



CITIZEN OPOS DRIVER 1.8 Application Development Guide

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CITIZEN SYSTEMS JAPAN CO.,LTD.

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1. Introduction

The OPOS Driver complies with OPOS1.8. This document provides the explanation of device (POS printer)-dependent specifications and precautions. When you want to develop applications by using this driver, refer to "OpenPOS for OLE Application Programmer's Guide, Japanese Edition, Version 1.8" beforehand.

Reference link (as of July 17, 2007)

<https://www.microsoft.com/japan/business/industry/retail/opos/download.msp>

1.2. CITIZEN OPOS Driver

This driver provides an open device driver architecture that can easily integrate the CITIZEN POS printer and the cash drawer connected to it by the POS system based on Microsoft Windows Operating System. This driver has been developed for the following purpose.

- Definition of architecture for accessing the Win32-based POS printer and cash drawer connected to it
- Definition of interface of CITIZEN POS printer supporting POS solution and cash drawer connected to it

1.3. Operating Environment

Object Operating System

This driver supports the following Windows operating systems.

- Windows 2000
- Windows XP

Object Models

Object models of this driver and the corresponding drivers are as shown below.

For details of each model, refer to the Printer User's Guide.

Object Model	Function	Applicable driver (Printer)	Applicable driver (Drawer)
CBM-1000TypeII	Standard	CBM1000TYPEII_*	CBM1000TYPEII_*.CD*
CBM-1000TypeII-L	Blackmark paper and label paper are supported.		
CT-S300	Standard (Paper with blackmark on front side is supported)	CT-S300_*	CT-S300_*.CD*
CT-S300-M1/M2	Paper with blackmark on back side is supported.		
CT-S310	Standard (Paper with blackmark on front side is supported)	CT-S310_*	CT-S310_*.CD*
CT-S310-M1/M2	Paper with blackmark on back side is supported.		
CT-S2000	Standard	CT-S2000_*	CT-S2000_*.CD*
CT-S2000-M	Blackmark paper is supported.		
CT-S2000-L	Label paper is supported.		
CT-S4000	Standard (Paper with blackmark on front side is supported)	CT-S4000_*	CT-S4000_*.CD*
CT-S4000-M	Paper with blackmark on back side is supported.		
CT-S4000-L	Label paper is supported.		
CD-S500	Standard type (Without cutting feature)	CD-S500_*	CD-S500_*.CD*
CD-S501	With cutting feature		
CD-S503	Rewinder equipped (With cutting feature)		

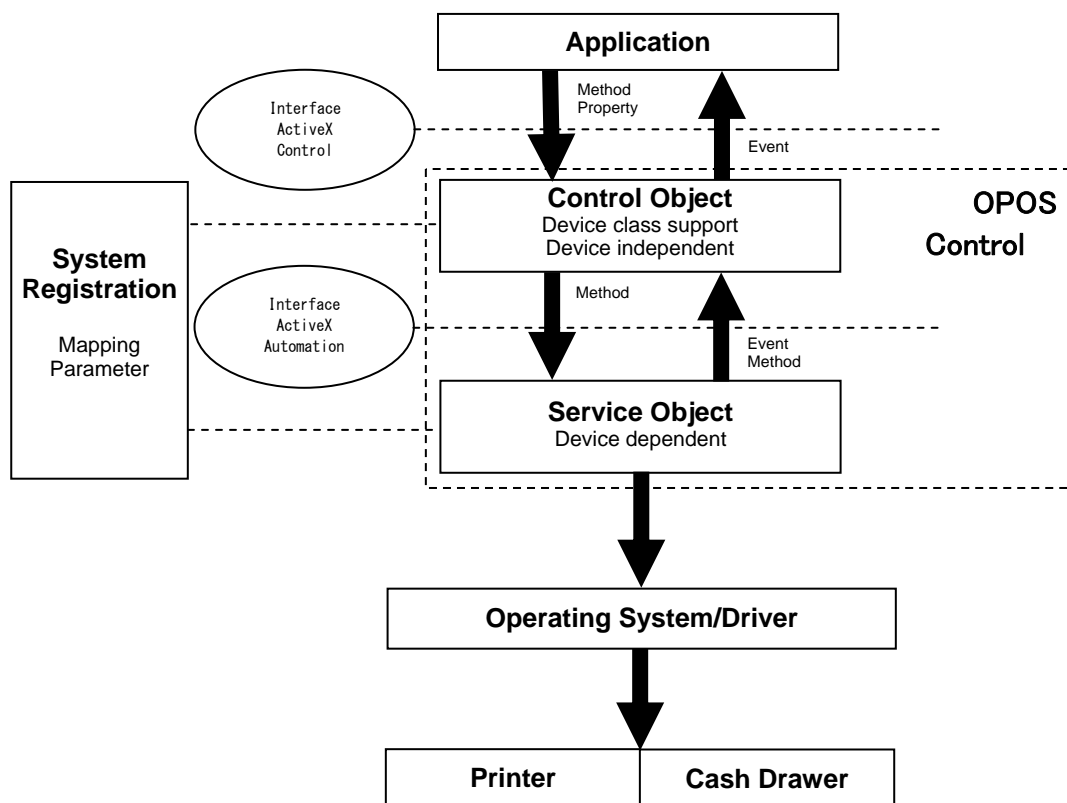
1.4. Application Developer

Application developer who wants to use this driver must be familiar with the following items.

- OPOS1.8 specifications
- General characteristics of CITIZEN POS printer
- Terms and structure of ActiveX control and OLE automation
- ActiveX control container development environment such as Microsoft Visual Basic and Microsoft Visual C++, etc.

1.5. OPOS Control

The OPOS control, conforming to ActiveX control specifications, provides the application with property, method, and/or event. It consists of control object (CO) for device class and service object (SO). CO supplies application interface (API) and SO executes the API, The OPOS software is implemented by the use of the layer shown in the following figure.



Device Class

This is a category of the POS device sharing the set of property, method and event.

Control Object (CO)

Control Object provides the application with a set of property, method and event for each device class. CO is a standard Active (OLE 32 bit) control and is not visible at the time of execution. As a rule, this driver uses OPOS standard CO. (OPOS standard CO is installed automatically at the installation of this driver.)

Service Object (SO)

Service Object is called by Control Object and executes the function specified by OPOS for each device. It is implemented as automation server and provides the set of methods called by CO. This driver provides the processing dependent on the CITIZEN POS printer and cash drawer connected to the printer.

1.6. CITIZEN OPOS Driver Registry Structure

In order for Control Object to be connected to Service Object exactly and initialize the corresponding device, the OPOS control requires data for the system registry. The registry has a hierarchical structure with levels called "key". Each key consists of the following.

- Additional key (also called sub-key)
- Named value ("Data" of string, binary, or double-word type is defined for each value.)
- One "default value" defined by string-type data.

OPOS defines only string data.

The following is a registry structure taking CT-S2000 (printer and cash drawer) as an example.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail]
@=""

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceInfo]

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceInfo\OposCCOs]
"Version"="1.8.001"
"Company"="Research Computer Services, Inc: Dayton OH"
"Directory"="C:\Program Files\CITIZEN\CITIZEN Service Objects"
"Author"="Curtiss R. Monroe"
@="OPOS Common Control Objects -- Public Binaries. Source (c) RCS-Dayton."

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS]
@=""

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\CashDrawer]
@=""
"DRW001"="CT-S2000_1_CD1"

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\CashDrawer\CT-S2000_1_CD1]
@="CBM. Thermal. CashDrawer"
"PhysicalDeviceID"="CITIZENCT-S2000"
"Version"="1008009"
"WriteTimeout"="5000"
"Pin3"="001"
"StatusBackInterval"="200"
"Service"="C:\Program Files\CITIZEN\CITIZEN Service Objects\CBM.TSO.dll"
"Port"="COM1:"
"BaudRate"="19200"
"HandShake"="000"
"BitLength"="008"
"Parity"="000"
"ServiceObjectDescription"="Citizen Systems Service Object for CT-S2000_1 Printer Cash Drawer No.1 ver 1.08.09"
"DrawerName"="CTS2000.CITIZEN.CD1"
"DeviceDescription"="Citizen Systems Thermal POSPrinter's Cash Drawer 1"
"OnTime"="005"
"PrinterID"="CT-S2000_1"
"CapStatus"="001"
```

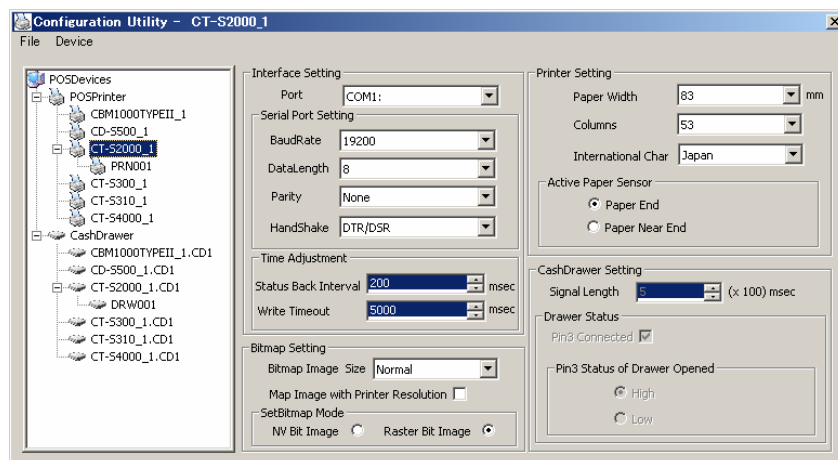


```
[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\Service\OPOS\POSPrinter]
@=""
"PRN001"="CT-S2000_1"

