

EPSON OPOS ADK for .NET Manual

Application Development Guide

**CheckScanner
(TM-H6000III)**

Version 1.14.6 Dec. 2017

Notes

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Contents

Chapter 1 Introduction	1
1.1 Terminology	1
Chapter 2 Before Using CheckScanner	2
2.1 Device Setting	2
2.2 Notes and Restrictions	2
2.2.1 General	2
2.2.2 Storage function	3
2.2.3 CardScanner mode	4
Chapter 3 Properties, Methods, and Events	5
3.1 Properties.....	5
3.1.1 CapPowerReporting property	5
3.1.2 CapColor property	6
3.1.3 CapImageFormat proper	6
3.1.4 Color property.....	6
3.1.5 ImageFormat property	7
3.1.6 RemainingImagesEstimate property	7
3.1.7 Contrast property.....	7
3.1.8 DeviceEnabled property	8
3.2 Methods.....	9
3.2.1 Claim method	9
3.2.2 CheckHealth method.....	9
3.2.3 DirectIO method	11
3.2.4 ResetStatistics Method.....	17
3.2.5 ResetStatistic Method	18
3.2.6 RetrieveStatistics Method.....	18
3.2.7 RetrieveStatistic Method	20
3.2.8 UpdateStatistics Method	21
3.2.9 UpdateStatistic Method	22
3.2.10 BeginInsertion method	23
3.2.11 EndInsertion method	23
3.2.12 BeginRemoval method	24

3.2.13 EndRemoval method.....	24
3.2.14 ClearInputProperties method.....	24
3.3 Events.....	25
3.3.1 DirectIOEvent	25
3.3.2 ErrorEvent event	25
<u>Appendix A Revision history</u>	<u>26</u>
A.1 EPSON OPOS ADK for .NET 1.14.6	26
A.2 EPSON OPOS ADK for .NET 1.12	26
A.3 EPSON OPOS ADK for .NET 1.11	26
A.4 EPSON OPOS ADK for .NET 1.9	26
<u>Appendix B SetupPOS Settings</u>	<u>28</u>
B.1 Slip Clamp Time text box	28
B.2 Rotate Image checkbox.....	29
B.3 Enable Prescan checkbox.....	29
B.4 Sharpen Image combo box	30
B.5 Image Storage combo box	31
B.6 Trim Margin text box.....	31
B.7 Contrast combo box	32
<u>Appendix C Hardware settings</u>	<u>33</u>
C.1 DIP switch settings	33
C.2 Memory switch settings	35
<u>Appendix D Default Values of Properties</u>	<u>36</u>
<u>Appendix E DeviceStatistics</u>	<u>38</u>

Chapter 1 Introduction

This section explains how to use CheckScanner when using EPSON OPOS ADK for .NET, including any related information and special notes regarding the device.

For details on the POS for .NET API, refer to the "UnifiedPOS Retail Peripheral Architecture Version 1.14.1" specification and the MSDN "POS for .NET v1.14.1 SDK Documentation":

<http://www.omg.org/retail/unified-pos.htm>

[https://msdn.microsoft.com/en-us/library/bb429024\(v=winembedded.4\).aspx](https://msdn.microsoft.com/en-us/library/bb429024(v=winembedded.4).aspx)

1.1 Terminology

- "UnifiedPOS Retail Peripheral Architecture Version 1.14.1" may be abbreviated as "UPOS".
- "Microsoft POS for .NET" may be abbreviated as "POS.NET".
- "EPSON OPOS ADK for .NET Version 1.14.6" may be abbreviated as "OPOS.NET".
- "CheckScanner" may be abbreviated as "the device".
- "The ServiceObject of CheckScanner provided by OPOS.NET" may be abbreviated as "ServiceObject".
- "ErrorCode properties of PosControlException" may be abbreviated as "ErrorCode".
- "ErrorCodeExtended properties of PosControlException" may be abbreviated as "ErrorCodeExtended".
- "Exception" indicates "PosControlException".
- The EPSON original device constant used with this device is defined in "jp.co.epson.uposcommon.EpsonUPOSConst" and "jp.co.epson.uposcommon.EpsonCheckScannerConst".
- CheckScanner mode indicates a function for scanning checks.
- CardScanner mode indicates a function for scanning cards. When using CardScanner mode, read "check" in this manual as "card".
- When used at the same time as POSPrinter, cut paper may be inserted. In this case, read "check" in this manual as "cut paper" as necessary.
- Wired LANs and wireless LANs may be referred to as networks.

Chapter 2 Before Using CheckScanner

This chapter explains how to set up CheckScanner, as well as notes and restrictions on using it.

2.1 Device Setting

After checking the hardware model and the hardware settings, select the correct device using the SetupPOS utility. Refer to "[Appendix C Hardware settings](#)" for information on setting the hardware, and "[Appendix B SetupPOS Settings](#)" for information on how to use the SetupPOS utility.

