

EPSON OPOS ADK MANUAL

**APPLICATION DEVELOPMENT
GUIDE**

POSPrinter (TM Series)

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Section 1. Introduction

This manual describes the method of use and related items, as well as machine-specific precautions, when the EPSON TM series printers are used with the EPSON OPOS ADK program.

Before the EPSON TM series printer can be used, the EPSON OPOS ADK program should be installed and the devices to be used should be set using the SetupPOS utility. For setting methods, please refer to the Section 2 of this manual.

Devices:

For details of support devices, please read the release notes (SupportedDevicesList.txt).

For more details of the function, please refer to the manual of respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

Compatibility mode

The compatibility mode for upward compatibility was added in OPOS Ver2.60.

For the details of the compatibility mode, please refer to "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE Compatibility Mode".

Section 2. Details on Settings

This section describes connection configurations and how to make the settings for the POSPrinter.

2.1 Device Information

Please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for the details of DeviceDescription property and DeviceName property.

2.2 References of Firmware Versions

Please refer to the release notes (SupportedDevicesList.txt).

2.3 Settings of DIP Switches and Hardware

For more detail information, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

When modify the default values, use the SetupPOS utility to change the port information.

2.4 Setting of Devices

The SetupPOS utility should be used for setting devices. For how to use the SetupPOS utility, please refer to the "EPSON OPOS ADK MANUAL User's Manual (Installer/ SetupPOS/ TMUSB)".

2.4.1 Interfaces

2.4.1.1 1) Setting of Serial Devices

When using a printer with serial I/F specifications, use the SetupPOS utility to add the device to be used, and then set the baud rate, etc.

2.4.1.2 2) Setting of parallel devices

When using a printer with parallel I/F specifications, select devices with "P" appended to the end of the device name when adding the device in the SetupPOS utility.

Example: TM-H6000IIP/ TM-H5000IIP/ TM-T88IVP...

3) Setting of USB devices

When using a printer with USB I/F specifications, select devices with "U" appended to the end of the device name when adding the device in the SetupPOS utility.

Example: TM-H6000IIIU/ TM-H5000IIU/ TM-T88IVU...

2.4.1.3 4) Setting of Ethernet devices

When using a printer with Ethernet I/F specifications, select devices with "E" appended to the device name when adding the device in the SetupPOS utility.

*Select the device name that has an "E" on the end when using the UB-R series also.

Example: TM-H6000IIIE/ TM-H5000IIE/ TM-T88IVE...

2.4.1.4 5) Setting of IEEE802.11 devices

When using a printer with IEEE802.11 I/F specifications, select devices with "W" appended to the device name when adding the device in the SetupPOS utility.

Example: TM-P60IIW

2.4.1.5 6) Setting of Bluetooth devices

When using a printer with Bluetooth I/F specifications,

Select the COM port of the Bluetooth device in the Create New window of TMPORT.

2.4.1.5.1 Device Specific Settings

When making the settings, first select the device in the SetupPOS utility and then select "Device Specific Settings". For the details of "Device Specific Settings", please refer to the "EPSON OPOS ADK MANUAL User's Manual (Installer/ SetupPOS/ TMUSB)". A dialog box with the following functions appears. The items to be set are as follows:

- General
- Paper
- Slip
- Bitmap
- Color Bitmap
- Status Log
- Options
- Default Value
- Printing Properties

The settable functions vary by models. Items that cannot be set are not displayed,

or may be displayed in gray. Please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

2.4.1.5.2 General Tab

- "Disable panel buttons" check box
When "Ignore panel buttons" is checked, the panel buttons ([FEED], [RELEASE], etc.) are disabled. Default setting is without checking.
- "Assume print complete when data output finishes" check box
By checking "Assume print complete when data output finishes", completion of transmission and processing are synchronized. If not checked, the completion of printing and processing are synchronized. Default setting is without checking. This option is provided in order to ensure compatibility with the previous version of OPOS ADK. Normally, do not change this setting.
- "Homogenize Error Codes" check box
When "Homogenize Error Codes" is checked and an error occurs during printing, the same error code returned when the print command is issued after the error occurs is returned. If not checked, an error during printing is notified as timeout. In this case, the application need not reissue the print command because the printing continues if the printer is fixed. Default setting is without checking. In the case of models with built-in process ID, "Homogenize Error Codes" cannot be selected (gray display). In the case of these printer models, error codes during printing are not distinguished from error codes before printing; meaning that if an error occurs during printing (printer is off-line) the remaining data is not printed even if the printer is fixed. However, the operation where the [FEED] button is pressed is an exception, and there is a possibility that the remaining data is printed.
- "Ignore firmware version check" check box
When "Ignore firmware version check" is checked, the printer firmware version is not monitored. The warning message is not displayed when unsupported firmware version is detected. Default setting is with checking.
It is not recommended to use any other versions of firmware than those explained as the references of firmware versions at the Section 2 of this manual. Updating the former versions of firmware is strongly recommended.
When the firmware version is higher than the versions supported by EPSON OPOS ADK Version 2.60, it can be used after confirming the operation: In

most cases, there is no problem on the operation. However, it is recommended to use the supported EPSON OPOS ADK.

- “Output complete timeout [s]” edit box
“Output complete timeout [s]” edit box can be set from 5 [s] to 300 [s]. The default setting is 45 [s].

2.4.1.6 Paper Tab

- “Paper Type” combo box
Supported paper type can be selected. Settable paper types differ by models. For more details, please refer to the manual of respective printer model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”.
- “Paper Width [mm]: Line Width [dot]: LineCharsList” combo box
Supported paper width can be selected. Selectable values differ by models. For more details, please refer to each printer model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”.
This item can specify the value of the Width by selecting from the list or by directly entering the value. The method differs by models. When selecting from the list, the value is fixed. When entering the value, only the range of the value is fixed.

2.4.1.7 Slip Tab

- “Removal feed length [Line]” edit box
The default slip eject length (Pull-out position) = 0, ensures that the slip is ejected to a position where it is easy to remove at the hardware default setting of respective printer model. The removal feed length can be set by the line. For the selectable range, please refer to the respective printer model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”.
- “Reverse feed removal” check box
When “Reverse feed removal” is checked, the slip is removed in the direction of insertion used when the BeginRemoval method is executed. Default setting is without checking.
- “Blink LED with BeginInsertion” check box
When “Blink LED with BeginInsertion” is checked, the LED will blink when the BeginInsertion method is executed. Default setting is without checking.
- “Endorse Multi Font” check box

When “Endorse Multi Font” is checked, the endorsement can be printed in the multi-font text because the 40CPL mode is disabled. Default setting varies by models.

- “Paper Type” combo box
Sets the print head control method according to the type of cut paper being used for printing. The default setting depends on the device.

2.4.1.8 Bitmap Tab

- [TMFlogo...] button
Pressing the [TMFlogo...] button starts up the logo registration tool, allowing registrations of bitmaps in the printer. The bitmaps registered in the NVRAM are not deleted even after the printer is powered off.
- “Download” check box
When “Download” is checked, downloading function is loaded to the printer being set. “Download” setting is unable to change. (Indicated in gray)
- “NVRAM” check box
When “NVRAM” is checked: NVRAM function is available with SetBitmap method.
When “NVRAM” is not checked: NVRAM function is not used with SetBitmap method.
Default setting is without checking.
* When “NVRAM” is checked, NVRAM function is controlled by OPOS ADK.
In the case, all the data registered with NVRAM by applications including TMFlogo are deleted.

2.4.1.9 Color Bitmap Tab

Halftone

- “Method” combo box
In the “Method” combo box, one of the methods, Dither, Error Diffusion, None, or None (Extract) can be selected. Normally, select Dither, or Error Diffusion to print photos. For printing logos, select None, or None (Extract). When selecting None (Extract), it prints only extracted colors which exactly match the Primary and the Secondary colors after the image processed: There is no half tone color in this process. For other colors, very dark colors and dark colors are printed as the Primary and Secondary colors. The brighter color parts are printed as white.

Dither (Default): A process for printing photos. Darker parts are recognized as the Primary color, and the brighter parts are recognized as the Secondary color.

Error Diffusion: A process for printing photos. Darker parts are recognized as the Primary color, and the brighter parts are recognized as the Secondary color.

None: A basic process that multiple colors are separated into the Primary color (darker colors) and the Secondary color (brighter colors).

None (Extract): After the basic process described above, extracts the colors that exactly match the colors of the cartridges. As for the other methods except for None (Extract), it recognizes the darker color as the Primary color, and the brighter color as the Secondary color: The image of the bitmap and the printed bitmap maybe different. When you want to print a bitmap same as the image, use None (Extract).

- “Brightness” slider bar

In the “Brightness” slider bar, the printed brightness can be specified from 1 to 5 levels. 1 is the brightest. Default is 3.

Color

- “Primary” combo box

In the “Primary” combo box, the first cartridge color can be specified.
Default is black.

- “Secondary” combo box

In the “Secondary” combo box, the second cartridge color can be specified. Red or blue colors can be specified except for monochrome printers. When selecting the same color as the Primary or “None”, bitmaps are printed in a monochrome color.

Gradation

- “Method” combo box

Specifies the initial value of the print format for bitmaps printed.

Normal: Does not print a special bitmap.

Multi-tone: Prints a 16 level grayscale bitmap.

Default is Normal.

*Multi-tone printing can not be used when using the RotatePrint method with

90 degrees or using PageMode.

2.4.1.10 Status Log Tab

- "ERROR" check box

When "ERROR" is checked, the error and error recovery information are recorded in the specified in "Long filename (full path name)" file. Default setting is without checking.

-

- "OFFLINE" check box

When "OFFLINE" is checked, online/offline recovery information is recorded in the specified in "Long filename (full path name)" file. Default setting is without checking.

- "Log filename (full path name)" edit box

Be sure to enter the full path filename correctly in "Long filename (full path name)". Default setting is without checking.

Log information is recorded as follows.

12/7/2004 13:29:19 Cover was opened

- "Maximum file size [KB]" edit box

Specify the maximum size of the log file in "Maximum file size [KB]". If size of the log file exceeds this value, the file contents are automatically deleted.

[Log Character String]

Message
Mechanical error occurred
Mechanical error cleared
Cutter error occurred
Cutter error cleared
Automatic recoverable error occurred
Automatic recoverable error cleared
Unrecoverable error occurred
Unrecoverable error cleared
Cover opened
Cover closed
[Feed] button was pressed
[Feed] button released
Drawer status HIGH
Drawer status LOW
Device Offline
Device Online
Power ON
Power OFF
No paper
Paper inserted
Replace Ink cartridge.

Ink available
Cartridge removed
Cartridge present
Start Head cleaning
Finish Head cleaning

2.4.1.11 Option Tab

Optional functions vary by models. Please refer to the respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for details.

2.4.1.12 Default Value Tab

In compliance with UPOS1.11, the timing of initialization processing is different in pre-Ver2.60 and Ver2.60. Therefore, be sure to set the "DefaultValue".

- "Multilingual font" combo box
Supported Multilingual font type can be selected. Settable font types differ by models. For more details, please refer to the manual of respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".
- "Slip font size type" combo box
Supported slip font size type can be selected. Settable font size types differ by models. For more details, please refer to the manual of respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter". Default is first item of the list.
- "Receipt font size type" combo box
Supported receipt font size type can be selected. Settable font size types differ by models. For more details, please refer to the manual of respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter". Default is first item of the list.
- "Receipt paper layout type" combo box
Supported receipt paper layout type can be selected. Settable paper layout types differ by models. For more details, please refer to the manual of respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter". Default is first item of the list.
- "Peeler installation" check box
When the model has a peeler function: Check the checkbox
When the model does not have a peeler function: Uncheck the checkbox
Default setting is without checking.
- "Endorsement installation" check box
When the model has an endorsement: Check the checkbox
When the model does not have an endorsement: Uncheck the checkbox
Default setting is with checking.

- “Autocutter installation” check box

When the model has the autocutter:	Check the checkbox
When the model does not have the autocutter:	Uncheck the checkbox

 Default setting is without checking.
- “OCB-R font installation” check box

When the model has the OCB-R font r:	Check the checkbox
When the model does not have the OCB-R font:	Uncheck the checkbox

 Default setting is without checking.
- “U375 compatible” check box

When using the U375 compatible:	Check the checkbox
When not using the U375 compatible:	Uncheck the checkbox

 Default setting is without checking.

* Available only for the TM-U675.

2.4.1.13 Printing Properties Tab

- “Receipt Characters per Line” combo box

Sets the default value for the number of characters on a line for receipt. For more details, please refer to each printer model’s “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”. Default is first item of the list.
- “Receipt Line Spacing [dots]” edit box

Sets the default value for the line spacing for receipt paper. For more details, please refer to each printer model’s “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”. Default is the default value of RecLineSpacing.
- “Slip Characters per Line” combo box

Sets the default value for the number of characters on a line for slip paper.

Sets the default value for each of the face side and back side.

Face side: PTR_PS_SIDE1 of ChangePrintSide

Back side: PTR_PS_SIDE2 of ChangePrintSide

For more details, please refer to each printer model’s “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”. Default is first item of the list.
- “Slip Line Spacing [dots]” edit box

Sets the default value for the line spacing for slip paper. Sets the default value for each of the face side and back side.

Face side: PTR_PS_SIDE1 of ChangePrintSide

Back side: PTR_PS_SIDE2 of ChangePrintSide

For more details, please refer to each printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter". Default is the default value of SlpLineSpacing.

- "CharacterSet [Code Page Nimber]" combo box
Sets the standard character set. Default is "437".

2.5 Port Information

Port information varies by models. Please refer to the respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for details.

Section 3. Function Details

This section describes the functions of the EPSON TM series printers in details. Supplementary explanation of the parts not described in detail in the "UPOS" is also given here.

3.1 CheckHealth Method

3.1.1 Internal Test

When executed, the current printer status is returned. Nothing is printed.

When the method is executed by OPOS_CH_INTERNAL, the character string of the CheckHealthText property is as follows.

"Internal Hcheck: Complete" : CheckHealthText

After executing the CheckHealth method, be sure to confirm the returned value and the ResultCode and ResultCodeExtended properties. For details on occurred errors, please refer to the Section 6 of this manual.

3.1.2 External Test

When executed, the following character strings are printed on the POSPrinter's currently specified station.

```
External Hcheck!!
EPSON OPOS ADK
ServiceObjectVersion = Version
DeviceName = Device Name
```

Please confirm that the printed strings are correct.

When the method is executed by OPOS_CH_EXTERNAL, the character string of the CheckHealthText property is as follows.

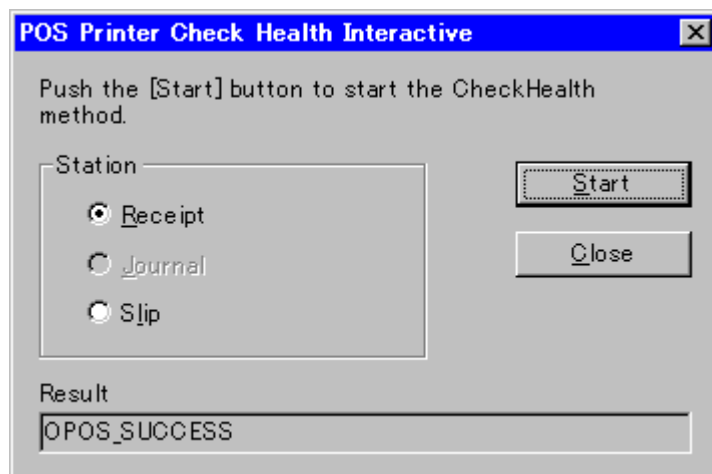
"External Hcheck: Complete" : CheckHealthText

After executing the CheckHealth method, be sure to confirm the returned value.

For details on occurred errors, please refer to the Section 6 of this manual.

3.1.3 Interactive Test

Executes the interactive CheckHealth test. When executed, the following dialog box is displayed.



When executed, the following character strings are sent and printed on the specified station (receipt, journal or slip).

```
Interactive Hcheck!!
EPSON OPOS ADK
ServiceObjectVersion =Version
DeviceName =Device Name
```

Confirm that the printed contents are correct.

When the method is executed by OPOS_CH_INTERACTIVE, the character strings of the CheckHealthText property are as follows.

```
"Interactive Hcheck: Canceled" : When the [Close] button is pressed without
                                the [Start] button having been pressed.
"Interactive Hcheck: Complete" : When the [Close] button is pressed after
                                the [Start] button has been pressed once.
```

After executing the CheckHealth method, be sure to confirm the returned value. If an error has occurred, there is no point in looking at the CheckHealthText property. For details on the occurred error, please refer to the Section 6 of this manual.

3.2 Property Set values and Default Values

Property set values and default values vary by printer models. Please refer to the manual of respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for details.

3.3 Supporting Methods

Supporting Methods and the detailed information vary by printer models. Please refer to the manual of the respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for details.

3.4 Escape Sequences

Various escape sequences can be specified with the printed characters. The Escape Sequences differ by printer models, and the selected Station. For more details, please refer to the manual of respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for details.

There are some Escape Sequences specified with # mark. When # is out of its range, the closest value to its range is used. However, when #rF is out of its range, the closest value cannot be used because the maximum value is varying according to the LineSpacing setting range: The operation cannot be executed.

3.4.1 Alignment function

Able to print the text that designated multiple alignments by using the escape sequences command. The print data are printed in the specified order if the several alignments are specified. If the first alignment specification data is over the limit of number of print characters, a line feed is performed. In addition, the second alignment specification data is printed to the next line.

If each of the alignment data is within the limits of printable characters in one line, they are printed in the same line. Therefore, there is the possibility that the printed character overlaps.

The alignment specification is not supported in the following situations

Situation	Priority of alignment specification
When the printing data is buffered via RotatePrint method.	The first specification
When the printing data is buffered via PageModePrint method.	The first specification

3.5 Supplementary Explanation of Functions

More information about POSPrinter is described below.

3.5.1 Property Settings

3.5.1.1 Value Holding and Printer Setting

When the properties are set, data is sent only to the printer having these values and the printer setting is not changed. Therefore, regardless of the condition of printer, the property values are changed provided the values are correct and the ResultCode becomes OPOS_SUCCESS.

After the properties are set and the print method, etc. is executed, data is sent with necessary setting commands added and printing is executed in accordance with the characteristics indicated by the current properties.

3.5.1.2 MapMode

For the property values with relation to the MapMode, the held value is in dot units. When the MapMode is other than PTR_MM_DOTS and a value is set for the property, the value is converted to the corresponding value expressed in dot units. This value is then reconverted to MapMode unit.

Conversion from MapMode units to dot units is performed as follows.