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\Service\OPOS\POSPrinter\CT-S2000_1]
@="CBM. Thermal. POSPrinter"
"PhysicalDeviceID"="CITIZENCT-S2000"
"Version"="1008009"
"WriteTimeout"="5000"
"Pin3"="001"
"StatusBackInterval"="200"
"Service"="C:\Program Files\CITIZEN\CITIZEN Service Objects\CBM.TSO.dll"
"Port"="COM1:"
"BaudRate"="19200"
"HandShake"="000"
"BitLength"="008"
"Parity"="000"
"FamilyID"="001"
"MapResolution"="001"
"PrinterName"="CTS2000. CITIZEN. POSPrinter"
"DeviceDescription"="Citizen Systems Thermal POSPrinter."
"ServiceObjectDescription"="Citizen Systems Service Object for Thermal PosPrinters ver 1.08.09."
"PrinterMode"="000"
"BitmapMode"="000"
"PrinterLanguageModel"="008"
"PaperSensor"="000"
"PaperModel"="003"
"Column"="001"
"UseNVRAM"="000"
```

Registry Operation

Writing illegal value in a registry may cause serious trouble in the system. Therefore, Close attention is required in handling a registry. When handling a registry, the following registry-setting tool (Configuration Utility) shall be used as a rule. For the method of using this tool, refer to "Setup Guide" of this driver.



(Configuration Utility)

1.7. CITIZEN OPOS Driver Precautions

- If the printer power is turned off/on while connection to the printer is being established, acquiring status of printer or cash drawer may become unsuccessful. In this case, close SO once and then open SO again.
- Though cash drawer SO can be opened singly without opening the corresponding printer SO, opening/closing the corresponding printer SO thereafter impossibility in acquiring cash drawer status may result. In this case, close cash drawer SO once and then open the cash drawer SO again.
 - When printing on label paper, use MarkFeed method (handling of marked paper). For the method of using this method, refer to "OpenPOS for OLE Application Programmer's Guide Japanese Versin Rev. 18".
- Also refer to the notes in each chapter.

2. CITIZEN OPOS Printer Service Object

For the details, method of use, etc. of property, method and event, refer to "OpenPOS for OLE Application Programmer's Guide, Japanese Edition, Version 1.8".

2.2. POS Printer Service Object and Method Relations

CBM-1000TypeII

Method	Notes	Supporting status (CBM1000TYPEII_*)	
Open		○	
Close		○	
ClaimDevice	Notes on Serial I/F connection (Refer to RotatePrint in 2.6 POS Printer Service Object and Precautions.)	○	
ReleaseDevice		○	
CheckHealth	OPOS_CH_EXTERNAL Only (self diagnostic printing) is supported.	△	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSPrinter	×	Not applied because no input device is used.
ClearOutput	Data being transmitted cannot be stopped.	○	
DirectIO		×	Not supported
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
PrintNormal		○	
PrintTwoNormal		×	Not supported
PrintImmediate		○	
BeginInsertion		×	Not supported
EndInsertion		×	Not supported
BeginRemoval		×	Not supported
EndRemoval		×	Not supported
CutPaper		○	Partial cut (0-100) Full cut (0-100) provided hardware change is required.
RotatePrint	(Refer to RotatePrint in 2.6 POS Printer Service Object and Precautions.)	△	
PrintBarCode	(Refer to PrintBarcode in 2.6 POS Printer Service Object and Precautions.)	○	
PrintBitmap		○	Raster bit image printing
TransactionPrint		○	
ValidateData		○	
SetBitmap	(Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	Raster bit image mode NV bit image mode
SetLogo		○	
ChangePrintSide		×	Not supported
MarkFeed		○	Blackmark paper and label paper are supported.

CT-S300/CT-S310

Method	Notes	Supporting status (CT-S300_*/CT-S310_*)	
Open		○	
Close		○	
ClaimDevice	Notes on Serial I/F connection (Refer to ClaimDevice in 2.6. POS Printer Service Object and Precautions.)	○	
ReleaseDevice		○	
CheckHealth	OPOS_CH_EXTERNAL Only (self diagnostic printing) is supported.	△	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSPrinter	×	Not applied because no input device is used.
ClearOutput	Data being transmitted cannot be stopped.	○	
DirectIO		×	Not supported
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
PrintNormal		○	
PrintTwoNormal		×	Not supported
PrintImmediate		○	
BeginInsertion		×	Not supported
EndInsertion		×	Not supported
BeginRemoval		×	Not supported
EndRemoval		×	Not supported
CutPaper		○	Partial cut (0-99) Full cut (100)
RotatePrint	(Refer to RotatePrint in 2.6 POS Printer Service Object and Precautions.)	△	
PrintBarCode	(Refer to PrintBarcode in 2.6 POS Printer Service Object and Precautions.)	○	
PrintBitmap		○	Raster bit image printing
TransactionPrint		○	
ValidateData		○	
SetBitmap	(Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	Raster bit image mode NV bit image mode
SetLogo		○	
ChangePrintSide		×	Not supported
MarkFeed		○	Blackmark paper is supported.

CT-S2000

Method	Notes	Supporting status (CT-S200_*)	
Open		○	
Close		○	
ClaimDevice	Notes on Serial I/F connection (Refer to ClaimDevice in 2.6. POS Printer Service Object and Precautions.)	○	
ReleaseDevice		○	
CheckHealth	OPOS_CH_EXTERNAL Only (self diagnostic printing) is supported.	△	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSPrinter	×	Not applied because no input device is used.
ClearOutput	Data being transmitted cannot be stopped.	○	
DirectIO		×	Not supported
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
PrintNormal		○	
PrintTwoNormal		×	Not supported
PrintImmediate		○	
BeginInsertion		×	Not supported
EndInsertion		×	Not supported
BeginRemoval		×	Not supported
EndRemoval		×	Not supported
CutPaper		○	Partial cut (0-99) Full cut (100)
RotatePrint	(Refer to RotatePrint in 2.6 POS Printer Service Object and Precautions.)	△	
PrintBarCode	(Refer to PrintBarcode in 2.6 POS Printer Service Object and Precautions.)	○	
PrintBitmap		○	Raster bit image printing
TransactionPrint		○	
ValidateData		○	
SetBitmap	(Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	Raster bit image mode NV bit image mode
SetLogo		○	
ChangePrintSide		×	Not supported
MarkFeed		○	Blackmark paper and label paper are supported.

CT-S4000

Method	Notes	Supporting status (CT-S4000_*)	
Open		○	
Close		○	
ClaimDevice	Notes on Serial I/F connection (Refer to ClaimDevice in 2.6. POS Printer Service Object and Precautions.)	○	
ReleaseDevice		○	
CheckHealth	OPOS_CH_EXTERNAL Only (self diagnostic printing) is supported.	△	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSPrinter	×	Not applied because no input device is used.
ClearOutput	Data being transmitted cannot be stopped.	○	
DirectIO		×	Not supported
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
PrintNormal		○	
PrintTwoNormal		×	Not supported
PrintImmediate		○	
BeginInsertion		×	Not supported
EndInsertion		×	Not supported
BeginRemoval		×	Not supported
EndRemoval		×	Not supported
CutPaper		○	Partial cut (0-99) Full cut (100)
RotatePrint	(Refer to RotatePrint in 2.6 POS Printer Service Object and Precautions.)	△	
PrintBarCode	(Refer to PrintBarcode in 2.6 POS Printer Service Object and Precautions.)	○	
PrintBitmap		○	Raster bit image printing
TransactionPrint		○	
ValidateData		○	
SetBitmap	(Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	Raster bit image mode NV bit image mode
SetLogo		○	
ChangePrintSide		×	Not supported
MarkFeed		○	Blackmark paper and label paper are supported.

CD-S500

Method	Notes	Supporting status (CD-S500_*)	
Open		○	
Close		○	
ClaimDevice	Notes on Serial I/F connection (Refer to ClaimDevice in 2.6. POS Printer Service Object and Precautions.)	○	
ReleaseDevice		○	
CheckHealth	OPOS_CH_EXTERNAL Only (self diagnostic printing) is supported.	△	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSPrinter	×	Not applied because no input device is used.
ClearOutput	Data being transmitted cannot be stopped.	○	
DirectIO		×	Not supported
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
PrintNormal		○	
PrintTwoNormal		×	Not supported
PrintImmediate		○	
BeginInsertion		×	Not supported
EndInsertion		×	Not supported
BeginRemoval		×	Not supported
EndRemoval		×	Not supported
CutPaper		○	Partial cut (0-100) Full cut (100)
RotatePrint	(Refer to RotatePrint in 2.6 POS Printer Service Object and Precautions.)	△	
PrintBarCode		×	Not supported
PrintBitmap		○	Raster bit image printing
TransactionPrint		○	
ValidateData		○	
SetBitmap	(Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	Raster bit image mode NV bit image mode
SetLogo		○	
ChangePrintSide		×	Not supported
MarkFeed		○	Blackmark paper is supported.

2.3. POS Printer Service Object and Property Relations

CBM-1000TypeII

Property	Notes	Attribute	Supporting status (CBM1000TYPEII_*)
AutoDisable	Not applicable with OPOSPrinter	R/W	× Not supported
BinaryConversion	(Refer to BinaryConversion in 2.6 POS Printer Service Object and Precautions.)	R/W	○ OPOS_BC_NONE (Default value) OPOS_BC_NIBBLE OPOS_BC_DECIMAL
CapPowerReporting		R	○ OPOS_PR_STANDARD
CapstatisticsReporting		R	× FALSE
CapUpdateStatistics		R	× FALSE
CheckHealthText		R	○ External HCheck: Successful
Claimed		R	○ ClaimeDevice → True ReleaseDevice → False
DataCount	Not applicable with OPOSPrinter	R	× Not applied because no input device is used.
DataEventEnabled	Not applicable with OPOSPrinter	R/W	× Not applied because no input device is used.
DeviceEnabled		R/W	○ TRUE: DataEvent notified False: DataEvent not notified
FreezeEvents		R/W	○ TRUE: Event notification disabled FALSE: Event notification enabled
OpenResult		R	○ In other than OPOS_SUCCESS, refer to OpenResult properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
OutputID	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	R	○ Increment (+1)
PowerNotify		R/W	○ OPOS_PN_DISABLE (Power notification is not supplied.) OPOS_PN_ENABLE (Information on power notification is supplied.)
PowerState		R	○ OPOS_ONLINE(2001) Online and Ready state OPOS_PS_OFFLINE(2003) Not Ready state
ResultCode	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○ In other than OPOS_SUCCESS, refer to ResultCode properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ResultCodeExtended	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○
State		R	○ In other than OPO_S_IDLE, refer to State properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ControlObjectDescription		R	○ 1.8***
ControlObjectVersion		R	○ 1.8***
ServiceObjectDescription		R	○ CITIZEN Service Object for Thermal Printers ver *.*.*.*
ServiceObjectVersion		R	○ 1*****
DeviceDescription		R	○ CITIZEN Thermal POSPrinter
DeviceName		R	○ "CBM1000II"
CapCharacterSet		R	○ PTR_CCS_KANJI

Property	Notes	Attribute	Supporting status (CBM1000TYPEII_*)	
CapConcurrentJrnRec		R	×	Not supported
CapConcurrentJrnSlp		R	×	Not supported
CapConcurrentRecSlp		R	×	Not supported
CapCoverSensor		R	○	TRUE: With cover open sensor
CapTransaction		R	○	TRUE: Batch processing of characters is possible.
CapJrnPresent		R	×	Not supported
CapJrn2Color		R	×	Not supported
CapJrnBold		R	×	Not supported
CapJrnDhigh		R	×	Not supported
CapJrnDwide		R	×	Not supported
CapJrnDwideDhigh		R	×	Not supported
CapJrnEmptySensor		R	×	Not supported
CapJrnItalic		R	×	Not supported
CapJrnNearEndSensor		R	×	Not supported
CapJrnUnderline		R	×	Not supported
CapJrnCartridgeSensor		R	×	Not supported
CapJrnColor		R	×	Not supported
CapRecPresent		R	○	TRUE: Receipt is possible.
CapRec2Color		R	○	TRUE: 2-color printing is possible. (Using paper printable in 2 colors)
CapRecBarCode		R	○	TRUE: Barcode printing is possible.
CapRecBitmap		R	○	TRUE: Bitmap printing is possible.
CapRecBold		R	○	TRUE: Bold attribute setting is possible.
CapRecDhigh		R	○	TRUE: Double height attribute setting is possible.
CapRecDwide		R	○	TRUE: Double width setting is possible.
CapRecDwideDhigh		R	○	TRUE: Quadruple attribute setting is possible.
CapRecEmptySensor	(Refer to CapRecEmptySensor/RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○	TRUE: Paper-Out sensor is active. FALSE: Paper-Out sensor is non-active.
CapRecItalic		R	×	Not supported
CapRecLeft90		R	○	TRUE: 90-degree CCW rotation attribute setting is possible.
CapRecNearEndSensor		R	○	TRUE: With Paper Near-End sensor
CapRecPapercut		R	○	Only partial cut (90) is supported.
CapRecRight90		R	○	TRUE: 90-degree CW rotation attribute setting is possible.
CapRecRotate180		R	○	TRUE: 180-degree rotation attribute setting is possible.
CapRecStamp		R	×	Not supported
CapRecUnderline		R	○	TRUE: Underline attribute setting is possible.
CapRecCartridgeSensor		R	○	PTR_CART_OK
CapRecColor		R	○	PTR_CUSTOM_COLOR1
CapRecMarkFeed		R	○	PTR_MF_TO_CUTTER
CapSlpPresent		R	×	Not supported
CapSlpFullslip		R	×	Not supported
CapSlp2Color		R	×	Not supported
CapSlpBarCode		R	×	Not supported
CapSlpBitmap		R	×	Not supported
CapSlpBold		R	×	Not supported
CapSlpDhigh		R	×	Not supported
CapSlpDwide		R	×	Not supported
CapSlpDwideDhigh		R	×	Not supported