2.2 Notes and Restrictions

2.2.1 General

- Scanning image data takes quite a long time. When scanning BMP file formats, it may take several minutes to complete depending on the communication speed.
- With the **EndInsertion** method, image data scanning is performed. During this time, output is not possible to devices connected to the printer other than CheckScanner (Example: The LineDisplay marquee also stops).
- Do not touch the CheckScanner device when scanning image data. In particular, do not turn the power OFF/ON during scanning. Problems with the operation of ServiceObject may occur.
- If an error occurs while scanning the image data, the scanning mode is canceled after the error is canceled. Before the error is canceled, if this ServiceObject is closed, the scanning mode is not canceled normally and problems with the operation of ServiceObject may occur.
- With the **StoreImage** method, the image data is saved as a file on the hard disk of the PC. When using the **StoreImage** method, first ensure that there is sufficient space on the hard disk.
- UB-U05 is recommended for the UIB (interface) when using CheckScanner. CheckScanner does not perform well with other UIBs.

- The recommended combinations of gradation (Color property) to use with each UIB are shown below.

UIB	MONO	GRAYSCALE
Serial (UB-S01,S09)	Recommended	Not recommended
Parallel (UB-P02II)	Recommended	Not recommended
USB (UB-U01II/U02II)	Recommended	Not recommended
USB (UB-U05)	Recommended	Recommended
Network (UB-E01/E02)	Recommended	Not recommended

When using any interface other than onboard USB to scan grayscale images, data transfer can take a long time (greater than 10 minutes). In this case the scan could fail and the error "RC:Failure RCE: PTRERROR(9007) RC Message: An error occurred during the scanning operation." could be returned. There is no remedy other than to reduce the amount of data transfer, or to use another interface.

- Since it is necessary to set the relevant image data as the **ImageData** property when issuing **DataEvent**, the image data for each **DataEvent** is saved. Since the size of the image data is large and a large buffer area is used, the operation of applications being run may be adversely affected if no **DataEvent** is issued for a while.

2.2.2 Storage function

- The storage memory capacity of the device is 16 MB.
- When storing images in the device, binary JPEG cannot be saved.
If a binary JPEG is specified, change the format to TIFF and save it.
- If storage in the device is specified, the service internal image information is never updated even if **EndInsertion** method is executed (it may be updated when an error occurs.) Therefore, the operation of the **RetrieveImage** method and **StoreImage** method is affected. When **EndInsertion** method finishes, the **DocumentWidth** property and **DocumentHeight** property values are also not updated.
- Retrieval from the device storage memory is not supported.
- When storing images in the device fails, **EndInsertion** method throws an exception. However, depending on the error processing mode, valid image data may be scanned.
- When storing images in the device, most image processing provided by this ServiceObject cannot be used. When using storage, the unused area deletion function, cropping function and contrast function cannot be used.

2.2.3 CardScanner mode

- In order to ensure coordination between modes, switch modes after finishing one series of data processing tasks (after getting an image by executing the **RetrieveImage** method, and after **DataEvent** notification.)
- The area defined by the **DefineCropArea** method is the same for the CheckScanner mode and CardScanner mode. To use separate areas for CheckScanner mode and CardScanner mode, it is necessary to maintain mode information in the application.

Also for the parameters for specifying the area in the **StoreImage** method and the **RetrieveImage** method, to use separate areas for CheckScanner mode and CardScanner mode, it is necessary to maintain mode information in the application.

- The area for storing images with the **StoreImage** method, the **RetrieveMemory** method, and the **ClearImage** method is the same for the CheckScanner mode and CardScanner mode. When it is necessary to identify images in the CheckScanner mode and CardScanner mode, identification information must be maintained in the application.
- Each of the following methods is executed for the respective station of the CheckScanner mode or CardScanner mode according to the selected mode.
 - **BeginInsertion** method
 - **EndInsertion** method
- Each of the following methods is executed for the station selected for the device, irrespective of the mode selected with the **DirectIO** method.
 - **BeginRemoval** method
 - **EndRemoval** method
- All of the following commands of the **DirectIO** method are invalid in the CardScanner mode. If the commands are executed, they are valid for scanning checks when you switch the mode to the CheckScanner mode.
 - CHK_DI_READ_AREA
 - CHK_DI_IMAGE_FILTER
 - CHK_DI_PRESCAN
 - CHK_DI_BORDER_COLOR

Chapter 3 Properties, Methods, and Events

3.1 Properties

Properties that differ from functions described in UPOS are shown below.

3.1.1 CapPowerReporting property

Description

The notification capability of the connected device is identified.

This property is set to one of the following values.

Value	Meaning
PowerReporting.Standard	<p>The value set when there is a serial connection.</p> <p>ServiceObject can determine between and provide notification of the two power statuses: OFF_OFFLINE (the device is turned off or offline) and ONLINE.</p>
PowerReporting.Advanced	<p>The value set when a parallel, USB and network connection is established.</p> <p>ServiceObject can determine between and provide notification of the three power statuses: OFF, OFFLINE and ONLINE.</p>

3.1.2 CapColor property

Description

Indicates the gradation that can be set when scanning.

With this ServiceObject, the CheckScanner device checks the supported gradations when the **Claim** method is executed. Therefore when the **Claim** method is executed, the value of the **CapColor** property may change.

Since the gradations supported by the CheckScanner mode and the CardScanner mode are different, the **CapColor** property value is changed when the mode is switched by the **DirectIO** method.

3.1.3 CapImageFormat proper

Description

Indicates the format that can be set to **ImageFormat** property.

With this ServiceObject, the CheckScanner device checks the supported image formats when the **Claim** method is executed. Therefore when the **Claim** method is executed, the value of the **CapImageFormat** property may change.

