

**EPSON OPOS ADK MANUAL**

# **APPLICATION DEVELOPMENT GUIDE**

ElectronicJournal

Version 3.00 Feb. 2019

**Notes**

- (1) Reproduction of any part of this documentation by any means is prohibited.
- (2) The contents of this documentation are subject to change without notice.
- (3) Comments and notification of any mistakes in this documentation are gratefully accepted.
- (4) This software cannot be used with other equipment that the specified.
- (5) EPSON will not be responsible for any consequences resulting from the use of any information in this documentation.

**Trademarks**

Microsoft®, Windows®, Windows Server®, Visual Basic® and Visual C++® are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

EPSON® and ESC/POS® are registered trademarks of Seiko Epson Corporation.

Other product and company names used herein are for identification purposes only and may be trademarks or registered trademarks of their respective companies.

# Contents

---



---

<b>Section 1. Introduction .....</b>	<b>1</b>
<b>Section 2. Details on Settings .....</b>	<b>3</b>
2.1 Device Information.....	3
2.2 References of Firmware Versions .....	4
2.3 Settings of DIP Switches and Hardware .....	4
2.4 Setting of Devices.....	5
2.4.1 Interface .....	5
2.5 Port Information .....	6
2.5.1 Device Specific Settings.....	7
<b>Section 3. Function Details.....</b>	<b>9</b>
3.1 CheckHealth Method .....	9
3.1.1 Internal Test .....	9
3.1.2 External Test .....	9
3.1.3 Interactive Test.....	10
3.2 Property Set values and Default Values .....	11
3.2.1 Capability Set Value .....	11
3.2.2 Other Set Value.....	12
3.3 Methods.....	13
3.4 Writing process.....	14
3.4.1 Printer's methods.....	14
3.4.2 Escape Sequences .....	15
3.4.3 DirectIO method .....	16
3.5 Supplementary Explanation of Functions .....	17
3.5.1 Writing print data .....	17
3.5.2 Written data printing .....	17
3.5.3 Erasing of written data.....	18
3.6 Device Statistics .....	18
<b>Section 4. Expanded Functions.....</b>	<b>19</b>
4.1 DirectIO Function.....	19
4.1.1 EJ_DI_RECOVER_ERROR .....	20

4.1.2 DirectIOEvent Event..... 20

**Section 5. Device Specific Programming..... 21**

**Section 6. Error Information ..... 22**

6.1 ResultCode List ..... 22

6.1.1 When Executing Properties ..... 22

6.1.2 When A Method is executed..... 23

6.1.3 When writing output data of the Printer ..... 28

6.2 Remedial Actions for Principal Errors ..... 29

6.2.1 ResultCode..... 29

6.2.2 ResultCodeExtended ..... 31

**Section 7. Warnings..... 34**

# Section 1. Introduction

---

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

Before the EPSON TM series ElectronicJournal 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.

This manual applies to the following POSPrinter devices that ElectronicJournal supported. (Devices with "M" appended to the end of the device name offer multi-language support.)

Serial	Parallel	USB	Ethernet
TM-H6000III	TM-H6000IIIP	TM-H6000IIIU	TM-H6000IIIE
TM-H6000IIIM	TM-H6000IIIPM	TM-H6000IIIMU	TM-H6000IIIME
TM-T88IV	TM-T88IVP	TM-T88IVU	TM-T88IVE
TM-T88IVM	TM-T88IVPM	TM-T88IVMU	TM-T88IVME
TM-T88V	TM-T88VP	TM-T88VU	TM-T88VE
TM-T88VM	TM-T88VPM	TM-T88VMU	TM-T88VME
TM-T88VI	TM-T88VIP	TM-T88VIU	TM-T88VIE
TM-T88VIM	TM-T88VIMP	TM-T88VIMU	TM-T88VIME
TM-T20	-	TM-T20U	TM-T20E
TM-T20-42C	-	TM-T20-42CU	TM-T20-42CE
TM-T20II	-	TM-T20IIU	TM-T20IIE
TM-T20II-42C	-	TM-T20II-42CU	TM-T20II-42CE
TM-H6000IV	TM-H6000IVP	TM-H6000IVU	TM-H6000IVE
TM-H6000IVM	TM-H6000IVMP	TM-H6000IVMU	TM-H6000IVME
TM-H6000V	TM-H6000VP	TM-H6000VU	TM-H6000VE
TM-H6000VM	TM-H6000VMP	TM-H6000VMU	TM-H6000VME

The detail function of POSPrinter is not described in this manual. Therefore, when using the ElectronicJournal, please refer to along with the POSPrinter's manual.

- "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)" manual
- The manual of respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter"

Throughout the manual, ElectronicJournal will be referred to as "Device", and POSPrinter will be referred to as "Printer".

