CipherLab
User Guide

CipherLab Scanner OPOS Driver

Version 1.01

CIPHER LAB

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RELEASE NOTES

Version	Date	Notes
1.01	Feb. 25, 2019	Modified: **Interface Change for CipherLab Scanner** - description
1.00	Apr. 12, 2018	Initial release

CONTENTS

INTRODUCTION

CipherLab's scanner OPOS (OLE for Retail POS) driver supports a variety of POS solutions, allowing CipherLab scanners to be integrated into POS systems based on Windows 32/64 bits and Windows Embedded operating systems.

We recommend you keep one copy of the manual at hand for quick reference or maintenance purposes. To avoid any improper disposal or operation, please read the manual thoroughly before use.

Thank you for choosing CipherLab products!

GETTING STARTED

SYSTEM REQUIREMENTS

The CipherLab OPOS driver can be installed on any of the operating systems listed below:

- ▶ Windows 32/64 bits operating systems
- ▶ Windows Embedded for Point of Service (WEPOS)

SUPPORTED INTERFACE

The CipherLab OPOS driver only supports the Direct USB interface.

OPOS DRIVER INSTALLATION

Please follow the setup instructions step by step.

1) Run the setup file to install the CipherLab OPOS Kit. Click the **Next** button to continue.

2) The License Agreement dialog shows up first. Click the **I Agree** button to continue.
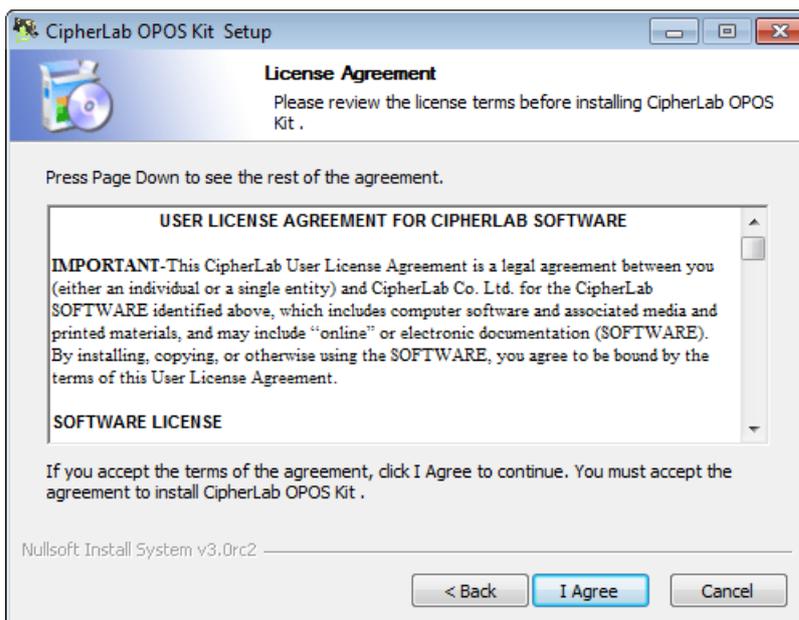
3) The default destination directory is specified as the picture illustrated below. You can click the **Browse** button to locate the destination directory to install CipherLab OPOS Kit. Click the **Install** button to proceed with installation.
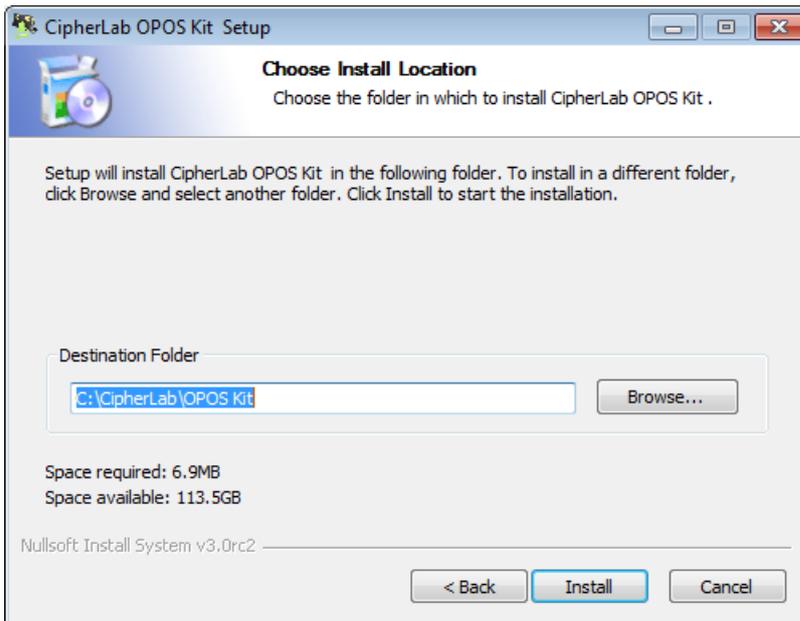
4) When the installation completes, click the **Finish** button to exit.
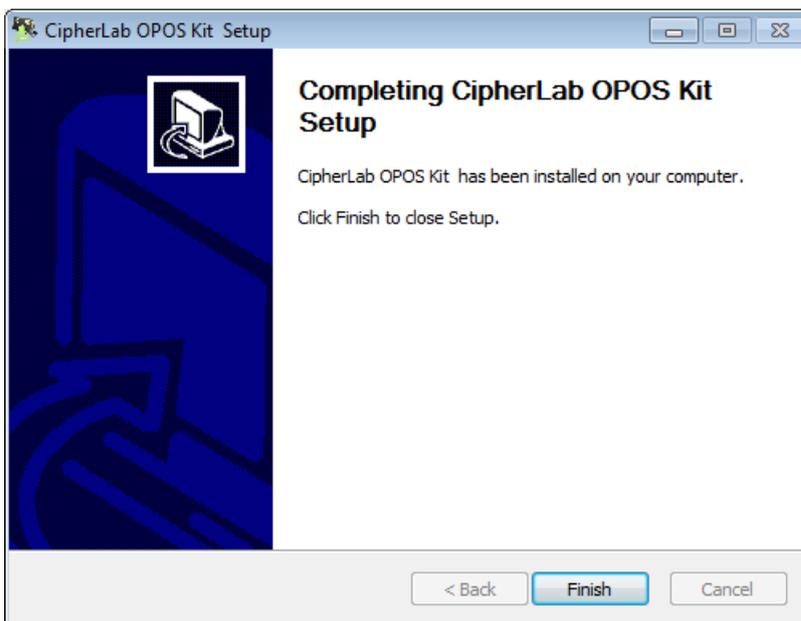
CONFIGURING THE CIPHERLAB SCANNER AS AN OPOS DEVICE