When the image formats supported by the CheckScanner mode and the CardScanner mode are different, the **CapImageFormat** property value is changed when the mode is switched by the **DirectIO** method.

3.1.4 Color property

Description

Sets the gradation of the scanned image.

With this ServiceObject, since the CheckScanner device checks the supported gradation when the **Claim** method is executed, the **Color** property value may change. Therefore, before and after the **Claim** method is executed, the values of the **Color** property that can be set may change.

Since the setting values of this property are managed differently with the CheckScanner mode and the CardScanner mode, the **Color** property value may be changed when the mode is switched by the **DirectIO** method.

3.1.5 ImageFormat property

Description

Sets the format of the scanned image.

Since the setting values of this property are managed differently with the CheckScanner mode and the CardScanner mode, the **ImageFormat** property value may be changed when the mode is switched by the **DirectIO** method.

3.1.6 RemainingImagesEstimate property

Description

Indicates the number of images that can still be stored.

With this ServiceObject, the value is calculated based on the size of the last image saved.

Since the image size is unknown immediately after **Open** method, the number that can still be saved is calculated based on a size of the last image saved of 10 KB. The formula for the number of images that can be saved is as follows.

Spare capacity = Total capacity of the memory (16 MB) - Memory capacity currently used

Number of images that can be saved = Spare capacity / Image size last saved

3.1.7 Contrast property

Description

Sets the contrast adjustment value of the scanned image.

Since the setting values of this property are managed differently in the CheckScanner mode and the CardScanner mode, the **Contrast** property value may be changed when the mode is switched by the **DirectIO** method.

When the **Color** property is set with CheckColors.GrayScale, contrast adjustment of the scanned image is performed. Adjustment is not performed when the **Color** property is set with CheckColors.Mono, but it is possible to set the **Contrast** property. The value set is reflected when the **Color** property is set in CheckColors.GrayScale.

3.1.8 DeviceEnabled property

Description

When the **DeviceEnabled** property is set to TRUE first after the **Claim** method is executed, device initialization is performed.

In the following states, device initialization cannot be done:

- Offline (e.g. Cover open, out of paper, etc.)
- Error (e.g. Paper jam)

When the **DeviceEnabled** property is set to TRUE, the printer state is notified via a **StatusUpdateEvent**.

If the **StatusUpdateEvent** for the printer stat is not defined in UPOS, however, the **StatusUpdateEvent** cannot be notified. In this case, the printer status can be found by examining the exception that is notified when the method is executed.

If the device initialization cannot be done when the **DeviceEnabled** property is set to TRUE, a device status is checked at an interval of 1 second, and it is repeated until the device initialization is performed completely.

The device initialization status can be found by enabling the **PowerNotify** property.

When StatusPowerOnline is notified by a **StatusUpdateEvent**, the initialization process is complete.

In addition, the initialization process may take several seconds depending on the connection speed and the image registration status.

3.2 Methods

Methods that differ from functions described in UPOS are shown below.

3.2.1 Claim method

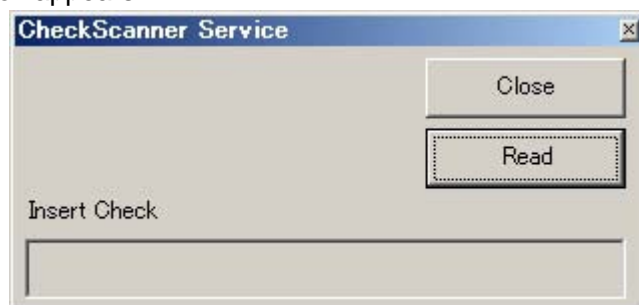
Description

The device connection state is confirmed. If the device is not connected, or if the power is OFF, an exception is thrown. In the case of a Serial connection, the device connection state cannot be confirmed. In this case, Success is always returned. In the case of a USB connection where the "Port Name Type" is set to "Device Name", if the printer is in an error state, an exception is thrown.

3.2.2 CheckHealth method

Description

This ServiceObject supports only "HealthCheckLevel.Interactive". When "HealthCheckLevel.Interactive " is executed, the following dialog box appears.



Clicking [Read] enables CheckHealth to enter the check insertion waiting mode. When a check is inserted, it is scanned and ejected, and the results are displayed in the field (partial only). If a scanning error occurs, a message indicating the type of error is displayed.

Clicking Close ends CheckHealth.

The **CheckHealth** method works only in the CheckScanner mode.

The results are saved in the **CheckHealthText** property.
And besides, the following value is retrieved as the returned value of method.

Value	Meaning
Interactive HCheck: Canceled	Ends CheckHealth method without doing anything.
Interactive HCheck: Complete	Ends CheckHealth method after the last operation ends normally.
Interactive HCheck: Error - <Message>	Ends CheckHealth method after the last operation ends with an error. The content of the error appears as a <i>Message</i> .

3.2.3 DirectIO method

Description

The **DirectIO** method can be used when the **DeviceEnabled** property is “true”. The functions that the **DirectIO** method supports are as follows.

