

EPSON OPOS ADK for .NET Manual

Application Development Guide

CashDrawer

Version 1.14.6 Dec. 2017

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 than 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® and Windows Vista® are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. IBM® and PC/AT® are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. 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. Epson disclaims any and all rights in those marks.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by SEIKO EPSON is under license. Other trademarks and trade names are those of their respective owners.

Contents

Chapter 1 Introduction	1
1.1 Terminology	1
Chapter 2 Before Using CashDrawer	2
2.1 Device Setting	2
2.2 Notes and Restrictions	2
Chapter 3 Properties, Methods, and Events	3
3.1 Properties.....	3
3.2 Methods.....	5
3.3 Events.....	13
Appendix A Revision history	14
A.1 EPSON OPOS ADK for .NET 1.14.6.....	14
A.2 EPSON OPOS ADK for .NET 1.12.17.....	14
A.3 EPSON OPOS ADK for .NET 1.12.....	14
A.4 EPSON OPOS ADK for .NET 1.11.....	14
A.5 EPSON OPOS ADK for .NET 1.9	14
A.6 EPSON OPOS ADK for .NET 1.8	15
Appendix B SetupPOS Settings	16
B.1 Connected Printer combo box.....	16
B.2 Drawer Kick Pin combo box.....	17
B.3 Drawer Open Status combo box.....	17
B.4 Enable Multi-Drawer Detection checkbox.....	18
Appendix C Default Values of Properties	19
Appendix D DeviceStatistics	20

Chapter 1 Introduction

This section explains how to use CashDrawer with EPSON OPOS ADK for .NET, including 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 v1.14.6 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 1.14.6" may be abbreviated as "OPOS.NET".
- "CashDrawer" may be abbreviated as "the device."
- "The ServiceObject of CashDrawer 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.EpsonCashDrawerConst".
- Wired LANs and wireless LANs may be referred to as networks.
- "Forced sending" means sending without using flow control.

Chapter 2 Before Using CashDrawer

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

2.1 Device Setting

After checking the hardware model number and the hardware settings, select the correct device using the SetupPOS utility. Refer to the manual of the POSPrinter to which CashDrawer is connected for information on setting up the hardware. Refer to "[Appendix B SetupPOS Settings](#)" for information on how to use the SetupPOS utility.

2.2 Notes and Restrictions

- The drawer cannot be opened in the following cases.

However, if the printer DIP switches are set so that the printer goes OFFLINE when the buffer is full, the drawer may open after the printer recovers to ONLINE.

- The printer does not support forced sending.
- The printer status is in one of the following statuses: unrecoverable error, mechanical error, or initializing.
- The port for the connection does not support forced sending

In these cases, the `ErrorCode.Offline` exception is thrown.

- When the device is connected with Network and the drawer opens when the **OpenDrawer** method is executed, `StatusUpdateEvent` may be delivered to indicate that the power supply is OFFLINE.

Chapter 3 Properties, Methods, and Events

3.1 Properties

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

For the default values of properties, refer to "[Appendix C Default Values of Properties](#)".

3.1.1 CapPowerReporting property

Description

The notification capability of the connected printer device is identified.

This property is set to one of the following values.

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

3.1.2 DeviceEnabled property

Description

When the Device Enabled 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 Device Enabled 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 Device Enabled 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 Power Notify 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.

3.1.3 PowerState property

Description

The power supply status of the connected printer device is identified.

3.1.4 CapStatus property

Description

This property is always set to "true".

3.1.5 CapStatusMultiDrawerDetect property

Description

This property is changed according to the SetupPOS setting.

Refer to "[Appendix B SetupPOS Settings](#)" for information on the SetupPOS settings.

3.2 Methods

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

3.2.1 Release method

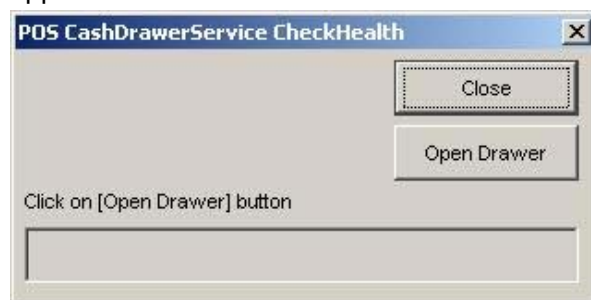
Description

Releases exclusive access to the device. The **DeviceEnabled** property is not changed because CashDrawer is a sharable device.

3.2.2 CheckHealth method

Description

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



Clicking Open Drawer opens the drawer.

Clicking Close ends CheckHealth.

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 without doing anything.
Interactive HCheck:Complete	Ends CheckHealth after the last operation ends normally.
Interactive HCheck: Error - <Message>	Ends CheckHealth 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 only function that the **DirectIO** method supports is **DRW_DI_OPEN_DRAWER**.