Use your CipherLab scanner to read the setting barcode below to set the scanner as an OPOS device. Make sure your scanner firmware which supports OPOS has been upgraded.

Set scanner as an OPOS device

#@100033#

OPOS VALIDATION TOOL

After CipherLab OPOS Kit is successfully installed, you are able to launch the OPOS driver validation tool to confirm whether a specific scanner OPOS driver meets the UnifiedPOS specifications. Go to **Start** and click **OPOS Validation Tool**.
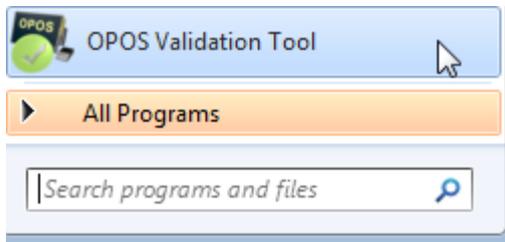
After the validation tool is ready, click the **Open** button.
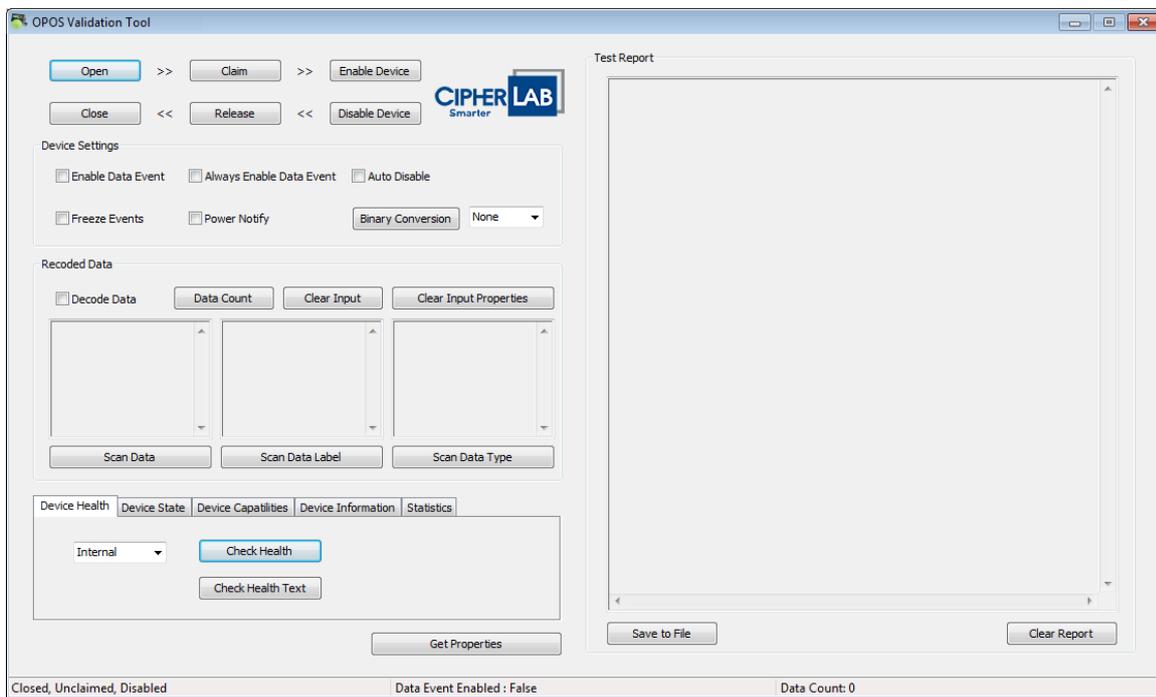
When the **Open Service Object** dialog shows up, click **OK** to open the Service Object.
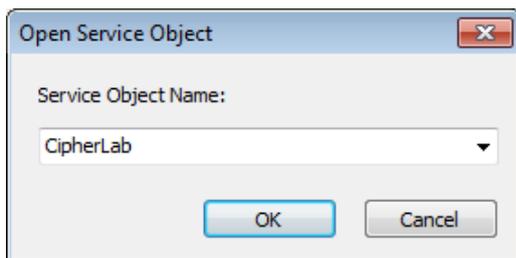
Then you can see the result code displays in the Test Report text field indicating the Service Object is succesfully opened.