<i>command</i>	Outline of function
CHK_DI_PRESCAN	Performs prescanning.
CHK_DI_READ_AREA	Defines the scanning area.
CHK_DI_IMAGE_FILTER	Defines the filtering area.
CHK_DI_BORDER_COLOR	Sets the threshold value for binary conversion.
CHK_DI_TMSTORE_SET_INDEX	Specifies the memory number for device storage.
CHK_DI_TMSTORE_GET_FREEMEM	Gets the spare capacity of the device storage memory.
CHK_DI_CHANGE_MODE	Switches between the CheckScanner mode and the CardScanner mode.
CHK_DI_SHARPNESS_IMAGE	Enables/disables sharpening.
CHK_DI_GET_SUPPORT_FUNCTION	Gets the supported function information.

- **CHK_DI_PRESCAN command**

Parameter	
<i>command</i>	CHK_DI_PRESCAN
<i>data</i>	Not used
<i>object</i>	Not used

Description

Performs prescanning.

Executing this command with paper inserted causes prescanning to be performed. If there is no paper inserted, or paper is inserted but prescanning cannot be executed, an error occurs. When this command is executed, controls are not returned until the prescanning operation finishes. This command cannot be executed in the CardScanner mode. If it is executed, an exception is thrown.

- **CHK_DI_READ_AREA command**

Parameter

<i>command</i>	CHK_DI_READ_AREA
<i>data</i>	Not used
<i>object</i> (String type)	A string specifying the area

Description

Defines the scanning area.

Specifies the area defined by the *object*.

Example:

When the area $X = 0$, $Y = 500$, $CX = 1000$, $CY = 1500$ is specified, the *object* parameter specifies "0,500,1000,1500".

X is the start X coordinate

Y is the start Y coordinate

CX is the end X coordinate

CY is the end Y coordinate

The value specified here is influenced by **MapMode**.

If a value in excess of the threshold specifiable area is specified, or a positive integer value that does not meet the minimum settable value is set, a valid range is automatically set.

The valid range is as follows.

Width: 0 to 100 mm

Height: 0 to 230 mm ^{Note 1}

Minimum width: 2 mm

^{Note 1}: If the end coordinate is less than 50 mm, the scanning operation may fail.

To cancel the specified area, a null string ("") is specified for *object*.

This command is invalid in the CardScanner mode. If the command is executed in the CardScanner mode, it is valid when you switch the mode to the CheckScanner mode.

- **CHK_DI_IMAGE_FILTER command**

Parameter

<i>command</i>	CHK_DI_IMAGE_FILTER
<i>data</i>	Area number
<i>object</i> (String type)	A string specifying the area

Description

Defines the filtering area.

Specifies the area number with *data*. The settable range is 1 to 10.

Specifies the area defined by the *object*.

Example:

When the area $X = 0$, $Y = 500$, $CX = 1000$, $CY = 1500$ is specified, the *object* parameter specifies "0, 500,1000,1500".

X is the start X coordinate

Y is the start Y coordinate

CX is the end X coordinate

CY is the end Y coordinate

The value specified here is influenced by **MapMode**.

If a value in excess of the threshold specifiable area is specified, or a positive integer value that does not meet the minimum settable value is set, a valid range is automatically set.

The valid range is as follows.

Width: 0 to 100 mm

Height: 0 to 230 mm

Minimum width: 2 mm

To cancel the specified area, the area number to cancel is specified for *data*, and a null string ("") is specified for *object*.

When canceling the area, specifying '0' for *data* cancels all areas.

This command is invalid in the CardScanner mode. If the command is executed in the CardScanner mode, it is valid when you switch the mode to the CheckScanner mode.

- **CHK_DI_BORDER_COLOR command**

Parameter

<i>command</i>	CHK_DI_BORDER_COLOR
<i>data</i>	Threshold value
<i>object</i>	Not used

Description

Sets the threshold value for binary conversion.

The valid setting value for *data* is -128 to 127. When a negative number is set, a lighter setting than the basic density is set (-128 is lightest). When a positive number is set, a darker setting than the basic density is set (127 is darkest).

'0' is set by default.

This command is invalid in the CardScanner mode. If the command is executed in the CardScanner mode, it is valid when you switch the mode to the CheckScanner mode.

This setting value is not reflected when the **DirectIO** method CHK_DI_SHARPNESS_IMAGE is used and sharpening is enabled.

- **CHK_DI_TMSTORE_SET_INDEX command**

Parameter

<i>command</i>	CHK_DI_TMSTORE_SET_INDEX
<i>data</i>	Saved memory number
<i>object</i>	Not used

Description

Specifies the memory number for device storage.

The settable value for *data* is 1 to 65534.

This command is executed before the **EndInsertion** method. If an already saved memory number is specified and **EndInsertion** method is executed, the saved content is overwritten. Be careful not to overwrite important data when setting the number.

"1" is set by default.

- **CHK_DI_TMSTORE_GET_FREEMEM command**

Parameter

<i>command</i>	CHK_DI_TMSTORE_GET_FREEMEM
<i>data</i>	Not used
<i>object</i>	Not used

Description

Gets the spare capacity of the device storage memory.

Stores the spare capacity of the device storage memory in the Data property of DirectIOData.

When using the device for storage, first use this command to check that there is enough spare storage memory.

- **CHK_DI_CHANGE_MODE command**

Parameter

<i>command</i>	CHK_DI_CHANGE_MODE
<i>data</i>	CHK_DI_MODE_CHECKSCANNER CHK_DI_MODE_CARDSCANNER
<i>object</i>	Not used

Description

Switches between the CheckScanner mode and the CardScanner mode.

