

### Executive Summary

MagTek OPOS driver for customers with an OPOS platform.

## Tools Needed

- Windows 7 or above computer
- MagTek MSR in HID Mode with PID 002 or 011 (PID 002 or 011 are defaults PID's for HID Mode).

Use MagTek USB MSR application to change to HID if needed, and to verify PID's.

https://elotouch.sharepoint.com/:u:/s/KnoxvilleTechnicalServices/EXhO21kMxAZLiy0afCECxvoBak9U3\_ 4GcSnPdrUdpfV1Tg?e=SdFkJ0

• MagTek Driver Package for USB HID Swipe Readers

### **Installation**

- Download the OPOS Driver Package for USB HID Swipe Reader: <u>https://elotouch.sharepoint.com/:u:/s/KnoxvilleTechnicalServices/EbGXvrRAS4VOgWzmgCEYfM</u> <u>UBjnaxzwivXFmb fZ3jqq9HA?e=75dNb6</u>
- 2. Double click on the file to launch the installation and click Next.



a. Continue with installation per screen shots below:





#### b. The default target folder:

- For x86 platforms: C:\Program Files\OPOS\MagTek
- For x64 platforms: C:\Program Files (x86)\OPOS\MagTek

Setup		×
Choose Destination Location Select folder where setup will insta	l files.	
	Setup will install MagTek OPOS MSR in the following folder. To install to this folder, click Next. To install to a different folder, click Browse and select another folder. Destination Folder C:\Program Files (x86)\OPOS\MagTek	
InstallShield	< Back Next > Cancel	





c. The setup type for the installation of the MagTek OPOS MSR is '*Complete*' or '*Custom*'. The '*Complete*' setup type will proceed to install all components for the MagTek OPOS MSR.







- d. Click Finish to complete the installation.
- e. Click on driver again for modifications, repair, or removal of OPOS driver:





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### **Testing OPOS Installation**

The MagTek UPOS 1.13 OPOS MSR Utility application performs testing of the MagTek MSR OPOS device object along with the management of the Logical Device Names (LDN) registration. Within the MagTek OPOS MSR target installation folder, double click on the 'OPOSMSRUtility.exe' file to launch the MagTek OPOS MSR Utility application: *C:\Program Files (x86)\OPOS\MagTek\Sample Code\OPOSMSRUtility\Object* 

Below is the MagTek OPOS MSR Utility application primary screen. The MSR *Logical Device Name (LDN*) within the combo box is to first be selected for the USB connected MagTek MSR device and tested by populating the fields below of the most recent swiped card data. The *Clear* button will clear all display data fields.

Clicking the LDN button will launch the Logical Device Name Management dialog for adding and deleting Logical Device Names for each MagTek MSR Master Key.

The MagTek MSR Master Keys available are the 1) MagTek\_MSR-1 (representing the nonencrypted based reader) and 2) MagTek\_MSR-2 (representing the encrypted based reader).

Clicking the LDN button will launch the Logical Device Name Management dialog for adding and deleting Logical Device Names for each MagTek MSR Master Key.

The MagTek MSR Master Keys available are the 1) MagTek\_MSR-1 (representing the nonencrypted based reader) and 2) MagTek\_MSR-2 (representing the encrypted based reader).

MagTek OPOS MSR Utility v1.13	×
Salect a LDN     MSR Logical Device Name     LDN     Logical Device Name Management	
	,
Track 2 Data	
Track 3 Data	
Additional Security Information	
Track 1 Data Encrypted	,
Track 2 Data Encrypted	,
Track 3 Data Encrypted	
Clear	



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The default LDN's installed:

- MagTekMSR (MagTek non-encrypted MSR reader, using the MagTek MSR Master Key: MagTek\_MSR-1)
- MagTekMSR\_Encrypted (MagTek encrypted MSR reader, using the MagTek MSR Master Key: MagTek\_MSR-2).

The MagTek MSR Logical Device Names are displayed within the combo box: 1) 'MagTekMSR' (representing the non-encrypted based reader) and 2) 'MagTekMSR\_Encrypted' (representing the encrypted based reader) to be tested via the populated fields:

Track 1 Data, Track 2 Data and Track 3 Data for both the MagTek Non-encrypted and encrypted MSR reader; and the Additional Security Information, Track 1 Data Encrypted, Track 2 Data Encrypted and Track 3 Data Encrypted for MagTek encrypted MSR reader.

MagTek OPOS MSR Utilit	y v1.13	
 MagTekMSR MagTekMSR_Encrypted	MSR Logical Device Name	LDN Logical Device Name Management
, Track 2 Data		
, Track 3 Data		
,	Additional Security Information	
Track 1 Data Encrypted		
Track 2 Data Encrypted		
Track 3 Data Encrypted		
Clear		

Example of using the 'MagTekMSR' Logical Device Name with the USB connected MagTek nonencrypted based reader. The appropriate non-encrypted data fields are populated with clear text information.