Test Report

[16:52:11] Scanner: Open , Result Code : OPOS_SUCCESS
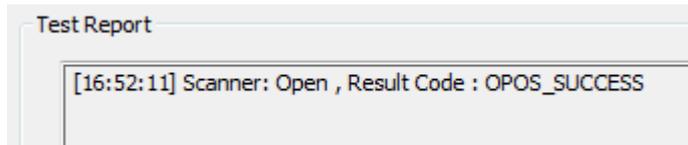
Next, click the **Claim** button to get exclusive access to the device. The result code displays in the Test Report text field.

Test Report

[16:59:08] Scanner: Claim , Result Code : OPOS_SUCCESS

[16:52:11] Scanner: Open , Result Code : OPOS_SUCCESS
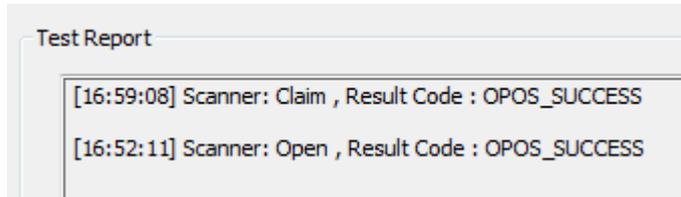
And the Driver state displays in the status bar.

Idle, Claimed, Disabled

Click the **Enable Device** button. Then the scanner is ready to scan barcodes.

Test Report

[17:01:36] Scanner: Set Device Enabled : True , Result Code : OPOS_SUCCESS

[16:59:08] Scanner: Claim , Result Code : OPOS_SUCCESS

[16:52:11] Scanner: Open , Result Code : OPOS_SUCCESS

Idle, Claimed, Enabled
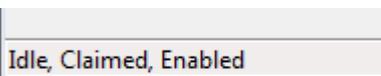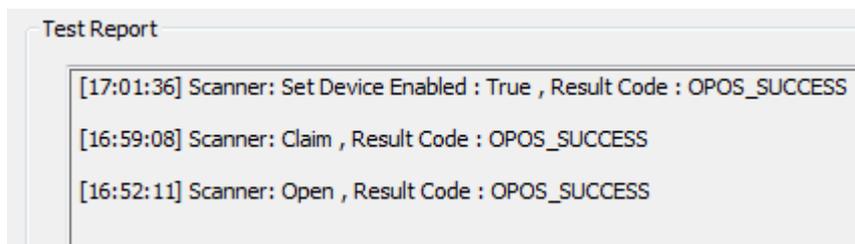
To release the Service Object, click **Disable Device**, **Release**, and then **Close** buttons.