If *data* is CHK_DI_MODE_CHECKSCANNER, the mode is the CheckScanner mode, and if it is CHK_DI_MODE_CARDSCANNER, the mode is the CardScanner mode.

The default is set to "CheckScanner mode".

Devices that cannot use the CardScanner mode cannot switch modes.

In this case, an exception is thrown.

- **CHK_DI_SHARPNESS_IMAGE command**

Parameter	
<i>command</i>	CHK_DI_SHARPNESS_IMAGE
<i>data</i>	CHK_DI_SHARPNESS_ON
	CHK_DI_SHARPNESS_OFF
<i>object</i>	Not used

Description

Sets whether to sharpen the scanned image.

If *data* is CHK_DI_SHARPNESS_ON, the image is sharpened, and if it is CHK_DI_SHARPNESS_OFF, the image is not sharpened.

If the sharpening set in the SetupPOS utility is not supported, sharpening cannot be performed. In this case, an exception is thrown.

- **CHK_DI_GET_SUPPORT_FUNCTION command**

Parameter	
<i>command</i>	CHK_DI_GET_SUPPORT_FUNCTION
<i>data</i>	Not used
<i>object</i>	Not used

Description

Gets the functions supported by the device.

The setting values for the functions supported are saved as a logical sum in the Data property of DirectIOData.

For example, if the saved value is CHK_DI_CHECKSCANNER, only the functions of the CheckScanner mode are supported by this device. The CardScanner mode and storage function are not supported.

Furthermore, when the logical sum of CHK_DI_CHECKSCANNER and CHK_DI_CARDSCANNER is set, the CheckScanner mode and CardScanner mode functions are supported. The storage function is not supported.

3.2.4 ResetStatistics Method

Description

With this ServiceObject, besides the Statistics defined by UPOS, the following two items are supported.

Name	Meaning
GoodReadCount	Counts the number of successful image scans.
FailedReadCount	Counts the number of failed image scans.

- **Parameter type: *Microsoft.PointOfService.StatisticCategories***

Parameter

Microsoft.PointOfService.StatisticCategories

Specify one of the following.

- *StatisticCategories.Upos*
- *StatisticCategories.Manufacturer*
- *StatisticCategories.All*

Description

Of the items included in the specified category, only the items for which O appeared for the permission reset in "[Appendix-E DeviceStatistics](#)" are reset.

- **Parameter type: *String[]***

Parameter

String[] An array of the item names to reset

Description

Of the items included in the specified category, only the items for which O appears for the reset permission in "[Appendix-E DeviceStatistics](#)" are reset when "U_", "M_", or an empty string is specified for item names. If an illegal item name or non-resettable item name is included, this method reports an error. When this happens, correctly specified items are also not reset.

3.2.5 ResetStatistic Method

Description

With this ServiceObject, besides the Statistics defined by UPOS, the following two items are supported.

Name	Meaning
GoodReadCount	Counts the number of successful image scans.
FailedReadCount	Counts the number of failed image scans.

Of the items included in the specified category, only the items for which O appears for the reset permission in "Appendix-E DeviceStatistics" are reset when "U_", "M_", or an empty string is specified for item names.

If an illegal item name or non-resettable item name is specified, this method reports an error.

3.2.6 RetrieveStatistics Method

Description

With this ServiceObject, besides the Statistics defined by UPOS, the following two items are supported.

Name	Meaning
GoodReadCount	Counts the number of successful image scans.
FailedReadCount	Counts the number of failed image scans.

- **Parameter type: *Microsoft.PointOfService.StatisticCategories***

Parameter

Microsoft.PointOfService.StatisticCategories

Specify one of the following.

- *StatisticCategories.Upos*
- *StatisticCategories.Manufacturer*
- *StatisticCategories.All*

Description

If “*StatisticCategories.Manufacturer*” is specified, the minimum information specified by UPOS (the 4 items; UPOS version, manufacturer name, device name, and device category) besides *GoodReadCount* and *FailedReadCount* is acquired.

- **Parameter type: *String[]***

Parameter

String[]

An array of the item names to retrieve

Description

If an illegal item name is included, this method reports an error.

If “*M_*” is specified, the minimum information specified by UPOS (the 4 items; UPOS version, manufacturer name, device name, and device category) besides *GoodReadCount* and *FailedReadCount* is acquired.

- **Parameter type: *None***

Description

The information of all defined items is retrieved.

3.2.7 RetrieveStatistic Method

Description

With this ServiceObject, besides the Statistics defined by UPOS, the following two items are supported.

Name	Meaning
GoodReadCount	Counts the number of successful image scans.
FailedReadCount	Counts the number of failed image scans.

If an illegal item name is included, this method reports an error.

If multiple item names separated by commas are specified (UPOS Specification), an error is reported.

If "M_" is specified, the minimum information specified by UPOS (the 4 items; UPOS version, manufacturer name, device name, and device category) besides GoodReadCount and FailedReadCount is acquired.

3.2.8 UpdateStatistics Method

Description

With this ServiceObject, besides the Statistics defined by UPOS, the following two items are supported.

Name	Meaning
GoodReadCount	Counts the number of successful image scans.
FailedReadCount	Counts the number of failed image scans.