**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 ElectronicJournal devices.

### 2.1 Device Information

The DeviceDescription and DeviceName for each model are as follows:

Model Name	I/F	DeviceName	DeviceDescription
TM-H6000III	S	TM-H6000III	EPSON TM-H6000III ElectronicJournal
	P	TM-H6000IIIP	EPSON TM-H6000IIIP ElectronicJournal
	U	TM-H6000IIIU	EPSON TM-H6000IIIU ElectronicJournal
	E	TM-H6000IIIE	EPSON TM-H6000IIIE ElectronicJournal
TM-H6000IIIM	S	TM-H6000IIIM	EPSON TM-H6000IIIM ElectronicJournal
	P	TM-H6000IIIPM	EPSON TM-H6000IIIPM ElectronicJournal
	U	TM-H6000IIIMU	EPSON TM-H6000IIIMU ElectronicJournal
	E	TM-H6000IIIME	EPSON TM-H6000IIIME ElectronicJournal
TM-T88IV	S	TM-T88IV	EPSON TM-T88IV ElectronicJournal
	P	TM-T88IVP	EPSON TM-T88IVP ElectronicJournal
	U	TM-T88IVU	EPSON TM-T88IVU ElectronicJournal
	E	TM-T88IVE	EPSON TM-T88IVE ElectronicJournal
TM-T88IVM	S	TM-T88IVM	EPSON TM-T88IVM ElectronicJournal
	P	TM-T88IVPM	EPSON TM-T88IVPM ElectronicJournal
	U	TM-T88IVMU	EPSON TM-T88IVMU ElectronicJournal
	E	TM-T88IVME	EPSON TM-T88IVME ElectronicJournal
TM-T88V	S	TM-T88V	EPSON TM-T88V ElectronicJournal
	P	TM-T88VP	EPSON TM-T88VP ElectronicJournal
	U	TM-T88VU	EPSON TM-T88VU ElectronicJournal
	E	TM-T88VE	EPSON TM-T88VE ElectronicJournal
TM-T88VM	S	TM-T88VM	EPSON TM-T88VM ElectronicJournal
	P	TM-T88VPM	EPSON TM-T88VPM ElectronicJournal
	U	TM-T88VMU	EPSON TM-T88VMU ElectronicJournal
	E	TM-T88VME	EPSON TM-T88VME ElectronicJournal
TM-T88VI	S	TM-T88VI	EPSON TM-T88VI ElectronicJournal
	P	TM-T88VIP	EPSON TM-T88VIP ElectronicJournal
	U	TM-T88VIU	EPSON TM-T88VIU ElectronicJournal
	E	TM-T88VIE	EPSON TM-T88VIE ElectronicJournal
TM-T88VIM	S	TM-T88VIM	EPSON TM-T88VIM ElectronicJournal
	P	TM-T88VIPM	EPSON TM-T88VIPM ElectronicJournal
	U	TM-T88VIMU	EPSON TM-T88VIMU ElectronicJournal
	E	TM-T88VIME	EPSON TM-T88VIME ElectronicJournal

TM-T20	S	TM-T20	EPSON TM-T20 ElectronicJournal
	U	TM-T20U	EPSON TM-T20U ElectronicJournal
	E	TM-T20E	EPSON TM-T20E ElectronicJournal
TM-T20-42C	S	TM-T20-42C	EPSON TM-T20 Electronic Journal 42Column Mode
	U	TM-T20-42CU	EPSON TM-T20U Electronic Journal 42Column Mode
	E	TM-T20-42CE	EPSON TM-T20E Electronic Journal 42Column Mode
TM-T20II	S	TM-T20II	EPSON TM-T20II ElectronicJournal
	U	TM-T20IIU	EPSON TM-T20IIU ElectronicJournal
	E	TM-T20IIE	EPSON TM-T20IIE ElectronicJournal
TM-T20II-42C	S	TM-T20II-42C	EPSON TM-T20II Electronic Journal 42Column Mode
	U	TM-T20II-42CU	EPSON TM-T20IIU Electronic Journal 42Column Mode
	E	TM-T20II-42CE	EPSON TM-T20IIE Electronic Journal 42Column Mode
TM-H6000IV	S	TM-H6000IV	EPSON TM-H6000IV ElectronicJournal
	P	TM-H6000IVP	EPSON TM-H6000IV P ElectronicJournal
	U	TM-H6000IVU	EPSON TM-H6000IV U ElectronicJournal
	E	TM-H6000IVE	EPSON TM-H6000IV E ElectronicJournal
TM-H6000V	S	TM-H6000V	EPSON TM-H6000V ElectronicJournal
	P	TM-H6000VP	EPSON TM-H6000V P ElectronicJournal
	U	TM-H6000VU	EPSON TM-H6000V U ElectronicJournal
	E	TM-H6000VE	EPSON TM-H6000V E ElectronicJournal

I/F indicate the connected interface.