DEVICE SETTINGS
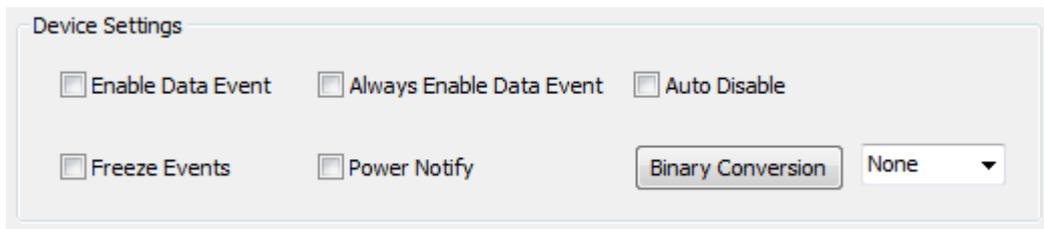
With the **Enable Data Event** checkbox selected, an event is sent to notify the POS application when the Service Object receives data from the scanner.
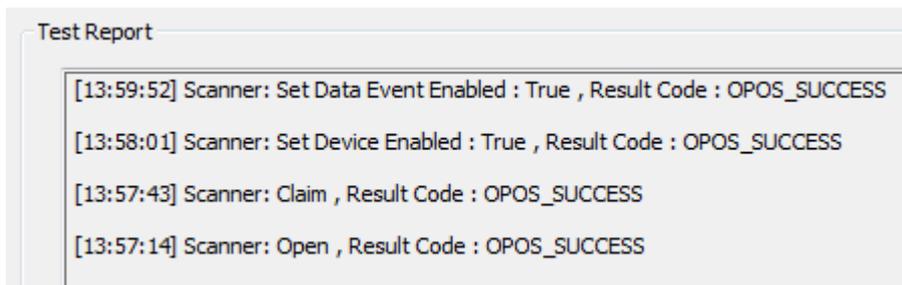
If the **Enable Data Event** checkbox is not selected, any scanned data will be queued. You can click the **Data Count** button to show how many entries of scanned data are queued.
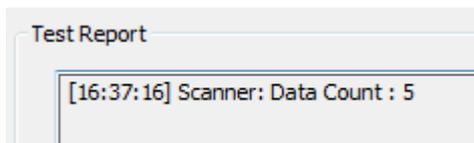
With the **Enable Data Event** checkbox ticked, the scanned data is displayed in the **Scan Data** and **Scan Data Type** text boxes (belong to the **Recorded Data** groupbox) respectively after the scanner has successfully read a barcode. The tick mark of **Enable Data Event** disappears each time for a reading action.
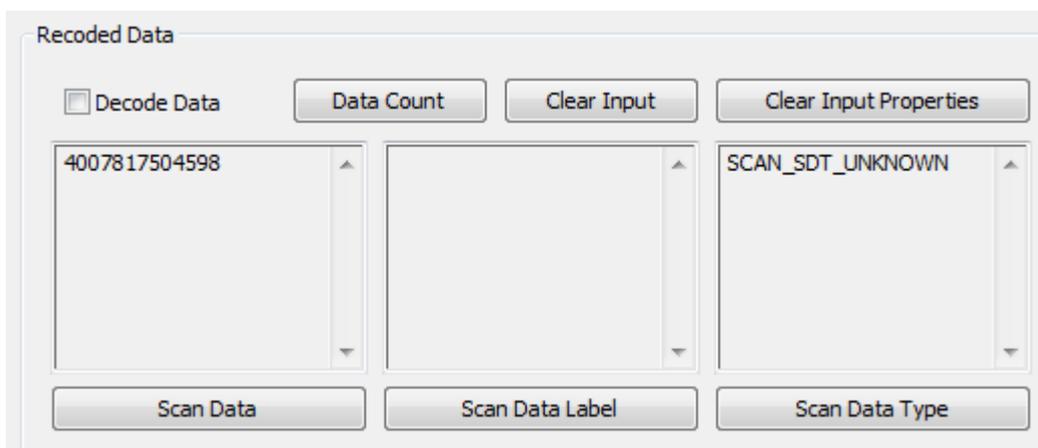
Note that the **Scan Data Label** text box display nothing and the **Scan Data Type** text box doesn't exactly show the data type information. You can tick the **Decode Data** checkbox to show the information.
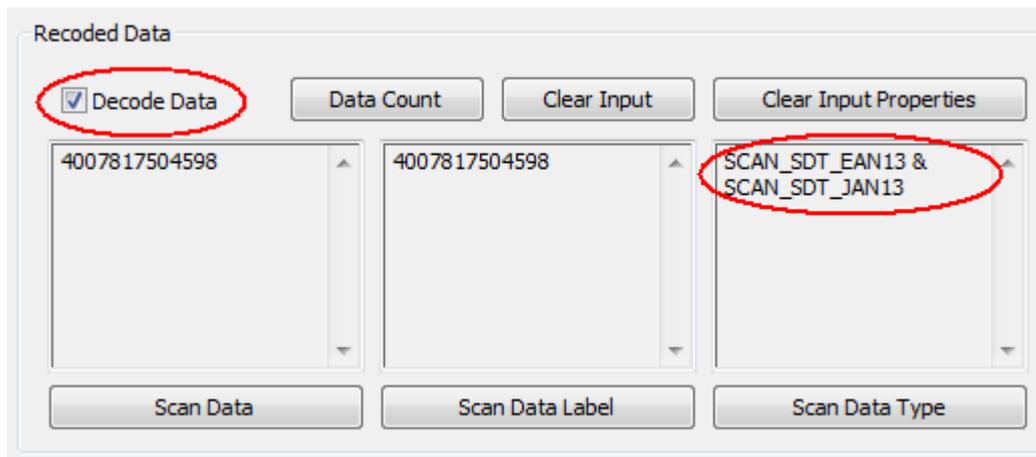
By ticking the **Always Enable Data Event** checkbox, the scanned data is ALWAYS sent to the tool application each time the scanner has successfully read a barcode (the tick mark won't disappear unless you remove the tick).