- **Parameter type: *Microsoft.PointOfService.Statistic[]***

Parameter

Microsoft.PointOfService.Statistic[]

Specifies *Microsoft.PointOfService.Statistic* array for which item names and new values have been set.

Description

Of the items included in the specified category, only the items for which O appears for the update permission in "[Appendix-E DeviceStatistics](#)" are updated when "U_", "M_", or an empty string is specified for item names.

If an illegal item name or non-updatable item name is included, this method reports an error. In this case, correctly specified items are also not updated.

- **Parameter type: *Microsoft.PointOfService.StatisticCategories***

Parameter

Microsoft.PointOfService.StatisticCategories

Specify one of the following.

- *StatisticCategories.Upos*
- *StatisticCategories.Manufacturer*
- *StatisticCategories.All*

Object

Specify the new value after updating.

Description

Of the items included in the specified category, only the items for which O appeared for the update permission in "[Appendix-E DeviceStatistics](#)" are updated.

3.2.9 UpdateStatistic Method

Description

With this ServiceObject, besides the Statistics defined by UPOS, the following two items are supported.

Name	Meaning
GoodReadCount	Counts the number of successful image scans.
FailedReadCount	Counts the number of failed image scans.

Of the items included in the specified category, only the items for which O appears for the update permission in "[Appendix-E DeviceStatistics](#)" are updated when "U_", "M_", or an empty string is specified for item names.

If an illegal item name or non-updatable item name is specified, this method reports an error.

3.2.10 BeginInsertion method

Description

When this method is executed, it is not possible to open the clamp or change to the check insertion mode.

The **BeginInsertion** method determines whether a check is placed on the clamp. Even if paper is already inserted, an exception is not thrown and the method ends normally.

When the CardScanner mode is supported, if the mode selected with the **DirectIO** method and the selected status of the device differ, an exception is thrown.

3.2.11 EndInsertion method

Description

When this method is executed, the check placed on the clamp of the device is scanned. If there is no check, an exception is thrown.

With the **EndInsertion** method, image data scanning of the check is performed. When inserting checks with a ServiceObject other than this one, always run the **EndInsertion** method of this ServiceObject.

When the **EndInsertion** method is executed, the check is ejected after the image data is scanned.

When the CardScanner mode is supported, if the mode selected with the **DirectIO** method and the selected status of the device differ, an exception is thrown.

3.2.12 BeginRemoval method

Description

When this method is executed, the check is ejected.

The device waits until the check is removed from the device completely.

If the check is not ejected completely from the device when the time of the *timeout* parameter has elapsed, an exception with the "ErrorCode.Timeout" ErrorCode is thrown.

If the method is executed again before the check is ejected, the device waits until the check is ejected. If a check is ejected when the method is not executed and the method is executed immediately after, the status is "SUCCESS", once only.

When the CardScanner mode is supported, the check or card is ejected irrespective of the mode selected with the **DirectIO** method.

3.2.13 EndRemoval method

Description

An exception is thrown when a check is placed in the printer slip station.

When the CardScanner mode is supported, the card station selection status of the card station can be checked in addition to that of the printer slip station, irrespective of the mode selected with the **DirectIO** method.

In this case an exception is thrown if a card is placed in the card station.

3.2.14 ClearInputProperties method

Description

The following properties are cleared by this method:

Property Name	Cleared Value
ImageData Property	Null

3.3 Events

3.3.1 DirectIOEvent

Description

With this ServiceObject this event is not issued.

3.3.2 ErrorEvent event

Description

With this ServiceObject this event is not issued.

Appendix A Revision history

A.1 EPSON OPOS ADK for .NET 1.14.6

- (1) Microsoft POS for .NET 1.14.1 is supported.

A.2 EPSON OPOS ADK for .NET 1.12

- (1) Microsoft POS for .NET 1.12 is supported.
- Added support for "ChecksScannedCount" of DeviceStatistics.

A.3 EPSON OPOS ADK for .NET 1.11

- (1) Microsoft POS for .NET 1.11 is supported.
- (2) Changed Error codes for Hydra Devices.
- (3) Change initialization sequence.

A.4 EPSON OPOS ADK for .NET 1.9

POS Device driver complied with Microsoft POS for .NET 1.1 specification has been provided.

This version has been created based on EPSON OPOS ADK 2.40.

The following shows the difference between this version and EPSON OPOS ADK 2.40.

Differences from EPSON OPOS ADK 2.40

- (1) **ErrorCode** and **ErrorCodeExtended** for exceptions have all been reviewed.
- (2) **DeviceEnabled** property status has been deleted from the issuing conditions of queued events. As a result, even when the status of the **DeviceEnabled** property is "false", there may be notification of events.
- (3) **ErrorEvent** is no longer issued when the **EndInsertion** method is executed. All errors are exceptions.
- (4) The **Open** method has been changed so that when it is executed, a communication control class instance is generated. If a communication control class instance is not generated, an exception is thrown when the **Open** method is executed.
- (5) After executing the **DirectIO** command PRESCAN, loading to the check paper printing position is not performed.

- (6) The **BeginRemoval** method error judgment conditions are under review. If the **EndInsertion** method has not first been executed, an exception is thrown when the **BeginRemoval** method is executed.
- (7) The **CapAutoSize** property indicates whether the image size can be acquired or not. Therefore, when the CardScanner mode is selected, the **CapAutoSize** property is true.