The following is the list of the four connecting interfaces.

S: Serial

P: Parallel

U: USB

E: Ethernet

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

## 2.2 References of Firmware Versions

Refer to the release notes (Relnote.txt/SupportedDevicesList.txt).

## 2.3 Settings of DIP Switches and Hardware

For the settings of DIP Switches, please refer to the respective printer model's "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".



## **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 Interface**

#### **1) Setting of Serial interface devices**

When using the device at the Serial interface, select a device and set the baud rate with the SetupPOS utility.

#### **2) Setting of Parallel interface devices**

When the SetupPOS utility is used to select the device when using a Parallel port, select devices with "P" appended to the end of the device name.

Example: TM-H6000IIIP/ TM-T88IVP

#### **3) Setting of USB interface devices**

When the SetupPOS utility is used to select the device when using a USB port, select devices with "U" appended to the end of the device name.

Example: TM-H6000IIIU/ TM-T88IVU

#### **4) Setting of Ethernet interface devices**

When the SetupPOS utility is used to select the device when using an Ethernet port, select devices with "E" appended to the end of the device name.

Example: TM-H6000IIIE/ TM-T88IVE

## 2.5 Port Information

The settable port information by the SetupPOS utility is as follows.

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

The port information that can be set with the SetupPOS utility is as follows.

### 1) Port information when using serial port

Setting Information	Effective Setting Range
Baud rate	2400 <sup>*1</sup> , 4800, 9600, 19200, 38400, 57600 <sup>*1</sup> , 115200 <sup>*1</sup>
Bit length	8 bits
Parity	NONE, ODD, EVEN
Stop bit	1 bit
Handshake	DTR/DSR
Output buffer length [byte] <sup>*2</sup>	32-1024
Output interval time [ms] <sup>*2</sup>	0-9999

<sup>\*1</sup> Unavailable only for TM-H6000III(M) models.

<sup>\*2</sup> This information does not appear when using TMPort port.

### 2) Port information when using parallel port

Setting Information	Effective Setting Range
Output buffer length [byte] <sup>*1</sup>	32-1024
Output interval time [ms] <sup>*1</sup>	0-9999

<sup>\*1</sup> This information does not appear when using TMPort port.

### 3) Port information when using USB port

Setting Information	Effective Setting Range
Output interval time [ms] <sup>*1</sup>	0-9999

<sup>\*1</sup> This information does not appear when using TMPort port.

### 4) Port information when Ethernet port is used

Setting Information	Effective Setting Range
Output buffer length [byte] <sup>*1</sup>	32-1024
Output interval time [ms] <sup>*1</sup>	0-9999

<sup>\*1</sup> This information does not appear when using TMPort port.

### 2.5.1 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 set items appears.

- List of Available Disk Drive
- Directory to Store Electronic Journal
- Free Disk Drive Space
- Disk Near-Full Notify Size
- Maximum File Size

#### 2.5.1.1 List of Available Disk Drive

Sets a drive to store stored data and marker maintain files. Available drives in the system are displayed. When setting a disk drive, refer to the "Section7 Warnings" in this manual.

Default setting: It differs depending on operation system. <sup>\*1</sup>

<sup>\*1</sup> Drive found at first is selected. At that time, partition that OS is not installed is prioritized. The network drives are excluded.

#### 2.5.1.2 Directory to Store Electronic Journal

Locations to store stored data and marker maintenance files are displayed automatically.

Default setting: (Selected Drive) ¥ElectronicJournal

##### 2.5.1.2.1 Selectable directory to store

Only HDD media, which is fixed to the system, is supported to store ElectronicJournal with the EPSON OPOS ADK program. Any situation the media become unavailable during the system operation is not concerned.

Even a removal media is specified for saving the files through the SetupPOS setting, when the media is disconnected, it can not be reported.

When the ElectronicJournal data files exist already, a dialog box appears and make certain of directory to store.

The methods are as follows:

[DELETE]:	Delete existing files.
[SAVE]:	Without deleting existing files. Keep these files alive.
[MOVE]:	Move existing files in old directory to new directory.
[CANCEL]:	Cancel the processing.

#### **2.5.1.3 Free Disk Drive Space**

Free disk space of drive specified as a location to store data is displayed automatically.

Default setting: Free disk space of drive selected.

#### **2.5.1.4 Disk Near-Full Notify Size (in KB)**

Sets a threshold value that determines as HDD disk space is near full. Value unit is in KB. Settable range is as follows

1~4194204-n (n = Cluster size)

When a free disk size reaches to a set value, EJ\_SUE\_MEDIUM\_NEAR\_FULL StatusUpdateEvent will be notified.