Ticking the **Auto Disable** checkbox will disable the scanner which takes effect after a trigger pulling.

Ticking the **Freeze Event** checkbox will keep the scanned data in queue.

When the **Power Notify** checkbox is ticked, power reporting is allowed. You can tick this checkbox when the OPOS driver is in opened and claimed states.

RECORDED DATA

Decode Data: Tick this checkbox to show information displayed in the **Scan Data Label** text box and the symbology type in the **Scan Data Type** text box.

Data Count: Click this button to show how many entries of scanned data are queued

Clear Input: Click this button to clear all data in the queue.

Clear Input Properties: Click this button to clear data displayed in **Scan Data**, **Scan Data Label**, and **Scan Data Type** text boxes.

Scan Data: Click it to show the data in the **Scan Data** text box.

Scan Data Label: Click it to show the data in the **Scan Data Label** text box.

Scan Data Type: Click it to show the data in the **Scan Data Type** text box.

DEVICE HEALTH
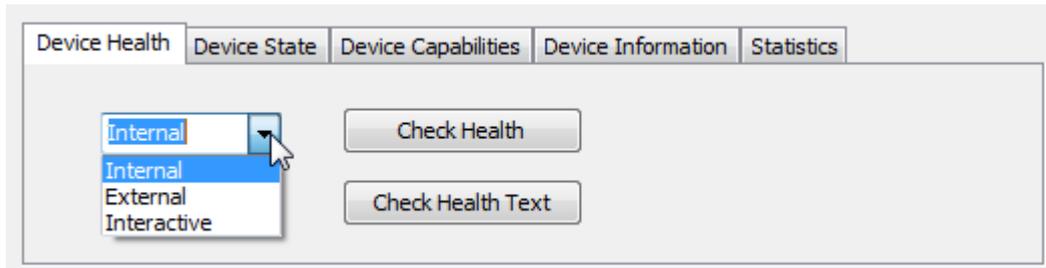
Click the **Check Health** button to perform a health check in accordance with the drop-down menu options. Click the **Check Health Text** button to show the health check results.

Internal: Perform a health check by internal tests.

External: Perform a more complete test.

Interactive: Perform an interactive test of the device.

DEVICE STATE
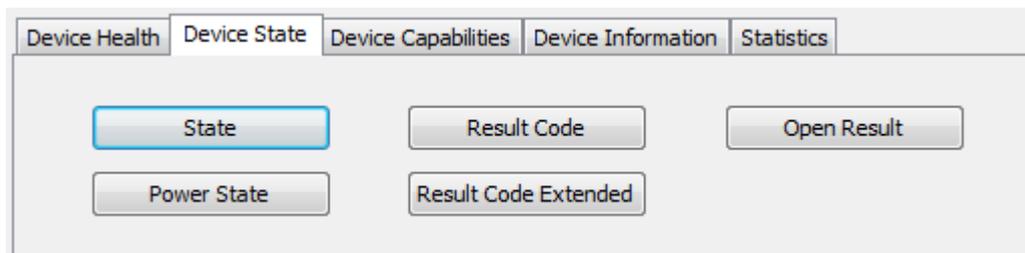
State: Click to show the state.

Power State: Click to show power state.

Result Code: Click to show the status of most recent method or property.

Result Code Extended: Click to show the extended status of most recent method or property.

Open Result: Click to show additional details of the recent Open method.

DEVICE CAPABILITIES
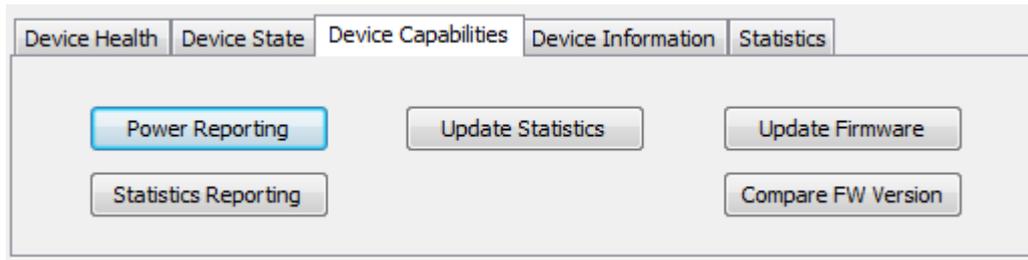
Power Reporting: Click to show the Power Reporting property value.