PTR_MM_TWIPS:

$$\text{Value [dot]} = \text{Value [Twips]} \times \text{Resolution} / 1440;$$

PTR_MM_ENGLISH:

$$\text{Value [dot]} = \text{Value [English]} \times \text{Resolution} / 1000;$$

PTR_MM_METRIC:

$$\text{Value [dot]} = \text{Value [Metric]} \times \text{Resolution} / 2540;$$

Decimals are rounded down. If the calculated result becomes 0, it is corrected to 1 in cases in which the original value is other than 0.

Conversion from dot units to MapMode units is performed as follows.

PTR_MM_TWIPS:

$$\text{Value [Twips]} = \text{Value [dot]} \times 1440 / \text{Resolution};$$

PTR_MM_ENGLISH:

$$\text{Value [English]} = \text{Value [dot]} \times 1000 / \text{Resolution};$$

PTR_MM_METRIC:

$$\text{Value [Metric]} = \text{Value [dot]} \times 2540 / \text{Resolution};$$

Decimals are rounded up.

<Example>

MapMode = PTR_MM_METRIC, in a printer in which the resolution is 180 [dpi] and the line feed amount is set to 1000, the property values become as follows:

PTR_MM_DOTS:

XxxLineSpacing = 70

PTR_MM_TWIPS:

XxxLineSpacing = 560

PTR_MM_ENGLISH:

XxxLineSpacing = 389

PTR_MM_METRIC:

XxxLineSpacing = 988

3.5.1.3 OutputID

The default value of the OutputID property is “0”. When the first asynchronous output is executed, the OutputID property value is “1”, and count up one by one. When the “long” value is counted up to its maximum value (2147483647), the next OutputID is “1”.

3.5.1.4 LetterQuality

The switching operation (print result) when set to LetterQuality varies with the printing method employed by the printer.

- Serial dot impact
Setting/cancellation of single-direction printing.
- Line thermal
Setting/cancellation of smoothing of double height/width characters.
Selection of bitmap printing resolution.
- Ink jet
Setting/cancellation of single-direction printing.
Selection of bitmap printing resolution.
Switching between economy and fine mode.
Specify/clear the smoothing of double height/width characters.

3.5.1.5 FontTypefaceList

- **Selection of fonts and cancellation of selection**

If the FontTypefaceList property is not empty, it is possible to change the font type by the ESC sequence ESC|#fT. If the FontTypefaceList property is empty, this ESC sequence is ignored.

If the # value is "0", the default font is selected. If this is not the case, a font indicated in the FontTypefaceList property is selected. (When "1", the first font is selected; when "2", the second font is selected.)

This ESC sequence is not cancelled by ESC|N. The specified font is kept as the font of printing even after finishing the printing method. To change the font back to the former one or to another, it needs to be specified with ESC|#fT. Change of font type can only be done at the beginning of a line. Therefore, if ESC|#fT is specified in the middle of a line, a line feed is automatically performed.

- **XxxLineChars property while a special font is selected**

The character string printed while a special font is selected must conform to the number of characters indicated in the XxxLineChars property.

Also, even if the setting of the XxxLineChars property is modified while a special font is selected, the font that is actually printed is not changed. Following this, it becomes possible to print character strings with the number of characters indicated in the XxxLineChars property when the special font is cancelled by ESC|#fT.

- **Categories of special characters**

Special characters do not have to be defined for all the options between 0x00 to 0x7F. A space is printed if data, which was not defined at the time the special characters were selected, is selected.

- **OCR-B**

In the case of OCR-B, the defined characters are SP, +, -, 0 ~ 9, <, > only.

As the OCR-B characters are characters designed for character recognition when reading from a scanner, etc. the mode automatically becomes the high-quality printing mode when this font is selected. (Fine mode in the case of ink jet printer.) Inverted printings are also possible, but ornaments, such as bold and underline, cannot be printed in this mode.

3.5.1.6 CodePage and International Characters Settings

CodePages and international character sets are shown below. When one of the below values is set for the CharacterSet property, the corresponding international character set is also set automatically. If you want to use other international characters, please use the DirectIO method to change the international character set. (Please refer to the DirectIO command for selecting international character sets.)

● CharacterSet and the print characters

CharacterSet	CodePage	International Character Set
120	KU42(Thai)	USA
121	TIS11(Thai)	USA
123	TIS14(Thai)	USA
126	TIS18(Thai)	USA
130	TCVN-3(Vietnamese)	Vietnamese
131	TCVN-3(Vietnamese)	Vietnamese
150	ISO8859-7(Greek)	USA
151	ISO8859-2(Latin2)	USA
152	ISO8859-15(Latin9)	USA
153	774(Lithuanian)	USA
154	772(Lithuanian)	USA
155	KZ1048(Kazakhstan)	USA
254	Blank page	USA
255	Blank page	USA
437	USA	USA
720	PC720	USA
737	PC737(Greek)	USA
775	WPC775	USA
850	Multilingual	USA
851	PC851(Greek)	USA
852	Latin2	USA
853	PC853(Turkish)	USA
855	PC855(Cyrillic)	USA
858	PC858	USA
860	Portuguese	USA
861	861(Icelandic)	USA
862	PC862(Hebrew)	USA
863	Canadian-French	USA
864 ^{*1}	PC864(Arabic)	ARABIA
865	Nordic	USA
866	Cyrillic #2	USA
869	PC869(Greek)	USA
874	Windows	USA
936	Simple Chinese	USA
950	Traditional Chinese	USA
997	^{*2}	-

998	ASCII	USA
999	Windows	USA
1098	PC1098(Farsi)	ARABIA
1125	PC1125(Ukrainian)	USA
1250	WPC1250	USA
1251	WPC1251	USA
1252	Windows	USA
1253	WPC1253	USA
1254	WPC1254	USA
1255	WPC1255	USA
1256	WPC1256	USA
1257	WPC1257	USA
1258	WPC1258	USA

^{*1} Printing direction is the same as other languages (Printing from right is not supported).

^{*2} Print an equivalent Unicode character, within the limits of the printable characters of the device.

3.5.2 Bitmap

EPSON OPOS automatically chooses the most appropriate bitmap commands. The priority of the use of commands is as follows.

1. NV bitmap ^{*1}
2. Download bitmaps
3. Raster bitmap in the case of line thermal station
4. Height variable bitmap in the case of ink jet station
5. 1-line bitmap

^{*1}: This command is used only when “NVRAM” check box is checked in “Device Specific Settings” dialog box of SetupPOS utility.

Supported bitmap commands differ by printer models. For more details about the supported bitmap commands, please refer to the respective printer model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”.

When a printer supports a download bitmap function, a download bitmap is used for the SetBitmap 1; a bitmap in the SetBitmap 1 can be printed at high speed.

However, a download bitmap size is limited. For the details about the allowance range, please refer to the respective printer model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”.

3.5.2.1 NV Bitmap

Because NV Bitmap is storing data at NVRAM (nonvolatile memory) of the printer, High-speed printing is available. Moreover, the data is remained after turned off. This function is used prior to other functions with execution of SetBitmap method when “NVRAM” check box is checked under “Bitmap” tab in “Device Specific Settings” dialog box of SetupPOS utility.

When LetterQuality property is TRUE : Printing resolution of bitmap is the same as that of the printer respecting both height and width.

When LetterQuality property is FALSE : Printing resolution of bitmap is a half of that of the printer respecting both height and width.

There is size limitation of ESC/POS command other than paper width.

Regarding details of register possible bitmap size, please refer to respective printer model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOP GUIDE POSPrinter”.

3.5.2.2 Download Bitmap

As the data is held in the printers, these bitmaps can be printed at high speed. Normally, printers allow the downloading of one bitmap, so this function is utilized for the first bitmap number of the SetBitmap method for the receipt. When it is possible to download bitmaps one by one per station, this function is utilized for the first bitmap number of the SetBitmap method for respective stations.

In addition to the limitations set by paper width, the size is also restricted by the restrictions imposed by the ESC/POS commands. This function cannot be used at the same time as download characters. If the LetterQuality property is set to TRUE, both the vertical and horizontal printing resolutions of the bitmap are the same as that of printer's printing resolution. If the LetterQuality property is set to FALSE, both the vertical and horizontal printing resolutions of the bitmap are half of the printer's printing resolution. However, with a dot impact station, both the vertical and horizontal resolutions are the same as that of printers.

The size for download bitmap differs by printer models. Some models are unable to print download bitmap in two colors. For more detail information, please refer to the respective model's “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter”.

3.5.2.3 Raster Bitmap

The data transmission methods of these bitmaps are optimized for line thermal stations. This ensures printing of bitmaps at high speed on line thermal papers and curbs deterioration of the bitmap print quality due to paper feed stop. There is almost no advantage in using this command for other than line thermal stations. There is almost no advantage in using this command for other than line thermal stations. With some models, this command cannot be used. Accordingly, even if this function is available with the printer, it is not used other than line thermal stations. If the LetterQuality property is set to TRUE, both the vertical and horizontal printing resolutions of the bitmap are the same as that of the printer's printing resolution. If the LetterQuality property is set to FALSE, both the vertical and horizontal printing resolutions of the bitmap are half of the printer's printing resolution. However, with a dot impact station, both the vertical and horizontal resolutions are the same as that of printers.

Supported sizes of the Raster bitmap differ by printer models. For more details, please refer to the respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE".

3.5.2.4 Variable Height Bitmap

This is a command for ensuring efficient printing of bitmaps on ink jet printers. The size is restricted by the ESC/POS command, but since the Service Object can print one bitmap as a combination of "n" bitmaps when necessary, the possible size is only limited by the paper width.

If the LetterQuality property is set to TRUE, the both vertical and horizontal printing resolutions of the bitmap are the same as that of the printer's printing resolution.

If the LetterQuality property is set to FALSE, both the vertical and horizontal printing resolutions of the bitmap are half of printer's printing resolution.

The supported height differs by printer models.

For more details, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

3.5.2.5 1-line Bitmap

The width of the paper sets the limit on the size of this type of bitmap as one bitmap is printed as a combination of “n” numbers of 1-line bitmaps.

If the LetterQuality property is set to TRUE, both the vertical and horizontal printing resolutions of the bitmap are the same.

If the LetterQuality property is set to FALSE, the horizontal printing resolution is half of the printer's printing resolution but the vertical resolution is 1/3 of printer's printing resolution. However, with a dot impact station, both the vertical and horizontal resolutions are the same as that of printers. Accordingly, with a line thermal station, when the LetterQuality property is set to FALSE, the printed vertical length is longer than that of the actual bitmap. However, when the PrintBitmap method and PrintMemoryBitmap method's width parameter is other than PTR_BM_ASIS, the ratio between vertical and horizontal length is the same as the original bitmap because enlargement and reduction is performed to make the printed result identical with the original bitmap. When the SetBitmap method is used, enlargement and reduction are performed based on the standard mode (rotated printing mode not used) and the data saved. Consequently, if 90-degree rotated printing is performed, the ratio between the vertical and horizontal length of the printed bitmap will differ from the original bitmap.

3.5.2.6 Printing Position of Bitmap

It is not possible to print anything next to the bitmap. When printing the bitmap in the rotated printing mode, position compensation is performed automatically. This processing is designed to free the user from the necessity of making compensations overlapping with printing as when printing in the standard mode of the Printing area.

Position compensation is performed according to the following rules.

- When printing on the first line of the printing area:
If the upper edge of the bitmap extends beyond the printing area, the position of the upper edge of the bitmap is adjusted to align with the upper edge of the printing area.
- When printing at a position other than the first line of the printing area:
If the upper edge of the bitmap overlaps with the above line, the position of the upper edge of the bitmap is adjusted to be below the lower edge of the above line.

If the bitmap print command is executed at another position than at the start of the line, a line feed is performed automatically.

3.5.2.7 Print Quality

The bitmap print quality is determined by the XxxLetterQuality property. The control of the print density and the print head or the ink jet can be modified by altering the value of the XxxLetterQuality property.

3.5.2.8 Printable Bitmap Formats

The printable bitmap formats are formats that meet all the following conditions.

- BMP files
- Monochrome, 16-color (4-bit), 256-color (8-bit)
- Uncompressed

3.5.2.9 Color Bitmap

2-color Printing:

2-color bitmap can be printed when used 16 or 256-color bitmap file.

If a specified bitmap file is single color, it is printed with single color. Setting the Device Specific Settings can specify color image processing.

Multi-tone Printing:

You can obtain richer gradation by selecting Multi-tone. The printable bitmap is full-color. If the specified bitmap file is single-color, an error will be returned.

The initial gradation setting is set using the device-specific setting in SetupPOS. Please refer to Chapter “2.4.2.5 Color Bitmap Tab” for details.

Please set the gradation setting according to your needs.

The setting can be changed using a DirectIO command. Please refer to MULTI_TONE in Chapter [4.1.36 PTR_DI_SET_BITMAP_PRINTING_TYPE](#) for details.

Please refer to Sample Step19 for an example of how to use this program.

*Multi-tone printing can not be used when using the RotatePrint method with 90 degrees or using PageMode.

3.5.2.10 Download Bitmap and Buffering

When using the TransactionPrint and RotatePrint methods, there are cases in which the Service Object retains the print data. The SO converts and retains the data at the point when the print method is executed, and the retained data is output when the TransactionPrint or RotatePrint method's buffering mode is released. In the following example, when download bitmaps are used, because

the bitmap held in the printer is the second bitmap, the second bitmap is printed as number two when Transaction is cancelled and printing started. When download bitmaps are used, bitmap data are also held by the SO in the same manner as text data, and the first bitmap and the second bitmap are printed in the specified order.

(Example)

```
OPOSPOSPrinter.TransactionPrint PTR_S_RECEIPT, PTR_TP_TRANSACTION
OPOSPOSPrinter.SetBitmap 1, PTR_S_RECEIPT, "seiko.bmp", PTR_BM_ASIS,
PTR_BM_LEFT
OPOSPOSPrinter.PrintNormal PTR_S_RECEIPT, Chr(&H1B) + "|1B" + vbLF
'Data analysis & retained
OPOSPOSPrinter.SetBitmap 1, PTR_S_RECEIPT, "epson.bmp", PTR_BM_ASIS,
PTR_BM_LEFT
OPOSPOSPrinter.PrintNormal PTR_S_RECEIPT, Chr(&H1B) + "|1B" + vbLF
'Data analysis & retained
OPOSPOSPrinter.TransactionPrint PTR_S_RECEIPT, PTR_TP_NORMAL
'Output
```

In the above example, when using the download bitmap printing function, two "epson.bmp" images are printed because the bitmap buffered in the printer is "epson.bmp". If the download bitmap function is not used, "Seiko.bmp" and "epson.bmp" are printed because the bitmap data is buffered separately in the SO (Service Object).

3.5.3 A One-Dimensional Barcode

When printing barcode, the allowance range for specifying data and the format differ by printer models.

3.5.3.1 Data Format

All bar code data must meet the conditions listed in the table below. Also, when specifying data in the table, etc. the following conditions apply in accordance with the barcode type.

- The first character of UPCE must be "0".
 - However, if the length of data is exactly 6 bytes, then the first character is no need to be "0". *1

- The first and the last data of Codabar must be 0x41-0x44. The data of Codabar must not contain 0x41-0x44 except for the first and the last data.
- The first data of Code 128 must be Code A, Code B, and Code C. If the code is not specified, the default code is regarded as the Code A. The DirectIO can modify the default code.
- The characters that can be specified in Code A of Code 128 are:
0x00-0x5f, FNC1, FNC2, FNC3, FNC4, SHIFT, Code B, Code C.
- The characters that can be specified in Code B of Code 128 are:
0x20-0x7f, FNC1, FNC2, FNC3, FNC4, SHIFT, Code A, Code C.
- The characters that can be specified in Code C of Code 128 are:
0x00-0x63, FNC1, Code A, Code B.
- The characters that can be specified in Code A of Code 128_Parsed are:
0x00-0x5f, FNC1, FNC2, FNC3, FNC4, SHIFT, CODE B, CODE C
- The characters that can be specified in Code B of Code 128_Parsed are:
0x20-0x7f, FNC1, FNC2, FNC3, FNC4, SHIFT, CODE B, CODE C
- The characters that can be specified in Code C of Code 128_Parsed are:
0x30-0x39, FNC1, CODE A, CODE B
- The characters that can be specified in GS1 DataBar 128 ^{*1} (old name: UCC/EAN-128) are:
0x00-0x7f, FNC1, FNC3.
- The characters that can be specified in GS1 DataBar Expanded ^{*1} (old name: RSS Expanded) are:
0x20-0x22, 0x25-0x3f, 0x41-0x5a, 0x5F, 0x61-0x7a, FNC1.

^{*1} Available only for the TM-P60PEELER, TM-T88V, TM-T88VI, TM-H6000IV, TM-H6000V, TM-H2000, TM-T20, TM-T20-42C, TM-T20II, TM-T20II-42C, TM-T82, TM-T82-42C, TM-T82II, TM-T82II-42C, TM-P60II, TM-P60IPEELER, TM-T70II, TM-L90, TM-P80, TM-P80-42C and TM-P20.

[Setting range of data]

Symbology	Length	Characters that can be specified
PTR_BCS_UPCA ^{*1}	11-12	0x30-0x39
PTR_BCS_UPCE ^{*1}	6-8 ^{*2} 11-12	0x30-0x39 (Set the first character to 0x30 when the length is not 6 bytes.)
PTR_BCS_JAN8 ^{*1} PTR_BCS_EAN8	7-8	0x30-0x39
PTR_BCS_JAN13 ^{*1} PTR_BCS_EAN13	12-13	0x30-0x39
PTR_BCS_ITF	1-255 (Even)	0x30-0x39
PTR_BCS_CODABAR	1-255	0x30-0x39, 0x41-0x44 0x24, 0x2b, 0x2d, 0x2e, 0x2f, 3a
PTR_BCS_CODE39	1-255	0x30-0x39, 0x41-0x5a, 0x20, 0x24, 0x25, 0x2b, 0x2d, 0x2e, 0x2f
PTR_BCS_CODE93 ^{*2}	1-255	0x00-0x7f
PTR_BCS_CODE128 ^{*2}	2-255 1-253 ^{*2}	0x00-0x7f
PTR_BCS_CODE128_ Parsed ^{*2}	2-255 1-253 ^{*2}	0x00-0x7f
PTR_BCS_GS1DATABAR 128 ^{*2} (old name: EAN128)	2-255	0x00-0x7f
PTR_BCS_RSS14 PTR_BCS_GS1DATABAR ^{*2}	13	0x30-0x39
PTR_BCS_RSS_EXPAND ED PTR_BCS_GS1DATABAR _E ^{*2}	2-255	0x20-0x22, 0x25-0x3f, 0x41-0x5a, 0x5F, 0x61-0x7a (The first two characters are limited to 0x30-0x39. Or if the first character is 0x28, the second and the third characters are limited to 0x30-0x39.)
PTR_BCS_OTHER+5 ^{*2} (GS1 DataBar Truncated (old name: 14 Truncated))	13	0x30-0x39
PTR_BCS_OTHER+6 ^{*2} (GS1 DataBar Stacked (old name: RSS Limited))	13	0x30-0x39 (The first character is limited to 0x30 or 0x31.)