Default setting: 1024 KB

#### **2.5.1.5 Maximum File Size (in KB)**

Sets a maximum size of stored data file. Value unit is in KB. Settable range is as follows:

1~4194204-n (n = Cluster size)

When a maximum file size value is exceeded, a new stored data file will be created.

Default setting: Settable maximum size.

## Section 3. Function Details

---

This section describes the functions of the ElectronicJournal device in details. Supplementary explanation of the parts not described in detail in UPOS is also given here.

### 3.1 CheckHealth Method

The operations of the CheckHealth method are as follows.

#### 3.1.1 Internal Test

Confirms status of ElectronicJournal file, capacity of drive where file is saved, and POSPrinter.

Does not write to HDD or send command to POSPrinter.

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 return value. If an error has occurred, there is no point in referring to the CheckHealthText property. For details on the error, refer to the Section 6 of this manual.

#### 3.1.2 External Test

Confirms status of Electronic Journal file and capacity of drive where file is saved. Performs test for writing a file and outputting data to POSPrinter.

```
External HCheck!!
EPSON OPOS ADK
ElectronicJournal Service
ServiceObjectVersion = Version
DeviceName = Model name
```

Confirms an output result.

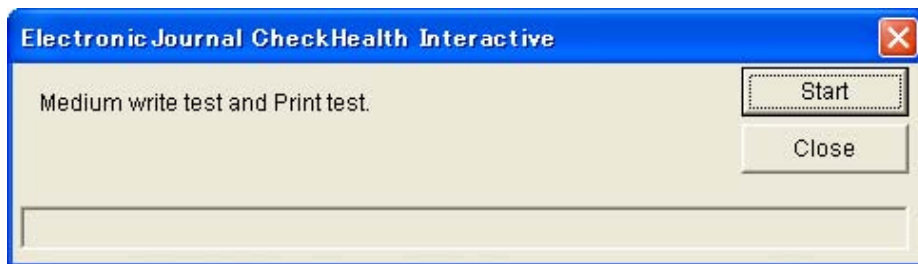
When the method is executed by OPOS\_CH\_EXTERNAL, the character string of the CheckHealthText property is as follows.

“External Hcheck:Complete” : CheckHealthText

After executing the CheckHealth method, be sure to confirm the return value. If an error has occurred, there is no point in referring to the CheckHealthText property. For details on the error, refer to the “Section 6 Error Information” of this manual.

### 3.1.3 Interactive Test

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



If a test is executed, the strings below should be outputted.

```
Interactive HCheck!!
EPSON OPOS ADK
ServiceObjectVersion = Version
DeviceName = Model name
```

Confirms an output result.

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 executing the [Read].

“Interactive Hcheck: Complete” : When the [Close] button is pressed after executing the [Read].

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

### 3.2 Property Set values and Default Values

The following explanation is about the property set values and the default values.

#### 3.2.1 Capability Set Value

The following values are the Capability set values.

Capability	Setting Value
CapUpdateFirmware	FALSE
CapUpdateStatistics	TRUE
CapCompareFirmwareVersion	FALSE
CapStatisticsReporting	TRUE
CapPowerReporting	OPOS_PR_NONE <sup>*1</sup>
	OPOS_PR_STANDARD <sup>*2</sup>
	OPOS_PR_ADVANCED <sup>*3</sup>
CapAddMarker	TRUE
CapErasableMedium	TRUE
CapInitializeMedium	FALSE
CapMediumIsAvailable	FALSE
CapPrintContent	TRUE
CapPrintContentFile	TRUE
CapRetrieveCurrentMarker	FALSE
CapRetrieveMarker	FALSE
CapRetrieveMarkerByDateTime	FALSE
CapRetrieveMarkersDateTime	FALSE
CapStation	EJ_S_RECEIPT
CapStorageEnabled	TRUE
CapSuspendPrintContent	TRUE
CapSuspendQueryContent	FALSE
CapWaterMark	FALSE

<sup>\*1</sup> Parallel I/F (Using the Windows standard driver.)

<sup>\*2</sup> Serial I/F

<sup>\*3</sup> USB I/F, Ethernet I/F and Parallel I/F (Using the Lilac driver.)

### 3.2.2 Other Set Value

The following values are the other set values.