Statistics Reporting: Click to show Statistics Reporting property value.

Update Statistics: Click to show the Update Statistics property value.

Update Firmware: Click to show the Update Firmware property value.

Compare FW Version: Click to show the Firmware Comparing property value

DEVICE INFORMATION

Click these buttons to show related information.

STATISTICS
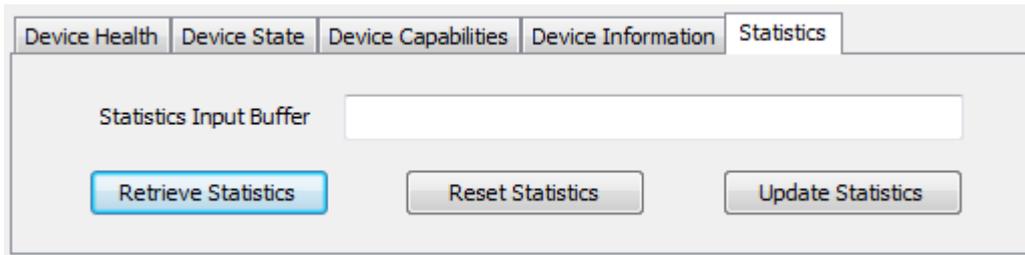
Statistics Input Buffer: Specify the target device statistics to be retrieved, reset, or updated. Leave this text field blank if you want to retrieve, reset, or update all statistics.

Retrieve Statistics: Click to retrieve statistics.

Reset Statistics: Click to reset statistics.

Update Statistics: Click to update statistics.

OPOS KIT UNINSTALLATION

To uninstall the OPOS Kit, click **Start → All programs**. Then navigate to **CipherLab → OPOS Kit** and click **Uninstall**.
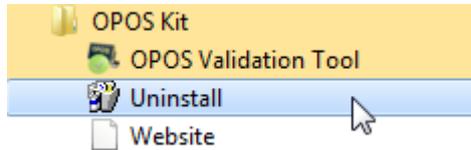
Then the uninstall dialog shows up. Click **Yes** to start the uninstall process.
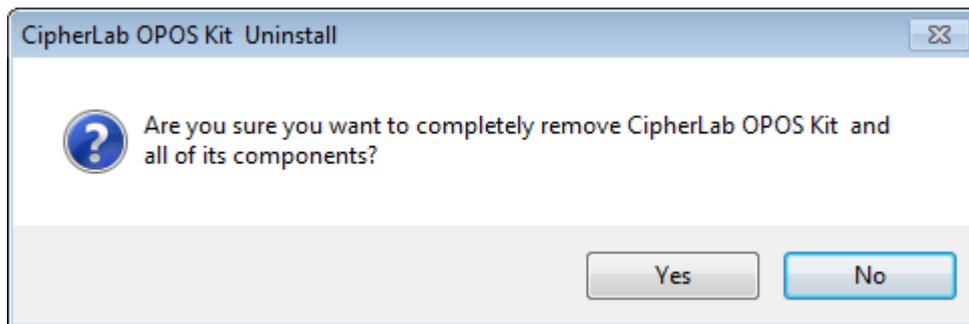
Chapter 1

OPOS PROPERTIES, METHODS, EVENTS

WHO SHOULD READ THIS CHAPTER

This chapter is intended for application developers who require access to POS-specific CipherLab scanners.

Developers are supposed to be familiar with these:

▶ General characteristics of CipherLab scanners.

▶ ActiveX and Automation terminology and architecture.