MagTek OPOS MSR Utility v1.13
MagTekMSR  MSR Logical Device Name LDN Logical Device Name Management
Track 1 Data B4433604108827204 <sup>h</sup> SMITH/JOHN ^1004101000011153067410751000000
Track 2 Data 4433604108827204=10041011104675203731
Track 3 Data
Additional Security Information
Track 1 Data Encrypted
, Track 2 Data Encrypted
rrack 3 Data Encrypted
, <u>Clear</u> MSR Device 'MagTekMSR' card read Successful, ready to swipe card



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Example of using the 'MagTekMSR\_Encrypted' Logical Device Name with the USB connected MagTek encrypted based reader.

The appropriate encrypted data fields are populated with masked text data and encrypted data along with the Additional Security Information for the encrypted data coding.

MagTek OPOS MSR Utility v1.13
MagTekMSR_Encrypted  MSR Logical Device Name LDN Logical Device Name Management
Track 1 Data B423300000003214^SMITH/JOHN ^10040000000000000000000000000000000000
Track 2 Data
Track 3 Data
9010010B04BCCB0001B3 Additional Security Information
Track 1 Data Encrypted 459800A41A76ED536CF391E165D1377F3A30AD72FDF8F35C43F8251A09C0A050088A5DA1C342CB57B73643180C856C824E
Track 2 Data Encrypted EA41490BDDF77411B389998C27741349677D1D8C8EB095A4B31A8D576DFA594FA5D2D956C54DB4A9
Track 3 Data Encrypted
Clear MSR Device 'MagTekMSR_Encrypted' card read Successful, ready to swipe card

When clicking the LDN button, the Logical Device Name Management dialog is launched for adding and deleting Logical Device Names registrations for each MagTek MSR Master Key: 1) MagTek\_MSR-1 (representing the non-encrypted based reader) and 2) MagTek\_MSR-2 (representing the encrypted based reader).

MagTek OPOS MSR Utility v1.13	×
Salact a LDN MSR Logical Device Name LDN	Logical Device Name Management
Track 1 Data	
Track 2 Data	
Track 3 Data	
Additio	
Track 1 Data Encrypted	
Track 2 Data Encrypted Add LDN Delete LDN Cancel	
Track 3 Data Encrypted	
Clear	



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Select the MagTek Master Key via the 'Master Key' combo box to add or remove a Logical Device Name (LDN).

In the example below, the Master Key 'MagTek\_MSR-1' has an existing LDN 'MagTekMSR' with the LDN 'Msr1' to be added via the Add LDN button.

Once the Logical Device Names are set (registered), close the Logical Device Name Management dialog which will return control back to the primary MagTek OPOS MSR Utility application screen.

The registered LDN's will then be displayed within the MSR Logical Device Name combo box to be selected for testing.

MagTek OPOS MSR Utility v1.13	}	×
Select a LDN 💽 MS	R Logical Device Name LDN	Logical Device Name Management
Track 1 Data	Logical Device Name (LDN)	
Track 2 Data	MagTek_MSR-1 Master Key	
Track 3 Data	MagTekMSR	
Additio		
Track 1 Data Encrypted		
Track 2 Data Encrypted	Msr1	
Track 3 Data Encrypted	Add LDN Delete LDN Cancel	
Clear		

### **MagTek Sample Application**

The MagTek UPOS 1.13 OPOS MSR Sample application demonstrates the UPOS 1.13 OPOS MSR Properties, Methods and Events for the MagTek OPOS 1.13 MSR non-encrypted and encrypted readers.

Within the MagTek OPOS MSR target installation folder, double click on the 'Sample' folder and then double click on the 'MSRSample.exe' file to launch the MagTek OPOS MSR Sample application.

C:\Program Files (x86)\OPOS\MagTek\Sample Code\MSRSample\Object

MagTek OPOS Installation	TB000062	REV. B
MagTek OPOS MSR Sample Application v1.13		
Salect a LDN MSR Logical Device Name		
Open Claim DeviceEnabled DataEventEnabled CheckHealth ClearInput	ClearInputProp	perties
Close Release FreezeEvents AutoDisable Statistics DirectIO	Propertie	s
	🔽 DecodeData	
	ParseDecode	eData
	TransmitSen	tinels
	TracksToRead TR_1_2_3	•
	DataEncryption/ 3DEA_DUKPT	Algorithm
	RetrieveCardPro AccountNumbe	pperty r 💌
	ErrorReportingT	ype
	~	
< >>		
Clear		

The MagTek OPOS MSR Sample application screen. The MSR Logical Device Name (LDN) within the combo box is to first be selected for the USB connected MagTek MSR device for OPOS Properties, Methods and Events operations.