CapSlpEmptySensor		R	×	Not supported
CapSlpItalic		R	×	Not supported
CapSlpLeft90		R	×	Not supported
CapSlpNearEndSensor		R	×	Not supported

Property	Notes	Attribute	Supporting status (CBM1000TYPEII_*)	
CapSlpRight90		R	×	Not supported
CapSlpRotate180		R	×	Not supported
CapSlpUnderline		R	×	Not supported
CapSlpBothSidesPrint		R	×	Not supported
CapSlpCartridgeSensor		R	×	Not supported
CapSlpColor		R	×	Not supported
AsyncMode	(Refer to AsyncMode Property in <u>2.6 POS Printer Service Object and Precautions.</u>)	R/W	○	TRUE/FALSE
CartridgeNotify		R/W	×	Not supported
CharacterSet		R/W	○	Default value Japanese version: Code932 English version: Code437
CharacterSetList		R	○	437: Code437 850: Code850 Multilingual 860: Code860 Portugal 863: Code863 Canada-French 865: Code865 Norway 852: Code852 Eastern Europe 866: Code866 Russia 857: Code857 Turkey 932: KANA 998: A SCII 999: Windows Code 1252: Windows Code
CoverOpen		R	○	TRUE: POS printer cover is open. FALSE: POS printer cover is closed.
ErrorLevel	(Refer to ErrorLevel Property in <u>2.6 POS Printer Service Object and Precautions.</u>)	R	○	PTR_EL_NONE PTR_EL_RECOVERABLE PTR_EL_FATAL
ErrorStation		R	○	PTR_S_RECEIPT
ErrorString		R	○	Description on present error is retained.
FontTypefaceList		R	○	Font A, B
FlagWhenIdle		R/W	○	
MapMode		R/W	○	PTR_MM_DOTS (Default value) PTR_MM_TWIPS PTR_MM_ENGLISH PTR_MM_METRIC
RotateSpecial		R/W	△	PTR_RP_NORMAL (OPOS_SUCCESS) PTR_RP_RIGHT90 (OPOS_E_ILLEGAL) PTR_RP_LEFT90: Not supported (OPOS_E_ILLEGAL) PTR_RP_ROTATE180: Supported (OPOS SUCCESS)
JrnLineChars		R/W	×	Not supported
JrnLineCharsList		R	×	Not supported
JrnLineHeight		R/W	×	Not supported
JrnLineSpacing		R/W	×	Not supported
JrnLineWidth		R	×	Not supported
JrnLetterQuality		R/W	×	Not supported
JrnEmpty		R	×	Not supported
JrnNearEnd		R	×	Not supported
JrnCartridgeState		R	×	Not supported
JrnCurrentCartridge		R/W	×	Not supported

Property	Notes	Attribute	Supporting status (CBM1000TYPEII_*)
RecLineChars	The Font size is changed depending on the set value. Select the value from RecLineCharsList property. (Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○ OPOS_SUCCESS (Normal setting) ○ OPOS_E_ILLEGAL (Illegal line character width is specified.)
RecLineCharsList	(Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R	○ 58 mm paper "30, 40" "36, 48" 80 mm paper "42, 56" "48, 64"
RecLineHeight	The value is changed according to the RecLineChars property.	R/W	○
RecLineSpacing	Only if the value is smaller than RecLineHeight property, the value is changed in accordance with to the RecLineHeight property.	R/W	○
RecLineWidth		R	○
RecLetterQuality		R/W	× Not supported
RecEmpty	(Refer to RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○ TRUE: Receipt paper out FALSE: With receipt paper * Always FALSE if CapRecSensor is False.
RecNearEnd		R	○
RecSidewaysMaxLines	(Refer to RecSidewaysMaxLines Property in 2.6 POS Printer Service Object and Precautions.)	R	○
RecSidewaysMaxChars	(Refer to RecSidewaysMaxChars Property in 2.6 POS Printer Service Object and Precautions.)	R	○
RecLinesToPaperCut		R	○
RecBarCodeRotationList		R	○ 0 (Default value), 180
RecCartridgeState		R	× Not supported
RecCurrentCartridge		R/W	○ PTR_CUSTOM_COLOR1
RecBitmapRotationList		R	○ 0 (Default value), 180
SlpLineChars		R/W	× Not supported
SlpLineCharsList		R	× Not supported
SlpLineHeight		R/W	× Not supported
SlpLineSpacing		R/W	× Not supported
SlpLineWidth		R	× Not supported
SlpLetterQuality		R/W	× Not supported
SlpEmpty		R	× Not supported
SlpNearEnd		R	× Not supported
SlpSidewaysMaxLines		R	× Not supported
SlpSidewaysMaxChars		R	× Not supported
SlpMaxLines		R	× Not supported
SlpLinesNearEndToEnd		R	× Not supported
SlpBarCodeRotationList		R	× Not supported
SlpPrintSide		R	× Not supported
SlpCartridgeState		R	× Not supported
SlpCurrentCartridge		R/W	× Not supported

CT-S300/CT-S310

Property	Notes	Attribute	Supporting status (CT-S300_*/CT-S 310_*)	
AutoDisable	Not applicable with OPOSPrinter	R/W	×	Not supported
BinaryConversion	(Refer to BinaryConversion in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_BC_NONE (Default value) OPOS_BC_NIBBLE OPOS_BC_DECIMAL
CapPowerReporting		R	○	At the connection of parallel or USB I/F OPOS_PR_STANDARD At the connection of serial I/F OPOS_PR_NONE
CapstatisticsReporting		R	×	FALSE
CapUpdateStatistics		R	×	FALSE
CheckHealthText		R	○	External HCheck: Successful
Claimed		R	○	ClaimeDevice → True ReleaseDevice → False
DataCount	Not applicable with OPOSPrinter	R	×	Not applied because no input device is used.
DataEventEnabled	Not applicable with OPOSPrinter	R/W	×	Not applied because no input device is used.
DeviceEnabled		R/W	○	TRUE: DataEvent notified False: DataEvent not notified
FreezeEvents		R/W	○	TRUE: Event notification disabled FALSE: Event notification enabled
OpenResult		R	○	In other than OPOS_SUCCESS, refer to OpenResult properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
OutputID	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	R	○	Increment (+1)
PowerNotify		R/W	○	OPOS_PN_DISABLE (Power notification is not supplied.) OPOS_PN_ENABLE (Information on power notification is supplied.) * Always OPOS_PN_DISABLE at the connection of serial I/F
PowerState		R	○	Online and Ready state OPOS_ONLINE(2001) Not Ready state OPOS_PS_OFFLINE(2003) At the connection of serial I/F OPOS_PS_UNKNOWN
ResultCode	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	In other than OPOS_SUCCESS, refer to ResultCode properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ResultCodeExtended	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
State		R	○	In other than OPOSIDLE, refer to State properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ControlObjectDescription		R	○	1.8***
ControlObjectVersion		R	○	1.8***
ServiceObjectDescription		R	○	CITIZEN Service Object for Thermal Printers ver *.*.*
ServiceObjectVersion		R	○	1*****

Property	Notes	Attribute	Supporting status (CT-S300_*/CT-S 310_*)
DeviceDescription		R	○ CITIZEN Thermal POSPrinter
DeviceName		R	○ CT-S300: "CT-S300" CT-S310; "CT-S310"
CapCharacterSet		R	○ PTR_CCS_KANJI
CapConcurrentJrnRec		R	× Not supported
CapConcurrentJrnSlp		R	× Not supported
CapConcurrentRecSlp		R	× Not supported
CapCoverSensor		R	○ TRUE: With cover open sensor
CapTransaction		R	○ TRUE: Batch processing of characters is possible.
CapJrnPresent		R	× Not supported
CapJrn2Color		R	× Not supported
CapJrnBold		R	× Not supported
CapJrnDhigh		R	× Not supported
CapJrnDwide		R	× Not supported
CapJrnDwideDhigh		R	× Not supported
CapJrnEmptySensor		R	× Not supported
CapJrnItalic		R	× Not supported
CapJrnNearEndSensor		R	× Not supported
CapJrnUnderline		R	× Not supported
CapJrnCartridgeSensor		R	× Not supported
CapJrnColor		R	× Not supported
CapRecPresent		R	○ TRUE: Receipt is possible.
CapRec2Color		R	○ TRUE: 2-color printing is possible. (Using paper printable in 2 colors)
CapRecBarCode		R	○ TRUE: Barcode printing is possible.
CapRecBitmap		R	○ TRUE: Bitmap printing is possible.
CapRecBold		R	○ TRUE: Bold attribute setting is possible.
CapRecDhigh		R	○ TRUE: Double height attribute setting is possible.
CapRecDwide		R	○ TRUE: Double width setting is possible.
CapRecDwideDhigh		R	○ TRUE: Quadruple attribute setting is possible.
CapRecEmptySensor	(Refer to CapRecEmptySensor/ RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○ TRUE: Paper-Out sensor is active. FALSE: Paper-Out sensor is non-active.
CapRecItalic		R	× Not supported
CapRecLeft90		R	○ TRUE: 90-degree CCW rotation attribute setting is possible.
CapRecNearEndSensor		R	○ TRUE: With Paper Near-End sensor
CapRecPapercut		R	○ Only partial cut (90) is supported.
CapRecRight90		R	○ TRUE: 90-degree CW rotation attribute setting is possible.
CapRecRotate180		R	○ TRUE: 180-degree rotation attribute setting is possible.
CapRecStamp		R	× Not supported
CapRecUnderline		R	○ TRUE: Underline attribute setting is possible.
CapRecCartridgeSensor		R	○ PTR_CART_OK
CapRecColor		R	○ PTR_CUSTOM_COLOR1
CapRecMarkFeed		R	○ PTR_MF_TO_CUTTER
CapSlpPresent		R	× Not supported
CapSlpFullslip		R	× Not supported
CapSlp2Color		R	× Not supported
CapSlpBarCode		R	× Not supported
CapSlpBitmap		R	× Not supported
CapSlpBold		R	× Not supported
CapSlpDhigh		R	× Not supported
CapSlpDwide		R	× Not supported

Property	Notes	Attribute	Supporting status (CT-S300_*/CT-S 310_*)	
CapSlpDwideDhigh		R	×	Not supported
CapSlpEmptySensor		R	×	Not supported
CapSlpItalic		R	×	Not supported
CapSlpLeft90		R	×	Not supported
CapSlpNearEndSensor		R	×	Not supported
CapSlpRight90		R	×	Not supported
CapSlpRotate180		R	×	Not supported
CapSlpUnderline		R	×	Not supported
CapSlpBothSidesPrint		R	×	Not supported
CapSlpCartridgeSensor		R	×	Not supported
CapSlpColor		R	×	Not supported
AsyncMode	(Refer to AsyncMode Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	TRUE/FALSE
CartridgeNotify		R/W	×	Not supported
CharacterSet		R/W	○	Default value Japanese version: Code932 English version: Code437
CharacterSetList		R	○	437: Code437 850: Code850 Multilingual 860: Code860 Portugal 863: Code863 Canada-French 865: Code865 Norway 852: Code852 Eastern Europe 858: Code858 864: Code864 Arabic 874: Code874 Tai Code 18 866: Code866 Russia 857: Code857 Turkey 932: KANA 998: ASCII 999: Windows Code 1252: Windows Code
CoverOpen		R	○	TRUE: POS printer cover is open. FALSE: POS printer cover is closed.
ErrorLevel	(Refer to ErrorLevel Property in 2.6 POS Printer Service Object and Precautions.)	R	○	PTR_EL_NONE PTR_EL_RECOVERABLE PTR_EL_FATAL
ErrorStation		R	○	PTR_S_RECEIPT
ErrorString		R	○	Description on present error is retained.
FontTypefaceList		R	○	Font A, B, C
FlagWhenIdle		R/W	○	
MapMode		R/W	○	PTR_MM_DOTS (Default value) PTR_MM_TWIPS PTR_MM_ENGLISH PTR_MM_METRIC
RotateSpecial		R/W	△	PTR_RP_NORMAL (OPOS_SUCCESS) PTR_RP_RIGHT90 (OPOS_E_ILLEGAL) PTR_RP_LEFT90: Not supported (OPOS_E_ILLEGAL) PTR_RP_ROTATE180: Supported (OPOS SUCCESS)
JrnLineChars		R/W	×	Not supported
JrnLineCharsList		R	×	Not supported
JrnLineHeight		R/W	×	Not supported
JrnLineSpacing		R/W	×	Not supported
JrnLineWidth		R	×	Not supported
JrnLetterQuality		R/W	×	Not supported
JrnEmpty		R	×	Not supported
JrnNearEnd		R	×	Not supported
JrnCartridgeState		R	×	Not supported

Property	Notes	Attribute	Supporting status (CT-S300_*/CT-S 310_*)	
JrnCurrentCartridge		R/W	×	Not supported
RecLineChars	According to the value, the Font size is changed. Value should be chosen from RecLineCharsList property. (Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_SUCCESS (Normal setting) OPOS_E_ILLEGAL (Illegal line character width is specified.)
RecLineCharsList	(Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R	○	58 mm paper "30, 40, 45" "32, 42, 48" 80 mm paper "42, 56, 63" "48, 64/72"
RecLineHeight	The value is changed according to the RecLineChars property.	R/W	○	
RecLineSpacing	If the value is smaller than RecLineHeight, the value is changed according to the RecLineHeight property.	R/W	○	
RecLineWidth		R	○	
RecLetterQuality		R/W	×	Not supported
RecEmpty	(Refer to RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○	TRUE: Receipt paper out FALSE: With receipt paper * Always FALSE if CapRecSensor is False.
RecNearEnd		R	○	
RecSidewaysMaxLines	(Refer to RecSidewaysMaxLines Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
RecSidewaysMaxChars	(Refer to RecSidewaysMaxChars Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
RecLinesToPaperCut		R	○	
RecBarCodeRotationList		R	○	0 (Default value), 180
RecCartridgeState		R	×	Not supported
RecCurrentCartridge		R/W	○	PTR_CUSTOM_COLOR1
RecBitmapRotationList		R	○	0 (Default value), 180
SlpLineChars		R/W	×	Not supported
SlpLineCharsList		R	×	Not supported
SlpLineHeight		R/W	×	Not supported
SlpLineSpacing		R/W	×	Not supported
SlpLineWidth		R	×	Not supported
SlpLetterQuality		R/W	×	Not supported
SlpEmpty		R	×	Not supported
SlpNearEnd		R	×	Not supported
SlpSidewaysMaxLines		R	×	Not supported
SlpSidewaysMaxChars		R	×	Not supported
SlpMaxLines		R	×	Not supported
SlpLinesNearEndToEnd		R	×	Not supported
SlpBarCodeRotationList		R	×	Not supported
SlpPrintSide		R	×	Not supported
SlpCartridgeState		R	×	Not supported
SlpCurrentCartridge		R/W	×	Not supported

CT-S2000

Property	Notes	Attribute	Supporting status (CT-S2000_*)	
AutoDisable	Not applicable with OPOSPrinter	R/W	×	Not supported
BinaryConversion	(Refer to BinaryConversion in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_BC_NONE (Default value) OPOS_BC_NIBBLE OPOS_BC_DECIMAL
CapPowerReporting		R	○	OPOS_PR_STANDARD
CapstatisticsReporting		R	×	FALSE
CapUpdateStatistics		R	×	FALSE
CheckHealthText		R	○	External HCheck: Successful
Claimed		R	○	ClaimedDevice → True ReleaseDevice → False