^{*1} When the data length is short, CheckDigit is calculated and appended at the end automatically.

^{*2} Available only for the TM-P60PEELER, TM-T88V, TM-T88VI, TM-T20, TM-T20-42C, TM-H6000IV, TM-H6000V, TM-H2000, TM-T82, TM-T82-42C, TM-P60II, TM-P60IPEELER, TM-T82II, TM-T82II-42C, TM-T70II, TM-L90, TM-T20II, TM-T20-42C, TM-P80, TM-P80-42C and TM-P20.

^{*3} The length when the default code strings are not specified.

If a data extends the paper width, an error is occurred even if the length limitation described above meets with the data.

[Special characters of Code 128]

Special characters	ASCII
SHIFT	{S
CODE A	{A
CODE B	{B
CODE C	{C
FNC1	{1
FNC2	{2
FNC3	{3
FNC4	{4
{	{{

[Special characters of GS1 DataBar 128 (old name: EAN 128)]

Special characters	ASCII
FNC1	{1
FNC3	{3
{	{{
{({{(
{)}	{{)}
{*}	{{*

[Special characters of GS1 DataBar Expanded (old name: RSS Expanded)]

Special characters	ASCII
FNC1	{1

3.5.3.2 Barcode Width

The barcode is printed with a width that is as close as possible to the printable width in accordance with the Width parameter of the PrintBarcode method.

3.5.3.3 Barcode Printing Positions

In the case of devices without the CR function, it is not possible to print anything next to the barcode.

When the barcode should be printed in the rotated printing mode, printing is performed with the upper edge of the barcode aligned with the upper edge of the printing area. If HRI characters are located above the barcode, the HRI characters are aligned with the upper edge of the printing area.

If the PrintBarcode method is executed at another position than at the start of the line, a line feed is performed automatically.

3.5.4 90-degree Rotate Printing

The RotatePrint method (PTR_RP_RIGHT90 or PTR_RP_LEFT90) enables 90-degree rotated printing to the right or the left.

3.5.4.1 Restrictions for 90-degree Rotate Printing

- Some models do not allow printing of raster bitmap images.
- When using dot impact station for printing, the number of the columns does not change even if the XxxLineChars is changed.

3.5.4.2 90-degree Rotate Printing Position

EPSON OPOS ADK automatically adjusts the printing position to free the user from the work involved in adjusting the printing position while considering the overlapping of bitmaps and vertical double size characters. Accordingly, bitmaps and text are printed above the baseline as a rule, but if these data extends beyond the upper edge of the printing area, or overlaps with the above line, the printing position is shifted downward.

3.5.5 Maintenance Counters

The maintenance counters are functions provided for maintenance management of the printer. The maintenance counters are functions realized by means of the printer (EPSON TM series Firmware). Some of the counter values are predicted values, not accurate values. Use the DirectIO method for obtaining or resetting maintenance counter values. (Please refer to the DirectIO method's maintenance counter command.)

3.5.5.1 Obtain the Maintenance Counter

The Maintenance Counter is obtained by using the DirectIO method.

Specify PTR_DI_GET_MAINTENANCE_COUNTER for the first parameter; the counter number for the second parameter, and specify the character variable pointer for storing the acquired value for the third parameter.

If an inappropriate counter number is specified for the second parameter, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.

Please note the maximum counter value that can be obtained is 4,294,967,295 (maximum value of unsigned long) when type conversion is performed after the acquisition.

3.5.5.2 Reset the Maintenance Counters

The Maintenance counter is reset using the DirectIO method.

Specify PTR_DI_RESET_MAINTENANCE_COUNTER for the first parameter; and specify the counter number for the second parameter.

Excessive use of the reset function may destroy the nonvolatile memory. As a guideline, only use this function 10 times per a day.

3.5.5.3 Detailed Information about the Maintenance Counters

The contents of the counter and counter numbers are summarized in the following table.

Items can be reset by using the PTR_DI_RESET_MAINTENANCE_COUNTER

command. The PTR_DI_GET_MAINTENANCE_COUNTER command is used to obtain the count on cumulative items from the counters totaling the items cumulatively from the date of manufacture.

Please note that the counter values are not necessarily exactly precise values.

[List of the Maintenance Counters]

Counter number Hexadecimal	Counter	Unit	Max. Value	Counter Type
0A	Paper feed in number of lines: Slip	Lines	178,956,970	Resettable
0B	Number of printed characters: Slip (front side)	Characters	715,827,882	Resettable
14	Paper feed in number of lines: Roll paper	Lines	143,165,576	Resettable
15	Number of times head timing pulse: Roll paper	Times	4,294,967,295	Resettable
28	Number of head travels: SLIP (back side)	Times	4,294,967,295	Resettable
29	Number of printed characters: Slip (back side)	Characters	4,294,967,295	Resettable
32	Number of auto-cutter operations	Times	4,294,967,295	Resettable
3C	Number of check paper readings	Times	4,294,967,295	Resettable
46	Uptime of product	Hours	71,582,788	Resettable
8A	Paper feed in number of lines	Lines	178,956,970	Cumulative
8B	Number of printed characters: Slip (front side)	Characters	715,827,882	Cumulative
94	Number of paper feed lines: Roll paper	Lines	143,165,576	Cumulative
95	Number of times head timing pulse: Roll paper	Times	4,294,967,295	Cumulative
A8	Number of head travels: Slip (back side)	Times	4,294,967,295	Cumulative
A9	Number of printed characters: Slip (back side)	Characters	4,294,967,295	Cumulative
B2	Number of auto-cutter operations	Times	4,294,967,295	Cumulative
BC	Number of check paper readings	Times	4,294,967,295	Cumulative
C6	Uptime of product	Hours	71,582,788	Cumulative

(Detailed information on the list is differed in the printer models.)

3.5.6 Synchronous Processing

There are two methods to synchronize the completion of printing and the printing processing, i.e., using process ID or the method where other commands are substituted. When using the process ID method in asynchronous printing, the printing speed becomes faster if multiple print commands are sent consecutively because the next data is sent without waiting for the previous data to finish printing. Whether the printer supports the process ID or not, please refer to the respective model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter". Regardless of I/F type, devices that are able to use Process ID use the Process ID as a method to synchronize.

3.5.7 Asynchronous Processing

If ClearOutput is executed during synchronous processing, the asynchronous printing data held by the SO is deleted as far as possible, and all ErrorEvent information is deleted. However, since there is a risk that the next print command, etc. may not be recognized if it is deleted, data under processing is not deleted and the processing continues uninterrupted.

Consequently, the asynchronous data that can be deleted is as follows.

- Unprocessed asynchronous output data (data under processing only is not deleted)
- ErrorEvent information already held in queue

As the output result for deleted output data is not notified, an output result event is not generated for the data mentioned above, but an output result event is generated and notified for other data (data under processing).

3.5.8 Operation when the Power is turned ON/OFF

When power is turned ON/OFF, the EPSON OPOS performs a recovery as thorough as possible so that the following processing can continue normally. The recovery function depends on the printer model. In case the Memory Switch or factory setting function is available, EPSON OPOS investigates the function and automatically enables the function. At this point, the printer is reset. The valid/invalid setting of this function is retained in NVRAM, and unless the setting is intentionally disabled, reset by this setting is limited to one time.

3.5.8.1 EPSON OPOS Operation when the Power is turned OFF

When power OFF is detected, all the data held by SO/port class is deleted. As devices that do not feature the power OFF notification function do not perform this processing, there are cases where data is output immediately after the power is turned ON. If the power is turned OFF during bitmap printing, the bitmap data may be sent and junk printed while the initialization of the device may not be performed correctly.

3.5.8.2 EPSON OPOS Operation when the Power is turned ON

When power ON is detected, the printer is initialized and the printer settings are made to agree with the currently set properties. If bitmaps have been downloaded previously, bitmap is downloaded.

3.5.8.3 Cautions

- Even in the case of models not featuring the power OFF notification function, power OFF may be detected by the status of the printer or the employed power supply. In these cases, the operation performed at the point of power OFF will take place.
- Even if the power ON notification function is not available, power ON may be detected by the changes in the signal line if power OFF can be detected. In these cases, the operation performed at the point of power ON will take place. (Serial I/F)
- The error code differs by that timing when the power is turned OFF.

3.5.9 Communication I/F

The characteristics of each communication I/F are indicated below.

[Differences according to communication I/F]

Communication I/F	Output with no flow control	CapPowerReporting	Connections to printer
Serial	O	STANDARD	MICR CheckScanner Drawer Display ElectronicJournal
Parallel	O	ADVANCED	MICR CheckScanner Drawer ElectronicJournal
USB	O	ADVANCED	MICR CheckScanner Drawer Display ElectronicJournal
Ethernet	O	ADVANCED	MICR CheckScanner Drawer ElectronicJournal
IEEE802.11	O	ADVANCED	-
Bluetooth	O	STANDARD	Drawer

When Parallel I/F is used please set Busy condition of device to Buffer full only.

When using Parallel, USB, Ethernet, IEEE802.11 or Bluetooth interface, some models or the firmware versions do not support outputting without the flow control. For more details, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

3.5.9.1 Recoverable Error

In the case of I/Fs that allow output without flow control, it is possible to recover recoverable printer errors by commands. In addition, if enabled in the offline mode, it is possible to acquire the offline factor by real time command. However, the some models do not support the real time command. For those models, a recoverable error cannot be cleared by commands.

3.5.9.2 Power Condition Reports

The CapPowerReporting property differs by the communication I/F or the operating systems.

Serial	: OPOS_PR_STANDARD
Parallel	: OPOS_PR_ADVANCED
USB	: OPOS_PR_ADVANCED
Ethernet	: OPOS_PR_ADVANCED
IEEE802.11	: OPOS_PR_ADVANCED
Bluetooth	: OPOS_PR_STANDARD

The power condition is reported according to the status of the communication port (Ready/Busy). When setting the Busy condition to Buffer full only on the TM series DIP Switch (2-1), cover open status or no paper status is not reported as OFFLINE.

When the CapPowerReporting is STANDARD, Power OFF/Unconnected cannot be distinguished from OFFLINE. For the reason, when the status is power OFF or Unconnected, it may send the real time commands without the flow control: NOINPUT error is returned because it cannot get the response.

When the CapPowerReporting is ADVANCED, Power OFF/Unconnected can be distinguished from OFFLINE. When the status is power OFF/Unconnected, commands are not sent: The error is returned (NOHARDWARE). As for the USB I/F like that the port does not exist when it is unconnected, an error is returned when trying to open the port.

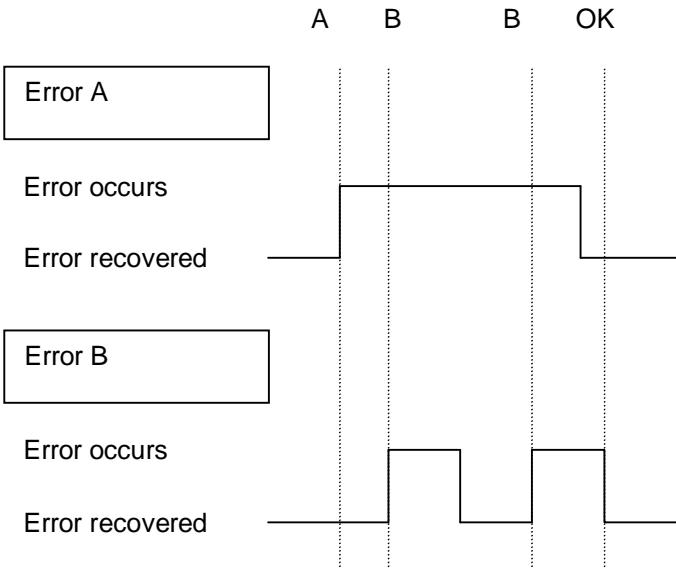
3.5.10 Ink Status

The following explanation is about the ink status.

3.5.10.1 Multiple Error Factors

The StatusUpdateEvent parameters related to the ink status do not match with each other. The errors are occurring as follows:

- When there is an error factor, it is notified in the StatusUpdateEvent.
- When every error is recovered, it is notified in the StatusUpdateEvent.



A: StatusUpdateEvent A occurs
B: StatusUpdateEvent B occurs
OK: StatusUpdateEvent (CARTRIDGE_OK) occurs

3.5.10.2 Station

When one cartridge is shared in multiple stations, the same value is set for each station properties. As for the StatusUpdateEvent, the errors occur for each station: The same status is notified for the one cartridge.

3.5.11 A Two-Dimensional Barcode (PDF 417)

PDF 417 supports a two-dimensional barcode printing.

3.5.11.1 Barcode size

A codeword width is fixed to 3 dots. The width of a barcode depends on the number of columns accordance with the value specified in the Width parameter. The module height is fixed to the minimum value of the recommended one (codeword width X 3), and the number of rows is determined automatically. (The value in the Height parameter is ignored.)

- The maximum width depends on the paper width.
- The maximum height for PDF 417 is 90 rows (the rows and columns is up to 928). Also, the maximum height needed to meet with the allowance range for POSPrinter. The allowance ranges differ by printer models. For more details, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".
- The allowance ranges for printing rotated barcode differ by printer models. For more details, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".
- The allowance height ranges for printing rotated barcode is limited to the printed-paper.

3.5.11.2 Error Collection Level

The error collection level depends on the Printer default value.

(The value is set at the ratio of $n=1$.)

3.5.11.3 Text Position

Checks the parameter value. Only when an illegal value (Unsupported by OPOS) is specified, the error is returned.

3.5.11.4 Printing Positions

A Two-Dimensional Barcode is printed on the specified position. (Same as the one-dimensional barcode printing.)

3.6 Device Statistics

The DeviceStatistics function is added in response to the compliance of the "UPOS 1.8".

Please refer to the "EPSON OPOS ADK MANUAL APPLICATION GUIDE Device Statistics" for the details of the Device Statistics.

3.7 PageMode printing

In compliance with UPOS1.9, the PageMode printing feature is now available.

The PageMode printing feature enables users to freely design page layout by specifying the printing area and position data.

The Escape sequences and the "method" feature availability depends on the printer model and Station. Please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

3.8 Initialization processing

In compliance with UPOS1.11, the initialization processing specification is changed.

The timing of initialization processing is different in pre-Ver2.60 and Ver2.60. For the details of the initialization processing, please refer to "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE Compatibility Mode".

3.9 Command execution during offline

The command execution during offline function enables, insofar as is possible, processes to be executed even when the printer is offline due to cover open, no paper, or other condition.

When either the receipt station or the slip station is in an unusable state, this function makes possible to control the other station.

Even when both the receipt station and the slip station are unusable, operations such as logo registration in the nonvolatile area of the device can be performed.

This function is set using the Utility for each device. For details, refer to "Utility User's Manual" of each device.

The timing of notification of the power status by StatusUpdateEvent, and the timing at which the ServiceObject updates the PowerState property vary depending on whether this function is enabled or disabled.

Details are as follows:

Printer status	Event when disabled	Event when enabled
Cover open	OFF_OFFLINE or OFFLINE notification	No notification
Cover closed	ONLINE notification	No notification
Out of receipt paper	OFF_OFFLINE or OFFLINE notification	No notification
Cover closed after receipt paper is loaded	ONLINE notification	No notification

If the printer status changes when this function is enabled, notification of a StatusUpdateEvent will not take place and the PowerState property will not change. For this reason, it is not possible to check if the printer method is executable by checking StatusUpdateEvent or the PowerState property. To check if the printer method is executable, PTR_DI_GET_OFFLINE_CONDITION of the DirectIO method can be used. For details on the DirectIO method, refer to “4.1 DirectIO Function” in this manual.

Section 4. Extended Functions

This section describes the extended functions of the POSPrinter.

4.1 DirectIO Function

The usage of the DirectIO method and DirectIOEvent event is described in the following.

Syntax **DirectIO** *Command* As Long, *pData* As Long, *pString* As String

Parameter	Explanation
<i>Command</i>	Output format
<i>pData</i>	Number of output data/Value defined by command
<i>pString</i>	Output data

EPSON DirectIO commands are as follows.

[EPSON DirectIO Command list]

Command	Outline
PTR_DI_OUTPUT_NORMAL	Outputs the data specified in <i>pString</i>
PTR_DI_OUTPUT_REALTIME	Outputs the data specified in <i>pString</i> with no flow control
PTR_DI_SET_BITMAP_MODE	Specifies the bitmap printing mode
PTR_DI_PRINT_FLASH_BITMAP	Prints the bitmap stored in NVRAM
PTR_DI_PRINT_FLASH_BITMAP2	Bitmaps registered in the NVRAM are selected by key code and printed.
PTR_DI_SELECT_SLIP	Selects slip/validation
PTR_DI_SLIP_CHANGE_SIDE	Switches the side of the slip to be printed between front and rear
PTR_DI_RESET_MAINTENANCE_COUNTER	Resets the maintenance counter
PTR_DI_GET_MAINTENANCE_COUNTER	Acquires the maintenance counter value
PTR_DI_SET_INTERNATIONAL_CHAR	Selects international character set
PTR_DI_WAIT_FOR_OUTPUT	Waits for printing to be completed
PTR_DI_PANEL_SWITCH	Enables/Disables panel switches

Command	Outline
PTR_DI_LABEL_REMOVE	Removes label
PTR_DI_LABEL_SET_PRINT_MODE	Sets the counter's printing mode
PTR_DI_LABEL_SET_COUNT_MODE	Sets the counter's counter mode
PTR_DI_LABEL_PRINT_COUNT	Prints the counter
PTR_DI_LABEL_SET_COUNT_VALUE	Sets the counter value
PTR_DI_RECOVER_ERROR	Recover the recoverable error
PTR_DI_DELAYED_CUT	Execute the delayed cut
PTR_DI_CUT_AND_FEED_TOF	Cuts the paper and pulls out its head
PTR_DI_CODE128_TYPE	Specify the Code 128 default code
PTR_DI_DELETE_NVIMAGE	Deletes the key code image specified by <i>pData</i> from NVRAM
PTR_DI_GET_SUPPORT_FUNCTION	Indicates supported function by currently connected device using logical OR of function flag, and stores in <i>pData</i> parameter.
PTR_DI_SLIP_EMPHASIS	Sets ON/OFF of emphasized printing for 90-degree rotated printing mode at slip station.
PTR_DI_RING_BUZZER	Rings buzzer.
PTR_DI_GET_BATTERY_STATUS	Acquires battery status.
PTR_DI_RING_BUZZER_WITH_TIME	Rings buzzer.
PTR_DI_SELECT_PAGE_MODE	Selects the PageMode type.
PTR_DI_DRAWLINE	Draw line.
PTR_DI_DRAWRECTANGLE	Draw rectangle.
PTR_DI_SET_PAPERLAYOUT	Sets paper layout.
PTR_DI_GET_PAPERLAYOUT	Obtains the setting of paper layout.
PTR_DI_OPERATION_MODE	Sets paper operation mode.
PTR_DI_SPECIAL_FONT_MODE	Sets font mode.
PTR_DI_SOUND_MELODY	Sounds the melody.
PTR_DI_SET_BITMAP_PRINTING_TYPE	Specify the bitmap print format.
PTR_DI_SET_SLIP_ROTATE_FONT_TYPE	Specifies the font used for 90-degree Rotate Printing on slips
PTR_DI_PRINT_FRANKING	Prints by franking
PTR_DI_GET_OFFLINE_CONDITION	Acquires the printer status
PTR_DI_SELECT_SLIP_PAPER_TYPE	Sets the paper used for slip printing.

