

EPSON OPOS ADK MANUAL

**APPLICATION DEVELOPMENT
GUIDE**

CashDrawer

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Section 1. Introduction

This manual describes the method of use and related items, including device-specific precautions, when the Cash Drawer device is used with EPSON OPOS ADK.

Before the Cash Drawer can be used, the EPSON OPOS ADK should be installed and the devices to be used should be set using the SetupPOS utility. For setting methods, please see the Section 2 of this manual.

This manual applies to the following devices.

In this manual, explanations are grouped for devices as described below.

Standard	Cash drawer connected via printer (1-drawer configuration)
Multi_A	Cash drawer connected via Y Cable on port A (2-drawer configuration)
Multi_B	Cash drawer connected via Y Cable on port B (2-drawer configuration)

The devices described above can connect printers that support serial, parallel, USB, or Ethernet interfaces.

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 setup the Cash Drawer devices.

2.1 Device Information

The DeviceDescription and DeviceName for each model are as follows.

Model Name	I/F	DeviceDescription	DeviceName
Standard	S	Standard Cash Drawer for EPSON TM series	Standard
	P	Standard Cash Drawer for EPSON TM series for Parallel I/F Printer	StandardP
	U	Standard Cash Drawer (USB) for EPSON TM series	StandardU
	E	Standard Cash Drawer (Ethernet) for EPSON TM series	StandardE
	B	Standard Cash Drawer (Bluetooth) for EPSON TM series	StandardB
Multi_A	S	Y Cable Cash Drawer Port A (Serial TM Printer)	Multi_A
	P	Y Cable Cash Drawer Port A (Parallel I/F Printer)	Multi_AP
	U	Y Cable Cash Drawer Port A (USB I/F Printer)	Multi_AU
	E	Y Cable Cash Drawer Port A (Ethernet I/F Printer)	Multi_AE
	B	Y Cable Cash Drawer Port A (Bluetooth I/F Printer)	Multi_AB
Multi_B	S	Y Cable Cash Drawer Port B (Serial TM Printer)	Multi_B
	P	Y Cable Cash Drawer Port B (Parallel I/F Printer)	Multi_BP
	U	Y Cable Cash Drawer Port B (USB I/F Printer)	Multi_BU
	E	Y Cable Cash Drawer Port B (Ethernet I/F Printer)	Multi_BE
	B	Y Cable Cash Drawer Port B (Bluetooth I/F Printer)	Multi_BB

I/F indicates the connected interface.

The following is the list of the four connecting interfaces.

S: Serial

P: Parallel

U: USB

E: Ethernet

B: Bluetooth

2.2 Setting of Devices

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

1) Setting for Parallel Device

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.

2) Setting for USB 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.

3) Setting for Ethernet 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.

4) Setting for Bluetooth Devices

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

5) Setting for 2 Drawers via the Same Port (Multi Drawer)

The EPSON OPOS ADK supports the settings of multiple drawers connected via the same communications port. These configurations are referred to as Multi Drawer configurations. This configuration is available via a "Y cable".

When using a Multi Drawer configuration only support drawers that open via a pulse on pin 2. As well, the open status of both drawers should be the same.

When a Multi Drawer configuration is installed via the SetupPOS utility, select device Multi_A or Multi_B depending on which multi device you are installing.

6) Device Specific Settings

Device specific settings are accessed through the SetupPOS utility via a dialog

box. The dialog is used to change the settings of the Service Object so that operation matches your specific drawer.

Available settings are Open Status Phase, Connector Pin, Pulse Time and Unique Status Device.

Open Status Phase

There are two possible settings for Open Level: HIGH and LOW. This setting indicates the status of the drawer status line when the drawer is open. This setting is available only when a cash drawer is setup as stand-alone or hydra-connected to a printer supporting the ASB function.

Connector Pin

There are two possible settings for Connector Pin: 2 and 5. This setting indicates which pin the drawer kick pulse should be sent. For Dual Drawer devices, this value is fixed at 2.

Pulse Time

This value is a time in milliseconds. This setting indicates the duration of the drawer kick pulse. The maximum allowable value and the available gradation depend on how the device is connected. The value is updated to a valid value wherever the "Pulse time" edit box loses focus.

Unique Status Device

This setting indicates if the open state of the device is unique.

Please uncheck the checkbox. If this check box state is incorrect, the cash drawer will not operate correctly.