DataCount	Not applicable with OPOSPrinter	R	×	Not applied because no input device is used.
DataEventEnabled	Not applicable with OPOSPrinter	R/W	×	Not applied because no input device is used.
DeviceEnabled		R/W	○	TRUE: DataEvent notified False: DataEvent not notified
FreezeEvents		R/W	○	TRUE: Event notification disabled FALSE: Event notification enabled
OpenResult		R	○	In other than OPOS_SUCCESS, refer to OpenResult properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
OutputID	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	R	○	Increment (+1)
PowerNotify		R/W	○	OPOS_PN_DISABLE (Power notification is not supplied.) OPOS_PN_ENABLE (Information on power notification is supplied.)
PowerState		R	○	OPOS_ONLINE(2001) Online and Ready state OPOS_PS_OFFLINE(2003) Not Ready state
ResultCode	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	In other than OPOS_SUCCESS, refer to ResultCode properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ResultCodeExtended	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
State		R	○	In other than OPOSIDLE, refer to State properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ControlObjectDescription		R	○	1.8***
ControlObjectVersion		R	○	1.8***
ServiceObjectDescription		R	○	CITIZEN Service Object for Thermal Printers ver *.*.*.*
ServiceObjectVersion		R	○	1*****
DeviceDescription		R	○	CITIZEN Thermal POSPrinter
DeviceName		R	○	"CT-S2000"
CapCharacterSet		R	○	PTR_CCS_KANJI
CapConcurrentJrnRec		R	×	Not supported
CapConcurrentJrnSlp		R	×	Not supported
CapConcurrentRecSlp		R	×	Not supported
CapCoverSensor		R	○	TRUE: With cover open sensor

Property	Notes	Attribute	Supporting status (CT-S2000_*)	
CapTransaction		R	○	TRUE: Batch processing of characters is possible.
CapJrnPresent		R	×	Not supported
CapJrn2Color		R	×	Not supported
CapJrnBold		R	×	Not supported
CapJrnDhigh		R	×	Not supported
CapJrnDwide		R	×	Not supported
CapJrnDwideDhigh		R	×	Not supported
CapJrnEmptySensor		R	×	Not supported
CapJrnItalic		R	×	Not supported
CapJrnNearEndSensor		R	×	Not supported
CapJrnUnderline		R	×	Not supported
CapJrnCartridgeSensor		R	×	Not supported
CapJrnColor		R	×	Not supported
CapRecPresent		R	○	TRUE: Receipt is possible.
CapRec2Color		R	○	TRUE: 2-color printing is possible. (Using paper printable in 2 colors)
CapRecBarCode		R	○	TRUE: Barcode printing is possible.
CapRecBitmap		R	○	TRUE: Bitmap printing is possible.
CapRecBold		R	○	TRUE: Bold attribute setting is possible.
CapRecDhigh		R	○	TRUE: Double height attribute setting is possible.
CapRecDwide		R	○	TRUE: Double width setting is possible.
CapRecDwideDhigh		R	○	TRUE: Quadruple attribute setting is possible.
CapRecEmptySensor	(Refer to CapRecEmptySensor/RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○	TRUE: Paper-Out sensor is active. FALSE: Paper-Out sensor is non-active.
CapRecItalic		R	×	Not supported
CapRecLeft90		R	○	TRUE: 90-degree CCW rotation attribute setting is possible.
CapRecNearEndSensor		R	○	TRUE: With Paper Near-End sensor
CapRecPapercut		R	○	Only partial cut (90) is supported.
CapRecRight90		R	○	TRUE: 90-degree CW rotation attribute setting is possible.
CapRecRotate180		R	○	TRUE: 180-degree rotation attribute setting is possible.
CapRecStamp		R	×	Not supported
CapRecUnderline		R	○	TRUE: Underline attribute setting is possible.
CapRecCartridgeSensor		R	○	PTR_CART_OK
CapRecColor		R	○	PTR_CUSTOM_COLOR1
CapRecMarkFeed		R	○	PTR_MF_TO_CUTTER
CapSlpPresent		R	×	Not supported
CapSlpFullslip		R	×	Not supported
CapSlp2Color		R	×	Not supported
CapSlpBarCode		R	×	Not supported
CapSlpBitmap		R	×	Not supported
CapSlpBold		R	×	Not supported
CapSlpDhigh		R	×	Not supported
CapSlpDwide		R	×	Not supported
CapSlpDwideDhigh		R	×	Not supported
CapSlpEmptySensor		R	×	Not supported
CapSlpItalic		R	×	Not supported
CapSlpLeft90		R	×	Not supported
CapSlpNearEndSensor		R	×	Not supported
CapSlpRight90		R	×	Not supported
CapSlpRotate180		R	×	Not supported
CapSlpUnderline		R	×	Not supported

Property	Notes	Attribute	Supporting status (CT-S2000_*)	
CapSlpBothSidesPrint		R	×	Not supported
CapSlpCartridgeSensor		R	×	Not supported
CapSlpColor		R	×	Not supported
AsyncMode	(Refer to AsyncMode Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	TRUE/FALSE
CartridgeNotify		R/W	×	Not supported
CharacterSet		R/W	○	Default value Japanese version: Code932 English version: Code437
CharacterSetList		R	○	437: Code437 850: Code850 Multilingual 860: Code860 Portugal 863: Code863 Canada-French 865: Code865 Norway 852: Code852 Eastern Europe 858: Code858 864: Code864 Arabic 874: Code874 Tai Code 18 866: Code866 Russia 857: Code857 Turkey 932: KANA 998: ASCII 999: Windows Code 1252: Windows Code
CoverOpen		R	○	TRUE: POS printer cover is open. FALSE: POS printer cover is closed.
ErrorLevel	(Refer to ErrorLevel Property in 2.6 POS Printer Service Object and Precautions.)	R	○	PTR_EL_NONE PTR_EL_RECOVERABLE PTR_EL_FATAL
ErrorStation		R	○	PTR_S_RECEIPT
ErrorString		R	○	Description on present error is retained.
FontTypefaceList		R	○	Font A, B, C
FlagWhenIdle		R/W	○	
MapMode		R/W	○	PTR_MM_DOTS (Default value) PTR_MM_TWIPS PTR_MM_ENGLISH PTR_MM_METRIC
RotateSpecial		R/W	△	PTR_RP_NORMAL (OPOS_SUCCESS) PTR_RP_RIGHT90 (OPOS_E_ILLEGAL) PTR_RP_LEFT90: Not supported (OPOS_E_ILLEGAL) PTR_RP_ROTATE180: Supported (OPOS_SUCCESS)
JrnLineChars		R/W	×	Not supported
JrnLineCharsList		R	×	Not supported
JrnLineHeight		R/W	×	Not supported
JrnLineSpacing		R/W	×	Not supported
JrnLineWidth		R	×	Not supported
JrnLetterQuality		R/W	×	Not supported
JrnEmpty		R	×	Not supported
JrnNearEnd		R	×	Not supported
JrnCartridgeState		R	×	Not supported
JrnCurrentCartridge		R/W	×	Not supported

Property	Notes	Attribute	Supporting status (CT-S2000_*)
RecLineChars	According to the value, the Font size is changed. Value should be chosen from RecLineCharsList property. (Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○ OPOS_SUCCESS (Normal setting) ○ OPOS_E_ILLEGAL (Illegal line character width is specified.)
RecLineCharsList	(Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R	○ 58 mm paper "30, 40, 45" "36, 48, 54" 60 mm paper "36, 48, 54" 80 mm paper "42, 56, 64" "48, 64, 72" 83 mm paper "53, 71, 80"
RecLineHeight	The value is changed according to the RecLineChars property.	R/W	○
RecLineSpacing	If the value is smaller than RecLineHeight, the value is changed according to the RecLineHeight property.	R/W	○
RecLineWidth		R	○
RecLetterQuality		R/W	× Not supported
RecEmpty	(Refer to RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○ TRUE: Receipt paper out FALSE: With receipt paper * Always FALSE if CapRecSensor is False.
RecNearEnd		R	○
RecSidewaysMaxLines	(Refer to RecSidewaysMaxLines Property in 2.6 POS Printer Service Object and Precautions.)	R	○
RecSidewaysMaxChars	(Refer to RecSidewaysMaxChars Property in 2.6 POS Printer Service Object and Precautions.)	R	○
RecLinesToPaperCut		R	○
RecBarCodeRotationList		R	○ 0 (Default value), 180
RecCartridgeState		R	× Not supported
RecCurrentCartridge		R/W	○ PTR_CUSTOM_COLOR1
RecBitmapRotationList		R	○ 0 (Default value), 180
SlpLineChars		R/W	× Not supported
SlpLineCharsList		R	× Not supported
SlpLineHeight		R/W	× Not supported
SlpLineSpacing		R/W	× Not supported
SlpLineWidth		R	× Not supported
SlpLetterQuality		R/W	× Not supported
SlpEmpty		R	× Not supported
SlpNearEnd		R	× Not supported
SlpSidewaysMaxLines		R	× Not supported
SlpSidewaysMaxChars		R	× Not supported
SlpMaxLines		R	× Not supported
SlpLinesNearEndToEnd		R	× Not supported
SlpBarCodeRotationList		R	× Not supported
SlpPrintSide		R	× Not supported
SlpCartridgeState		R	× Not supported
SlpCurrentCartridge		R/W	× Not supported

CT-S4000

Property	Notes	Attribute	Supporting status (CT-S4000_*)	
AutoDisable	Not applicable with OPOSPrinter	R/W	×	Not supported
BinaryConversion	(Refer to BinaryConversion in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_BC_NONE (Default value) OPOS_BC_NIBBLE OPOS_BC_DECIMAL
CapPowerReporting		R	○	OPOS_PR_STANDARD
CapstatisticsReporting		R	×	FALSE
CapUpdateStatistics		R	×	FALSE
CheckHealthText		R	○	External HCheck: Successful
Claimed		R	○	ClaimedDevice → True ReleaseDevice → False
DataCount	Not applicable with OPOSPrinter	R	×	Not applied because no input device is used.
DataEventEnabled	Not applicable with OPOSPrinter	R/W	×	Not applied because no input device is used.
DeviceEnabled		R/W	○	TRUE: DataEvent notified False: DataEvent not notified
FreezeEvents		R/W	○	TRUE: Event notification disabled FALSE: Event notification enabled
OpenResult		R	○	In other than OPOS_SUCCESS, refer to OpenResult properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
OutputID	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	R	○	Increment (+1)
PowerNotify		R/W	○	OPOS_PN_DISABLE (Power notification is not supplied.) OPOS_PN_ENABLE (Information on power notification is supplied.)
PowerState		R	○	OPOS_ONLINE(2001) Online and Ready state OPOS_PS_OFFLINE(2003) Not Ready state
ResultCode	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	In other than OPOS_SUCCESS, refer to ResultCode properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ResultCodeExtended	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
State		R	○	In other than OPOSIDLE, refer to State properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ControlObjectDescription		R	○	1.8***
ControlObjectVersion		R	○	1.8***
ServiceObjectDescription		R	○	CITIZEN Service Object for Thermal Printers ver *.*.*
ServiceObjectVersion		R	○	1*****
DeviceDescription		R	○	CITIZEN Thermal POSPrinter
DeviceName		R	○	"CT-S4000"
CapCharacterSet		R	○	PTR_CCS_KANJI
CapConcurrentJrnRec		R	×	Not supported
CapConcurrentJrnSlp		R	×	Not supported
CapConcurrentRecSlp		R	×	Not supported
CapCoverSensor		R	○	TRUE: With cover open sensor

Property	Notes	Attribute	Supporting status (CT-S4000_*)	
CapTransaction		R	○	TRUE: Batch processing of characters is possible.
CapJrnPresent		R	×	Not supported
CapJrn2Color		R	×	Not supported
CapJrnBold		R	×	Not supported
CapJrnDhigh		R	×	Not supported
CapJrnDwide		R	×	Not supported
CapJrnDwideDhigh		R	×	Not supported
CapJrnEmptySensor		R	×	Not supported
CapJrnItalic		R	×	Not supported
CapJrnNearEndSensor		R	×	Not supported
CapJrnUnderline		R	×	Not supported
CapJrnCartridgeSensor		R	×	Not supported
CapJrnColor		R	×	Not supported
CapRecPresent		R	○	TRUE: Receipt is possible.
CapRec2Color		R	○	TRUE: 2-color printing is possible. (Using paper printable in 2 colors)
CapRecBarCode		R	○	TRUE: Barcode printing is possible.
CapRecBitmap		R	○	TRUE: Bitmap printing is possible.
CapRecBold		R	○	TRUE: Bold attribute setting is possible.
CapRecDhigh		R	○	TRUE: Double height attribute setting is possible.
CapRecDwide		R	○	TRUE: Double width setting is possible.
CapRecDwideDhigh		R	○	TRUE: Quadruple attribute setting is possible.
CapRecEmptySensor	(Refer to CapRecEmptySensor/RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○	TRUE: Paper-Out sensor is active. FALSE: Paper-Out sensor is non-active.
CapRecItalic		R	×	Not supported
CapRecLeft90		R	○	TRUE: 90-degree CCW rotation attribute setting is possible.
CapRecNearEndSensor		R	○	TRUE: With Paper Near-End sensor
CapRecPapercut		R	○	Only partial cut (90) is supported.
CapRecRight90		R	○	TRUE: 90-degree CW rotation attribute setting is possible.
CapRecRotate180		R	○	TRUE: 180-degree rotation attribute setting is possible.
CapRecStamp		R	×	Not supported
CapRecUnderline		R	○	TRUE: Underline attribute setting is possible.
CapRecCartridgeSensor		R	○	PTR_CART_OK
CapRecColor		R	○	PTR_CUSTOM_COLOR1
CapRecMarkFeed		R	○	PTR_MF_TO_CUTTER
CapSlpPresent		R	×	Not supported
CapSlpFullslip		R	×	Not supported
CapSlp2Color		R	×	Not supported
CapSlpBarCode		R	×	Not supported
CapSlpBitmap		R	×	Not supported
CapSlpBold		R	×	Not supported
CapSlpDhigh		R	×	Not supported
CapSlpDwide		R	×	Not supported
CapSlpDwideDhigh		R	×	Not supported
CapSlpEmptySensor		R	×	Not supported
CapSlpItalic		R	×	Not supported
CapSlpLeft90		R	×	Not supported
CapSlpNearEndSensor		R	×	Not supported
CapSlpRight90		R	×	Not supported
CapSlpRotate180		R	×	Not supported
CapSlpUnderline		R	×	Not supported
CapSlpBothSidesPrint		R	×	Not supported

Property	Notes	Attribute	Supporting status (CT-S4000_*)	
CapSlpCartridgeSensor		R	×	Not supported
CapSlpColor		R	×	Not supported
AsyncMode	(Refer to AsyncMode Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	TRUE/FALSE
CartridgeNotify		R/W	×	Not supported
CharacterSet		R/W	○	Default value Japanese version: Code932 English version: Code437
CharacterSetList		R	○	437: Code437 850: Code850 Multilingual 860: Code860 Portugal 863: Code863 Canada-French 865: Code865 Norway 852: Code852 Eastern Europe 858: Code858 864: Code864 Arabic 874: Code874 Tai Code 18 866: Code866 Russia 857: Code857 Turkey 932: KANA 998: ASCII 999: Windows Code 1252: Windows Code