Remarks: Execute each function in accordance with the specified outline by Command.

Return: Differ in commands.

Prerequisites: Open/ Open, Claim & Enable

The following explanations are the details about the each commands described above.

4.1.1 PTR_DI_OUTPUT_NORMAL

Parameter	Command	PTR_DI_OUTPUT_NORMAL
	<i>pData</i>	Not used
	<i>pString</i>	Output data
Remarks	Transmission is implemented as checking of the printer status with a flow control. The data will not be changed. <i>pString</i> depends on the value of the BinaryConversion property. When synchronized with printing characters, use the PTR_DI_WAIT_FOR_OUTPUT command. SO does not analyze the specified data. Please use this command after fully understanding the specifications of the ESC/POS commands and the EPSON TM series. When a command that may affect the SO operation is sent, the SO operation is not guaranteed.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 3 OPOS_EX_DEVBUSY OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL OPOS_EPTR_CUTTER OPOS_EPTR_UNRECOVERABLE OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN OPOS_EPTR_JRN_EMPTY OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.2 PTR_DI_OUTPUT_REALTIME

Parameter	Command	PTR_DI_OUTPUT_REALTIME
	<i>pData</i>	Not used
	<i>pString</i>	Output data
Remarks	Transmission is implemented as checking of the printer status without a flow control. The data will not be changed. <i>pString</i> depends on the value of the BinaryConversion property. When using a printer (Parallel I/F), which does not support a transmission without a flow control, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. SO (Service Object) does not analyze the specified data. Please use this command after fully understanding the specifications of the ESC/POS commands and the EPSON TM series. When a command that may affect the SO operation is sent, the SO operation is not guaranteed.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 3
		OPOS_EX_NOTSUPPORTED

4.1.3 PTR_DI_SET_BITMAP_MODE

Parameter	Command	PTR_DI_SET_BITMAP_MODE
	<i>pData</i>	PTR_DI_BMP_NORMAL PTR_DI_BMP_DOWNLOAD PTR_DI_BMP_RASTER (Logical OR)
	<i>pString</i>	Not used
Remarks	Determines a command to use with PrintBitmap method, PrintMemoryBitmap method and SetBitmap method. PTR_DI_BMP_NORMAL: Uses 1-line bitmap function instead of Raster bitmap function. Some models are unable to rotate print Raster bitmap 90 degrees. If you wish to use 90-degree rotated printing function with those models, specifying this parameter enable the function. PTR_DI_BMP_RASTER: Cancels 1-line bitmap function and restores to the condition that Raster bitmap function is used. This parameter is not effective for the models not loading or not using Raster bitmap function. PTR_DI_BMP_DOWNLOAD:	

This invariable is not used anymore. Kept for compatibility.

When PTR_DI_BMP_NORMAL is specified, 1-line bitmap is used even for normal printing. 1-line Bitmap is inferior to Raster Bitmap in terms of both printing speed and image quality. Please be aware of this when specifying this parameter.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
		OPOS_EX_NOTSUPPORTED

4.1.4 PTR_DI_PRINT_FLASH_BITMAP

Parameter	Command	PTR_DI_PRINT_FLASH_BITMAP
	<i>pData</i>	Bitmap Number (1 to 255)
	<i>pString</i>	Printing position
Remarks	Prints bitmap on the NVRAM according to the specified bitmap number. When no bitmap is registered on the NVRAM, nothing is printed. If a printer does not support the NVRAM bit image printing, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. The printing position matches the value specified in the Alignment parameter of the PrintBitmap. It is specified by converting a numeric data into a character string. Example: Centering <i>pString</i> = CStr (PTR_BM_CENTER) Example: 100 dots from the left edge <i>pString</i> = CStr (100)	
	The NVRAM size is restricted. For the details of the size, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
		OPOS_EX_NOTSUPPORTED
		OPOS_EX_DEVBUSY
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL

	OPOS_EPTR_CUTTER
	OPOS_EPTR_UNRECOVERABLE
	OPOS_EPTR_AUTORECOVERABLE
OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
	OPOS_EPTR_JRN_EMPTY
	OPOS_EPTR_REC_EMPTY
OPOS_E_OFFLINE	0

4.1.5 PTR_DI_PRINT_FLASH_BITMAP2

Parameter	Command	PTR_DI_PRINT_FLASH_BITMAP2
	<i>pData</i>	Bitmap number
	<i>pString</i>	Printing position
Remarks	<p>Prints the NV graphics according to the key code specified by bitmap number. Specify the key code using bitmap number by storing the first key code in 31 to 16 bits and the second key code in 15 to 0 bit of <i>pData</i>.</p> <p>Key code signifies two numerals used to write in NV graphic on logo utility. The first numeral is the first byte of the key code, and the second numeral is the second byte. When the NV graphics that corresponds specified key code is not registered, nothing is printed out.</p> <p>When a printer does not support the NV graphics print function, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. The printing position matches the value specified in the Alignment parameter of the PrintBitmap, but the type is different. It is specified by converting a numeric data into a character string.</p>	

Example: Centering

pString = CStr(PTR_BM_CENTER)

Example: 100 dots from the left edge

pString = CStr(100)

$(32)_{10} = (0000000000100000)_2, (126)_{10} = (0000000001111110)_2$

Example: Specifying key code

In the case of First byte of key code = $(32)_{10}$, Second byte of key code = $(126)_{10}$,

Figure of *pData*:

31	16	15	0
0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0		0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 0	
First byte of key code		Second byte of key code	

The NVRAM size is restricted. For the details of the size, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

*Multi-tone printing can not be used when using the RotatePrint method with 90 degrees or using PageMode.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
		OPOS_EX_NOTSUPPORTED
		OPOS_EX_DEVBUSY
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.6 PTR_DI_SELECT_SLIP

Parameter	Command	PTR_DI_SELECT_SLIP
	<i>pData</i>	PTR_DI_SLIP_FULLSLIP or PTR_DI_SLIP_VALIDATION
	<i>pString</i>	Not used
Remarks	<p>When a printer supports both slip and validation print functions, select the station to be used.</p> <p>When a <i>pData</i> is PTR_DI_SLIP_FULLSLIP, slip can be used.</p> <p>When the <i>pData</i> is PTR_DI_SLIP_VALIDATION, validation can be used. For insertion, removal and print on each station, the same operation can be done by the BeginInsertion, EndInsertion, BeginRemoval, EndRemoval and the PrintNormal methods.</p> <p>After toggled a station, the value of the CapSlpFullslip property is changed.</p> <p>When a slip is sensed, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned. If the printer does not support neither slip nor validation print functions, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0

OPOS_E_NOTCLAIMED	0
OPOS_E_DISABLED	0
OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
	OPOS_EX_NOTSUPPORTED
	OPOS_EX_INVALIDMODE

4.1.7 PTR_DI_SLIP_CHANGE_SIDE

Parameter	Command	PTR_DI_SLIP_CHANGE_SIDE
	<i>pData</i>	PTR_DI_SLIP_FRONT_SIDE or PTR_DI_SLIP_REVERSE_SIDE
	<i>pString</i>	Not used
Explanation	<p>When a printer supports both sides printing, switches the printing side.</p> <p>This function is only for compatibility with the Version 1.xx. Instead of using the command, use the new methods and the properties for selecting a printing side of a slip defined in "UPOS 1.5". When PTR_DI_SLIP_FRONT_SIDE is specified in the <i>pData</i>, the face side of the slip is selected. When PTR_DI_SLIP_REVERSE_SIDE is specified in the <i>pData</i>, the backside of the slip is selected.</p> <p>When a printer does not support the function, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p> <p>If a slip is in unprintable situation, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned. If a printer is in an error status, the error code is returned. The values of related properties are updated.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
		OPOS_EX_NOTSUPPORTED
		OPOS_EX_INVALIDMODE
		OPOS_EX_DEVBUSY
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.8 PTR_DI_RESET_MAINTENANCE_COUNTER

Parameter	Command	PTR_DI_RESET_MAINTENANCE_COUNTER
	<i>pData</i>	Maintenance counter number
	<i>pString</i>	Not used
Remarks	<p>Initializes the maintenance counter value specified in <i>pData</i>.</p> <p>The allowance range for <i>pData</i> is 10 to 70. When specified a value over the allowance range, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned. When a printer does not support the function, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. For more details, please refer to the section explaining the maintenance counter supported by each model.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2 OPOS_EX_NOTSUPPORTED OPOS_EX_INVALIDMODE OPOS_EX_DEVBUSY
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL OPOS_EPTR_CUTTER OPOS_EPTR_UNRECOVERABLE OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN OPOS_EPTR_JRN_EMPTY OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.9 PTR_DI_GET_MAINTENANCE_COUNTER

Parameter	Command	PTR_DI_GET_MAINTENANCE_COUNTER
	<i>pData</i>	Maintenance counter number
	<i>pString</i>	Maintenance counter value
Remarks	<p>Acquires the maintenance counter value specified in the <i>pData</i>. The maintenance counter value is stored in <i>pString</i>. The allowance range for <i>pData</i> is 10 to 198. When specified a value over the allowance range, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned. When a printer does not support the function, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p> <p>The allowance range for <i>pData</i> is "0" to "4294967295". When those strings are converted into numerals on the application, needed for using unsigned long, etc. (As for VB, "double" or "variant" type should be used.)</p> <p>The type of the supported maintenance counters differs by models. When an unsupported counter identifier is specified, OPOS_E_ILLEGAL (OPOS_EX_TIMEOUT) is returned since a maintenance counter value cannot be acquired within a specified period of time. For the details of the Maintenance counter, please refer to the section explaining the maintenance counter supported by each model.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2 OPOS_EX_NOTSUPPORTED OPOS_EX_INVALIDMODE OPOS_EX_DEVBUSY OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL OPOS_EPTR_CUTTER OPOS_EPTR_UNRECOVERABLE OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN OPOS_EPTR_JRN_EMPTY OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.10 PTR_DI_SET_INTERNATIONAL_CHAR

Parameter	Command	PTR_DI_SET_INTERNATIONAL_CHAR
	<i>pData</i>	One of the commands: PTR_DI_CHAR_USA PTR_DI_CHAR_FRANCE PTR_DI_CHAR_GERMANY PTR_DI_CHAR_UK PTR_DI_CHAR_DENMARK1 PTR_DI_CHAR_SWEDEN PTR_DI_CHAR_ITALY PTR_DI_CHAR_SPAIN1 PTR_DI_CHAR_JAPAN PTR_DI_CHAR_NORWAY PTR_DI_CHAR_DENMARK2 PTR_DI_CHAR_SPAIN2 PTR_DI_CHAR_LATIM_AMERICA PTR_DI_CHAR_KOREA PTR_DI_CHAR_SLOVENIA PTR_DI_CHAR_CROATIA PTR_DI_CHAR_CHINA PTR_DI_CHAR_VIETNAM PTR_DI_CHAR_ARABIA
	<i>pString</i>	Not used
Remarks	Select the International character set. Select the International character set specified in <i>pData</i> . When modify the value of the CharSet property, the International character set that has been selected by the command will be invalid.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY

OPOS_EPTR_REC_EMPTY

OPOS_E_OFFLINE0

4.1.11 PTR_DI_WAIT_FOR_OUTPUT

Parameter	Command	PTR_DI_WAIT_FOR_OUTPUT
	<i>pData</i>	Timeout value
	<i>pString</i>	Not used
Remarks	Precise synchronization. Set the timeout time [ms] for <i>pData</i> . If status is obtained before time-out, OPOS_SUCCESS is returned assuming that the process till then is completed. If the status could not be obtained before time-out, OPOS_E_TIMEOUT is returned. If a printer does not support the GS r of the ESC/POS, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. It is not necessary using this command with the methods other than DirectIO since the methods complete the transaction by itself. The methods wait for the response after sending data to the device and complete upon receipt of the response. When output a data, the command can be used for synchronization with the output.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2 OPOS_EX_NOTSUPPORTED OPOS_EX_INVALIDMODE OPOS_EX_DEVBUSY OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL OPOS_EPTR_CUTTER OPOS_EPTR_UNRECOVERABLE OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN OPOS_EPTR_JRN_EMPTY OPOS_EPTR_REC_EMPTY
	OPOS E OFFLINE	0

4.1.12 PTR_DI_PANEL_SWITCH

Parameter	Command	PTR_DI_PANEL_SWITCH
	<i>pData</i>	TRUE (Other than 0) or FALSE (0)
	<i>pString</i>	Not used
Remarks	Valid/Invalid the panel switches.	
	When TRUE is set to <i>pData</i> , panel switches are valid.	
	When FALSE is set, panel switches are invalid.	
	Due to the printer models' specifications, the following exceptions exist. (Please refer to "ESC c5" in the TM Specifications for details.)	
Return	<ul style="list-style-type: none"> ● When waiting for the switch during the macro execution, the switch is valid. ● When a printer cover is open, the panel switch is invalid. 	
	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.13 PTR_DI_LABEL_REMOVE

Parameter	Command	PTR_DI_LABEL_REMOVE
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Feeds the label currently being printed to a position where it can be peeled off. To feed the label, please use the MarkFeed method. The printer remains off-line until the [PAPER FEED] button is pressed.	
	This command is valid for label printers only. For other models, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0

OPOS_E_DISABLED	0
OPOS_E_BUSY	0
OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
	OPOS_EX_DEVBUSY
	OPOS_EX_TIMEOUT
OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
	OPOS_EPTR_CUTTER
	OPOS_EPTR_UNRECOVERABLE
	OPOS_EPTR_AUTORECOVERABLE
OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
	OPOS_EPTR_JRN_EMPTY
	OPOS_EPTR_REC_EMPTY
OPOS_E_OFFLINE	0

4.1.14 PTR_DI_LABEL_SET_PRINT_MODE

Parameter	Command	PTR_DI_LABEL_SET_PRINT_MODE
	<i>pData</i>	PTR_DI_LABEL_RIGHT_SPACE, PTR_DI_RIGHT_ZERO or PTR_DI_LEFT_SPACE
	<i>pString</i>	'0'~'5'
Remarks	Sets counter print mode. Specify the counter print mode in <i>pData</i> . The modes are described below.	

PTR_DI_LABEL_RIGHT_SPACE

Sets the printing format to: Right - Add Space.

PTR_DI_RIGHT_ZERO

Sets the printing format to: Right - Add Zero

PTR_DI_LEFT_SPACE

Sets the printing format to: Left - Add Space

The *pString* value gives the number of print lines.

Set this value to a numeral character "5".

PTR_DI_LABEL_RIGHT_SPACE

1 2
1 2

PTR_DI_RIGHT_ZERO

0 0 1 2
0 0 1 2

PTR_DI_LEFT_SPACE

1 2	____
-----	------

This command is valid for the TM-L60II and TM-L90 (with Peeler model) only. For other models, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.15 PTR_DI_LABEL_SET_COUNT_MODE

Parameter	Command	PTR_DI_LABEL_SET_COUNT_MODE
	<i>pData</i>	Not used
	<i>pString</i>	Sets the counter limits, value, count up, repeat number, etc. Sets <i>pString</i> to sa;sb;sn;sr;sc.
Remarks	Sets the counter limits, value, count up, repeat number, etc. Sets <i>pString</i> to sa;sb;sn;sr;sc.	

0 <= sa <= 65535 is the counter's limit.

0 <= sb <= 65535 is the counter's limit.

0 <= sn <= 255 is the count up/count down step.

0 <= sr <= 255 sets the counter to that number.

0 <= sc <= 65535 is the counter value.

When sa < sb and sa != 0 and sb != 0, count up mode is set.

When sa > sb and sa != 0 and sb != 0, count down mode is set.

When sa = sb or sa = 0 or sb = 0, count mode is disabled.

When the counter exceeds the maximum value, it returns to the

largest or the smallest value possible.

When *sc* is set outside legal limits, it is set to the largest or smallest possible value.

The internal counter that shows the number of repeat printings is cleared.