▶ ActiveX Control Container development environment, such as Microsoft Visual Basic or Microsoft Visual C++, will be useful.
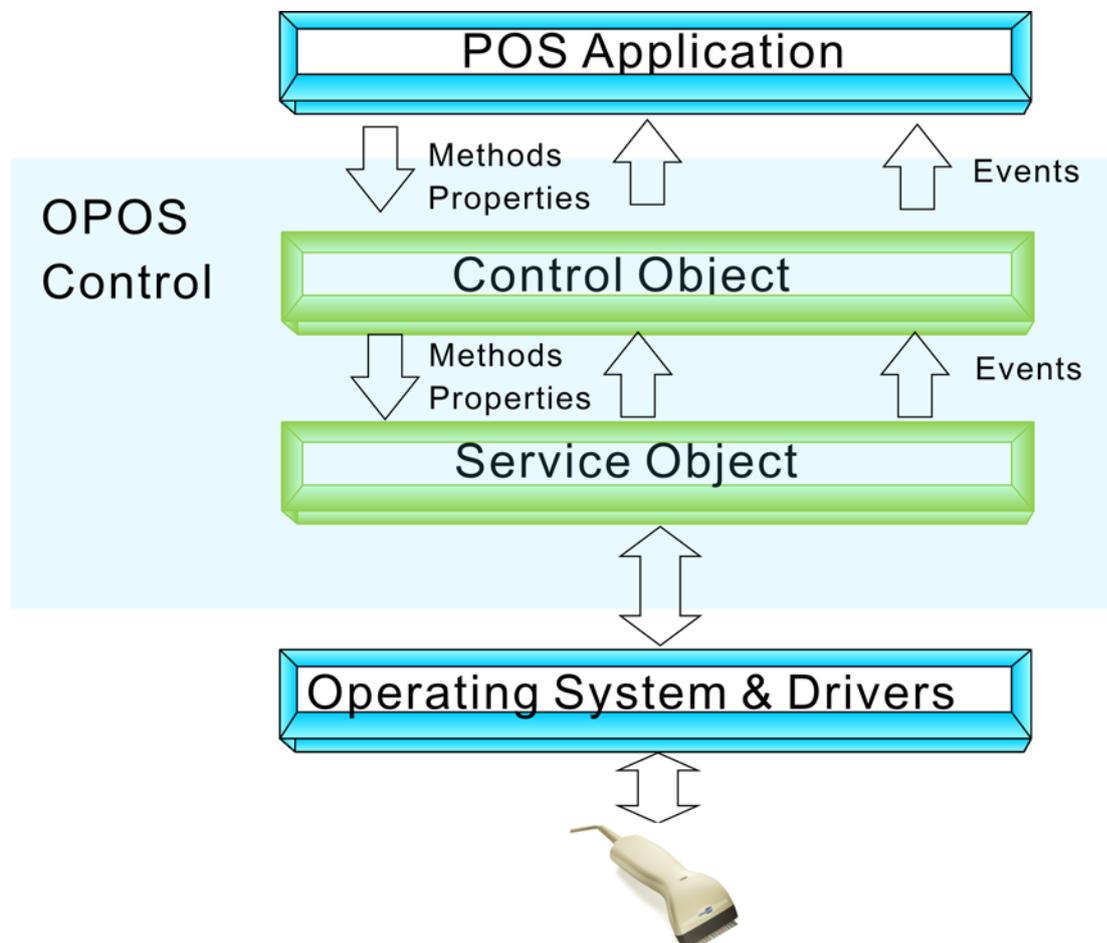
PROPERTISE, METHODS, AND EVENTS

An application can access a POS Device via platform specific APIs. Three elements of UnifiedPOS standard for APIs are depicted in the table below:

Elements	Descriptions
Properties	Properties are device characteristics or settings. A type is associated with each property, such as boolean or string. An application may retrieve a property's value, and it may set a writable property's value.
Methods	An application calls a method to perform or initiate some activity at a device. Some methods require parameters of specified types for sending and/or returning additional information.
Events	A Device implementation may call back into the application via events. The application may need to register for events. The mechanism to do this is implementation specific.

PROPERTIES

COMMON PROPERTIES

Name	Type	Mutability	Version	May Use After	Support
AutoDisable	boolean	R/W	1.2	Open	Supported
BinaryConversion	int32	R/W	1.2	Open	Supported
CapCompareFirmwareVersion	boolean	R	1.9	Open	*Not Support*
CapPowerReporting	int32	R	1.3	Open	Supported
CapStatisticsReporting	boolean	R	1.8	Open	Supported
CapUpdateFirmware	boolean	R	1.9	Open	*Not Support*
CapUpdateStatistics	boolean	R	1.8	Open	Supported
CheckHealthText	string	R	1.0	Open	Supported
Claimed	boolean	R	1.0	Open	Supported
DataCount	int32	R	1.2	Open	Supported
DataEventEnabled	boolean	R/W	1.0	Open	Supported
DeviceControlDescription	string	R	1.0	--	Supported
DeviceControlVersion	int32	R	1.0	--	Supported
DeviceEnabled	boolean	R/W	1.0	Open & Claim	Supported
DeviceServiceDescription	string	R	1.0	Open	Supported
DeviceServiceVersion	int32	R	1.0	Open	Supported
FreezeEvents	boolean	R/W	1.0	Open	Supported
OpenResult	int32	R	1.5	--	Supported

PhysicalDeviceDescription	string	R	1.0	Open	Supported
PhysicalDeviceName	string	R	1.0	Open	Supported
PowerNotify	int32	R/W	1.3	Open	Supported
PowerState	int32	R	1.3	Open	Supported
ResultCode	int32	R	1.0	--	Supported
ResultCodeExtended	int32	R	1.0	--	Supported
State	int32	R	1.0	--	Supported