## Parameter Descriptions

### **MSR Logical Device Name**

### [Combo box]

This combo box contains the OPOS registered Logical Device Names (LDN) to be selected the for MagTek OPOS MSR device instantiation.

## **OPOS Open method**

### [Button]

This button will pass the selected LDN as the string parameter of the OPOS Open method, which will instantiate the associated OPOS device object for processing of all OPOS MSR Properties, Methods and Events.

## **OPOS Claim (ClaimDevice) method**

## [Button]

This button will claim the MagTek OPOS MSR device object for exclusive use. (Required for the OPOS MSR device object).



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## **OPOS DeviceEnabled property**

[Check box] This check box enables (checked) or disables (unchecked) the MSR device object. (Required for most OPOS operations).

## **OPOS DataEventEnabled property**

[Check box]

This check box enables (checked) or disables (unchecked) Data Events to be sent from the MagTek OPOS MSR Service Object for any queued MSR read data. Per the UPOS 1.13 OPOS Standards specification, this DataEventEnabled property is set to false within the MagTek OPOS MSR Service Object after each OPOS MSR Data Event is fired to the OPOS application. The OPOS application is required to re-enable the DataEventEnabled property to receive the MSR read data from the most recent or queued card swipe.

## **OPOS CheckHealth method**

[Button]

This button will invoke the CheckHealth (Internal) method and display the CheckHealthText Property value within the output window.

### **OPOS ClearInput method**

[Button]

This button will clear any queued MSR read data within the MagTek OPOS MSR Service Object. **OPOS ClearInputProperties method** 

[Button]

This button will clear all properties populated via the most recent MSR read data.

### Properties

[Button]

This button will invoke and display all the OPOS common and device specific MSR properties within the output window. All properties associated to MSR read data will contain data from the most recently swiped card.

## **OPOS DecodeData property**

[Check box]

This check box enables (checked) or disables (unchecked) the MSR specific DecodeData property.

### **OPOS ParseDecodeData property**

[Check box]

This check box enables (checked) or disables (unchecked) the MSR specific ParseDecodeData property.



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## **OPOS TransmitSentinels property**

[Check box]

This check box enables (checked) or disables (unchecked) the MSR specific TransmitSentinels property.

# TracksToRead

[Combo box]

This combo box contains the OPOS MSR options for the Tracks To Read setting and reflected within the populated OPOS MSR Properties.

## DataEncryptionAlgorithm

[Combo box]

This combo box contains the MagTek OPOS MSR supported Data Encryption Algorithms. Note: This Property setting only applies to the MagTek encrypted based MSR devices.

## RetrieveCardProperty

[Combo box]

This combo box contains the MSR specific Properties to be retrieved corresponding to the parsing of the recently swiped card.

Properties that do not contain data did not exist in the original track number data.

## ErrorReportingType

[Combo box]

This combo box contains the MSR specific Property for reporting the error type, either Card or Track based error reporting.

## **OPOS DirectIO method**

[Button] This button invokes the DirectIO Method example.

## **OPOS Statistics method**

[Button]

This button invokes the supported RetrieveStatistics Method returning the OPOS Statistics XML based string and is displayed within a launched dialog box.

## **OPOS AutoDisable property**

[Check box]

This check box enables (checked) or disables (unchecked) the Auto Disable Property. This Property is used for added control with receiving event driven input from the MSR device object.



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### **OPOS FreezeEvents property**

[Check box]

This check box enables (checked) or disables (unchecked) the Freeze Events Property. This Property is used to control when events are to be received. This applies to all Events associated with the OPOS MSR device object.

#### **OPOS Release (ReleaseDevice) method**

[Button]

This button will release the MagTek OPOS MSR device object from exclusive use.

#### **OPOS Close method**

[Button]

This button will close the MagTek OPOS MSR device object instantiation.

### **Examples**

1. Example one:

MagTek OPOS MSR Sample Application v1.13	
MsR Logical Device Name	
MagTekMSR Encrypted DeviceEnabled DataEventEnabled CheckHealth ClearInput	ClearInputProperties
Close Release FreezeEvents AutoDisable Statistics DirectIO	Properties
	🔽 DecodeData
	▼ ParseDecodeData
	TransmitSentinels
	TracksToRead
	DataEncryptionAlgorithm 3DEA_DUKPT
	RetrieveCardProperty AccountNumber
	ErrorReportingType
Clear	

Example of the Logical Device Name combo box containing the default OPOS MSR registered Logical Device Names (LDN).



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Additional Logical Device Names may be added or removed via the MagTek OPOS MSR Utility application.