Example:

Setting strings for *pString*: "0;65535;1;1;0"

This command is valid for the TM-L60II and TM-L90 (with Peeler model) only. For other models, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
		OPOS_EX_BADPARAM + 3
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
	OPOS_E_OFFLINE	0

4.1.16 PTR_DI_LABEL_PRINT_COUNT

Parameter	Command	PTR_DI_LABEL_PRINT_COUNT
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Prints the counter.	
	This command does not produce a linefeed. After issuing this command, use the PrintNormal to output a linefeed so as to generate printing. This command is valid for the TM-L60II and TM-L90 (with Peeler model) only. For other models, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0

OPOS_E_NOTCLAIMED	0
OPOS_E_DISABLED	0
OPOS_E_BUSY	0
OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
	OPOS_EX_DEVBUSY
	OPOS_EX_TIMEOUT
OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
	OPOS_EPTR_CUTTER
	OPOS_EPTR_UNRECOVERABLE
	OPOS_EPTR_AUTORECOVERABLE
OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
	OPOS_EPTR_JRN_EMPTY
	OPOS_EPTR_REC_EMPTY
OPOS_E_OFFLINE	0

4.1.17 PTR_DI_LABEL_SET_COUNT_VALUE

Parameter	Command	PTR_DI_LABEL_SET_COUNT_VALUE
	<i>pData</i>	Count value (0 to 65535)
	<i>pString</i>	Not used
Remarks	Sets a new count value. If the setting is outside of the counter range (as established by PTR_DI_LABEL_COUNT_MODE), the value automatically resets to the minimum or maximum range limit.	
	<Note>	
	When 0 is specified for the printing digit number, neither right-justification nor left-justification can be specified for the printing mode of the counter. When a value larger than the value in the counter is specified, the value in the counter is valid.	
	This command is valid for the TM-L60II and TM-L90 (with Peeler model) only. For other models, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
		OPOS_EX_BADPARAM + 2
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE

OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
	OPOS_EPTR_JRN_EMPTY
	OPOS_EPTR_REC_EMPTY
OPOS_E_OFFLINE	0

4.1.18 PTR_DI_RECOVER_ERROR

Parameter	Command	PTR_DI_RECOVER_ERROR
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	<p>Recover from recoverable error.</p> <p>A printer outputs real time command DLE ENQ 2 without flow control and recover from the error.</p> <p>When the printer is not claimed, communication port is opened and closed once the command is sent out. When the condition of BUSY is set as Receive buffer-full + Offline by DIP Switch, and I/F that cannot send data without flow control is used, the printer cannot recover from the error.</p> <p>When a printer is not in an error mode, the command has no effect on the printer.</p>	
Return	ResultCode OPOS_SUCCESS OPOS_E_CLOSED OPOS_E_CLAIMED OPOS_E_ILLEGAL	ResultCodeExtended 0 0 0 OPOS_EX_NOTSUPPORTED OPOS_EX_PORTUSED OPOS_EX_TIMEOUT

4.1.19 PTR_DI_DELAYED_CUT

Parameter	Command	PTR_DI_DELAYED_CUT
	<i>pData</i>	Feed lines
	<i>pString</i>	Not used
Remarks	<p>Execute delayed cut.</p> <p>When executing delayed cut command, it does not cut physically, but keep the command.</p> <p>When the specified lines are fed by executing the PrintNormal method, the delayed cut is executed.</p> <p>By using the delayed cut command, it can save the useless margins between the data.</p> <p>For the TM-U230, it execute the delayed command after feeding 4 + <i>pData</i> x 0.176 [mm]. The settable range for <i>pData</i> is 0~255. When an illegal value is set, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.</p>	
Return	ResultCode OPOS_SUCCESS	ResultCodeExtended 0

OPOS_E_CLOSED	0
OPOS_E_CLAIMED	0
OPOS_E_NOTCLAIMED	0
OPOS_E_DISABLED	0
OPOS_E_BUSY	0
OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2
	OPOS_EX_DEVBUSY
	OPOS_EX_TIMEOUT
OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
	OPOS_EPTR_CUTTER
	OPOS_EPTR_UNRECOVERABLE
	OPOS_EPTR_AUTORECOVERABLE
OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
	OPOS_EPTR_JRN_EMPTY
	OPOS_EPTR_REC_EMPTY
OPOS_E_OFFLINE	0

4.1.20 PTR_DI_CUT_AND_FEED_TOF

Parameter	Command	PTR_DI_CUT_AND_FEED_TOF
	<i>pData</i>	Cutting rate
	<i>pString</i>	Not used
Remarks	<p>Execute to cut papers and pull out its head.</p> <p>When this command is executed, the printer feeds the paper to the cutting position and then cuts the paper using the specified cutting rate. Then, it pulls out the head of the paper and the operation ends. Because the printer pulls out the head of paper after cutting it, the blank on the paper at the upper side can be reduced. This function can be used only if the receipt paper is set to the paper setting.</p> <p>For TM-L90, the cutting rate does not change according to the value of <i>pData</i>, because the cutting rate depends on the installed position of the auto cutter unit. However, when the values other than 0 to 100 are specified for <i>pData</i>, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_BADPARAM + 2
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT

OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL OPOS_EPTR_CUTTER OPOS_EPTR_UNRECOVERABLE OPOS_EPTR_AUTORECOVERABLE
OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN OPOS_EPTR_JRN_EMPTY OPOS_EPTR_REC_EMPTY OPOS_EPTR_REC_CARTRIDGE_REMOVED OPOS_EPTR_REC_CARTRIDGE_EMPTY OPOS_EPTR_REC_HEAD_CLEANING OPOS_EPTR_SLP_CARTRIDGE_REMOVED OPOS_EPTR_SLP_CARTRIDGE_EMPTY OPOS_EPTR_SLP_HEAD_CLEANING
OPOS_E_OFFLINE	0

4.1.21 PTR_DI_CODE128_TYPE

Parameter	Command	PTR_DI_CODE128_TYPE
	<i>pData</i>	PTR_DI_CODE_A, PTR_DI_CODE_B or PTR_DI_CODE_C
	<i>pString</i>	Not used
Remarks	Specify the default code for the Code 128. The Code 128 has to be specified as Code A, B and C for the first. The command can be used to specify the default Code 128 when it is not specified. According to the specified data in the <i>pData</i> , the data code is specified. If the command is not executed, the barcode data of the Code 128 that has no specified code will be printed by the Code A.	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 2 OPOS_EX_INCAPABLE

4.1.22 PTR_DI_DELETE_NVIMAGE

Parameter	Command	PTR_DI_DELETE_NVIMAGE
	<i>pData</i>	Registered Key Code
	<i>pString</i>	Not used
Remarks	<p>Deletes the key code image specified by <i>pData</i> from NVRAM. The key code to be used here should be the one notified by DirectIOEvent event upon SetBitmap execution.</p> <p>If a key code is specified by PTR_DI_DELETE_ALL, registered data with NVRAM is deleted completely.</p> <p>By deleting images registered with NVRAM, the following information is also deleted.</p> <ul style="list-style-type: none"> • NVRAM image information stored on PC • Registered information of SetBitmap method related to the deleting key code. 	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM +2

4.1.23 PTR_DI_GET_SUPPORT_FUNCTION

Parameter	Command	PTR_DI_GET_SUPPORT_FUNCTION	
	<i>pData</i>	Support function flag	
	<i>pString</i>	Not used	
Remarks	Indicates supported function by currently connected device using logical OR of function flag, and stores in <i>pData</i> parameter.		
	Defined function flags are as follows:		
	Function Flag	Meaning	
	PTR_DI_VALIDATION	Validation mechanism is loaded.	
	PTR_DI_EMPHASIS	For 90-degree rotated printing, emphasized printing function is available at slip station.	
	These are exclusive commands for TM-H6000II, TM-H6000III, TM-H6000IV and TM-H6000V. For other devices, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.		
	Return	ResultCode	ResultCodeExtended
		OPOS_SUCCESS	0
		OPOS_E_CLOSED	0
		OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS E ILLEGAL	OPOS EX NOTSUPPORTED	

4.1.24 PTR_DI_SLIP_EMPHASIS

Parameter	Command	PTR_DI_SLIP_EMPHASIS
	<i>pData</i>	PTR_DI_ENABLE_EMPHASIS or PTR_DI_DISABLE_EMPHASIS
	<i>pString</i>	Not used
Remarks	<p>Sets ON/OFF of emphasized printing that is used for 90-degree rotated printing mode at slip station.</p> <p>When <i>pData</i> parameter is PTR_DI_ENABLE_EMPHASIS, 90-degree rotated printing data at slip station are printed in emphasized font.</p> <p>When <i>pData</i> parameter is PTR_DI_DISABLE_EMPHASIS, 90-degree rotated printing data at slip station are printed in normal font.</p> <p>These are exclusive commands for TM-H6000II, TM-H6000III, TM-H6000IV and TM-H6000V. For other devices, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. Also for these devices without emphasized printing function for 90-degree rotated printing, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED OPOS_EX_BADPARAM + 2

4.1.25 PTR_DI_RING_BUZZER

Parameter	Command	PTR_DI_RING_BUZZER
	<i>pData</i>	Type of buzzer sound
	<i>pString</i>	Not used
Remarks	<p>Rings buzzer sound corresponding to the specified value by <i>pData</i>. The specifiable values by <i>pData</i> and corresponding buzzer sounds to them are as follows:</p>	

***pData* Type of Sound**

[TM-P60x Series, TM-P80x Series, TM-P20x Series]

48D	Silence
49D	5kHz 1000 msec rumble
50D	8kHz 1000 msec rumble
51D	5kHz 200 msec rumble
52D	8kHz 200 msec rumble

53D 5kHz 200 msec rumble – 200 msec silence –
 200 msec rumble
 54D 8kHz 200 msec rumble – 200 msec silence –
 200 msec rumble
 55D 5kHz 500 msec rumble
 56D 8kHz 500 msec rumble
 57D 5kHz 200 msec rumble – 200 msec silence – 200 msec
 rumble – 200 msec silence – 200 msec rumble
 58D 8kHz 200 msec rumble – 200 msec silence – 200 msec
 rumble – 200 msec silence – 200 msec rumble
 [TM-U330x Series]
 48D Silence
 59D 1.5kHz 800 msec rumble – 100 msec silence
 60D 1.5kHz 200 msec rumble – 100 msec silence
 61D 1.5kHz 200 msec rumble – 200 msec silence – 200 msec
 rumble – 200 msec silence
 62D 1.5kHz 500 msec rumble – 100 msec silence
 63D 1.5kHz 200 msec rumble – 200 msec silence – 200 msec
 rumble – 200 msec silence – 200 msec rumble – 200 msec
 silence

These are exclusive commands in the following device

[TM-P60x Series]

TM-P60
 TM-P60PEELER
 TM-P60II(M)
 TM-P60IIPPEELER

[TM-P80x Series]

TM-P80(M)
 TM-P80-42C(M)

[TM-P20x Series]

TM-P20(M)

[TM-U330x Series]

TM-U330B
 TM-U330D

For other devices, OPOS_E_ILLEGAL

(OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED OPOS_EX_BADPARAM + 2

4.1.26 PTR_DI_GET_BATTERY_STATUS

Parameter	Command	PTR_DI_GET_GET_BATTERY_STATUS
	<i>pData</i>	Battery status flag
	<i>pString</i>	Not used
Remarks	Indicates battery status by currently connected device using logical OR of status flag, and stores in <i>pData</i> parameter. Defined status flags are as follows:	

Status Flag	Meaning
PTR_DI_POWERED_BY_AC	Driving with AC power
PTR_DI_POWERED_BY_BATTERY	Driving with Battery
PTR_DI_BATTERY_FULL	Battery Level: HIGH
PTR_DI_BATTERY_MIDDLE	Battery Level: MIDDLE
PTR_DI_BATTERY_NEAR_EMPTY	Battery Level: LOW
PTR_DI_BATTERY_CLOSE_EMPTY	Battery Level: SMALL
PTR_DI_BATTERY_REMOVED	No Battery Cartridge

These are exclusive commands in the following device.

TM-P60
TM-P60PEELER
TM-P60II(M)
TM-P60IPEELER

PTR_DI_POWERED_BY_AC	Driving with AC power
PTR_DI_POWERED_BY_BATTERY	Driving with Battery
PTR_DI_BATTERY_FULL	Battery Level: HIGH
PTR_DI_BATTERY_NEAR_MIDDLE	Battery Level: HIGH
PTR_DI_BATTERY_MIDDLE	Battery Level: MIDDLE
PTR_DI_BATTERY_NEAR_LOW	Battery Level: MIDDLE
PTR_DI_BATTERY_LOW	Battery Level: LOW
PTR_DI_BATTERY_NEAR_EMPTY	Battery Level: LOW
PTR_DI_BATTERY_CLOSE_EMPTY	Battery Level: SMALL
PTR_DI_BATTERY_REMOVED	No Battery Cartridge

These are exclusive commands in the following device.

TM-P80(M)
TM-P80-42C(M)
TM-P20(M)

For other devices, OPOS_E_ILLEGAL
(OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0

OPOS_E_DISABLED	0
OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED

4.1.27 PTR_DI_RING_BUZZER_WITH_TIME

Parameter	Command	PTR_DI_RING_BUZZER_WITH_TIME
	<i>pData</i>	Rumble time of buzzer (msec)
	<i>pString</i>	Not used
Remarks	<p>Rings the buzzer for the duration of time specified in the <i>pData</i> setting. The valid value for the ring time is in the range of 1 to 510 (msec).</p> <p>Please set more than 500 (msec) for the correct buzzer operation.</p> <p>This command can only be executed on a model with a built-in buzzer or on a model with the optional external buzzer connected.</p> <p>When combined with a CashDrawer:</p> <p>If this command is executed while a drawer is connected, please use a drawer which has a kick pin of 2. If you are using a drawer which has a kick pin of 5, the drawer will open when the buzzer sounds.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY

OPOS_EPTR_SLP_HEAD_CLEANING

OPOS_E_OFFLINE 0

4.1.28 PTR_DI_SELECT_PAGE_MODE

Parameter	Command	PTR_DI_SELECT_PAGE_MODE
	<i>pData</i>	Type of PageMode
	<i>pString</i>	Not used
Remarks	<p>Specifies the PageMode type to be used when printing in the PageMode. The specified PageMode is applied to the Station set in the PageModeStation property box when PTR_DI_SELECT_PAGE_MODE is executed.</p> <p>The types of PageMode available for the <i>pData</i> setting are as follows:</p> <p>PTR_DI_NORMAL_DOT_PAGEMODE; Normal dot PageMode Wider printing area although half-dot fonts (mainly Chinese characters) are not available.</p> <p>PTR_DI_HALF_DOT_PAGEMODE; Half-dot PageMode Compared to the normal dot PageMode, the printing area is narrower but the half-dot fonts are available.</p> <p>If the command is executed without Station setting (for the PageModeStation) specified, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.</p> <p>If the PageModeStation setting specifies, when this command is executed, a Station that does not come with the PageMode switching feature, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p> <p>The PageMode type cannot be changed once the PageMode printing is initiated. Check the PageMode type setting before the PageMode printing is initiated and, make changes to the setting if necessary.</p> <p>This command is available for the following devices and Stations:</p> <p>TM-U675 (Receipt) (Slip) TM-H6000 (Slip) TM-H6000II (Slip) TM-H6000III (Slip) TM-H6000IV (Slip) TM-H6000V (Slip)</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0

OPOS_E_NOTCLAIMED 0
 OPOS_E_DISABLED 0
 OPOS_E_ILLEGAL OPOS_EX_NOTSUPPORTED
 OPOS_EX_INVALIDMODE
 OPOS_EX_BADPARAM + 2

4.1.29 PTR_DI_DRAWLINE

Parameter	Command	PTR_DI_DRAWLINE
	<i>pData</i>	Thickness of the line
	<i>pString</i>	The x-y coordinate of the starting point, the x-y coordinate of the ending point
Remarks	<p>Sets when the line print is executed.</p> <p>This command is available only when PageModePrint is set.</p> <p>Specifies the thickness of the line in <i>pData</i>. The available values are as follows.</p> <p>PTR_DI_LINE_THIN : thin line</p> <p>PTR_DI_LINE_NORMAL : normal line</p> <p>PTR_DI_LINE_THICK : thick line</p> <p>When the inappropriate values are specified for the second parameter, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.</p> <p>The x-y coordinate of the starting and ending points of the line are specified in <i>pString</i>.</p> <p>Example: "100,0,300,0"</p> <p>If the coordinates in <i>pString</i> are outside of the specified area set in the property of PageModePrintArea, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+3) is returned.</p> <p>If the line becomes a diagonal line by the coordinates specified in <i>pString</i>, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+3) is returned.</p> <p>If the values of "0,0,0,0" are specified in <i>pString</i>, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+3) is returned.</p> <p>If this command is executed when PageModePrint has not been set, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.</p> <p>This command is valid only in the following device.</p> <p>TM-P60PEELER</p> <p>TM-P60IPEELER</p> <p>When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0

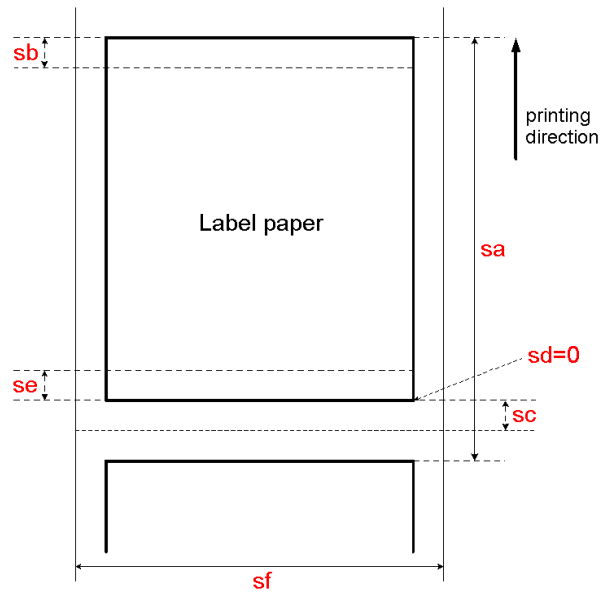
OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
	OPOS_EX_INVALIDMODE
	OPOS_EX_BADPARAM + 2
	OPOS_EX_BADPARAM + 3

4.1.30 PTR_DI_DRAWRECTANGLE

Parameter	Command	PTR_DI_DRAWRECTANGLE
	<i>pData</i>	Thickness of the line
	<i>pString</i>	The x-y coordinate of the starting point, width, and height
Remarks	<p>Sets when the rectangle print is executed.</p> <p>This command is available only when PageModePrint is set.</p> <p>Specifies the thickness of the line in <i>pData</i>. The available values are as follows.</p> <p style="padding-left: 40px;">PTR_DI_LINE_THIN : thin line</p> <p style="padding-left: 40px;">PTR_DI_LINE_NORMAL : normal line</p> <p style="padding-left: 40px;">PTR_DI_LINE_THICK : thick line</p> <p>When the inappropriate values are specified for the second parameter, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.</p> <p>The x-y coordinates of the starting point of a rectangle, and <i>width</i> and <i>height</i> of a rectangle are specified in <i>pString</i>.</p> <p style="padding-left: 40px;">Example: "100,0,300,300"</p> <p>If the coordinates in <i>pString</i> are outside of the specified area set in the property of PageModePrintArea, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+3) is returned.</p> <p>If the values of "0,0,0,0" are specified in <i>pString</i>, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+3) is returned.</p> <p>If this command is executed when PageModePrint has not been set, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.</p> <p>This command is valid only in the following device.</p> <p style="padding-left: 40px;">TM-P60PEELER</p> <p style="padding-left: 40px;">TM-P60IPEELER</p> <p>When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_INVALIDMODE
		OPOS_EX_BADPARAM + 2
		OPOS_EX_BADPARAM + 3

4.1.31 PTR_DI_SET_PAPERLAYOUT

Parameter	Command	PTR_DI_SET_PAPERLAYOUT
	<i>pData</i>	Not used
	<i>pString</i>	The layout of the paper which is to be used (type)
Remarks	<p>Sets the layout of the paper which is to be used.</p> <p>In order to perform correct printing matching the layout of the paper, it is necessary to set the layout of the paper (type) in advance.</p> <p>Specifies the values of the layout of the paper in <i>pString</i>. Please set "METRIC" in MapMode property upon specifying the values.</p> <p>When specifying the values in <i>pString</i>, the formats are as follows.</p> <p>" The types of paper,sa,sb,sc,sd,se,sf"</p> <p>Sets the values of appropriate paper for "the types of paper".</p> <p>The values of each paper are as follows.</p> <p>Roll paper : 48</p> <p>Label paper : 49</p> <p>Black marked label paper : 50</p> <p>Black marked roll paper : 51</p> <p>Sets the following values for "sa"~"sf".</p> <p>Please pay special attention in handling this since the contents differ from one type of paper to another.</p> <p>< roll paper (48)></p> <p>sa: 0</p> <p>sb: 0</p> <p>sc: 0</p> <p>sd: 0</p> <p>se: 0</p> <p>sf : The width of the paper</p> <p>< label paper (49)></p> <p>sa: The distance between the top of the label paper and the top top of the next label paper</p> <p>sb: The distance between the top of the label paper and the print starting position.</p> <p>sc: The distance between the bottom of the label paper and the cutting position</p> <p>sd: 0</p> <p>se: The distance between the bottom of the label paper and the bottom of the print area.</p> <p>sf : The width of the paper</p>	



< Black marked label paper (50)>

sa : The distance between the bottom of the black marked label paper and the bottom of the next black marked label paper.