SCANNER SPECIFIC PROPERTIES

Name	Type	Mutability	Version	May Use After	Support
DecodeData	boolean	R	1.2	Open	Supported
ScanData	binary	R	1.0	Open	Supported
ScanDataLabel	binary	R	1.2	Open	Supported
ScanDataType	int32	R	1.2	Open	Supported

METHODS

Name	Version	May Use After	Support
open	1.0	--	Supported
close	1.0	Open	Supported
claim	1.0	Open	Supported
release	1.0	Open & Claim	Supported
checkHealth	1.0	Open, Claim & Enable	Supported
clearInput	1.0	Open & Claim	Supported
clearInputProperties	1.10	Open & Claim	Supported
compareFirmwareVersion	1.9	Open, Claim & Enable	*Not Support*
directIO	1.0	Open	*Not Support*
resetStatistics	1.8	Open, Claim & Enable	Supported
retrieveStatistics	1.8	Open, Claim & Enable	Supported
updateFirmware	1.9	Open, Claim & Enable	*Not Support*
updateStatistics	1.8	Open, Claim & Enable	Supported

EVENT

Name	Version	May Use After	Support
DataEvent	1.0	Open & Claim	Supported
DirectIOEvent	1.0	--	*Not Support*
ErrorEvent	1.0	Open & Claim	Supported
StatusUpdateEvent	1.3	Open, Claim & Enable	Supported

Appendix I

SUPPORTED SYMBOLOGIES

Type	OPOS ScanDataLabel	Support
UPC-A	SCAN_SDT_UPCA	Supported
UPC-E	SCAN_SDT_UPCE	Supported
JAN 8 (= EAN 8)	SCAN_SDT_JAN8	Supported
EAN 8 (= JAN 8)	SCAN_SDT_EAN8	Supported
JAN 13 (= EAN 13)	SCAN_SDT_JAN13	Supported
EAN 13 (= JAN 13)	SCAN_SDT_EAN13	Supported
Standard (or discrete) 2 of 5	SCAN_SDT_TF	Supported
Interleaved 2 of 5	SCAN_SDT_ITF	Supported
Codabar	SCAN_SDT_Codabar	Supported
Code 39	SCAN_SDT_Code39	Supported
Code 93	SCAN_SDT_Code93	Supported
Code 128	SCAN_SDT_Code128	Supported
UPC-A with supplemental barcode	SCAN_SDT_UPCA_S	Supported
UPC-E with supplemental barcode	SCAN_SDT_UPCE_S	Supported
UPC-D1	SCAN_SDT_UPCD1	*Not Supported*
UPC-D2	SCAN_SDT_UPCD2	*Not Supported*
UPC-D3	SCAN_SDT_UPCD3	*Not Supported*
UPC-D4	SCAN_SDT_UPCD4	*Not Supported*
UPC-D5	SCAN_SDT_UPCD5	*Not Supported*
EAN 8 with supplemental barcode	SCAN_SDT_EAN8_S	Supported
EAN 13 with supplemental barcode	SCAN_SDT_EAN13_S	Supported
EAN-128	SCAN_SDT_EAN128	Supported
OCR "A"	SCAN_SDT_OCRA	*Not Supported*
OCR "B"	SCAN_SDT_OCRB	*Not Supported*
GS1 DataBar Omnidirectional (normal or stacked)	SCAN_SDT_GS1DATABAR	Supported
GS1 DataBar Expanded (normal or stacked)	SCAN_SDT_GS1DATABAR_E	Supported
Interleaved 2 of 5 check digit verified and transmitted	SCAN_SDT_ITF_CK	Supported
GS1 DataBar Limited	SCAN_SDT_GS1DATABAR_TYPE2	Supported
Ames Code	SCAN_SDT_AMES	*Not Supported*
Matrix 2 of 5	SCAN_SDT_TFMAT	Supported
Code 39 with check character verified and transmitted	SCAN_SDT_Code39_CK	Supported

Code 39 with Mod 32 check character	SCAN_SDT_Code32	Supported
Code 39 CIP	SCAN_SDT_CodeCIP	*Not Supported*
Tri-Optic Code 39	SCAN_SDT_TRIOPTIC39	Supported
ISBT-128	SCAN_SDT_ISBT128	Supported
Code 11	SCAN_SDT_Code11	Supported
MSI Code	SCAN_SDT_MSI	Supported
Plessey Code	SCAN_SDT_PLESSEY	Supported
Telepen	SCAN_SDT_TELEPEN	Supported
PDF 417	SCAN_SDT_PDF417	Supported