CoverOpen		R	○	TRUE: POS printer cover is open. FALSE: POS printer cover is closed.
ErrorLevel	(Refer to ErrorLevel Property in 2.6 POS Printer Service Object and Precautions.)	R	○	PTR_EL_NONE PTR_EL_RECOVERABLE PTR_EL_FATAL
ErrorStation		R	○	PTR_S_RECEIPT
ErrorString		R	○	Description on present error is retained.
FontTypefaceList		R	○	Font A, B, C
FlagWhenIdle		R/W	○	
MapMode		R/W	○	PTR_MM_DOTS (Default value) PTR_MM_TWIPS PTR_MM_ENGLISH PTR_MM_METRIC
RotateSpecial		R/W	○	PTR_RP_NORMAL (OPOS_SUCCESS) PTR_RP_RIGHT90 (OPOS_E_ILLEGAL) PTR_RP_LEFT90: Not supported (OPOS_E_ILLEGAL) PTR_RP_ROTATE180: Supported (OPOS_SUCCESS)
JrnLineChars		R/W	×	Not supported
JrnLineCharsList		R	×	Not supported
JrnLineHeight		R/W	×	Not supported
JrnLineSpacing		R/W	×	Not supported
JrnLineWidth		R	×	Not supported
JrnLetterQuality		R/W	×	Not supported
JrnEmpty		R	×	Not supported
JrnNearEnd		R	×	Not supported
JrnCartridgeState		R	×	Not supported
JrnCurrentCartridge		R/W	×	Not supported
RecLineChars	According to the value, the Font size is changed. Value should be chosen from RecLineCharsList property. (Refer to RecLineChars/RecLineCharsLis Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_SUCCESS (Normal setting) OPOS_E_ILLEGAL (Illegal line character width is specified.)

Property	Notes	Attribute	Supporting status (CT-S4000_*)
RecLineCharsList	(Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R	○ 80 mm paper "42, 56, 64 " "48, 64, 72" 82.5 mm paper "55, 73, 82" 112 mm paper "60, 80, 90" "69, 92, 104"
RecLineHeight	The value is changed according to the RecLineChars property.	R/W	○
RecLineSpacing	If the value is smaller than RecLineHeight, the value is changed according to the RecLineHeight property.	R/W	○
RecLineWidth		R	○
RecLetterQuality		R/W	× Not supported
RecEmpty	(Refer to RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○ TRUE: Receipt paper out FALSE: With receipt paper * Always FALSE if CapRecSensor is False.
RecNearEnd		R	○
RecSidewaysMaxLines	(Refer to RecSidewaysMaxLines Property in 2.6 POS Printer Service Object and Precautions.)	R	○
RecSidewaysMaxChars	(Refer to RecSidewaysMaxChars Property in 2.6 POS Printer Service Object and Precautions.)	R	○
RecLinesToPaperCut		R	○
RecBarcodeRotationList		R	○ 0 (Default value), 180
RecCartridgeState		R	× Not supported
RecCurrentCartridge		R/W	○ PTR_CUSTOM_COLOR1
RecBitmapRotationList		R	○ 0 (Default value), 180
SlpLineChars		R/W	× Not supported
SlpLineCharsList		R	× Not supported
SlpLineHeight		R/W	× Not supported
SlpLineSpacing		R/W	× Not supported
SlpLineWidth		R	× Not supported
SlpLetterQuality		R/W	× Not supported
SlpEmpty		R	× Not supported
SlpNearEnd		R	× Not supported
SlpSidewaysMaxLines		R	× Not supported
SlpSidewaysMaxChars		R	× Not supported
SlpMaxLines		R	× Not supported
SlpLinesNearEndToEnd		R	× Not supported
SlpBarcodeRotationList		R	× Not supported
SlpPrintSide		R	× Not supported
SlpCartridgeState		R	× Not supported
SlpCurrentCartridge		R/W	× Not supported

CD-S500

Property	Notes	Attribute	Supporting status (CD-S500_*)	
AutoDisable	Not applicable with OPOSPrinter	R/W	×	Not supported
BinaryConversion	(Refer to BinaryConversion in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_BC_NONE (Default value) OPOS_BC_NIBBLE OPOS_BC_DECIMAL
CapPowerReporting		R	○	At the connection of parallel or USB I/F OPOS_PR_STANDAR At the connection of serial I/F OPOS_PR_NONE
CapstatisticsReporting		R	×	FALSE
CapUpdateStatistics		R	×	FALSE
CheckHealthText		R	○	External HCheck: Successful
Claimed		R	○	ClaimeDevice → True ReleaseDevice → False
DataCount	Not applicable with OPOSPrinter	R	×	Not applied because no input device is used.
DataEventEnabled	Not applicable with OPOSPrinter	R/W	×	Not applied because no input device is used.
DeviceEnabled		R/W	○	TRUE: DataEvent notified False: DataEvent not notified
FreezeEvents		R/W	○	TRUE: Event notification disabled FALSE: Event notification enabled
OpenResult		R	○	In other than OPOS_SUCCESS, refer to OpenResult properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
OutputID	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	R	○	Increment (+1)
PowerNotify		R/W	○	OPOS_PN_DISABLE (Power notification is not supplied.) OPOS_PN_ENABLE (Information on power notification is supplied.) * Always OPOS_PN_DISABLE at the connection of serial I/F
PowerState		R	○	Online and Ready state OPOS_ONLINE(2001) Not Ready state OPOS_PS_OFFLINE(2003) At the connection of serial I/F OPOS_PS_UNKNOWN
ResultCode	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	In other than OPOS_SUCCESS, refer to ResultCode properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ResultCodeExtended	(Refer to ResultCode/ ResultCodeExtended Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
State		R	○	In other than OPOSIDLE, refer to State properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ControlObjectDescription		R	○	1.8***
ControlObjectVersion		R	○	1.8***
ServiceObjectDescription		R	○	CITIZEN Service Object for Dot Matrix Printers ver *.*.*.*
ServiceObjectVersion		R	○	1*****

Property	Notes	Attribute	Supporting status (CD-S500_*)	
DeviceDescription		R	○	CITIZEN Dot Matrix POSPrinter
DeviceName		R	○	"CD-S500"
CapCharacterSet		R	○	PTR_CCS_KANJI
CapConcurrentJrnRec		R	×	Not supported
CapConcurrentJrnSlp		R	×	Not supported
CapConcurrentRecSlp		R	×	Not supported
CapCoverSensor		R	○	TRUE: With cover open sensor
CapTransaction		R	○	TRUE: Batch processing of characters is possible.
CapJrnPresent		R	×	Not supported
CapJrn2Color		R	×	Not supported
CapJrnBold		R	×	Not supported
CapJrnDhigh		R	×	Not supported
CapJrnDwide		R	×	Not supported
CapJrnDwideDhigh		R	×	Not supported
CapJrnEmptySensor		R	×	Not supported
CapJrnItalic		R	×	Not supported
CapJrnNearEndSensor		R	×	Not supported
CapJrnUnderline		R	×	Not supported
CapJrnCartridgeSensor		R	×	Not supported
CapJrnColor		R	×	Not supported
CapRecPresent		R	○	TRUE: Receipt is possible.
CapRec2Color		R	○	TRUE: 2-color printing is possible. (Using paper printable in 2 colors)
CapRecBarCode		R	×	Not supported
CapRecBitmap		R	○	TRUE: Bitmap printing is possible.
CapRecBold		R	○	TRUE: Bold attribute setting is possible.
CapRecDhigh		R	○	TRUE: Double height attribute setting is possible.
CapRecDwide		R	○	TRUE: Double width setting is possible.
CapRecDwideDhigh		R	○	TRUE: Quadruple attribute setting is possible.
CapRecEmptySensor	(Refer to CapRecEmptySensor/RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○	TRUE: Paper-Out sensor is active. FALSE: Paper-Out sensor is non-active.
CapRecItalic		R	×	Not supported
CapRecLeft90		R	○	TRUE: 90-degree CCW rotation attribute setting is possible.
CapRecNearEndSensor		R	○	TRUE: With Paper Near-End sensor
CapRecPapercut		R	○	Only partial cut (90) is supported.
CapRecRight90		R	○	TRUE: 90-degree CW rotation attribute setting is possible.
CapRecRotate180		R	○	TRUE: 180-degree rotation attribute setting is possible.
CapRecStamp		R	×	Not supported
CapRecUnderline		R	○	TRUE: Underline attribute setting is possible.
CapRecCartridgeSensor		R	○	PTR_CART_OK
CapRecColor		R	○	PTR_CUSTOM_COLOR1
CapRecMarkFeed		R	○	PTR_MF_TO_CUTTER
CapSlpPresent		R	×	Not supported
CapSlpFullslip		R	×	Not supported
CapSlp2Color		R	×	Not supported
CapSlpBarCode		R	×	Not supported
CapSlpBitmap		R	×	Not supported
CapSlpBold		R	×	Not supported
CapSlpDhigh		R	×	Not supported
CapSlpDwide		R	×	Not supported
CapSlpDwideDhigh		R	×	Not supported

Property	Notes	Attribute	Supporting status (CD-S500_*)	
CapSlpEmptySensor		R	×	Not supported
CapSlpItalic		R	×	Not supported
CapSlpLeft90		R	×	Not supported
CapSlpNearEndSensor		R	×	Not supported
CapSlpRight90		R	×	Not supported
CapSlpRotate180		R	×	Not supported
CapSlpUnderline		R	×	Not supported
CapSlpBothSidesPrint		R	×	Not supported
CapSlpCartridgeSensor		R	×	Not supported
CapSlpColor		R	×	Not supported
AsyncMode	(Refer to AsyncMode Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	TRUE/FALSE
CartridgeNotify		R/W	×	Not supported
CharacterSet		R/W	○	Default value Japanese version: Code932 English version: Code437
CharacterSetList		R	○	437: Code437 850: Code850 Multilingual 860: Code860 Portugal 863: Code863 Canada-French 865: Code865 Norway 852: Code852 Eastern Europe 858: Code858 866: Code866 Russia 857: Code857 Turkey 932: KANA 998: ASCII 999: Windows Code 1252: Windows Code
CoverOpen		R	○	TRUE: POS printer cover is open. FALSE: POS printer cover is closed.
ErrorLevel	(Refer to ErrorLevel Property in 2.6 POS Printer Service Object and Precautions.)	R	○	PTR_EL_NONE PTR_EL_RECOVERABLE PTR_EL_FATAL
ErrorStation		R	○	PTR_S_RECEIPT
ErrorString		R	○	Description on present error is retained.
FontTypefaceList		R	○	Font A,B
FlagWhenIdle		R/W	○	
MapMode		R/W	○	PTR_MM_DOTS (Default value) PTR_MM_TWIPS PTR_MM_ENGLISH PTR_MM_METRIC
RotateSpecial		R/W	×	OPOS_E_ILLEGAL
JrnLineChars		R/W	×	Not supported
JrnLineCharsList		R	×	Not supported
JrnLineHeight		R/W	×	Not supported
JrnLineSpacing		R/W	×	Not supported
JrnLineWidth		R	×	Not supported
JrnLetterQuality		R/W	×	Not supported
JrnEmpty		R	×	Not supported
JrnNearEnd		R	×	Not supported
JrnCartridgeState		R	×	Not supported
JrnCurrentCartridge		R/W	×	Not supported

Property	Notes	Attribute	Supporting status (CD-S500_*)	
RecLineChars	According to the value, the Font size is changed. Value should be chosen from RecLineCharsList property. (Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R/W	○	OPOS_SUCCESS (Normal setting) OPOS_E_ILLEGAL (Illegal line character width is specified.)
RecLineCharsList	(Refer to RecLineChars/RecLineCharsList Property in 2.6 POS Printer Service Object and Precautions.)	R	○	57.5 mm paper "25, 30" "27, 33" 69.5 mm paper "30, 36" "32, 40" 76.2 mm paper "33, 40" "35, 42"
RecLineHeight	The value is changed according to the RecLineChars property.	R/W	○	
RecLineSpacing	If the value is smaller than RecLineHeight, the value is changed according to the RecLineHeight property.	R/W	○	
RecLineWidth		R	○	
RecLetterQuality		R/W	×	Not supported
RecEmpty	(Refer to RecEmpty Property in 2.6 POS Printer Service Object and Precautions.)	R	○	TRUE: Receipt paper out FALSE: With receipt paper * Always FALSE if CapRecSensor is False.
RecNearEnd		R	○	
RecSidewaysMaxLines	(Refer to RecSidewaysMaxLines Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
RecSidewaysMaxChars	(Refer to RecSidewaysMaxChars Property in 2.6 POS Printer Service Object and Precautions.)	R	○	
RecLinesToPaperCut		R	○	
RecBarCodeRotationList		R	×	Blank character
RecCartridgeState		R	×	Not supported
RecCurrentCartridge		R/W	○	PTR_CUSTOM_COLOR1
RecBitmapRotationList		R	○	0 (Default value), 180
SlpLineChars		R/W	×	Not supported
SlpLineCharsList		R	×	Not supported
SlpLineHeight		R/W	×	Not supported
SlpLineSpacing		R/W	×	Not supported
SlpLineWidth		R	×	Not supported
SlpLetterQuality		R/W	×	Not supported
SlpEmpty		R	×	Not supported
SlpNearEnd		R	×	Not supported
SlpSidewaysMaxLines		R	×	Not supported
SlpSidewaysMaxChars		R	×	Not supported
SlpMaxLines		R	×	Not supported
SlpLinesNearEndToEnd		R	×	Not supported
SlpBarCodeRotationList		R	×	Not supported
SlpPrintSide		R	×	Not supported
SlpCartridgeState		R	×	Not supported
SlpCurrentCartridge		R/W	×	Not supported

2.4. POS Printer Service Object and OPOS Escape Sequence Relations

CBM-1000TypeII

Escape Sequence		Notes	Supporting status (CBM-1000TYPEII_*)	
Paper cut	ESC #P		○	0-100 Full cut/Partial cut depends on the model.
Feed and paper cut	ESC #fP		○	0-100 Full cut/Partial cut depends on the model.
Feed, cut, and stamp print	ESC #sP		×	Not supported
Bitmap print	ESC #B	After Bitmap printing, print position returns to the initial state (left-justified). (Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	1-20 Specifies Bitmap number registered by the SetBitmap method. Printing is carried out in raster bit image or NV bit image mode.
Top logo print	ESC tL		○	
Bottom logo print	ESC bL		○	
Stamp print	ESC sL		×	Not supported
Multi-line feed	ESC #IF		○	
Unit feed	ESC #uF		○	
Reverse feed	ESC #rF		×	Not supported
Font type specification	ESC #fT		×	Not supported
Bold	ESC bC		○	
Underline	ESC #uC		○	
Italic	ESC IC		×	Not supported
Custom color	ESC #rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Red	ESC rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Reverse character	ESC rvC		○	
Shaded character	ESC #sC		×	Not supported
Standard	ESC 1C		○	
Double width	ESC 2C		○	
Double height	ESC 3C		○	
Quadruple	ESC 4C		○	
Horizontal magnification	ESC #hC		○	1-8
Vertical magnification	ESC #vC		○	1-8
Color specification	ESC #fC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Centering	ESC cA		○	