Appendix B SetupPOS Settings

The screenshot shows a settings window with two tabs: 'Common' and 'Device Details'. The 'Common' tab is active. It contains two sections: 'Common' and 'Specific'. In the 'Common' section, there is a text box for 'Slip Clamp Time (ms)' with the value '0'. In the 'Specific' section, there are several options: 'Rotate Image' (checked), 'Enable Prescan' (unchecked), 'Sharpen Image' (dropdown menu showing 'Device Sharpening'), 'Image Storage' (dropdown menu showing 'Store on Host'), 'Trim Margin (dot)' (text box with '0'), and 'Contrast Image' (dropdown menu showing 'Gamma').

B.1 Slip Clamp Time text box

Description

Sets the time from insertion of the slip to (the **EndInsertion** method is executed) clamping.

Setting value	Meaning
0 to 6400	Time before clamping (unit: ms) Can be set in units of 100 ms.

Default: 0 (ms)

B.2 Rotate Image checkbox

Description

Enables or disables the function to rotate the scanned image through 90-degrees.

Status	Meaning
Checked	Enables the rotate 90-degrees function.
Not checked	Disables the rotate 90-degrees function.

Default: Checked

B.3 Enable Prescan checkbox

Description

Enables/disables the function to perform automatic prescanning when scanning images (the **EndInsertion** method is executed).

Status	Meaning
Checked	Enables the automatic prescan function.
Not checked	Disables the automatic prescan function.

- **When the automatic prescan function is enabled**

This setting is only reflected when the **Color** property is set with CheckColors.Mono and an image is scanned.

If the **Color** property is set with CheckColors.GrayScale and an image is scanned, prescanning is not performed.

Default: Not checked

B.4 Sharpen Image combo box

Description

Sets the type of sharpening when scanning images (the **EndInsertion** method is executed).

Item	Meaning
Device Sharpening	Uses the sharpening function of the device.
Host Sharpening	Uses the sharpening function of ServiceObject.

- **When “Device Sharpening” is selected**

If the device does not support the sharpening function, sharpening cannot be performed.

- **When “Host Sharpening” is selected**

If the connection interface is not USB (UB-U05), sharpening cannot be performed.

* Reference: CHK_DI_SHARPNESS_IMAGE commands supported by the DirectIO method

Default: Device Sharpening

B.5 Image Storage combo box

Description

Specifies the method of storage for scanned images.

Item	Meaning
Store on Host	Transfers scanned images to the host PC for storage by ServiceObject.
Force Store on Device	Stores scanned images in the device. An error occurs if storage fails.
Attempt Store on Device	Stores scanned images in the device. If storage fails, transfers images to the host PC for storage by ServiceObject.

When images are stored in the device, there are certain limits to the functions provided by ServiceObject. For details, refer to Notes and Restrictions, "[Storage function](#)".

Default: Store on Host

B.6 Trim Margin text box

Description

Sets the additional width to trim images after the image margin is determined automatically.

Setting value	Meaning
0 to 100	Trimming width (unit: dots)

Default: 0 (dots)

B.7 Contrast combo box

Description

Sets the type of contrast ratio processing when scanning images (the **EndInsertion** method is executed).

Setting value	Meaning
Contrast	Performs contrast processing.
Gamma	Performs gamma calibration processing.
Intensity	Performs brightness adjustment processing.

Default: Gamma

Appendix C Hardware settings

C.1 DIP switch settings

Set the DIP switches of the device as follows:

1) Serial interface

DIP-SW 1

No.	Setting	
1	OFF	Recommended
2	OFF	Fixed to OFF
3	OFF	Fixed to OFF
4	OFF	Fixed to OFF
5	OFF	Note 1
6	OFF	Note 1
7	OFF	Note 2
8	OFF	Note 2

DIP-SW 2

No.	Setting	
1	OFF	Recommended
2	OFF	Note 3
3	OFF	Settable Note 4
4	OFF	Settable Note 4
5	OFF	Fixed to OFF
6	OFF	Fixed to OFF
7	OFF	Fixed to OFF
8	OFF	Fixed to OFF

Note 1: Set the parity with 5 and 6 of DIP-SW1.

DIP Switch 1 Parity Settings

SW No.	Function	ON	OFF	Default
1-5	Parity check	Parity	No parity	OFF
1-6	Parity selection	Even parity	Odd parity	OFF

Note 2: Set the transmission speed with 7 and 8 of DIP-SW1.

DIP Switch 1 Transmission Speed Switching

SW1-7	SW1-8	Baud Rate (bps)
ON	ON	4800
OFF	ON	9600
ON	OFF	19200
OFF	OFF	38400

Note 3: Set the LineDisplay connection state with 2 of DIP-SW2.

Note 4: Set the printing density with 3 and 4 of DIP-SW2.