For details, please refer to the "2.4 Connection Configuration" of this manual.

2.3 Port Information

1) Port Information When Using Serial Port

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

The Standard cash drawer port information settings must be identical to the hydra settings for the POSPrinter it is attached to. The default settings are as follows.

Setting Information	Effective Setting Range
Baud rate	9600
Bit length	8 bits
Parity	NONE
Stop bit	1 bit
Handshake	DTR/DSR
Output buffer length [byte] *1	1024

*1 This information does not appear when using TMPort port.

The length of some printer default output buffers is not compatible with the default value. In this case, the SetupPOS utility displays a hydra settings warning to change the length. Press OK. This causes printer and cash drawer settings to become compatible.

2) Port information when using parallel port

Not applicable

3) Port information when using USB port

Not applicable

4) Port information when using Ethernet port

Not applicable

5) Port information when using Bluetooth port

Not applicable

2.4 Connection Configuration

The following two models are supported.

1) Hydra Device Model

In this model, the Cash Drawer is connected via a POSPrinter. If it is connected directly to the POSPrinter as a single device, the Standard device should be used. If it is connected with a “Y Cable” connector, the Multi_A and Multi_B device should be used. The communications information of the Cash Drawer should match the settings of the controlling POSPrinter (setting includes port type (Serial, Parallel, USB, Ethernet) and port number).

When using a “Y Cable” to connect 2 drawers to a single controlling POSPrinter it may not be not possible to determine which drawer will become Multi_A and which drawer will become Multi_B. In this case, determining the location of each drawer may be performed through use of the Check Health Interactive. As well, the setting of the “Unique Status Device” check box under the Device Specific Settings should be set to unchecked. As stated in this section “2.2. Setting of Devices”, Multi_A and Multi_B devices must support receiving their kick pulse on pin 2.

Section 3. Function Details

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

3.1 CheckHealth Method

3.1.1 Internal Test

When executed, communications with the CashDrawer is performed and the result is returned. No direct manipulation of the CashDrawer occurs.

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

“Internal Hcheck: Complete” : CheckHealthText

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

3.1.2 External Test

When executed, the CashDrawer is opened. Confirm that the CashDrawer opened normally.

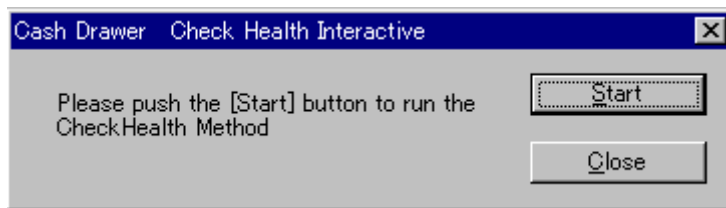
When the method is executed by OPOS_CH_EXTERNAL, the character strings of the CheckHealthText property is as follows.

“External Hcheck: Complete” : CheckHealthText

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

3.1.3 Interactive Test

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



When [Start] is selected, the drawer is opened.

Select [Cancel] button to finish the test.

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

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

3.2 Property Set Values and Default Values

3.2.1 Capability Set Value

Capability Name	Set Value
CapStatus ^{*1}	TRUE
CapPowerReporting ^{*2}	See the table1.
CapStatusMultiDrawerDetect	FALSE

^{*1} The CapStatus property depends on the master device printer connected by hydra. If the master device printer does not have an auto send function, the CapStatus property becomes FALSE.

^{*2} The value of CapPowerReporting depends on the environment and the port type used. Value of CapPowerReporting is set according to the following table.

Table 1

Port Type	CapPowerReporting
Serial	OPOS_PR_STANDARD
Parallel	OPOS_PR_ADVANCED
USB	OPOS_PR_ADVANCED
Ethernet	OPOS_PR_ADVANCED
Bluetooth	OPOS_PR_STANDARD

3.2.2 Property Default Set Values and Setting Ranges

Property	Function
DrawerOpened	Open status of the cash drawer.

3.3 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 CashDrawer device.

4.1 DirectIO Function

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

4.1.1 DirectIO Method

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

Parameter	Explanation
<i>Command</i>	DRW_DI_OPEN_DRAWER
<i>pData</i>	Not used.
<i>pString</i>	Not used.

Remarks The CashDrawer is opened regardless of the error state of the parent device's printer that is connected by hydra.