Property	Default Value	Settable Value
AsyncMode	FALSE	TRUE FALSE
AutoDisable	FALSE	TRUE FALSE
Claimed	FALSE	-
DataCount	0	-
DataEventEnabled	FALSE	TRUE FALSE
DeviceEnabled	FALSE	TRUE FALSE
FlagWhenIdle	FALSE	TRUE FALSE
FreezeEvents	FALSE	TRUE FALSE
MediumFreeSpace	0	-
MediumID	""	-
MediumIsAvailable	TRUE	-
MediumSize	0	-
OutputID	0	-
PowerNotify	PN_DISABLED	PN_ENABLED PN_DISABLED
PowerState	PN_UNKNOWN	-
State	PN_CLOSED	-
Station	EJ_S_RECEIPT	EJ_S_RECEIPT
StorageEnabled	FALSE	TRUE FALSE
Suspended	FALSE	-
WaterMark	FALSE	-



### 3.3 Methods

The following explanation is about supported/unsupported Methods, and the detailed information.

Method	Supported/Unsupported
AddMarker	O
CancelPrintContent	O
CancelQueryContent	X
EraseMedium	O
InitializeMedium	X
PrintContent	O
PrintContentFile	O
QueryContent	O
ResumePrintContent	O
ResumeQueryContent	X
RetrieveCurrentMarker	X
RetrieveMarker	X
RetrieveMarkerByDateTime	X
RetrieveMarkersDateTime	X
SuspendPrintContent	O
SuspendQueryContent	X

O : Supported

X : Unsupported

### 3.4 Writing process

The following explanation is about corresponding state of writing process.

#### 3.4.1 Printer's methods

The writable Printer's methods by ElectronicJournal are as follows:

Method	Write Timing
PageModePrint	When the printing process which PTR_PM_NORMAL or PTR_PM_PRIN_SAVE are completed.
PrintBarCode	When the printing process is completed.
PrintBitmap	When the printing process is completed.
PrintImmediate	When the printing process is completed. When the printing process is executed during non-simultaneous processing, regardless of the order of method the writing is executed by the output order to printer.
PrintMemoryBitmap	When the printing process is completed.
PrintNormal	When the printing process is completed.
PrintTwoNormal	When the printing process is completed. (Currently, there is no device supported by ElectronicJournal.)
RotatePrint	When the printing process is completed.
TransactionPrint	When the printing process of PTR_TP_NORMAL is completed.

For details, please refer to the manual of respective model's "3.2 Methods" of "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

In addition, please refer to the "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)" manual.

### 3.4.2 Escape Sequences

The writable printer's Escape Sequences by ElectronicJournal are as follows:

ESC|#B <sup>\*1</sup>  
 ESC|tL  
 ESC|bL  
 ESC|#IF  
 ESC|#uF  
 ESC|bC  
 ESC|#uC  
 ESC|#rC  
 ESC|rvC  
 ESC|1C  
 ESC|2C  
 ESC|3C  
 ESC|4C  
 ESC|#hC  
 ESC|#vC  
 ESC|cA  
 ESC|rA  
 ESC|IA  
 ESC|N  
 ESC|#R  
 ESC|#stC

<sup>\*1</sup> About "ESC|#B" (bitmap printing), please refer to the "3.5 Supplementary Explanation of Functions" of this manual.

For details of Escape Sequences, please refer to the manual of respective model's "3.3 Escape Sequences" of "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter".

In addition, please refer to the "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)" manual.

### 3.4.3 DirectIO method

The writable printer's DirectIO methods by ElectronicJournal are as follows:

PTR\_DI\_OUTPUT\_NORMAL

PTR\_DI\_PRINT\_FLASH\_BITMAP \*<sup>1</sup>

PTR\_DI\_PRINT\_FLASH\_BITMAP2 \*<sup>1</sup>

\*<sup>1</sup> Only when the receipt is selected.

For details of DirectIO method, please refer to the Section 4 of the "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)" manual.

- "4.1.1 PTR\_DI\_OUTPUT\_NORMAL"
- "4.1.4 PTR\_DI\_PRINT\_FLASH\_BITMAP"
- "4.1.5 PTR\_DI\_PRINT\_FLASH\_BITMAP2"

### 3.5 Supplementary Explanation of Functions

More information about ElectronicJournal is described below.

#### 3.5.1 Writing print data

The store stored data file and marker maintain file are created to accumulate of the writing of the Printer's output data.

The timing of file making and file deletion are as follows.

The timing of file making:

- When there is not still file in the directory that specified in the "Device Specific Settings" of SetupPOS
- When a maximum file size value specified in the "Device Specific Settings" of SetupPOS is exceeded
- When a first write process occurs after the EraseMedium method is executed

The timing of file deletion:

- When the EraseMedium method is executed
- If the [DELETE] button is selected in the "Directory to Store Electronic Journal" of "Device Specific Settings" setting
- When the ElectronicJournal device is deleted in the SetupPOS setting
- In Uninstallation, if "Yes" is selected of the "Delete of ElectronicJournal device".

The markers maintain file and the stored data file are deleted at the same time.

#### 3.5.2 Written data printing

##### 3.5.2.1 Marker setting

The ElectronicJournal data is printed when the PrintContent method and the PrintContentFile method are executed.