Right adjustment	ESC rA		○	
Normal	ESC N		○	
Subscript	ESC tbC		×	Not supported
Superscript	ESC tpC		×	Not supported

CT-S3000/CT-S310

Escape Sequence		Notes	Supporting status (CT-S300_*/CT-S310_*)	
Paper cut	ESC #P		○	0-100
Feed and paper cut	ESC #fP		○	0-100
Feed, cut, and stamp print	ESC #sP		×	Not supported
Bitmap print	ESC #B	After Bitmap printing, print position returns to the initial state (left-justified). (Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	1-20 Specifies Bitmap number registered by the SetBitmap method. Printing is carried out in raster bit image or NV bit image mode.
Top logo print	ESC tL		○	
Bottom logo print	ESC bL		○	
Stamp print	ESC sL		×	Not supported
Multi-line feed	ESC #IF		○	
Unit feed	ESC #uF		○	
Reverse feed	ESC #rF		×	Not supported
Font type specification	ESC #fT		×	Not supported
Bold	ESC bC		○	
Underline	ESC #uC		○	
Italic	ESC iC		×	Not supported
Custom color	ESC #rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Red	ESC rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Reverse character	ESC rvC		○	
Shaded character	ESC #sC		×	Not supported
Standard	ESC 1C		○	
Double width	ESC 2C		○	
Double height	ESC 3C		○	
Quadruple	ESC 4C		○	
Horizontal magnification	ESC #hC		○	1-8
Vertical magnification	ESC #vC		○	1-8
Color specification	ESC #fC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Centering	ESC cA		○	
Right adjustment	ESC rA		○	
Normal	ESC N		○	
Subscript	ESC tbC		×	Not supported
Superscript	ESC tpC		×	Not supported

CT-S2000

Escape Sequence		Notes	Supporting status (CT-S2000_*)	
Paper cut	ESC #P		○	0-100
Feed and paper cut	ESC #FP		○	0-100
Feed, cut, and stamp print	ESC #SP		×	Not supported
Bitmap print	ESC #B	After Bitmap printing, print position returns to the initial state (left-justified). (Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	1-20 Specifies Bitmap number registered by the SetBitmap method. Printing is carried out in raster bit image or NV bit image mode.
Top logo print	ESC tL		○	
Bottom logo print	ESC bL		○	
Stamp print	ESC sL		×	Not supported
Multi-line feed	ESC #IF		○	
Unit feed	ESC #uF		○	
Reverse feed	ESC #rF		×	Not supported
Font type specification	ESC #fT		×	Not supported
Bold	ESC bC		○	
Underline	ESC #uC		○	
Italic	ESC iC		×	Not supported
Custom color	ESC #rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Red	ESC rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Reverse character	ESC rvC		○	
Shaded character	ESC #sC		×	Not supported
Standard	ESC 1C		○	
Double width	ESC 2C		○	
Double height	ESC 3C		○	
Quadruple	ESC 4C		○	
Horizontal magnification	ESC #hC		○	1-8
Vertical magnification	ESC #vC		○	1-8
Color specification	ESC #fC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Centering	ESC cA		○	
Right adjustment	ESC rA		○	
Normal	ESC N		○	
Subscript	ESC tbC		×	Not supported
Superscript	ESC tpC		×	Not supported

CT-S4000

Escape Sequence		Notes	Supporting status (CT-S4000_*)	
Paper cut	ESC #P		○	0-100
Feed and paper cut	ESC #FP		○	0-100
Feed, cut, and stamp print	ESC #sP		×	Not supported
Bitmap print	ESC #B	After Bitmap printing, print position returns to the initial state (left-justified). (Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	1-20 Specifies Bitmap number registered by the SetBitmap method. Printing is carried out in raster bit image or NV bit image mode.
Top logo print	ESC tL		○	
Bottom logo print	ESC bL		○	
Stamp print	ESC sL		×	Not supported
Multi-line feed	ESC #IF		○	
Unit feed	ESC #uF		○	
Reverse feed	ESC #rF		×	Not supported
Font type specification	ESC #FT		×	Not supported
Bold	ESC bC		○	
Underline	ESC #u C		○	
Italic	ESC iC		×	Not supported
Custom color	ESC #rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Red	ESC rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Reverse character	ESC rvC		○	
Shaded character	ESC #sC		×	Not supported
Standard	ESC 1C		○	
Double width	ESC 2C		○	
Double height	ESC 3C		○	
Quadruple	ESC 4C		○	
Horizontal magnification	ESC #h C		○	1-8
Vertical magnification	ESC #vC		○	1-8
Color specification	ESC #fC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Centering	ESC cA		○	
Right adjustment	ESC rA		○	
Normal	ESC N		○	
Subscript	ESC tbC		×	Not supported
Superscript	ESC tpC		×	Not supported

CD-S500

Escape Sequence		Notes	Supporting status (CD-S500_*)	
Paper cut	ESC #P		○	0-100
Feed and paper cut	ESC #FP		○	0-100
Feed, cut, and stamp print	ESC #sP		×	Not supported
Bitmap print	ESC #B	After Bitmap printing, print position returns to the initial state (left-justified). (Refer to SetBitmap Method/ESC #B Escape Sequence in 2.6 POS Printer Service Object and Precautions.)	○	1-20 Specifies Bitmap number registered by the SetBitmap method. Printing is carried out in raster bit image or NV bit image mode.
Top logo print	ESC tL		○	
Bottom logo print	ESC bL		○	
Stamp print	ESC sL		×	Not supported
Multi-line feed	ESC #IF		○	
Unit feed	ESC #uF		○	
Reverse feed	ESC #rF		×	Not supported
Font type specification	ESC #fT		×	Not supported
Bold	ESC bC		○	
Underline	ESC #u C		○	
Italic	ESC iC		×	Not supported
Custom color	ESC #rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Red	ESC rC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Reverse character	ESC rvC		○	
Shaded character	ESC #sC		×	Not supported
Standard	ESC 1C		○	
Double width	ESC 2C		○	
Double height	ESC 3C		○	
Quadruple	ESC 4C		○	
Horizontal magnification	ESC #h C		○	1, 2, 4 (4 times horizontal and vertical when 4 is specified)
Vertical magnification	ESC #vC		○	1, 2, 4 (4 times horizontal and vertical when 4 is specified)
Color specification	ESC #fC	Effective only when dedicated 2-color paper is used. Do not use this escape sequence with normal thermal paper.	○	
Centering	ESC cA		○	
Right adjustment	ESC rA		○	
Normal	ESC N		○	
Subscript	ESC tbC		×	Not supported
Superscript	ESC tpC		×	Not supported

2.5. POS Printer Service Object and Event Relations

CBM-1000TypeII

Event	Notes	Supporting status (CBM1000TYPEII_*)	
DataEvent	Not applicable with OPOSPrinter	×	
DirectIOEvent		×	
ErrorEvent		○	
OutputCompleteEvent	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	○	Increment (+1)
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
StatusUpdateEvent	(Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CT-S300/CT-S310

Event	Notes	Supporting status (CT-S300_*/CT-S310_*)	
DataEvent	Not applicable with OPOSPrinter	×	
DirectIOEvent		×	
ErrorEvent		○	
OutputCompleteEvent	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	○	Increment (+1)
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
StatusUpdateEvent	(Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CT-S2000

Event	Notes	Supporting status (CT-S2000_*)	
DataEvent	Not applicable with OPOSPrinter	×	
DirectIOEvent		×	
ErrorEvent		○	
OutputCompleteEvent	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	○	Increment (+1)
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
StatusUpdateEvent	(Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CT-S4000

Event	Notes	Supporting status (CT-S4000_*)	
DataEvent	Not applicable with OPOSPrinter	×	
DirectIOEvent		×	
ErrorEvent		○	
OutputCompleteEvent	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	○	Increment (+1)
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
StatusUpdateEvent	(Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CD-S500

Event	Notes	Supporting status (CD-S500_*)	
DataEvent	Not applicable with OPOSPrinter	×	
DirectIOEvent		×	
ErrorEvent		○	
OutputCompleteEvent	(Refer to OutPutID property/ OutputCompleteEvent event in 2.6 POS Printer Service Object and Precautions.)	○	Increment (+1)
ResetStatistics		×	Not supported (OPOS_E_ILLEGAL)
RetrieveStatistics		×	Not supported (OPOS_E_ILLEGAL)
UpdateStatistics		×	Not supported (OPOS_E_ILLEGAL)
StatusUpdateEvent	(Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

2.6. POS Printer Service Object and Precautions

ClaimDevice Method

No identical serial port (COM*) specified by the Windows driver is not usable in the connection of serial interface. When this method is executed in this connection, "OPOS_E_TIMEOUT" is returned.

PrintBarcode Method/RotateSpecial

- Supported barcodes
PTR_BCS_UPCA, PTR_BCS_UPCE, PTR_BCS_EAN8, PTR_BCS_JAN8, PTR_BCS_EAN13, PTR_BCS_JAN13, PTR_BCS_ITF, PTR_BCS_CODABAR, PTR_BCS_CODE39, PTR_BCS_CODE93, PTR_BCS_CODE128, PTR_BCS_UPCA, PTR_BCS_UPCE
- About UPC-E barcode printing
This printer compresses the 11- or 12-digit data entered to 8-digit data by using the zero suppression method of UPC-E standard. The following is an example of data compression using zero suppression method.
Ex: Set the original code to be "0-ABCDE-VWXYZ" (11 digits). Printable patterns are as follows:
 - 1) When all V through Y are "0"
"0-ABCDE-0000Z": Denotes "ABCDEZ", where Z is any of 5 through 9.
 - 2) When E and VWXY are all "0"
"0-ABCD0-0000Z": Denotes "ABCDZ4". The last 4 indicates that A and D of manufacturer code is not "0".
 - 3) When DE and VWX are "0"
"0-ABC00-000YZ": Denotes "ABCYZ3". The last 3 indicates that A and C are not "0" but ABC is a number of 3 digits.
 - 4) When DE and VW are "0" and C is "0", "1", or "2":
 - ① When C = "0": "0-AB000-00XYZ" -> "ABXYZ0"
 - ② When C = "1": "0-AB100-00XYZ" -> "ABXYZ1"
 - ③ When C = "2": "0-AB200-00XYZ" -> "ABXYZ2"

The check digit is automatically calculated in the printer. When a condition other than the above is specified and executed, error (OPOS_E_ILLEGAL) is returned because the printer cannot print due to its specification requirement.

- About rotating printing of symbol
Available rotating direction is 0° and 180° (all models).

RotatePrint Method

Print size changes dynamically up to the value of RecSidewaysMaxChars depending on the print data. Rotate print in NV bit image mode is not supported. For NV bit image mode, refer to "SetBitmap Method/ESC|#B Escape Sequence in 2.6 POS Printer Service Object and Precautions".

SetBitmap Method/ESC | #B Escape Sequence

Bitmap is registered by specifying Bitmap number (1 - 20) using the SetBitmap method and bitmap printing is carried out by specifying the registered number in the ESC|#B escape sequence. This driver has two modes, raster bit image mode and NV bit image mode. Specification of each mode is as shown below.

- Raster bit image mode

SO stores own bitmap using the SetBitmap method. When SO is closed, the stored bitmap is cleared. Therefore, it is necessary to register bitmap each time SO is opened.

- NV bit image mode

Using the SetBitmap method, SO writes bitmap to the nonvolatile memory (Flash ROM) of the printer.

Therefore, it is not necessary to register bitmap each time SO is opened.

The initial value of this driver is raster bit image mode. To change to the NV bit image mode, perform the following registry operation.

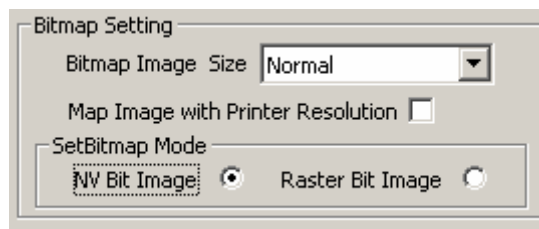
<Example: CT-S2000>

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter\CT-S2000_1

UseNVRAM = 001 ... NV bit image mode

UseNVRAM = 000 ... Raster bit image mode (initial value)

- * When changing the above setting, use the setting tool of this driver (Configuration Utility) as explained in "[1.6 Registry Structure](#)".



(Configuration Utility)

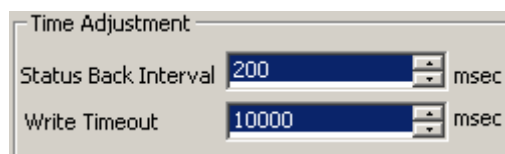
The time required for write operation in NV bit image mode depends on the communication condition, printer performance, etc. When writing bitmap registration is unsuccessful, conduct a test after setting the registry value of the following transmission timeout time to 10,000 ms or more.

<Example: CT-S2000>

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter\CT-S2000_1

WriteTimeout: 10000 or more ... 5000 (Initial value)

- * When changing the above setting, use the setting tool of this driver (Configuration Utility) as explained in "[1.6 Registry Structure](#)".



(Configuration Utility)

- * To insure long life of the printer, registration of NV bitmap shall be less than 10 times/day.

AsyncMode Property

- **TRUE**
Output method (PrintNormal, PrintTwoNormal, CutPaper, RotatePrint, PrintBarCode, and PrintBitmap) is executed asynchronously.
- **FALSE**
Output method is printed synchronously. When error occurs at the asynchronous output, error event is reported at about 0.5-s intervals.

ErrorLevel Property

- **PTR_EL_NONE**
Indicated when error is not detected.
- **PTR_EL_RECOVERABLE**
Indicated as Recoverable error at Paper Out/Cover Open.
- **PTR_EL_FATAL**
Indicated as irrecoverable error at Auto Cutter error.

BinaryConversion Property

Installation example (Visual Basic) using the BinaryConversion property and PrintNormal method is described.

- **Opos_BC_NONE**
Bstring1 character is stored with one byte without data conversion.