Value	Meaning
DRW_DI_OPEN_DRAWER	Opens the drawer.

- **DRW_DI_OPEN_DRAWER command**

Parameter	
<i>command</i>	DRW_DI_OPEN_DRAWAER
<i>data</i>	Not used
<i>object</i> (byte[] type)	Not used

Description

Opens the drawer with forced sending.

Unlike the **OpenDrawer** method, the control is returned immediately without checking the status of the drawer.

Performing forced sending forcibly sends all data that is waiting to be sent.

3.2.4 ResetStatistics Method

- **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-D DeviceStatistics" are reset.

All the statistics supported by the ServiceObject are defined in UPOS. If "StatisticCategories.Manufacturer" is specified, nothing is 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-D 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.

All the statistics supported by the ServiceObject **Error! Unknown document property name.** are defined in UPOS. If "M_" is specified, nothing is reset.

3.2.5 ResetStatistic Method

Description

Of the items included in the specified category, only the items for which O appears for the reset permission in "[Appendix-D 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.

All the statistics supported by the ServiceObject **Error! Unknown document property name.**are defined in UPOS. If "M_" is specified, nothing is reset.

3.2.6 RetrieveStatistics Method

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

Parameter

Microsoft.Microsoft.PointOfService.StatisticCategories

Specify one of the following.

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

Description

The Statistics supported by ServiceObject are all defined in UPOS. If "StatisticCategories.Manufacturer" is specified, the minimum information specified by UPOS (the 4 items; UPOS version, manufacturer name, device name, and device category) is acquired.

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

Parameter
<i>String[]</i>
An array of the item names to retrieve

Description

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

The Statistics supported by ServiceObject are all defined in UPOS. If “M_” is specified, the minimum information specified by UPOS (the 4 items; UPOS version, manufacturer name, device name, and device category) is acquired.

- **Parameter type: None**

Description

The information of all defined items is retrieved.

3.2.7 RetrieveStatistic Method**Description**

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.

The Statistics supported by ServiceObject are all defined in UPOS. If “M_” is specified, the minimum information specified by UPOS (the 4 items; UPOS version, manufacturer name, device name, and device category) is acquired.

3.2.8 UpdateStatistics Method

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

Parameter

<i>Microsoft.PointOfService.Statistic[]</i>	Specifies <i>Microsoft.PointOfService.Statistic</i> 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-D 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.

The Statistics supported by ServiceObject are all defined by UPOS. If "M_" is specified, nothing is updated.

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

Parameter

Microsoft.PointOfService.StatisticCategories

Specify one of the following.

- StatisticCategories.Upas
- 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-D DeviceStatistics" are updated.

All the statistics supported by the ServiceObject are defined in UPOS. If "StatisticCategories.Manufacturer" is specified, nothing is update.

3.2.9 UpdateStatistic Method

Description

Of the items included in the specified category, only the items for which O appears for the update permission in "Appendix-D 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.

The Statistics supported by ServiceObject are all defined by UPOS. If "M_" is specified, nothing is updated.

3.2.10 OpenDrawer method

Description

Opens the drawer.

When the drawer is opened, no control is returned until notification that the drawer is open or a fixed time elapses.

When the drawer is opened with forced sending set, the method finishes normally even after a fixed time elapses and the drawer does not open.

3.2.11 WaitForDrawerClose method

Description

Waits for notification that the drawer is closed.

No control is returned until notification that the drawer is closed or printer power is off is detected.

The beep sound is not supported.

3.3 Events

3.3.1 DirectIOEvent

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 1.12.17

- (1) Added support for the CashDrawer with a Bluetooth connection.

A.3 EPSON OPOS ADK for .NET 1.12

- (1) Microsoft POS for .NET 1.12 is supported.

A.4 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.5 EPSON OPOS ADK for .NET 1.9

- (1) Microsoft POS for .NET 1.1 is supported.

A.6 EPSON OPOS ADK for .NET 1.8

POS Device driver complied with Microsoft POS for .NET 1.0 specification has been provided.