The printing data are stored with contiguous data.

When the write data is acquired and printed, the marker are specified to indicate the data range as an index.

Strings can be specified as a marker name is as follows:

Strings exclude ASCII code (0x00-0x1F and 0x7F)

Maximum string size: 1024 characters

The null character cannot be used for marker.

### 3.5.2.2 Bitmap Printing

The specifications of bitmap printing of ElectronicJournal differ by method of bitmap printing with printer.

When the Setbitmap method is executed, serviceObject automatically chooses the most appropriate the destination to store by the priority. The destination of image to save is notified by DirectIOEvent event.

The details are as follows:

Priority of the destination to store	DirectIOEvent
In printer's NVRAM <sup>*1</sup>	PTR_DIE_NVRAM
In printer's volatile memory	PTR_DIE_VRAM
In Service Object	PTR_DIE_MEMORY

<sup>\*1</sup> This command is used only when "NVRAM" check box is checked in "Device Specific Settings" dialog box of SetupPOS utility.

For details, please refer to the "Section8 Appendix" of "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)" manual.

The image that stored in printer's volatile memory is deleted when power is turned ON/OFF. However, Printer's Service Object has recovery function.

When power is turned ON/OFF, the EPSON OPOS performs a recovery as thorough as possible so that the following processing can continue normally.

Therefore, when the ElectronicJournal data is printed, the POSPrinter's DeviceEnabled property needs to set to "TRUE".

### 3.5.3 Erasing of written data

The EraseMedium method is executed; written data inside the ElectronicJournal is deleted.

According to the circumstances, the written file may become enlarged. Therefore, there is need to erase the written data at regular intervals.

## 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.

## Section 4. Expanded Functions

---

This section describes the expanded functions of the ElectronicJournal device.

### 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. Specify command number
<i>pData</i>	Number of output data/Value defined by command
<i>pString</i>	Output data

EPSON DirectIO commands are as follows.

#### [Command List]

Command	Outline
EJ_DI_RECOVER_ERROR	Recover the Printer error.

**Explanation** Execute each function in accordance with the specified outline by *Command*.

**Returned value** The values vary by devices.

**Requirement** Open or Open, Claim & Enable

The specifications are as follows:

**4.1.1 EJ\_DI\_RECOVER\_ERROR**

Parameter	Command	EJ_DI_RECOVER_ERROR
	<i>pData</i>	Not used
	<i>pString</i>	Not used
Explanation	Recover from recoverable error.	
	When a printer is not in an error mode, the command has no effect on the printer.	
Returned value	ResultCode	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_ILLEGAL	OPOS_EX_TIMEOUT

**4.1.2 DirectIOEvent Event**

Nothing.



## **Section 5. Device Specific Programming**

---

There is not the device specific programming of the ElectronicJournal.

## Section 6. Error Information

---

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

### 6.1 ResultCode List

#### 6.1.1 When Executing Properties

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

Property Nme	ResultCode	ResultCodeExtended
AsyncMode	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
FlagWhenIdle	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
Station	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
		OPOS_EX_BADPROPVAL
StorageEnabled	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_CLAIMED	0
	OPOS_E_ILLEGAL	0
		OPOS_EX_BADFILE
	OPOS_E_FAILURE	0
WaterMark	OPOS_E_CLOSED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE

### 6.1.2 When A Method is executed

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

Method Name	ResultCode	ResultCodeExtended
AddMarker	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM+1
	OPOS_E_BUSY	OPOS_EEJ_BADFILE
		OPOS_EEJ_PRINTING
		OPOS_EEJ_PTR_PRINTING
		OPOS_EEJ_MEDIUM_USED
	OPOS_E_EXTENDED	0
		OPOS_EEJ_EXISTING
	OPOS_E_FAILURE	OPOS_EEJ_MEDIUM_FULL
		OPOS_EX_UNAUTHORIZED
CancelPrintContent	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	0
CancelQueryContent	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
EraseMedium	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	OPOS_EEJ_PRINTING
		OPOS_EEJ_PTR_PRINTING
		OPOS_EEJ_MEDIUM_USED
	OPOS_E_FAILURE	OPOS_EX_UNAUTHORIZED
		0

Method Name	ResultCode	ResultCodeExtended
InitializeMedium	OPOS_E_CLOSED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_CLAIMED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
PrintContent	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_NOEXIST	0
	OPOS_E_EXTENDED	OPOS_EEJ_MEDIUM_FULL
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM+1
		OPOS_EX_BADPARAM+2
		OPOS_EX_TIMEOUT
		OPOS_EX_PORTUSED
		OPOS_EX_DEVBUSY
		OPOS_EEJ_BADFILE
		OPOS_EEJ_MARKERORDER
	OPOS_E_BUSY	OPOS_EEJ_PTR_PRINTING
		OPOS_EEJ_MEDIUM_USED
		0
	OPOS_E_FAILURE	OPOS_EX_UNAUTHORIZED
		OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERBLE
		OPOS_EX_WAITING_REMOVAL
		0
	OPOS_E_NOHARDWARE	0
	OPOS_E_OFFLINE	0

