_E_CLOSED	0	The device is closed.	Open the device using the Open method.
	OPOS_E_NOTCLAIMED	0	Does not have exclusive access to the device.	Obtain the exclusive access using the Claim (ClaimDevice) method.
	OPOS_E_DISABLED	0	The device is disabled.	Set the DeviceEnabled property to TRUE to enable the device.
	OPOS_E_ILLEGAL	0	Not supported	–

7. Appendix B OPOS Installation File List

Installation File	Filename	Directory	Installation Type
POS Printer OPOS Control Object	OPOSPrinter.ocx	C:\OPOS\TEC	Full, Development, Execute-Serial USB Pos Printer Execyte-Parallel Pos Printer
TRSTA1x USB POS Printer OPOS Service Object	TRSRA1U.dll	C:\OPOS\TEC	Full, Execute-Serial USB Pos Printer
TRSTA1x Serial POS Printer OPOS Service Object	TRSTA1S.dll	C:\OPOS\TEC	Full, Execute-Serial USB Pos Printer
TRSTA1x Parallel POS Printer OPOS Service Object	TRSTA1P.dll	C:\OPOS\TEC	Full, Execyte-Parallel Pos Printer
TEC POS Control Panel	tecpos.cpl	%Windows%System32	Full, Execute-Serial USB Pos Printer Execyte-Parallel Pos Printer
Bitmap Registration to Flash ROM (SetBitmapTool)	SetBitmapTool.exe	C:\OPOS\TEC\TEST	Full, Development, Execute-Serial USB Pos Printer Execyte-Parallel Pos Printer
Operation Check (CheckHealth Program)	OPOSCHK.exe	C:\OPOS\TEC\TEST	Full, Execute-Serial USB Pos Printer Execyte-Parallel Pos Printer
Header File for the Toshiba TEC Printers	TECPTR.BAS	C:\OPOS\TEC\V18Bas	Full, Development,
OPOS APG1.8 VB Header File	OposAll.bas	C:\OPOS\TEC\V18Bas	Full, Development,
Log Manager Library	LogMngr.dll	%Windows%System32	Full, Execute-Serial USB Pos Printer Execyte-Parallel Pos Printer
Toshiba TEC's General-purpose USB Library	TECUSB.dll	%Windows%System32	Full, Execute-Serial USB Pos Printer