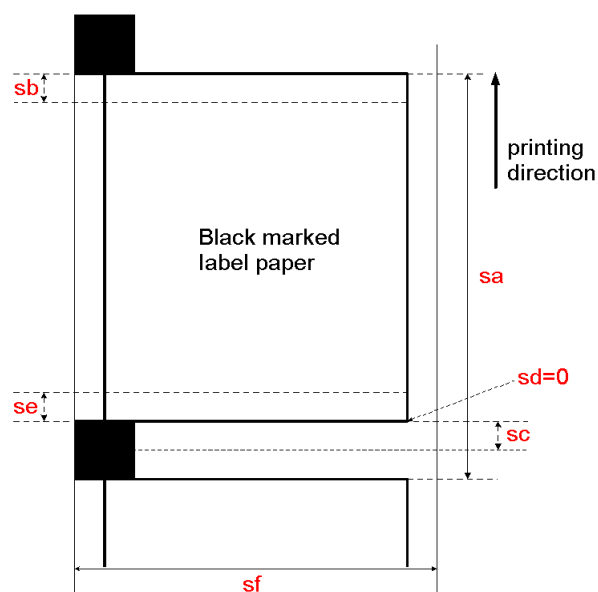
sb : The distance between the bottom of the black marked label paper and the print starting position.

sc : The distance between the top of the black marked label paper and the cutting position

sd : The distance between the top of the black marked label paper and the bottom of the black marked label paper.

se : The distance between the top of the black marked label paper and the bottom of the print area.

sf : The width of the paper



< Black marked roll paper (51)>

sa: The distance between the top of the black marked roll paper and the top of the the next black marked roll paper.

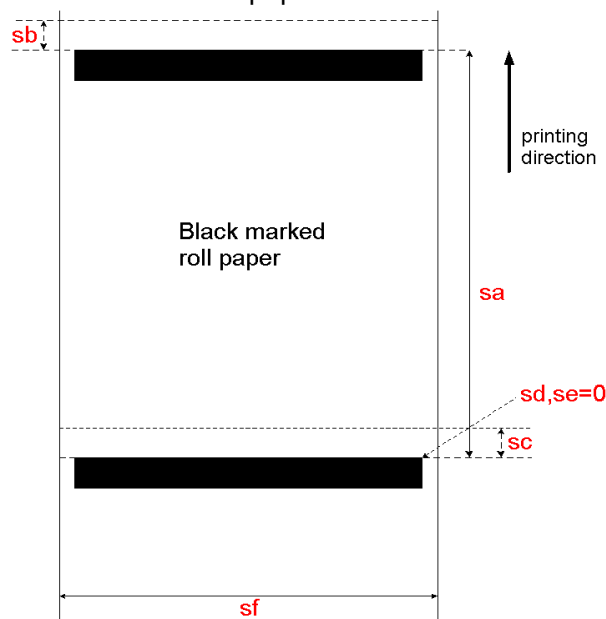
sb: The distance between the top of the black marked roll paper and the print starting position.

sc: The distance between the bottom of the black marked roll paper and the cutting position.

sd: 0

se: 0

sf: The width of the paper



example: "48,0,0,0,0,0,5950" (in the case of roll paper)

If other types of paper, not roll paper, are used, the automatic recognition for the layout setting of the paper is possible. When the automatic recognition of the layout setting is executed, please set "0" to specify "*sa*"'s value in *pString*.

However, when using over 15cm ("*sa*"'s values) size label paper, black marked label paper and black marked roll paper, the automatic recognition of the layout setting cannot be executed.

If this command succeeds, the value of CapRecMarkFeed property is updated by the paper issuance mode set up.

Please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter" for the details of MarkFeed method.

In addition, the values of RecLineWidth property, RecLineChars property, RecLineCharsList property and PageModeArea property are updated by the values specified in *pString* of paper type and paper width.

If the specified values in *pString* do not follow the formats

mentioned above, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+3) is returned

If this command is executed when PageModePrint has not been set, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.

This command is valid only in the following device.

TM-P60PEELER
 TM-P60IPEELER
 TM-P80(M)
 TM-P80-42C(M)
 TM-P20(M)

When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_BADPARAM + 3

4.1.32 PTR_DI_GET_PAPERLAYOUT

Parameter	Command	PTR_DI_GET_PAPERLAYOUT
	<i>pData</i>	Not used
	<i>pString</i>	Stores the values of obtained paper layout (type)

Remarks Obtains the value of the current paper layout, then stores them.
 Stores the values of the following formats in *pString*. When executing the command, please set "METRIC" in MapMode property.

" The type of paper,sa,sb,sc,sd,se,sf"

Regarding the details of the values, refer to PTR_DI_SET_PAPERLAYOUT on the previous page.

This command is valid only in the following device.

TM-P60PEELER
 TM-P60IPEELER
 TM-P80(M)
 TM-P80-42C(M)
 TM-P20(M)

When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0

OPOS_E_NOTCLAIMED	0
OPOS_E_DISABLED	0
OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED

4.1.33 PTR_DI_OPERATION_MODE

Parameter	Command	PTR_DI_OPERATION_MODE
	<i>pData</i>	Specification of issuance mode of the label
	<i>pString</i>	Not used
Remarks	<p>Sets the issuance mode of the label.</p> <p>Sets the way of issuing labels in <i>pData</i>. Specifiable values are as follows.</p> <p>PTR_DI_SERIAL_MODE : Serial Issuance Mode</p> <p>PTR_DI_PEEL_OFF_MODE : Peel-off Issuance Mode</p> <p>When the inappropriate values are specified for the second parameter, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+2) is returned.</p> <p>Please match the setting of the device side with the issuance mode set in this command upon the execution of the label issuance. If the setting of the issuance mode and the device side are not matched, there is a possibility of malfunction. Regarding the setting of the device side, please refer to the device manual.</p> <p>This command is valid only in the following device.</p> <p>TM-P60PEELER</p> <p>TM-P60IPEELER</p> <p>When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_BADPARAM + 2

4.1.34 PTR_DI_SPECIAL_FONT_MODE

Parameter	Command	PTR_DI_SPECIAL_FONT_MODE
	<i>pData</i>	Type of the Font Mode
	<i>pString</i>	Not used
Remarks	Specifies the font mode to use for printing. Specifies the kind of the font mode in <i>pData</i> . The available values are as follows.	

<i>pData</i>	Meaning
PTR_DI_FONT_NORMAL	Normal font mode
PTR_DI_FONT_SPECIAL	Special font mode

Default setting is PTR_DI_FONT_NORMAL.

When the inappropriate values are specified for the *pData*, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM+2) is returned. If you execute this command before the Initialization processing completed, OPOS_E_ILLEGAL (OPOS_EX_DEVBUSY) is returned. When a printer does not support the special font, and if the setting other than Thai 1 Pass mode, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. This command can only be executed on South asia models.

When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED OPOS_EX_DEVBUSY OPOS_EX_BADPARAM + 2

4.1.35 PTR_DI_SOUND_MELODY

Parameter	Command	PTR_DI_SOUND_MELODY
	<i>pData</i>	Constant corresponding to the sound pattern
	<i>pString</i>	The number of repetitions for the sound, and the sound interval
Remarks	The melody specified by <i>pData</i> is played on models that have the melody function. This is done synchronously. (No other processing can be done until the melody function is complete). The specifiable values in <i>pData</i> and corresponding melody sounds to them are as follows:	

<i>pData</i>	Type of melody
PTR_DI_SOUND_PATTERN_1:	"Pattern A"
PTR_DI_SOUND_PATTERN_2:	"Pattern B"

PTR_DI_SOUND_PATTERN_3: "Pattern C"
 PTR_DI_SOUND_PATTERN_4: "Pattern D"
 PTR_DI_SOUND_PATTERN_5: "Pattern E"
 PTR_DI_SOUND_PATTERN_ERROR: "Occurrence of an error"
 PTR_DI_SOUND_PATTERN_NOPAPER: "Paper out"

(Please refer to "ESC (A" in the TM Specifications for details.)

The setting method for *pString* are as follows:

The number of repetitions and the sound interval are separated by a comma.

"repetitions, sound interval"

(e.g.) If the number of repetitions is 5, and the sound interval is 1 second

"5,1000"

Note: Please do not put a space before or after the comma.

The valid range for *pString* is as follows:

Number of repetitions: 1 ~ 255

Sound Interval: 100 ~ 60000

When an illegal value or format is specified for the *pData*, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.

When an illegal value is specified for the *pString*, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 3) is returned.

If the command is executed when AsyncMode property is TRUE, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.

If you execute this command before the Initialization processing completed, OPOS_E_ILLEGAL (OPOS_EX_DEVBUSY) is returned.

This command can only be executed on a model with a built-in buzzer or on a model with the optional external buzzer connected. When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED OPOS_EX_INVALID_MODE OPOS_EX_DEVBUSY OPOS_EX_TIMEOUT OPOS_EX_BADPARAM + 2 OPOS_EX_BADPARAM + 3
	OPOS_E_OFFLINE	0

4.1.36 PTR_DI_SET_BITMAP_PRINTING_TYPE

Parameter	Command	PTR_DI_SET_BITMAP_PRINTING_TYPE
	<i>pData</i>	Print format of the specified bitmap.
	<i>pString</i>	Not used
Remarks	Specifies the bitmap print format.	

The specifiable values in *pData* and meanings to them are as follows:

<i>pData</i>	Meaning
PTR_DI_BITMAP_PRINTING_NORMAL:	Do not print a special bitmap.
PTR_DI_BITMAP_PRINTING_MULTI_TONE:	Prints a 16 level grayscale bitmap.

When an illegal value is specified for the *pData*, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.

If the device does not have the gray level function that is specified in *pData*, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

This command is valid in the following device.

When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

TM-T88V(M)
 TM-H6000IV(M)
 TM-T70II(M)
 TM-T88VI(M)
 TM-m10(m)
 TM-m30(m)
 TM-H6000V(m)

*Multi-tone printing can not be used when using the RotatePrint method with 90 degrees or using PageMode.

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 3 OPOS_EX_NOTSUPPORTED

4.1.37 PTR_DI_SET_SLIP_ROTATE_FONT_TYPE

Parameter	Command	PTR_DI_SET_SLIP_ROTATE_FONT_TYPE
	<i>pData</i>	Specifies the font type
	<i>pString</i>	Not used
Remarks	Specifies the type of font used for 90-degree Rotate Printing in the slip station.	
	The fonts available for the <i>pData</i> setting are as follows: PTR_DI_ROTATE_FONT_A: FontA PTR_DI_ROTATE_FONT_B: FontB	
Return	When an illegal value is specified for the <i>pData</i> , OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.	
	This command is valid only in the following device. When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.	
	TM-H6000IV (Slip)	
	TM-H6000V (Slip)	
	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_INVALIDMODE
		OPOS_EX_BADPARAM + 2

4.1.38 PTR_DI_PRINT_FRANKING

Parameter	Command	PTR_DI_PRINT_FRANKING
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Prints by Franking. Franking is applied to slip station printing. If a slip is in unprintable situation, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned. If you execute this command before the Initialization processing completed, OPOS_E_ILLEGAL (OPOS_EX_DEVBUSY) is returned. This command is valid only in the following device. When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned. TM-H2000 (Slip)	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_INVALIDMODE
		OPOS_EX_DEVBUSY
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
	OPOS_E_OFFLINE	0

4.1.39 PTR_DI_GET_OFFLINE_CONDITION

Parameter	Command	PTR_DI_GET_OFFLINE_CONDITION
	<i>pData</i>	Current printer status
	<i>pString</i>	Not used
Remarks	<p>Gets the status of the currently connected printer from the device and stores it in <i>pData</i>.</p> <p>The values that are set in <i>pData</i> and their meanings are as follows:</p> <p>PTR_DI_CONDITION_ONLINE Online</p> <p>PTR_DI_CONDITION_RECEIPT_ONLY_OFFLINE Receipt station is offline</p> <p>PTR_DI_CONDITION_SLIP_ONLY_OFFLINE Slip station is offline</p> <p>PTR_DI_CONDITION_OFFLINE_EXECUTE Receipt and slip stations are both offline; operations that do not involve printing can be executed</p> <p>PTR_DI_CONDITION_RECOVERBLE Printer is in an error state; recovery possible by recovery command</p> <p>PTR_DI_CONDITION_UNRECOVERBLE Printer is in an error state; recovery only possible by rebooting the printer.</p> <p>This command is valid only in the following device. When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.</p> <p>TM-H6000IV TM-H6000V TM-H2000 TM-P60II(M) TM-P60IIPPEELER TM-P80(M) TM-P80-42C(M) TM-P20(M)</p>	
Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED OPOS_EX_BADPARAM + 2

4.1.40 PTR_DI_SELECT_SLIP_PAPER_TYPE

Parameter	Command	PTR_DI_SELECT_SLIP_PAPER_TYPE
	<i>pData</i>	Sets the paper used for slip printing.
	<i>pString</i>	Not used
Remarks	Sets the print head control method according to the type of cut paper being used for printing.	

The values that are set in *pData* and their meanings are as follows:

PTR_DI_SLIP_PAPER_NORMAL: Normal paper

PTR_DI_SLIP_PAPER_COPY: Copy paper *

* Copy paper refers to carbon and carbonless copy paper.

When an illegal value or format is specified for the *pData*, OPOS_E_ILLEGAL (OPOS_EX_BADPARAM + 2) is returned.

When a slip is sensed, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.

If this command is not executed, the value depends on the "paper type" setting in the Slip tab of the SetupPOS Utility.

This command is valid only in the following device. When the inappropriate device is specified, OPOS_E_ILLEGAL (OPOS_EX_NOTSUPPORTED) is returned.

TM-H6000IV

TM-H6000V

Return	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_ILLEGAL	OPOS_EX_NOTSUPPORTED
		OPOS_EX_BADPARAM + 2
		OPOS_EX_INVALIDMODE

4.2 DirectIOEvent Event

Syntax `DirectIOEvent` *EventNumber* As Long, *pData* As Long, *pString* As String

Parameter	Explanation
<i>EventNumber</i>	Event Number
<i>pData</i>	Numerical Value Data
<i>pString</i>	Character String Data

4.2.1 Input Events from Printers

Parameter	<i>EventNumber</i>	Not used. PTR_DI_DUMMY is set always.
	<i>pData</i>	1byte Receiving Data
	<i>pString</i>	Not used. PTR_DI_DUMMY is set always.

Remarks This event is fired to send information that results from the running of the DirectIO method. When the data to be transacted in OPOS are received, the received data are stored in *pData* and then this event is fired.

Prerequisites Open, Claim & Enable

Notes The data internally processed by the SO are as follows. When receiving a data other than that controlled by OPOS, this event is fired.

- ASB, ink ASB, extended ASB
- Power supply notification (data starting from 3B)
- GS r (when this command is used to obtain synchronization with the printing)
- ESC v (when this command is used to obtain synchronization with the printing)
- Data starting from 0x37 (viewed by identification data, only data to be used that is not already in SO)
- Data starting from 0x5F
- Data acquired while SO is acquiring original ID and device information
- Process ID (when this command is used to obtain synchronization with the printing)
- Offline response
- Clear response

4.2.2 PTR_DIE_SET_BITMAP_MODE

Parameter	<i>EventNumber</i>	PTR_DIE_SET_BITMAP_MODE
	<i>pData</i>	Index Value that indicates image register method
	<i>pString</i>	Registered Key Code with NVRAM

Remarks Notifies the register method used when registered an image by SetBitmap method.
The following values are restored in *pData*.

<i>pData</i> Value	Meanings
PTR_DIE_MEMORY	Stored in Service Object
PTR_DIE_VRAM	Stored in printer's volatile memory.
PTR_DIE_NVRAM	Stored in printer's NVRAM

When the image registered by SetBitmap method uses NVRAM, the Key code used for registering with *pString* is stored.

Prerequisites Open, Claim & Enable

4.2.3 PTR_DIE_LABEL_JAM

Parameter	<i>EventNumber</i>	PTR_DIE_LABEL_JAM
	<i>pData</i>	Not used
	<i>pString</i>	Not used

Remarks Notified when a label paper jam occurred within the peeler system.

Notified when a label jam of the TM-L90 (with Peeler model) occurred during feeding to the peel-off position by pushing the feed button down.

Also, it is notified when a label jam occurred during feeding to the peel-off position by the execution of the MarkFeed method.

Prerequisites Open, Claim & Enable

4.2.4 PTR_DIE_LABEL_REMOVAL

Parameter	<i>EventNumber</i>	PTR_DIE_LABEL_REMOVAL
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Notified when the output processing cannot be performed because of the waiting state of the label removal.	

Notified when the TM-L90 (with Peeler model) TM-P60PEELER and TM-P60IPEELER are under the waiting state of the label removal by the execution of the MarkFeed TAKEUP method in the peel-off issuance mode.

When using the TM-P60PEELER and TM-P60IPEELER, the label removal event may not be notified if a mis-print occurred due to the execution of the RotatePrint method, and PageModePrint method.

Prerequisites Open, Claim & Enable

4.2.5 PTR_DIE_LABEL_REMOVE_OK

Parameter	<i>EventNumber</i>	PTR_DIE_LABEL_REMOVE_OK
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Notified when the waiting state of the label removal was released.	

Notified when the TM-L90 (with Peeler model) TM-P60PEELER and TM-P60IPEELER became usual state by removing label that was causing label waiting.

Prerequisites Open, Claim & Enable

4.2.6 PTR_DIE_BUTTON_OPERATION

Parameter	<i>EventNumber</i>	PTR_DIE_BUTTON_OPERATION
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Notified when the output processing cannot be performed because of the push-waiting state of the button.	

Notified when the TM-L90 (with Peeler model) became the push-waiting state of the feed button after the cover open and close.

Notified when the TM-U120 and TM-U120II models became the push-waiting state of the feed button after the paper is inserted and automatically loaded.

Prerequisites Open, Claim & Enable

4.2.7 PTR_DIE_BUTTON_OK

Parameter	<i>EventNumber</i>	PTR_DIE_BUTTON_OK
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Remarks	Notified when the push-waiting state of the button was released.	