```
Dim pString As String
Dim result As Long
Dim PrintStation As Long

OPOSPrinter.BinaryConversion = OPOS_BC_NONE
pString = "None" + Chr$(&HD) + Chr$(&HA) _
        + "123" + Chr$(&HD) + Chr$(&HA) _
        + "ABC" + Chr$(&HD) + Chr$(&HA)

result = OPOSPrinter.PrintNormal(PrintStation, pString)
```

- **Opos_BC_NIBBLE**
Each byte is converted to two characters.

```
Dim pString As String
Dim result As Long
Dim PrintStation As Long
OPOSPrinter.BinaryConversion = OPOS_BC_NIBBLE
pString = Chr$(&H34) + Chr$(&H3E) _
        + Chr$(&H36) + Chr$(&H39) _
        + Chr$(&H36) + Chr$(&H32) _
        + Chr$(&H36) + Chr$(&H32) _
        + Chr$(&H36) + Chr$(&H3C) _
        + Chr$(&H36) + Chr$(&H35) _
        + Chr$(&H30) + Chr$(&H3D) _
        + Chr$(&H30) + Chr$(&H3A) _
        + Chr$(&H33) + Chr$(&H31) _
        + Chr$(&H33) + Chr$(&H32) _
```

```

+ Chr$(&H33) + Chr$(&H33) _
+ Chr$(&H30) + Chr$(&H3D) _
+ Chr$(&H30) + Chr$(&H3A) _
+ Chr$(&H34) + Chr$(&H31) _
+ Chr$(&H34) + Chr$(&H32) _
+ Chr$(&H34) + Chr$(&H33) _
+ Chr$(&H30) + Chr$(&H3D) _
+ Chr$(&H30) + Chr$(&H3A)
result = OPOSPrinter.PrintNormal(PrintStation, pString)

```

▪ OPOS_BC_DECIMAL

Each byte is converted to three characters. Val (String) is used by three characters each in order to convert ASCII to binary. To create three ASCII characters from each byte, Right("^ ^"+Str(Byte),3) is used in the following installation example, where "^" indicates a space.

```

Dim pString As String
Dim result As Long
Dim PrintStation As Long

OPOSPrinter.BinaryConversion = OPOS_BC_DECIMAL
pString = Right(Str(68), 3) _
+ Right(Str(101), 3) _
+ Right(Str(99), 3) _
+ Right(Str(105), 3) _
+ Right(Str(109), 3) _
+ Right(Str(97), 3) _
+ Right(Str(108), 3) _
+ Right(Str(13), 3) _
+ Right(Str(10), 3) _
+ Right("^^" + str(49), 3) _
+ Right("^^" + str(50), 3) _
+ Right("^^" + str(51), 3) _
+ Right("^^" + str(13), 3) _
+ Right("^^" + str(10), 3) _
+ Right(Str(65), 3) _
+ Right(Str(66), 3) _
+ Right(Str(67), 3) _
+ Right(Str(13), 3) _
+ Right(Str(10), 3)
result = OPOSPrinter.PrintNormal(PrintStation, pString)

```

Every printing results in the following.

(Printing order: OPOS_BC_None, OPOS_BC_Nibble, OPOS_BC_Decimal)

```

None
123
ABC
Nibble
123
ABC
Decimal
123
ABC

```

OutPutID Property/ OutputCompleteEvent Event

Identifier of asynchronous output started just before is retained and incremented by +1 with the following output.

<Visual Basic installation example: Output subroutine>

```
Dim i as Integer
Dim Result As Long
Dim PrintStation As Long

For i = 0 to 10
  DoEvents
  Result = OPOSPrinter.PrintNormal(PrintStation, "TEST PRINT" + Str(i) + Chr$(&HD) + Chr$(&HA))
Next i
```

<Visual Basic installation example: Event acquisition subroutine>

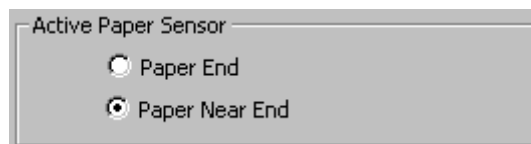
```
Private Sub OPOSPrinter_OutputCompleteEvent(ByVal OutputID As Long)
  Debug.Print "OutputCompleteEvent -> " + Str(OutputID)
End Sub
```

<Output result>