When the connected printer is under the normal condition, it opens the drawer with flow control. Opens the drawer forcibly without flow control if the transmission of the command with flow control was failed. It also opens the drawer forcibly without flow control when an error occurred in the printer.

However, returns an error without opening the drawer when the printer is power-off, or the printer is not connected.

Return One of the following values is returned and is stored in the ResultCode property.

Value	Meaning
OPOS_SUCCESS	DirectIO succeeded.
OPOS_E_ILLEGAL	The parameter value is illegal, or an error has occurred by the illegal processing.
OPOS_E_NOHARDWARE	The device is power-off or not connected.

Prerequisites Open & Enable ^{*1}

^{*1} It is limited to the case that there is no application that exclusively accesses the drawer.

4.1.2 DirectIOEvent Event

Not applicable

Section 5. Device Specific Programming

Not applicable

Section 6. Error Information

This section describes the error codes that may result from execution of Cash Drawer 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

When executing methods, the ResultCode and ResultCodeExtended are as follows.

Method Name	ResultCode	ResultCodeExtended	Meaning
OpenDrawer	OPOS_SUCCESS	0	Refer to UPOS Specifications
	OPOS_E_CLOSED	0	Refer to UPOS Specifications
	OPOS_E_CLAIMED	0	Refer to UPOS Specifications
	OPOS_E_DISABLED	0	Refer to UPOS Specifications
	OPOS_E_ILLEGAL	OPOS_EX_PORTUSED	Communication port is used by other application.
		OPOS_EX_BADPORT	Port number is illegal.
		OPOS_EX_MICRMODE	MICR mode is active.
		OPOS_EX_TIMEOUT	Data not transmitted within the timeout period.
	OPOS_E_FAILURE	POSPrinter condition errors ^{*1}	Refer to <i>UPOS Specifications</i> .
	OPOS_E_OFFLINE	0	Refer to UPOS Specifications
WaitForDrawerClose	OPOS_SUCCESS	0	Refer to UPOS Specifications
	OPOS_E_CLOSED	0	Refer to UPOS Specifications
	OPOS_E_CLAIMED	0	Refer to UPOS Specifications
	OPOS_E_DISABLED	0	Refer to UPOS Specifications
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM+1~4	Parameter is illegal (1~4).
		OPOS_EX_PORTUSED	A port that is being used by another device cannot be used.
		OPOS_EX_BADPORT	Port number is illegal.
	OPOS_E_FAILURE	POSPrinter condition errors ^{*1}	Refer to <i>UPOS Specifications</i> .

^{*1} The POSPrinter condition errors are as follows:

OPOS_EPTR_COVER_OPEN

OPOS_EPTR_JRN_EMPTY

OPOS_EPTR_REC_EMPTY
OPOS_EPTR_REC_CARTRIDGE_REMOVED
OPOS_EPTR_REC_CARTRIDGE_EMPTY
OPOS_EPTR_REC_HEAD_CLEANING
OPOS_EPTR_LABEL_JAM
OPOS_EPTR_MECHANICAL
OPOS_EPTR_CUTTER
OPOS_EPTR_UNRECOVERABLE
OPOS_EPTR_AUTORECOVERABLE

Section 7. Warnings

- When port information comes from a master device connected by hydra settings, follow the master device's settings to set the drawer.
- When a printer using hydra connection is busy (slip printing, cover open, etc.), the cash drawer cannot be opened. The `ResultCode` and `ResultCodeExtended` properties are set according to the error.
- If the `OpenDrawer` method is executed when the controlling printer is in a slip insertion/removal waiting state (printer's SLIP LED indicator is blinking), the drawer may not open causing the method will return a timeout error. The drawer will open when the slip insertion/removal waiting state is cleared.
- Cash Drawers that do not support status are not supported. If a Drawer that does not support status is used with a printer, supports status then the `CapStatus` property will be illegal and the `OpenDrawer` method will cause the drawer to open and return with a `ResultCode` of `OPOS_ILLEGAL` and a `ResultCodeExtended` of `OPOS_EX_TIMEOUT`.
- The error code differs by that timing when the power is turned OFF.
- The drawer sets the `DrawerOpened` property, and fires the `StatusUpdateEvent` when `DeviceEnabled` property becomes true. However, when the `POSPrinter` that connected with the `CashDrawer` is in an error state, the `CashDrawer` cannot detect state changes until a `CashDrawer` method is called. Please confirm printer's state before setting `DeviceOpened` property to true.