Notified when the TM-U120 and TM-U120II models became usual state by pushing the feed button.

Prerequisites Open, Claim & Enable

4.3 StatusUpdateEvent regarding Battery Status

When battery status is received during TM-P60, TM-P60Peeler, TM-P60II, TM-P60IIPeeler, TM-P80, TM-P80-42C and TM-P20 use, notifies it to the application with StatusUpdateEvent that is extended independently by Epson.

Potential events to be fired and the meaning of them are as follows:

- PTR_SUE_POWERED_BY_AC

A StatusUpdateEvent to indicate that the device is being driven by AC power.

When it is driven by AC power, the following StatusUpdateEvent that indicates loading condition of battery cartridge may be fired.

PTR_SUE_BATTERY_OK : Battery Cartridge is loaded
 PTR_SUE_BATTERY_REMOVED : Battery Cartridge is unloaded

- PTR_SUE_POWERED_BY_BATTERY

A StatusUpdateEvent to indicate that the device is being driven by battery.

When it is driven by battery, the following StatusUpdateEvent that indicates battery level may be fired.

StatusUpdateEvent	Battery Level
PTR_SUE_BATTERY_FULL	HIGH
PTR_SUE_BATTERY_MIDDLE	MIDDLE
PTR_SUE_BATTERY_NEAR_EMPTY	LOW
PTR_SUE_BATTERY_CLOSE_EMPTY	SMALL

These are exclusive commands in the following device.

TM-P60
 TM-P60Peeler
 TM-P60II(M)
 TM-P60IIPeeler

StatusUpdateEvent	Battery Level
PTR_SUE_BATTERY_FULL	HIGH
PTR_SUE_BATTERY_NEAR_MIDDLE	HIGH
PTR_SUE_BATTERY_MIDDLE	MIDDLE
PTR_SUE_BATTERY_NERA_LOW	MIDDLE
PTR_SUE_BATTERY_LOW	LOW
PTR_SUE_BATTERY_NEAR_EMPTY	LOW
PTR_SUE_BATTERY_CLOSE_EMPTY	SMALL

These are exclusive commands in the following device.

TM-P80(M)

TM-P80-42C(M)

TM-P20(M)

Those events are fired as StatusUpdateEvent only when there is a change of status from the status restored in Printer SO.

Example:

When the battery level is changed from HIGH to MIDDLE while the device is driven by battery.

1. Upon reception of Battery Status (Driven by battery – Battery Level: HIGH)
Fires StatusUpdateEvent (PTR_SUE_POWERED_BY_BATTERY)
Fires StatusUpdateEvent (PTR_SUE_BATTERY_FULL)
2. Upon reception of Battery Status (Driven by battery – Battery Level: MIDDLE)
StatusUpdateEvent (PTR_SUE_BATTERY_MIDDLE)

Example:

When AC power is removed while the device is driven by AC power, the power source is switched to battery.

1. Upon reception of Battery Status (Driven by AC power – Battery Cartridge: loaded)
Fires StatusUpdateEvent (PTR_SUE_POWERED_BY_AC)
Fires StatusUpdateEvent (PTR_SUE_BATTERY_OK)
2. Upon reception of Battery Status (Driven by battery – Battery Level: HIGH)
Fires StatusUpdateEvent (PTR_SUE_POWERED_BY_BATTERY)
Fires StatusUpdateEvent (PTR_SUE_BATTERY_FULL)

Section 5. Specific Programming

This section describes the extended functions of POSPrinter.

5.1 Printing Using the DirectIO Method

The DirectIO method can execute printing without using the printing methods defined by OPOS. For the DirectIO method specifications, please refer to the Section 4 of this manual.

EPSON OPS ADK does not check the command output by DirectIO. Therefore, the values of the properties or an operation of other methods may become illegal when directly executing the ESC/POS command in the DirectIO method. Basically, the ESC/POS command is not recommended for direct use.

When outputting 0x80 or more data, do so with BinaryConversion set to other than OPOS_BC_NONE.

- Print "Test"

```
Dim RC As Long
```

```
Dim Dummy As Long
```

```
Dim Data As String
```

```
Dummy=PTR_DI_DUMMY
```

```
Data=Chr(&H1B)+ "=" + Chr(&H01) + "Test" + Chr(&H0D) + Chr(&H0A)
```

```
RC=OPOSPOSPrinter1.DirectIO (PTR_DI_OUTPUT_NORMAL,
```

```
                                `Normal output
```

```
                                Dummy,
```

```
                                `Always PTR_DI_DUMMY
```

```
                                Data)
```

```
                                `Test
```

```
If RC=OPOS_SUCCESS Then
```

```
    `Success
```

```
Else
```

```
    `Error
```

```
End If
```

Chr(&H1B) + "=" + Chr(&H01) included at the start of the output data is the command for selecting the printer. If the printer and customer display are connected by hydra-connection, it is necessary to branch the transmission to the printer and customer display by commands. For details on these commands, please refer to the product manual of the respective printers.

ESC = 1: Printer

ESC = 2: Display

In order to use the DirectIO method for printing on the printer or setting the printer, it is necessary to select the Station. Use commands including output data to accomplish this.

ESC c1 Station number: Output before the command that performs the setting
(download characters, registration of images, etc.)

ESC c0 Station number: Output before the command that performs the printing
(normal operation)

If data is output without issuing these commands, the station is the same as the station used for the last output.

5.2 Bitmap Printing Specified by the Bitmap Command

By using the DirectIO commands before using the SetBitmap method and the PrintBitmap method, a bitmap command can be specified.

- Print a download bitmap

Dim RC As Long

Dim Data As String

Data= ""

```
RC=OPOSPOSPrinter1.DirectIO (PTR_DI_SETMAP_MODE,
                             PTR_DI_BMP_DOWNLOAD,
                             Data)
```

```
If RC=OPOS_SUCCESS Then
```

```
    RC = OPOSPOSPrinter1.PrintBitmap (PTR_S_RECEIPT, "epson.bmp",
    OPOSPOSPrinter1.RecLineWidth, PTR_BM_CENTER)
```

```
    If RC=OPOS_SUCCESS Then
```

```
        `Success
```

```
    Else
```

```
        `Error
```

```
    End If
```

```
Else
```

```
    `Error
```

```
End If
```

5.3 Print a Bitmap Registered on the NVRAM

EPSON OPOS ADK provides a tool, "TMFlogo" *1 that enables to register a

bitmap image on the NVRAM in the EPSON TM series. For the usage, please refer to the "EPSON OPOS ADK MANUAL User's Manual TMFlogo Utility" and the "EPSON OPOS ADK MANUAL User's Manual (Installer/ SetupPOS/ TMUSB)". A bitmap image can be printed with a printer by using the DirectIO method. Confirm a registered number of the bitmap image.

*1 A model specific logo registration utility will be launched for devices connected by a TMPORT. In this case, if the "Please install the utility for each device." message is displayed, it is necessary to install the specific utility for the corresponding device.

- Print the 3rd registered bitmap

```
Dim RC As Long
```

```
Dim Num As Long
```

```
Dim Data As String
```

```
Num=3
```

```
Data= CStr(PTR_BM_CENTER)
```

```
RC= OPOSPOSPrinter.DirectIO (PTR_DI_PRINT_FLASH_BITMAP,  
                             Num,  
                             Data)
```

```
If RC=OPOS_SUCCESS Then
```

```
    `Success
```

```
Else
```

```
    `Error
```

```
End If
```

5.4 Validation Printing

Some models of the EPSON TM series printers support the validation print function as well as the slip print function. By using the DirectIO method, please select either of the functions to use.

```
Dim RC As Long
```

```
Dim Data As String
```

```
Data= ""
```

```
RC=OPOSPOSPrinter1.DirectIO (PTR_DI_SELECT_SLIP,  
                             PTR_DI_SLIP_VALIDATION,  
                             Data)
```

```
If RC=OPOS_SUCCESS Then
```

```
    RC= OPOSPOSPrinter1.BeginInsertion (5000)
```

```

    If RC = OPOS_SUCCESS Then
        OPOSPOSPrinter1.EndInsertion
        OPOSPOSPrinter1.PrintNormal PTR_S_SLIP, "Print Validation
Station"+Chr(13) + Chr(10)
    Else If RC = OPOS_E_TIMEOUT Then
        `Slip has not been inserted during the setting time
    Else
        `Other error
    End If
Else
    `Error
End If

```

5.5 Handling Maintenance Counters

The maintenance counters are functions provided for maintenance management of the EPSON TM series printers. The following examples of programming are about obtaining maintenance counters and reset the counters.

- Get the counter of paper feed in number of lines

```

Dim ICounterNum As Long
Dim strCounter As String
Dim dCounter As Double

```

```

ICounterNum = 10`paper feed in number of lines
OPOSPOSPrinter1.DirectIO PTR_DI_GET_MAINTENANCE_COUNTER,
ICounterNum, strCounter
`Error handling (omission)

dCounter = Val(strCounter)

```

- Reset the counter of paper feed in number of lines

```

Dim ICounterNum As Long
Dim strDummy As String
    StrDummy = ""
    ICounterNum = 10 `paper feed in number of lines
    OPOSPOSPrinter1.DirectIO
    PTR_DI_RESET_MAINTENANCE_COUNTER, ICounterNum,
    StrDummy
`Error handling (omission)

```

Section 6. Error Information

This section describes the error codes that may result from execution of POSPrinter methods. The common properties and methods are described in "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE GENERAL DEVELOPMENT". Please refer to this guide for more information.

6.1 ResultCode List

6.1.1 When Properties are executed

The ResultCode and ResultCodeExtended when properties are executed are as follows.

Property Name	ResultCode	ResultCodeExtended
Printer (Characteristic of printers)	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_NOSERVICE	OPOS_EX_SOVERSION
	OPOS_E_NOHARDWARE	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL
		OPOS_EX_INCAPABLE
		OPOS_EPTR_NOSTATION
		OPOS_EPTR_ROTATE90
		OPOS_EX_INVALIDMODE

6.1.2 When Methods are executed

The ResultCode and ResultCodeExtended when methods are executed are as follows.

Method Name	ResultCode	ResultCodeExtended
PrintNormal	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_BADPARAM + 1, 2
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_NOHARDWARE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
PrintTwoNormal	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1, 2, 3
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_NOHARDWARE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
PrintImmediate	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_BADPARAM + 1, 2
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
		OPOS_EX_DEVBUSY
	OPOS_E_FAILURE	OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_NOHARDWARE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
BeginInsertion	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_TIMEOUT	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_BADPARAM + 1
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_OFFLINE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING

Method Name	ResultCode	ResultCodeExtended
EndInsertion	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_OFFLINE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING

Method Name	ResultCode	ResultCodeExtended
BeginRemoval	OPOS_SUCCESS ^{*1}	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_TIMEOUT	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_BADPARAM + 1
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_OFFLINE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING

^{*1} In the case of devices that only have a slip station, if BeginRemoval method is executed when a paper is not placed in the slip station, OPOS_SUCCESS is returned.

Method Name	ResultCode	ResultCodeExtended
EndRemoval	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
	OPOS_E_EXTENDED	OPOS_EPTR_SLP_FORM
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
ChangePrintSide	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_TIMEOUT	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_BADPARAM + 1
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_OFFLINE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING

Method Name	ResultCode	ResultCodeExtended
CutPaper	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
	OPOS_E_OFFLINE	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING

Method Name	ResultCode	ResultCodeExtended
RotatePrint	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1, 2
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
PrintBarCode	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0

	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1-7
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
		OPOS_EX_NOTSUPPORTED
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
PrintBitmap	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1, 3, 4
	(OPOS_E_ILLEGAL)	OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_NOEXIST	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_TOOBIG
		OPOS_EPTR_BADFORMAT
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
PrintMemoryBitmap	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0

	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_NOHARDWARE	0
	OPOS_E_BUSY	0
	OPOS_E_OFFLINE	0
	OPOS_EPTR_REMOVE_BUTTON	
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
		OPOS_EX_INVALIDMODE
		OPOS_EX_BADPARAM+1,3,4
		OPOS_EX_PORTLOCKED
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
		OPOS_EPTR_NOSTATION
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_TOOBIG
		OPOS_EPTR_BADFORMAT
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
SetBitmap	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0

	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1, 2, 4, 5
		OPOS_EX_DEVBUSY
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
		OPOS_EX_BADDEVICE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_NOEXIST	0
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_TOOBIG
		OPOS_EPTR_BADFORMAT
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
SetLogo	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM + 1, 2
TransactionPrint	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_NOSERVICE	OPOS_EX_SOVERSION
	OPOS_E_ILLEGAL	OPOS_EPTR_NOSTATION
		OPOS_EX_BADPARAM + 1, 2
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON
	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_SLP_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION

Method Name	ResultCode	ResultCodeExtended
ValidateData	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_NOSERVICE	OPOS_EX_SOVERSION
	OPOS_E_ILLEGAL	0
		OPOS_EX_BADPARAM + 1, 2
	OPOS_E_FAILURE	0
MarkFeed	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_NOSERVICE	OPOS_EX_SOVERSION
	OPOS_E_ILLEGAL	OPOS_EPTR_INCAPABLE
		OPOS_EX_BADPARAM + 1
	(OPOS_E_ILLEGAL)	OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON

Method Name	ResultCode	ResultCodeExtended
(MarkFeed)	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION
PageModePrint	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_NOSERVICE	OPOS_EX_SOVERSION
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
		OPOS_EX_BADPARAM + 1
		OPOS_EX_DEVBUSY
		OPOS_EX_INVALIDMODE
		OPOS_EX_TIMEOUT
		OPOS_EX_MICRMODE
	OPOS_E_FAILURE	OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERABLE
		OPOS_EPTR_LABEL_JAM
	OPOS_E_OFFLINE	0
		OPOS_EPTR_REMOVE_BUTTON

Method Name	ResultCode	ResultCodeExtended
(PageModePrint)	OPOS_E_EXTENDED	OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_REC_CARTRIDGE_REMOVED
		OPOS_EPTR_REC_CARTRIDGE_EMPTY
		OPOS_EPTR_REC_HEAD_CLEANING
		OPOS_EPTR_SLP_CARTRIDGE_REMOVED
		OPOS_EPTR_SLP_CARTRIDGE_EMPTY
		OPOS_EPTR_SLP_HEAD_CLEANING
		OPOS_EPTR_LABEL_REMOVAL
		OPOS_EPTR_BUTTON_OPERATION
ClearPrintArea	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_NOSERVICE	OPOS_EX_SOVERSION
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE

6.2 Principal Errors

ResultCodeExtended	Meanings
OPOS_SUCCESS	<ul style="list-style-type: none"> ● Operation successful
OPOS_E_CLOSED	<ul style="list-style-type: none"> ● Not opened
OPOS_E_CLAIMED	<ul style="list-style-type: none"> ● Another instance is claimed on the same device.
OPOS_E_NOTCLAIMED	<ul style="list-style-type: none"> ● Not claimed
OPOS_E_NOSERVICE	<ul style="list-style-type: none"> ● SO version is older than CO.
OPOS_E_DISABLED	<ul style="list-style-type: none"> ● DeviceEnabled is FALSE.
OPOS_E_ILLEGAL	<ul style="list-style-type: none"> ● An illegal parameter, process or unsupported function is specified.
OPOS_E_NOHARDWARE	<ul style="list-style-type: none"> ● Power is OFF or unconnected.
OPOS_E_OFFLINE	<ul style="list-style-type: none"> ● The printer is offline.
OPOS_E_NOEXIST	<ul style="list-style-type: none"> ● File does not exist. ● Registry information does not exist.
OPOS_E_FAILURE	<ul style="list-style-type: none"> ● Hardware failure
OPOS_E_TIMEOUT	<ul style="list-style-type: none"> ● Operation could not be completed within the timeout period.

OPOS_E_BUSY	<ul style="list-style-type: none"> ● The current Service Object state does not allow this request. For example, if asynchronous output is in progress, certain methods are not allowed. ● The ElectronicJournal is currently printing.
OPOS_E_EXTENDED	<ul style="list-style-type: none"> ● A class-specific error condition occurred. The error condition code is available in the ResultCodeExtended property.

[ResultCodeExtended defined by OPOS]

ResultCodeExtended	Meanings
OPOS_EPTR_COVER_OPEN	<ul style="list-style-type: none"> ● Cover is opened.
OPOS_EPTR_JRN_EMPTY	<ul style="list-style-type: none"> ● Journal station is out of paper.
OPOS_EPTR_REC_EMPTY	<ul style="list-style-type: none"> ● Receipt station is out of paper.
OPOS_EPTR_SLP_EMPTY	<ul style="list-style-type: none"> ● Slip station is out of paper.
OPOS_EPTR_TOOBIG	<ul style="list-style-type: none"> ● Size is too big.
OPOS_EPTR_BADFORMAT	<ul style="list-style-type: none"> ● Format of the specified file is illegal.
OPOS_EPTR_SLP_FORM	<ul style="list-style-type: none"> ● The device was taken out of removal mode while a form was still present.
OPOS_EPTR_REC_CARTRIDGE_REMOVED	<ul style="list-style-type: none"> ● No ink cartridge
OPOS_EPTR_REC_CARTRIDGE_EMPTY	<ul style="list-style-type: none"> ● Replace Ink cartridge.
OPOS_EPTR_REC_HEAD_CLEANING	<ul style="list-style-type: none"> ● Head cleaning in execution
OPOS_EPTR_SLP_CARTRIDGE_REMOVED	<ul style="list-style-type: none"> ● No ink cartridge
OPOS_EPTR_SLP_CARTRIDGE_EMPTY	<ul style="list-style-type: none"> ● Replace Ink cartridge.
OPOS_EPTR_SLP_HEAD_CLEANING	<ul style="list-style-type: none"> ● Head cleaning in execution

[EPSON Extended Error Code (POSPrinter)]

ResultCodeExtended	Meanings
OPOS_EPTR_NOSTATION	<ul style="list-style-type: none"> ● No station exists.

OPOS_EPTR_MECHANICAL	<ul style="list-style-type: none"> ● Mechanical error occurred.
OPOS_EPTR_CUTTER	<ul style="list-style-type: none"> ● Cutter error occurred.
OPOS_EPTR_UNRECOVERABLE	<ul style="list-style-type: none"> ● An irrecoverable error occurred.
OPOS_EPTR_AUTORECOVERABLE	<ul style="list-style-type: none"> ● The device is overheating. ● Auto recoverable error occurred.
OPOS_EPTR_ROTATE90	<ul style="list-style-type: none"> ● Cannot perform the operation during 90-degree rotations.
OPOS_EPTR_LABEL_JAM	<ul style="list-style-type: none"> ● A label paper jam occurred within the peeler system.
OPOS_EPTR_LABEL_REMOVAL	<ul style="list-style-type: none"> ● Cannot carry out the output processing since the device is at the waiting state of the label paper to be removed.
OPOS_EPTR_BUTTON_OPERATION	<ul style="list-style-type: none"> ● Cannot carry out the output processing since the device is at the push-waiting state of the button.
OPOS_EPTR_REMOVE_BUTTON	<ul style="list-style-type: none"> ● Cannot carry out the output processing since the device is at the waiting state of the label paper to be removed and push-waiting state of the button.