2) Parallel connection

DIP-SW 1

No.	Setting	
1	OFF	Recommended
2	OFF	Fixed to OFF
3	OFF	Fixed to OFF
4	OFF	Fixed to OFF
5	OFF	Fixed to OFF
6	OFF	Fixed to OFF
7	OFF	Fixed to OFF
8	OFF	Fixed to OFF

DIP-SW 2

No.	Setting	
1	ON	Fixed to ON
2	OFF	Fixed to OFF
3	OFF	Settable ^{Note 1}
4	OFF	Settable ^{Note 1}
5	OFF	Fixed to OFF
6	OFF	Fixed to OFF
7	OFF	Fixed to OFF
8	ON	Fixed to ON

Note 1: Set the printing density with 3 and 4 of DIP-SW2.

3) USB interface and Network interface

Dip-SW 1

No.	Setting	
1	OFF	Fixed to OFF
2	OFF	Fixed to OFF
3	OFF	Fixed to OFF
4	OFF	Fixed to OFF
5	OFF	Fixed to OFF
6	OFF	Fixed to OFF
7	OFF	Fixed to OFF
8	OFF	Fixed to OFF

Dip-SW 2

No.	Setting	
1	OFF	Recommended
2	OFF	Fixed to OFF
3	OFF	Settable ^{Note 1}
4	OFF	Settable ^{Note 1}
5	OFF	Fixed to OFF
6	OFF	Fixed to OFF
7	OFF	Fixed to OFF
8	ON	Fixed to ON

Note 1: Set the printing density with 3 and 4 of DIP-SW2.

C.2 Memory switch settings

Set the memory switches of the device as follows:

Mem-SW 1		Note 1	Mem-SW 8		Note 2 Note 2 Fixed to OFF Note 3 Fixed to OFF Note 3
No.	Setting		No.	Setting	
1	ON		1	-	
2	-		2	-	
3	-		3	OFF	
4	-		4	OFF	
5	-		5	-	
6	-		6	-	
7	-		7	OFF	
8	-		8	OFF	

Note 1 Set to ON with a serial connection, and OFF with a Network or USB connection.

Note 2 The setting is changed by the settings of the SetupPOS Utility.

Note 3 The setting is fixed by ServiceObject.

Appendix D Default Values of Properties

The default values of the properties are shown below.

Property name	Default value	
	CheckScanner mode	CardScanner mode
AutoDisable	false	
CapCompareFirmwareVersion	false	
CapPowerReporting	PowerReporting.Standard or PowerReporting.Advanced (Differs depending on the communication interface)	
CapStatisticsReporting	true	
CapUpdateFirmware	false	
CapUpdateStatistics	true	
CheckHealthText	""	
Claimed	false	
DataCount	0	
DataEventEnabled	false	
DeviceDescription	Refer to "Device Specific Property Settings"	
DeviceEnabled	false	
DeviceName	Refer to "Device Specific Property Settings"	
FreezeEvents	false	
PowerNotify	PowerNotification.Disabled	
PowerState	PowerState.Unknown	
State	ControlState.Closed	
CapAutoContrast	false	false
CapAutoGenerateFileID	false	
CapAutoGenerateImageTagData	false	
CapAutoSize	true	
CapColor	Refer to "Device Specific Property Settings"	Refer to "Device Specific Property Settings"
CapConcurrentMICR	false	
CapContrast	true	true
CapDefineCropArea	true	
CapImageFormat	Refer to "Device Specific Property Settings"	Refer to "Device Specific Property Settings"
CapImageTagData	true	
CapMICRDevice	true	
CapStoreImageFiles	true	
CapValidationDevice	false	
Color	CheckColors.Mono	CheckColors.GrayScale
Contrast	50	50
ConcurrentMICR	false	

CropAreaCount	0
DocumentHeight	0
DocumentWidth	0
FileID	""
FileIndex	0
ImageData	""
ImageFormat	CheckImageFormats.Tiff CheckImageFormats.Jpeg
ImageMemoryStatus	Depends on the memory status
ImageTagData	""
MapMode	MapMode.English
MaxCropAreas	10
Quality	200 200
QualityList	"200" "200"
RemainingImagesEstimate	Depends on the memory status

● Device Specific Property Settings

Device	Property name	Default value	
		CheckScanner mode	CardScanner mode
TM-H6000III	DeviceDescription	"EPSON TM-H6000III Scanner"	-
	DeviceName	"TM-H6000III"	-
	CapColor	CheckColors.Mono CheckColors.GrayScale	CheckColors.GrayScale
	CapImageFormat	CheckImageFormats.Bmp, CheckImageFormats.Tiff, CheckImageFormats.Jpeg	CheckImageFormats.Bmp, CheckImageFormats.Tiff, CheckImageFormats.Jpeg

Appendix E DeviceStatistics

The Statistics function list of this device is shown below.

TM-H6000III

XML Definition Name	Description	Reset Permission	Update Permission
UnifiedPOSVersion	UPOS version	×	×
DeviceCategory	Device category	×	×
ManufactureName	Manufacturer name	×	×
ModelName	Device name	×	×
SerialNumber	Serial number	×	×
ManufactureDate	Manufacture date	×	×
MechanicalRevision	Device revision	×	×
FirmwareRevision	Firmware version	×	×
Interface	Interface	×	×
InstallationDate	Installation date	×	×
HoursPoweredCount	Operation time	O	×
CommunicationErrorCount	Communication error count	O	O
CheckScannedCount	Number of checks scanned	O	O
GoodReadCount	Number of successful image scans	O	O
FailedReadCount	Number of failed image scans	O	O

O:Permitted
 × :Not permitted