```
OutputCompleteEvent -> 1
OutputCompleteEvent -> 2
OutputCompleteEvent -> 3
OutputCompleteEvent -> 4
OutputCompleteEvent -> 5
OutputCompleteEvent -> 6
OutputCompleteEvent -> 7
OutputCompleteEvent -> 8
OutputCompleteEvent -> 9
OutputCompleteEvent -> 10
OutputCompleteEvent -> 11
```

CapRecEmptySensor/ RecEmpty Property

When "Active Paper Sensor" is set to "PaperNearEnd" (Registry: "PaperSensor"="001"), Paper Out sensor becomes non-active state. Accordingly, the value of the CapRecEmptySensor property is set to "FALSE" and the value of the RecEmpty property remains in the "FALSE" state even in the Paper End condition. Here, StatusUpdateEvents (PTR_SUE_REC_EMPTY) is not reported.



(Configuration Utility)

RecLineChars/ RecLineCharsList Property

The number of one-byte characters of the font printed in one line on the paper is specified.

- RecLineChars property: Specifies the maximum number of digits of FontA corresponding to the specified paper size.
- RecLineCharsList property: Lists the maximum number of digits of FontA, FontB, FontC corresponding to the specified paper size. (Some printer has no FontC.)

For details of printer fonts, refer to User's Guide of the printer.

When setting the initial value of paper size and maximum number of digits (FontA), the following registry is operated.

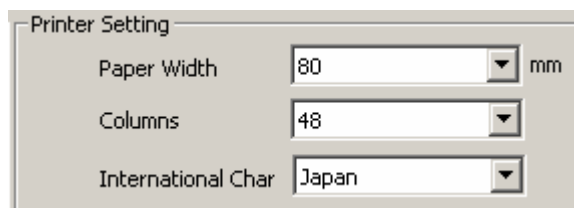
<Example: CT-S2000>

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter\CT-S2000_1

PaperModel = 002 ... Specifies 80-mm paper.

Column = 001 ... Specifies 48 digits (FontA).

- * When changing the above setting, use the setting tool of this driver (Configuration Utility) as explained in "[1.6 Registry Structure](#)".



(Configuration Utility)

The value of the RecLineChars/ RecLineCharsList corresponding to "Paper size" and "Printer font" of each printer is as shown below.

CBM-1000TypeII

Paper Size (mm)		FontA(12*24dot)	FontB(9*24dot)	RecLineChars	RecLineCharsList
80	58	30	40	30	30, 40
		36	48	36	36, 48
	42	56	42	42, 56	
	48	64	48	48, 64	

CT-S300/CT-S310

Paper Size (mm)		FontA(12*24dot)	FontB(9*24dot)	FontC(8*16dot)	RecLineChars	RecLineCharsList
80	58	30	40	45	30	30, 40, 45
		32	42	48	32	32, 42, 48
	42	56	63	42	42, 56, 63	
	48	64	72	48	48, 64, 72	

CT-S2000

Paper Size (mm)				FontA(12*24dot)	FontB(9*24dot)	FontC(8*16dot)	RecLineChars	RecLineCharsList
83	80	60	58	30	40	45	30	30, 40, 45
				30	40	45		
				35	46	52		
				36	48	54	36	36, 48, 54
				36	48	54	36	36, 48, 54
				42	56	64	42	42, 56, 64
				48	64	72	48	48, 64, 72
				53	71	80	53	53, 71, 80

CT-S4000

Paper Size (mm)			FontA(12*24dot)	FontB(9*24dot)	FontC(8*16dot)	RecLineChars	RecLineCharsList
112	82.5	80	42	56	64	42	42, 56, 64
			48	64	72	48	48, 64, 72
			55	73	82	55	55, 73, 82
			60	80	90	60	60, 80, 90
			69	92	104	69	69, 92, 104

CD-S500

Paper Size (mm)			FontA(9*9dot)	FontB(7*9dot)	RecLineChars	RecLineCharsList
76.2	69.5	57.5	25	30	25	25, 30
			27	33	27	27, 33
			30	36	30	30, 36
			32	40	32	32, 40
			33	40	33	33, 40
			35	42	35	35, 42

• About Kanji font (KANJI)

As shown above, Kanji font is calculated based on one-byte character. Accordingly, when Kanji font of multi-font is used, it is treated as two characters basically.

(Refer to the RecSidewaysMaxChars property of 2.6. POS Printer Service Object and Precautions.)

RecSidewaysMaxChars Property

Calculated based on one-byte character.

Kanji font (KANJI) is basically treated as two characters but some font selected by the value of the RecLineChars property may not correspond to two characters simply.

RecSidewaysMaxLines Property

Varies in conjunction with the value of the RecLineSpacing property and RecLineChars property. In addition, in some cases, the value may be smaller than the actual number of printable lines depending on the value of the preset RecLineSpacing property.

ResultCode/ ResultCodeExtended Property

When the value of the ResultCode property is other than OPOS_SUCCESS, refer to the ResultCode property in "OpenPOS for OLE Application Programmer's Guide, Japanese Edition, Version 18".

In case of OPOS_E_Extended, refer to ResultCodeExtended Property in "OpenPOS for OLE Application Programmer's Guide, Japanese Edition, Version 1.8".

3. Cash Drawer Service Object

For the details, method of use, etc. of property, method and event, refer to "OpenPOS for OLE Application Programmer's Guide, Japanese Edition, Version 1.8".

3.2. Cash Drawer Service and Object Method Relations

CBM-1000TypeII

Method	Notes	Supporting status (CBM1000TYPEII_*.CD*)	
Open		○	
Close		○	
ClaimDevice		○	
ReleaseDevice		○	
CheckHealth		○	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSDrawer.	×	
ClearOutput	Not applicable with OPOSDrawer.	×	
DirectIO		×	Not supported
OpenDrawer		○	
WaitForDrawerClose		○	

CT-S300/ CT-S310

Method	Notes	Supporting status (CT-S300_*.CD*/CT-S310_*.CD*)	
Open		○	
Close		○	
ClaimDevice		○	
ReleaseDevice		○	
CheckHealth		○	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSDrawer.	×	
ClearOutput	Not applicable with OPOSDrawer.	×	
DirectIO		×	Not supported
OpenDrawer		○	
WaitForDrawerClose		○	

CT-S2000

Method	Notes	Supporting status (CT-S2000_*.CD*)	
Open		○	
Close		○	
ClaimDevice		○	
ReleaseDevice		○	
CheckHealth		○	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSDrawer.	×	
ClearOutput	Not applicable with OPOSDrawer.	×	
DirectIO		×	Not supported
OpenDrawer		○	
WaitForDrawerClose		○	

CT-S4000

Method	Notes	Supporting status (CT-S4000_*.CD*)	
Open		○	
Close		○	
ClaimDevice		○	
ReleaseDevice		○	
CheckHealth		○	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSDrawer.	×	
ClearOutput	Not applicable with OPOSDrawer.	×	
DirectIO		×	Not supported
OpenDrawer		○	
WaitForDrawerClose		○	

CD-S500

Method	Notes	Supporting status (CD-S500_*.CD*)	
Open		○	
Close		○	
ClaimDevice		○	
ReleaseDevice		○	
CheckHealth		○	OPOS_CH_EXTERNAL
ClearInput	Not applicable with OPOSDrawer.	×	
ClearOutput	Not applicable with OPOSDrawer.	×	
DirectIO		×	Not supported
OpenDrawer		○	
WaitForDrawerClose		○	

3.3. Cash Drawer Service Object and Property Relations

CBM-1000TypeII

Property	Notes	Attribute	Supporting status (CBM1000TYPEII_*.CD*)
AutoDisable	Not applicable with OPOSDrawer.	R/W	×
BinaryConversion	Not applicable with OPOSDrawer.	R/W	×
CapStatisticsReporting	Hardware not supported	R	×
CapUpdateStatistics	Hardware not supported	R	×
CapPowerReporting	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
CheckHealthText		R	○
Claimed		R	○
DataCount	Not applicable with OPOSDrawer.	R	×
DataEventEnabled	Not applicable with OPOSDrawer.	R/W	×
DeviceEnabled		R/W	○
FreezeEvents		R/W	○
OpenResult		R	○
OutputID	Not applicable with OPOSDrawer.	R	×
PowerNotify	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R/W	○
PowerState	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
ResultCode		R	○
ResultCodeExtended		R	○
State		R	○
ControlObjectDescription		R	○
ControlObjectVersion		R	○
ServiceObjectDescription		R	○
ServiceObjectVersion		R	○
DeviceDescription		R	○
DeviceName		R	○
CapStatus		R	○
CapStatusMultiDrawerDetect		R	○
DrawerOpened	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 3.5 Cash Drawer Service Object and Precaution.)	R	○

CT-S300/CT-S310

Property	Notes	Attribute	Supporting status (CT-S300_*.CD*/CT-S310_*.CD*)
AutoDisable	Not applicable with OPOSDrawer.	R/W	×
BinaryConversion	Not applicable with OPOSDrawer.	R/W	× OPOS_BC_NONE
CapStatisticsReporting	Hardware not supported	R	× FALSE
CapUpdateStatistics	Hardware not supported	R	× FALSE
CapPowerReporting	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○ OPOS_PR_NONE
CheckHealthText		R	○ "External HCheck:Successful" "External HCheck:Not Responding"
Claimed		R	○ TRUE/FALSE
DataCount	Not applicable with OPOSDrawer.	R	×
DataEventEnabled	Not applicable with OPOSDrawer.	R/W	×
DeviceEnabled		R/W	○ TRUE/FALSE
FreezeEvents		R/W	○ TRUE: Event notification disabled FALSE: Event notification enabled
OpenResult		R	○ OPOS_SUCCESS
OutputID	Not applicable with OPOSDrawer.	R	×
PowerNotify	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R/W	○ OPOS_PN_DISABLE (Power notification is not supplied.) OPOS_PN_ENABLE (Information on power notification is supplied.)
PowerState	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○ OPOS_PS_ONLINE
ResultCode		R	○
ResultCodeExtended		R	○
State		R	○ In other than I OPO_S_IDLE, refer to State properties in "OPENPOS FOR OLE APPLICATION PROGRAMMER'S GUIDE Japanese-edition Specification Version 1.8".
ControlObjectDescription		R	○ OPOS CashDrawer Control 1.8.001 [Public, by CRM/RCS-Dayton]
ControlObjectVersion		R	○
ServiceObjectDescription		R	○ CT-S300 CITIZEN Service Object for CTS-300 Printer Cash Drawer No.1 ver *.*.*.* CT-S310 CITIZEN Service Object for CTS-310 Printer Cash Drawer No.1 ver *.*.*.*
ServiceObjectVersion		R	○ 1*****
DeviceDescription		R	○ CITIZEN Thermal POSPrinter's cash Drawer *
DeviceName		R	○ CT-S300: CT-S300.CITIZEN.CD* CT-S310: CT-S310.CITIZEN.CD*
CapStatus		R	○
CapStatusMultiDrawerDetect		R	○
DrawerOpened	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 3.5 Cash Drawer Service Object and Precaution.)	R	○

CT-S2000

Property	Notes	Attribute	Supporting status (CT-S2000_*.CD*)
AutoDisable	Not applicable with OPOSDrawer.	R/W	×
BinaryConversion	Not applicable with OPOSDrawer.	R/W	×
CapStatisticsReporting	Hardware not supported	R	×
CapUpdateStatistics	Hardware not supported	R	×
CapPowerReporting	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
CheckHealthText		R	○
Claimed		R	○
DataCount	Not applicable with OPOSDrawer.	R	×
DataEventEnabled	Not applicable with OPOSDrawer.	R/W	×
DeviceEnabled		R/W	○
FreezeEvents		R/W	○
OpenResult		R	○
OutputID	Not applicable with OPOSDrawer.	R	×
PowerNotify	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R/W	○
PowerState	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
ResultCode		R	○
ResultCodeExtended		R	○
State		R	○
ControlObjectDescription		R	○
ControlObjectVersion		R	○
ServiceObjectDescription		R	○
ServiceObjectVersion		R	○
DeviceDescription		R	○
DeviceName		R	○
CapStatus		R	○
CapStatusMultiDrawerDetect		R	○
DrawerOpened	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 3.5 Cash Drawer Service Object and Precaution.)	R	○

CT-S4000

Property	Notes	Attribute	Supporting status (CT-S4000_*.CD*)
AutoDisable	Not applicable with OPOSDrawer.	R/W	×
BinaryConversion	Not applicable with OPOSDrawer.	R/W	×
CapStatisticsReporting	Hardware not supported	R	×
CapUpdateStatistics	Hardware not supported	R	×
CapPowerReporting	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
CheckHealthText		R	○
Claimed		R	○
DataCount	Not applicable with OPOSDrawer.	R	×
DataEventEnabled	Not applicable with OPOSDrawer.	R/W	×
DeviceEnabled		R/W	○
FreezeEvents		R/W	○
OpenResult		R	○
OutputID	Not applicable with OPOSDrawer.	R	×
PowerNotify	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R/W	○
PowerState	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
ResultCode		R	○
ResultCodeExtended		R	○
State		R	○
ControlObjectDescription		R	○
ControlObjectVersion		R	○
ServiceObjectDescription		R	○
ServiceObjectVersion		R	○
DeviceDescription		R	○
DeviceName		R	○
CapStatus		R	○
CapStatusMultiDrawerDetect		R	○
DrawerOpened	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 3.5 Cash Drawer Service Object and Precaution.)	R	○

CD-S500

Property	Notes	Attribute	Supporting status (CD-S500_*.CD*)
AutoDisable	Not applicable with OPOSDrawer.	R/W	×
BinaryConversion	Not applicable with OPOSDrawer.	R/W	×
CapStatisticsReporting	Hardware not supported	R	×
CapUpdateStatistics	Hardware not supported	R	×
CapPowerReporting	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
CheckHealthText		R	○
Claimed		R	○
DataCount	Not applicable with OPOSDrawer.	R	×
DataEventEnabled	Not applicable with OPOSDrawer.	R/W	×
DeviceEnabled		R/W	○
FreezeEvents		R/W	○
OpenResult		R	○
OutputID	Not applicable with OPOSDrawer.	R	×
PowerNotify	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R/W	○
PowerState	(Refer to CapPowerReporting/ Powermotify/ PowerState Property in 3.5 Cash Drawer Service Object and Precaution.)	R	○
ResultCode		R	○
ResultCodeExtended		R	○
State		R	○
ControlObjectDescription		R	○
ControlObjectVersion		R	○
ServiceObjectDescription		R	○
ServiceObjectVersion		R	○
DeviceDescription		R	○
DeviceName		R	○
CapStatus		R	○
CapStatusMultiDrawerDetect		R	○
DrawerOpened	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 3.5 Cash Drawer Service Object and Precaution.)	R	○

3.4. Cash Drawer Service Object and Event Relations

CBM-1000TypeII

Event	Notes	Supporting status (CBM1000TYPEII_*.CD*)	
DataEvent	Not applicable with OPOSDrawer.	×	Not supported
DirectIOEvent		×	Not supported
ErrorEvent	Not applicable with OPOSDrawer.	×	Not supported
OutputCompleteEvent	Not applicable with OPOSDrawer.	×	Not supported
StatusUpdateEvent	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CT-S300/CT-S310

Event	Notes	Supporting status (CT-S300_*.CD*/CT-S310_*.CD*)	
DataEvent	Not applicable with OPOSDrawer.	×	Not supported
DirectIOEvent		×	Not supported
ErrorEvent	Not applicable with OPOSDrawer.	×	Not supported
OutputCompleteEvent	Not applicable with OPOSDrawer.	×	Not supported
StatusUpdateEvent	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CT-S2000

Event	Notes	Supporting status (CT-S2000_*.CD*)	
DataEvent	Not applicable with OPOSDrawer.	×	Not supported
DirectIOEvent		×	Not supported
ErrorEvent	Not applicable with OPOSDrawer.	×	Not supported
OutputCompleteEvent	Not applicable with OPOSDrawer.	×	Not supported
StatusUpdateEvent	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CT-S4000

Event	Notes	Supporting status (CT-S4000_*.CD*)	
DataEvent	Not applicable with OPOSDrawer.	×	Not supported
DirectIOEvent		×	Not supported
ErrorEvent	Not applicable with OPOSDrawer.	×	Not supported
OutputCompleteEvent	Not applicable with OPOSDrawer.	×	Not supported
StatusUpdateEvent	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

CD-S500

Event	Notes	Supporting status (CD-S500_*.CD*)	
DataEvent	Not applicable with OPOSDrawer.	×	Not supported
DirectIOEvent		×	Not supported
ErrorEvent	Not applicable with OPOSDrawer.	×	Not supported
OutputCompleteEvent	Not applicable with OPOSDrawer.	×	Not supported
StatusUpdateEvent	If the corresponding printer SO is closed, status cannot be acquired. (Refer to 1.7. CITIZEN OPOS Driver Precautions.)	○	

3.5. Cash Drawer Service Object and Precautions

CapPowerReporting/ Powermotify/ PowerState Property

This service object supports only cash drawer connected to the drawer kick connector at the back of the printer. Therefore the value of the CapPowerReporting property shall be "OPOS_PR_NONE".

By setting the Powermotify property to "OPOS_PN_ENABLED", the power state can be acquired with the PowerState property.