Method Name	ResultCode	ResultCodeExtended
PrintContentFile	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_NOEXIST	0
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM+1
		OPOS_EX_TIMEOUT
		OPOS_EX_PORTUSED
		OPOS_EX_DEVBUSY
		OPOS_EEJ_BADFILE
	OPOS_E_BUSY	OPOS_EEJ_PTR_PRINTING
		0
	OPOS_E_FAILURE	OPOS_EX_UNAUTHORIZED
		OPOS_EPTR_COVER_OPEN
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_AUTORECOVERBLE
		OPOS_EX_WAITING_REMOVAL
		0
	OPOS_E_NOHARDWARE	0
	OPOS_E_OFFLINE	0

Method Name	ResultCode	ResultCodeExtended
QueryContent	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
		OPOS_EX_BADPARAM+2
		OPOS_EX_BADPARAM+3
		OPOS_EEJ_MARKERORDER
		OPOS_EEJ_BADFILE
		OPOS_EX_DISPOSE_ERROREVENT
	OPOS_E_NOEXIST	0
	OPOS_E_EXIST	0
	OPOS_E_FAILURE	OPOS_EX_UNAUTHORIZED
		OPOS_EX_EXCEED_FILE_LIMIT
		0
	OPOS_E_BUSY	0
		OPOS_EEJ_PTR_PRINTING
		OPOS_EEJ_PRINTING
		OPOS_EEJ_MIDIUM_USED
	OPOS_E_EXTENDED	OPOS_EEJ_NOT_ENOUGH_SPACE
ResumePrintContent	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	OPOS_EEJ_PTR_PRINTING
ResumeQueryContent	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE

Method Name	ResultCode	ResultCodeExtended
RetrieveCurrentMarker	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
RetrieveMarker	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
RetrieveMarkerByDateT ime	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
RetrieveMarkersDateTi me	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE
SuspendPrintContent	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE
SuspendQueryContent	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE

### 6.1.3 When writing output data of the Printer

The ResultCode and ResultCodeExtended when methods of writing data are executed are as follows.

ResultCode	ResultCodeExtended
OPOS_E_ILLEGAL	OPOS_EEJ_BADFILE
OPOS_E_FAILURE	OPOS_EX_UNAUTHORIZED
	0
OPOS_E_EXTENDED	OPOS_EEJ_NOT_ENOUGH_SPACE
	OPOS_EEJ_MEDIUM_FULL



## 6.2 Remedial Actions for Principal Errors

### 6.2.1 ResultCode

The Meaning and remedy of ResultCode for principal are as follows:

ResultCode	Meaning	Remedy
OPOS_SUCCESS	Operation succeeded.	Nothing.
OPOS_E_NOSERVICE	No service. CO cannot create SO. SO version is older than CO.	Check the device name of the parameter of the Open method. Install the software again. Use new SO.
OPOS_E_ILLEGAL	An illegal parameter or process, or unsupported function is specified.  The processing cannot be executed because the Printer or medium is currently printing.	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_CLOSED	Not opened.	Open.
OPOS_E_TIMEOUT	Operation could not be completed within the timeout period.	Revise the timeout period.  Operate so that processing is completed within the timeout period.
OPOS_E_CLAIMED	The device is being claimed by the other device.	Release the device that is making a claim in another process.
OPOS_E_NOTCLAIMED	Not claimed.	Claim.
OPOS_E_NOHARDWARE	The device is power OFF or unconnected.	Turn ON the power. Check the connections.  Confirm the settings using SetupPOS
OPOS_E_DISABLED	DeviceEnabled is FALSE.	Set DeviceEnabled property to TRUE.

ResultCode	Meaning	Remedy
OPOS_E_FAILURE	<p>Hardware failure.</p> <p>Could not execute the process by the problem of devices with hydra connection.</p> <p>The written file is enlarged. Therefore, could not execute the process.</p>	<p>Eliminate the reason for the error of writing and reading.</p> <p>Check the status of the devices with hydra connection, and place it in the status in which commands can be executed.</p> <p>Execute the EraseMedium method, and delete the stored data file.</p>
OPOS_E_BUSY	<p>The device is under the asynchronous output. Could not execute the process.</p> <p>ElectronicJournal's SO is BUSY.</p>	<p>Wait for the asynchronous output to finish, and then execute the processing again.</p> <p>Execute ClearInput or ClearOutput method terminates the asynchronous output, and then executes the processing again.</p> <p>Please wait until the Printer has finished printing and try again.</p>
OPOS_E_EXTENDED	Indicates the occurrence of an extended error.	Refer to each of the extended result codes.
OPOS_E_NOEXIST	The file or marker does not exist.	Check the filename or marker name.
OPOS_E_EXISTS	The file or marker already exists.	Check the filename or marker name.
OPOS_E_OFFLINE	The printer is offline.	Make online.