[EPSON Extended Error Code (Common)]

ResultCodeExtended	Meanings
OPOS_EX_PORTUSED	<ul style="list-style-type: none"> ● Communication port is used by other application.
OPOS_EX_MICRMODE	<ul style="list-style-type: none"> ● The port is locked by the other device.
OPOS_EX_BADDEVICE	<ul style="list-style-type: none"> ● Connected device is illegal. ● The image data registered to NVRAM in the PC does not match to the device's actual NVRAM status.
OPOS_EX_BADPROPVAL	<ul style="list-style-type: none"> ● Value of the property is illegal.
OPOS_EX_INCAPABLE	<ul style="list-style-type: none"> ● No function
OPOS_EX_INVALIDMODE	<ul style="list-style-type: none"> ● The state is invalid mode.
OPOS_EX_NOTSUPPORTED	<ul style="list-style-type: none"> ● Not supported
OPOS_EX_NOASB OPOS_EX_NOINPUT	<ul style="list-style-type: none"> ● No data is received.

OPOS_EX_TIMEOUT	<ul style="list-style-type: none"> ● Operation cannot be completed within the timeout period.
OPOS_EX_DEVBUSY	Outputting cannot be executed because the communication port state is BUSY.
OPOS_EX_SOVERSION	<ul style="list-style-type: none"> ● New methods and the properties of the CO is not available because the SO version is old.
OPOS_EX_BADPARAM+n	<ul style="list-style-type: none"> ● The nth parameter is illegal.

6.3 Remedial Actions for Principal Errors

Remedial actions for principal errors are described in the following.

ResultCodeExtended	Remedy
OPOS_E_CLOSED	<ul style="list-style-type: none"> ● Open
OPOS_E_CLAIMED	<ul style="list-style-type: none"> ● Release the device that is making a claim in another process.
OPOS_E_NOTCLAIMED	<ul style="list-style-type: none"> ● Claim
OPOS_E_NOSERVICE	<ul style="list-style-type: none"> ● Check the device name of the parameter of the Open method. ● Install the software again. ● Use new SO.
OPOS_E_DISABLED	<ul style="list-style-type: none"> ● Set DeviceEnabled to TRUE.
OPOS_E_ILLEGAL	<ul style="list-style-type: none"> ● Execute the method using normal parameter or set the properties. ● Check the status of the printer, and place it in the status in which commands can be executed. ● Refer to the CapXxx property and confirm the function.
OPOS_E_NOHARDWARE	<ul style="list-style-type: none"> ● Turn ON the power. ● Check the connections. ● Confirm the settings using SetupPOS
OPOS_E_OFFLINE	<ul style="list-style-type: none"> ● Make online.
OPOS_E_NOEXIST	<ul style="list-style-type: none"> ● Check the filename and path. ● Check the registry information.

OPOS_E_FAILURE	<ul style="list-style-type: none"> ● In the case of a recoverable error, eliminate the reason for the error, and then use the ESC/POS command to recover the error, or execute ClearOutput. ● In the case of an irrecoverable error, or in the case of I/F where commands cannot be sent without flow control, turn the power off and then on again. ● If this error occurs frequently, please contact the hardware manufacturer.
OPOS_E_TIMEOUT	<ul style="list-style-type: none"> ● Revise the timeout period. ● Operate so that processing is completed within the timeout period.
OPOS_E_BUSY	<ul style="list-style-type: none"> ● Wait for the asynchronous output to finish, and then execute the processing again. ● Execute ClearOutput to terminate the asynchronous output, and then execute the processing again. ● Please wait until the ElectronicJournal has finished printing and try again.
OPOS_E_EXTENDED	<ul style="list-style-type: none"> ● Refer to each of the extended result codes.

[List of ResultCodeExtended defined by OPOS]

ResultCodeExtended	Remedy
OPOS_EPTR_COVER_OPEN	<ul style="list-style-type: none"> ● Close the cover.
OPOS_EPTR_JRN_EMPTY	<ul style="list-style-type: none"> ● Load journal paper.
OPOS_EPTR_REC_EMPTY	<ul style="list-style-type: none"> ● Load receipt paper.
OPOS_EPTR_SLP_EMPTY	<ul style="list-style-type: none"> ● Place slip at insertion opening, and then use BeginInsertion, EndInsertion, etc. to obtain the condition where slip printing is enabled.
OPOS_EPTR_TOOBIG	<ul style="list-style-type: none"> ● Specify a bitmap with a smaller size. ● Make the Width parameter smaller Use functions imposing few restrictions on size.
OPOS_EPTR_BADFORMAT	<ul style="list-style-type: none"> ● Specify file with correct format.
OPOS_EPTR_SLP_FORM	<ul style="list-style-type: none"> ● Pull out the slip.
OPOS_EPTR_REC_CARTRIDGE_REMOVED	<ul style="list-style-type: none"> ● Set an ink cartridge.
OPOS_EPTR_REC_CARTRIDGE_EMPTY	<ul style="list-style-type: none"> ● Change the ink cartridge.
OPOS_EPTR_REC_HEAD_CLEANING	<ul style="list-style-type: none"> ● Wait until the head cleaning of the printer is completed.
OPOS_EPTR_SLP_CARTRIDGE_REMOVED	<ul style="list-style-type: none"> ● Set an ink cartridge.
OPOS_EPTR_SLP_CARTRIDGE_EMPTY	<ul style="list-style-type: none"> ● Change the ink cartridge.
OPOS_EPTR_SLP_HEAD_CLEANING	<ul style="list-style-type: none"> ● Wait until the head cleaning of the printer is completed.

[EPSON Extended Error Code (POSPrinter)]

ResultCodeExtended	Remedy
OPOS_EPTR_NOSTATION	<ul style="list-style-type: none"> ● Refer to CapXxxPresent, and do not issue commands for stations that do not exist.
OPOS_EPTR_MECHANICAL	<ul style="list-style-type: none"> ● Remove jammed paper, etc. and recover the error by ESC/POS command, or execute ClearOutput. ● In the case of I/F where commands cannot be sent without flow control, turn the power off and then on again.

OPOS_EPTR_CUTTER	<ul style="list-style-type: none"> ● Remove jammed paper, etc. and recover the error by ESC/POS command, or execute ClearOutput to recover the error. ● In the case of I/F where commands cannot be sent without flow control, turn the power off and then on again.
OPOS_EPTR_UNRECOVERABLE	<ul style="list-style-type: none"> ● Remove jammed paper, etc. and recover the error by ESC/POS command, or execute ClearOutput. ● In the case of I/F where commands cannot be sent without flow control, turn the power off and then on again.
OPOS_EPTR_AUTORECOVERABLE	<ul style="list-style-type: none"> ● Wait until the temperature of the head decreases. ● Wait until the recoverable error is automatically recovered.
OPOS_EPTR_ROTATE90	<ul style="list-style-type: none"> ● Leave the 90-degree rotated printing mode using RotatePrint, and execute again.
OPOS_EPTR_LABEL_JAM	<ul style="list-style-type: none"> ● First, remove the jammed label paper. Then, recover from the error with the ESC/POS command or by execution of the ClearOutput method. ● Reboot the power when it is using an interface that cannot transmit commands without flow control.
OPOS_EPTR_LABEL_REMOVAL	<ul style="list-style-type: none"> ● Remove the label that is causing the removal waiting.
OPOS_EPTR_BUTTON_OPERATION	<ul style="list-style-type: none"> ● Release the waiting state by pressing the feed button of the device.
OPOS_EPTR_REMOVE_BUTTON	<ul style="list-style-type: none"> ● First, remove the label that is causing the removal waiting and then release waiting state by pressing the feed button of the device.

[EPSON Extended Error Code (Common)]

ResultCodeExtended	Remedy
OPOS_EX_PORTUSED	<ul style="list-style-type: none"> ● Close other application using the communication port.

OPOS_EX_BADDEVICE	<ul style="list-style-type: none"> ● Connect a device matching the device specified in Open. ● Connect an EPSON-manufactured device. ● Delete both the image data saved onto the NVRAM in the PC and the device's NVRAM image data. Then, reregister the image in NVRAM.
OPOS_EX_BADPROPVAL	<ul style="list-style-type: none"> ● Specify the correct value for the property.
OPOS_EX_INCAPABLE	<ul style="list-style-type: none"> ● Check the CapXxx property, and do not use a function that is not available.
OPOS_EX_MICRMODE	<ul style="list-style-type: none"> ● Wait until the MICR mode is escaped, and execute again.
OPOS_EX_INVALIDMODE	<ul style="list-style-type: none"> ● Establish the condition where processing can be executed, and execute again.
OPOS_EX_NOTSUPPORTED	<ul style="list-style-type: none"> ● Use another device that supports the function, or change to an alternative processing.
OPOS_EX_NOASB OPOS_EX_NOINPUT	<ul style="list-style-type: none"> ● Using SetupPOS, check the communication settings. ● Check the communication settings of the printer (Check the settings of DIP Switches or turn on the power while keeping the [FEED] button pressed). ● Check printer connection and power supply.
OPOS_EX_TIMEOUT	<ul style="list-style-type: none"> ● Use SetupPOS to set the output interval, etc. ● Normally, there should be no need to execute again as data should be processed until the end.
OPOS_EX_DEVBUSY	<ul style="list-style-type: none"> ● Wait until communication port becomes ready, and execute again.
OPOS_EX_SOVERSION	<ul style="list-style-type: none"> ● Use new SO (SO which supports the same OPOS Rel as the CO).
OPOS_EX_BADPARAM+n	<ul style="list-style-type: none"> ● Specify correct value for parameter "n".

Section 7. Warnings

This section describes warnings to be adhered to when using POSPrinters in the EPSON™ series.

- XON/XOFF cannot be set for the printer's hardware handshake setting.
- When using the DirectIO method to issue a command, be sure to read the instructions on the particular command in the product manual.
- The second argument of DirectIO is a long format pointer. Because a constant, which has been defined, cannot be specified directly, once assign a value to the variable and then specify this variable as the argument.
- Download characters and download bitmap images cannot coexist. If either of the two is specified, the other is deleted. As other restrictions exist on downloading, make sure to refer to the product manual and adhere to the warnings when downloading is used.
- Depending on the model and the firmware version, 90-degree rotated printing may not be possible for raster bit images.
To print bitmaps using the 90-degree rotated printing mode, please change the bitmap printing mode using DirectIO or changing the device specific settings in SetupPOS utility.
- SlpLinesNearEndToEnd is always "0".
- If the bitmap data contains a parameter similar to a real time command, DirectIOEvent will issue this command.
- When there is no empty capacity in the printer's buffer and PrintImmediate is executed, data other than commands processed in real time might be discarded because PrintImmediate outputs without using handshake.
- If the result is ResultCode = OPOS_E_ILLEGAL, ResultCodeExtended = OPOS_EPTR_TIMEOUT following execution of the output method, it means that data transmission was not completed within a prescribed period of time. The remaining data is normally output after the method finishes.
- In order to correctly process commands that are only valid at the beginning of a line, line feed may be performed automatically.
- In the case of dot impact stations and ink jet stations, it is possible to change the printing position (right justification, centering, left justification) also in the middle of a line. This is only possible at the beginning of a line in the case of a thermal printer.

- The values that can be set for XxxLineChars are limited to the values in the XxxLineCharsList.
- When an error occurs in a printer having parallel interface specifications, it is not possible to perform recovery by commands.
- Depending on the operating environment, there can be cases of missing data when transmitting data via serial port. In order to prevent such a cases of missing data, it is recommended to set a smaller value for the FIFO setting for the serial communication. (Recommended value: "1")
Another way of preventing such problem is: Set a smaller value for the output buffer length by way of the SetupPOS utility. (Activate the SetupPOS utility, select the device name, then, select and show the "communication settings" dialog box.)
However, the output speed shall slow down when the setting value is changed as above.
- If it so happens that the name of the status log file used in the status log function coincides with the name of the trace log file used in the trace function, the trace log takes precedence and, the status log cannot be recorded. If you are activating the status log function and the trace function simultaneously, it is recommended to use different file names respectively.
- Once the rotated printing mode is initiated, it cannot be switched to the PageMode printing mode.
- If, while in the transaction printing mode, either of the PageModePrint methods, PTR_PM_NORMAL or PTR_PM_PRINT_SAVE are executed, the PageMode printing data is buffered into the transaction printing buffer.
- When printing in the PageMode printing mode an image that is downloaded onto the device or saved in the NVRAM, the printing area set by the PageModePrintArea settings should be wider than the printing image itself. If the PageModePrintArea settings set the printing area as smaller than the printing image itself, the resulting print may miss part of the bitmap (BMP) or may leave part of the image unprinted.
- When using the built-in buzzer model of TM-T88IV, TM-T88IVM and TM-T70 with network connection, always use a UB-E02 or UB-R02 interface board. If a device is connected via other interface board, Epson will not be responsible for any consequences.
- When an error has been detected during non-simultaneous bitmap print and the Close method is executed, the Claim method in next time not is performed correctly. Therefore, need to power OFF/ON of the POSPrinter.

- This version only supports JISX0208 of Japanese character code. Therefore, may influence the outcome of the shape of the character in the characteristic character printing by the other character code set. ^{*1}

^{*1} JIS2004 (Standard for Windows Vista)

Section 8. Appendix

8.1 Method

Added methods and limitations for the methods are explained in this appendix.

8.1.1 RotatePrint method

Remarks Under 180-degree rotated printing mode (when PTR_RP_ROTATE180 is specified as Rotation parameter), the following method cannot be utilized. If the method is executed, an error is returned.

PrintTwoNormal

Under 90-degree rotated printing mode (when PTR_RP_RIGHT90 or PTR_RP_LEFT90 is specified as Rotation parameter), the following methods cannot be utilized. If any of the methods are executed, an error is returned.

CutPaper

PrintTwoNormal

Image printing with ESC|#B is printed rotated regardless of PTR_RP_BITMAP specification by Rotation parameter.

The following escape sequences are disregarded under 90-degree rotated printing mode even the device is supporting the functions.

ESC | P

ESC | fP

ESC | sP

ESC | sL

ESC | #rF

ESC | cA

ESC | rA

ESC | IA

In addition, respective *Alignment* parameter of SetBitmap method, PrintBitmap method, PrintMemoryBitmap method and PrintBarCode

method are disregarded as well.

When these methods return errors, rotated printing mode does not change. In addition, when 90-degree rotated printing mode is used, the data buffered in Service Object is not cleared.

8.1.2 PrintBarcode method

Remarks As for the rotated printing, it is influenced by the both following method and property. The specification of the RotatePrint method is given priority over the value of the RotateSpecial property.

- RotatePrint method
(Specifies PTR_RP_BARCODE for Rotation parameter)
- RotateSpecial property
90-degree rotated printing operation differs depending on buffered data existence. Please refer to UPOS for detail.

Printable Barcode types with PrintBarCode method are as follows:

Code 128
 Code 128 Parsed
 Code 93
 Codabar
 ITF
 Code 39
 JAN 13 (EAN 13)
 JAN 8 (EAN 8)
 UPC-E
 UPC-A
 PDF 417
 MAXI CODE
 QR CODE
 Micro QR CODE
 GS1 DataBar (old name: RSS-14)¹
 GS1 DataBar_Expanded (old name: RSS_Expanded)
 GS1 DataBar 128 (old name: UCC/EAN128)
 GS1 DataBar Truncated (old name: RSS-14 Truncated)
 GS1 DataBar Limited (old name: RSS Limited)

GS1 DataBar Stacked (old name: RSS-14 Stacked)

GS1 DataBar Stacked Omidirectional

(old name: RSS-14 Stacked Omidirectional)

GS1 DataBar Expanded Stacked

(old name: RSS Expanded Stacked)

Composite

Aztec

DataMatrix

Further, printable Barcodes differ by device. Please refer to the Section 3 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter” of respective printer model for detail.

8.1.3 SetBitmap method

Remarks Able to specify Windows BMP file.

With the devices that are loaded downloading function, uses the function. Downloadable images to the devices are one per station head type.

If any image is not downloaded yet, the first specified BitmapNumber parameter's image is downloaded.

The size of downloadable image differs by device. Even if un-downloadable size image is specified, the image is automatically stored in SO if the image is printable size with the other bitmap commands. Please refer to the Section 3 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter” of respective printer model for detail.

Please refer to “8.2 NVRAM with SetBitmap method” of this manual for the operation when the setting is specified to use NVRAM with SetBitmap method in “Device Specific Settings” dialog box of SetupPOS utility.

8.1.4 PrintMemoryBitmap method

Remarks Able to specify and print BMP file that registered with memory.

The RotatePrint method with PTR_RP_BITMAP enables rotated printing.

The RotatePrint method without PTR_RP_BITMAP enables normal

printing at any time.

8.2 Using NVRAM with SetBitmap method

The operations related to SetBitmap method when the setting is specified to use NVRAM with SetBitmap method in “Device Specific Settings” dialog box of SetupPOS utility are as follows:

- (1) When a specified image by SetBitmap coincides with the registered images with NVRAM, the registered image is used (no newly registration).

The following are the conditions that considered the same images.

- File name coincides
- The size (height and width) of the image to be registered coincides
- LetterQuality information coincides
- CheckSum (computes registered commands with modulus 253) coincides

- (2) The only cases that SetBitmap method returns error are illegal parameter and printer error.

Depending on the condition during execution of SetBitmap method, the image is stored most suitable way. (Stored in NVRAM→Stored by normal Download Image→Stored in Service Object) Register method is notified by DirectIOEvent event. Please refer to the Section 4 of this manual for details of image register method.

- (3) Images registered with NVRAM are not deleted under normal condition. (If null character is specified as a file name by SetBitmap method, printing command possessed in Service Object alone is deleted.)

- (4) During Claim method execution or when device is rebooted, acquires the image information (key code) registered with NVRAM of the device. Then, compare and coordinate NVRAM registered information possessed on PC. (Adjusted to match the information on PC)

- (5) To delete registered image with NVRAM, PTR_DI_DELETE_NVIMAGE command is added to DirectIO method. Please refer to the Section 4 of this manual for directions for use. Further, BitmapNumber that is related to NVRAM image deleted by the command is able to operate as if Null character is specified as a file name by SetBitmap method.

- (6) The Image information registered with NVRAM is stored as a file on PC.

The registered image information is stored in the directory where OPOS ADK is installed.