2. Example 2

MagTek OPOS MSR Sample Application v1.13	
Mag Tek OPOS MSR Sample Application v1.13         MagTekMSR       MSR Logical Device Name         Open       Claim       DeviceEnabled       DataEventEnabled       CheckHealth       ClearInput         Close       Release       FreezeEvents       AutoDisable       Statistics       DirectIO	ClearInputProperties Properties
DataEvent: [Time stamp: 12:03:10]	ParseDecodeData     TransmitSentinels     TrackToRead     TR_1_2_3     DateEncryptionAlgorithm     3DEA_DUKPT     RetrieveCardProperty     AccountNumber     CARD     Y
< Clear	

Example of a received and displayed OPOS MSR Data Event of a swiped card. The 'MagTekMSR' Logical Device Name used as the OPOS MSR instantiated device object representing the MagTek non-encrypted MSR device.

3. Example 3

MagTek OPOS MSR Sample Application v1.13	X
MagTek/MSR MSR Logical Device Name	
Open         Claim         Image: DeviceEnabled         DataEventEnabled         CheckHealth         ClearInput           Close         Release         Image: FreezeEvents         AutoDisable         Statistics         DirectIO	ClearInputProperties Properties
	🔽 DecodeData
OPO5 Properties: [Time stamp: 13:29:42]	🔽 ParseDecodeData
CapPowerReporting = OPOS_PR_NONE	TransmitSentinels
CapStatisticsReporting = True CapUpdateStatistics = False CapUpdateStatistics = False	TracksToRead
CheckHealth1ext = MSR CheckHealth INTERNAL: Successful Claimed = True DataCount = 0 DataCount = 0	DataEncryptionAlgorithm 3DEA_DUKPT
Datazvenichabied = Faise DeviceTabied = True FreezeEvents = Faise DeviceTabiet = ODE NL DISAPLED	RetrieveCardProperty AccountNumber
Powerstade = OPOS_FS_DIARADELD Powerstade = OPOS_S_DURNOWN State = OPOS_S_DUE DeviceObjectDescription = OPOS MSR_Control 1.13.001 [Public, by CRM/RCS-Davton]	ErrorReportingType
DeviceObjectVersion = 1013001 DeviceServiceObjectVersion = MagTek OPOS MSR Service Object, Copyright(C) 2012. DeviceServiceVersion = 1013000 DeviceServiceVersion = 1013000	
PhysicalDeviceDescription = NorPenerypted mak PhysicalDeviceName = V5 Series Readers	
CapCardAuthentication =	
Clear	

Example of clicking the Properties button displaying the OPOS MSR populated Properties of the most recently swiped card.



## **Additional Information**

By default, the OMTD installation registers aliases for the control objects' OLE programmatic ID, as required by the OPOS specification. The registered aliases are:

- MSR Control Object = OPOS.MSR
- MICR Control Object = OPOS.MICR
- PINPad Control Object = OPOS.PINPad
- Line Display Control Object = OPOS.LineDisplay

When the alias registration is bypassed, the control objects are registered under the following OLE programmatic IDs:

- MSR Control Object = MAGTEK.OPOS.MSR
- MICR Control Object = MAGTEK.OPOS.MICR
- PINPad Control Object = MAGTEK.OPOS.PPAD
- Line Display Control Object = MAGTEK.OPOS.LDSP

When the OMTD controls are uninstalled, the registered aliases are removed only if they still refer to an OMTD control object meaning that another OPOS control has not been installed after the OMTD controls were installed.

## **DEVICE POWER REPORTING**

The OMTD controls do not support the optional power reporting capability described in the OPOS Specification. This is due to the fact that MagTek devices and MTD do not report power events.

## SAVING DEVICE SETTINGS ACROSS CLAIM/RELEASE

The OPOS Specification defines that settable device characteristics are saved and restored for each application that accesses the device. The complexity of supporting this functionality does not justify the marginal benefit provided to applications. If MagTek foresees frequent simultaneous access of a device from multiple applications, this feature may be added later.

## ERROR PROCESSING

## Reporting

The SO will display a message box if it receives a property request containing an invalid *PropIndex*. These types of errors should be found during development, testing, or staging of the containing application prior to rollout to a customer. This type of error reporting is recommended by the OPOS Specification.

## **Incompatibility Issues**

If the control object determines that the specified service object is not supplied by MagTek or does not implement the required device class methods, it will fail the **Open** method. The CO determines if the SO is supplied by MagTek by querying a private property on the SO. However, the SO should work with other COs by specification.

The minimally required device class methods are those methods that are common to all device classes. Based on the service object version, one or more device class-specific methods may also be required.



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The PINPad CO will fail the **Open** method if the OPOS version of the SO is less than 1.3. This is because the PINPad device class did not exist with prior versions of OPOS.

The SO will fail its **OpenService** method if it fails to bind to the **SOxxx** event handlers of the CO.