### 6.2.2 ResultCodeExtended

The Meaning and remedy of ResultCodeExtended for principal are as follows:

ResultCode	Meaning	Remedy
OPOS_EX_TIMEOUT	The operation cannot be completed within the timeout period.	Use SetupPOS to set the output interval, etc.
OPOS_EX_BADPARAM+n	The parameter “n” is illegal.	Specify correct value for parameter “n”.
OPOS_EX_BADPROPVAL	The value of the property is illegal.	Specify the correct value for the property.
OPOS_EX_INVALIDMODE	The state is invalid mode.	Establish the condition where processing can be executed, and execute again.
OPOS_EX_PORTUSED	The Communication port is used by other application.	Closes other application using the communication port.
OPOS_EX_INCAPABLE	No function.	Check the CapXxx property, and do not use a function that is not available.
OPOS_EX_DEVBUSY	The outputting cannot be executed because the communication port state is BUSY.	Wait until communication port becomes ready, and execute again.
OPOS_EEJ_EXISTING	That marker already exists.	Check the Marker Strings.
OPOS_EEJ_MEDIUM_FULL	The file size limit has been exceeded. There is completely no space left on the Medium.	Please increase the file size limit and try again.
OPOS_EEJ_NOT_ENOUGH_SPACE	The file size limit has been exceeded. There is insufficient space left on the Medium.	Please increase the file size limit and try again.
OPOS_EEJ_MARKERORDER	There was a problem with the marker order.	Please check the marker order.
OPOS_EEJ_BADFILE	The file data is corrupt.	Please check the file.
OPOS_EEJ_EJ_PRINTING	The processing cannot be executed because the ElectronicJournal is currently printing.	Please wait until the ElectronicJournal has finished printing and try again.

ResultCode	Meaning	Remedy
OPOS_EEJ_PTR_PRINTING	The processing cannot be executed because the POSPrinter is currently printing.	Please wait until the POSPrinter has finished printing and try again.
OPOS_EEJ_MEDIUM_USED	The processing cannot be executed because the medium is currently using.	Please wait until the processing has finished and try again.
OPOS_EPTR_COVER_OPEN	Cover of Printer is open.	Close the cover of the Printer.
OPOS_EPTR_REC_EMPTY	Receipt station is out of paper.	Load receipt paper.
OPOS_EPTR_MECHANICAL	A mechanical error occurred.	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	A cutter error occurred.	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_UNRECOVERABLE	An irrecoverable error occurred.	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.

ResultCode	Meaning	Remedy
OPOS_EPTR_AUTORECOVERABLE	An overheat error occurred. An auto recoverable error occurred.	Wait until the temperature of the head decreases. Wait until the recoverable error is automatically recovered.。
OPOS_EX_WAITING_REMOVAL	Check or slip paper is present still in the device.	Remove the Check or paper.

## Section 7. Warnings

---

- When ElectronicJournal is used, depending on how to use, data may be lost. Under the situation below, output data is not written:
  - StorageEnabled property is true and DeviceEnabled property is false (As the same for when the properties is set to false automatically by AutoDisable property)
  - When initialization of ElectronicJournal file is not completed
  - When a process for writing output data from the printer is failed
  - When the state is S\_BUSY or S\_ERROR.
- When data is written while a bitmap image is registered to the printer, the bitmap image will not be printed unless the bitmap image is registered to the printer when re-outputting. In this case, DeviceStatistics of POSPrinter is counted based on output when writing.
- If a bitmap image registered to the printer when writing data and the bitmap image registered to the printer when re-outputting differs, the bitmap image registered to the printer when re-outputting will be printed. In this case, Device Statistics of POSPrinter is counted based on output when writing.
- When data in a file used by ElectronicJournal is insufficient, output may not be printed correctly.
- When HDD is not selected for saving ElectronicJournal files, EPSON will not be responsible for any consequences. Please be aware of this matter.
- When POSPrinter is turned off and on, or the cover is opened, garbage or overlapping characters may be printed.
- If using the strings except for the character that can be specified as the marker name, it may not do proper file control.
- When settings of POSPrinter at time of writing and printing are different, output may not be printed correctly.
- To save Electronic Journal files, write-access is required. Otherwise setting a write-access is recommended.
- The error code differs by that timing when the power is turned OFF.