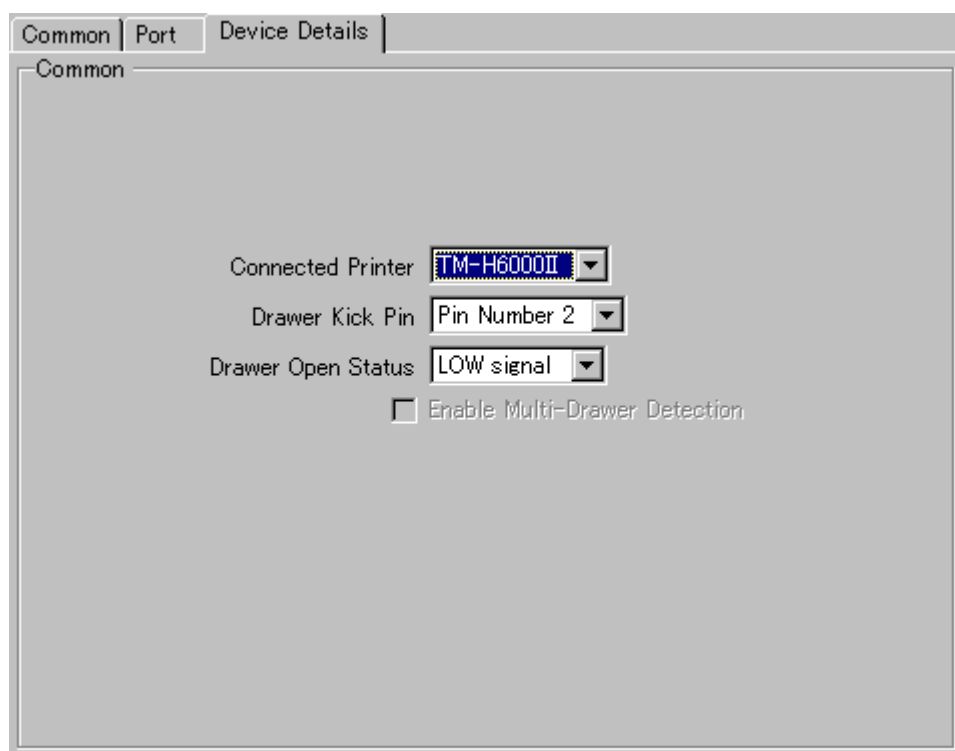
This version has been created based on EPSON OPOS ADK 2.40.

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) With the **OpenDrawer** method, if the fixed time (currently 5 seconds) elapses, ServiceObject returns a control irrespective of the status of the drawer.
- (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, when the **Open** method is executed, an exception is thrown.

Appendix B SetupPOS Settings



B.1 Connected Printer combo box

Description

Sets the name of the printer connected to the device.

Item	Meaning
Each printer name	Uses the settings of the selected printer.
When using CashDrawer on a USB-connected printer when multiple printers have been registered, select the proper "connected port" in the "Port" configuration window.	

Default: TM-H6000IV

B.2 Drawer Kick Pin combo box

Description

Sets the connected pin number.

Item	Meaning
Pin Number 2	Sets the connected pin number to Number 2.
Pin Number 5	Sets the connected pin number to Number 5.

Default: Pin Number 2

B.3 Drawer Open Status combo box

Description

Sets the status of the signal conductor that indicates the open status of the drawer.

Item	Meaning
Low signal	Determines that the drawer is open when the status of the signal conductor that indicates open is low.
High signal	Determines that the drawer is open when the status of the signal conductor that indicates open is high.

Default: Low signal

B.4 Enable Multi-Drawer Detection checkbox

Description

Sets whether or not the host PC can identify the status of multiple drawers.

Presently, this setting is not supported.

CapStatusMultiDrawerDetect property is fixed to OFF.

Default: Not checked

Appendix C Default Values of Properties

The default values of the properties of this device are shown below.

Property name	Default value	Settable values
CapCompareFirmwareVersion	false	-
CapPowerReporting	PowerReportting.Standard, or PowerReportting.Advanced (Differs depending on the communication interface)	-
CapStatisticsReporting	true	-
CapUpdateFirmware	false	-
CapUpdateStatistics	true	-
CheckHealthText	""	-
Claimed	false	-
DeviceDescription	"Standard CashDrawer"	-
DeviceEnabled	false	true false
DeviceName	"Standard"	-
FreezeEvents	false	true false
PowerNotify	PowerNotification.Disabled	PowerNotification.Disabled PowerNotification.Enabled
PowerState	PowerState.Unknown	-
State	ControlState.Closed	-
CapStatus	true	-
CapStatusMultiDrawerDetect	Depends on SetupPOS settings	-
DrawerOpend	false	-

Appendix D DeviceStatistics

The Statistics function list of this device is shown below.

XML definition name	Description	Reset Permission	Update Permission
UnifiedPOSVersion	UPOS version	×	×
DeviceCategory	Device category	×	×
ManufactureName	Manufacturer	×	×
ModelName	Device name	×	×
SerialNumber	Serial number	×	×
ManufactureDate	Date of manufacture	×	×
MechanicalRevision	Device revision	×	×
FirmwareRevision	Firmware version	×	×
Interface	Interface	×	×
InstallationDate	Installation date	×	×
HoursPoweredCount	Operating time	O	O
CommunicationErrorCount	Communication error count	O	O
DrawerGoodOpenCount	Successful drawer open count	O	O
DrawerFailedOpenCount	Failed drawer open count	O	O

O: Permitted
 × : Not permitted