MagTek
OPOS FOR MSR DEVICES
PROGRAMMING REFERENCE MANUAL

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MAGTEK®

REVISIONS

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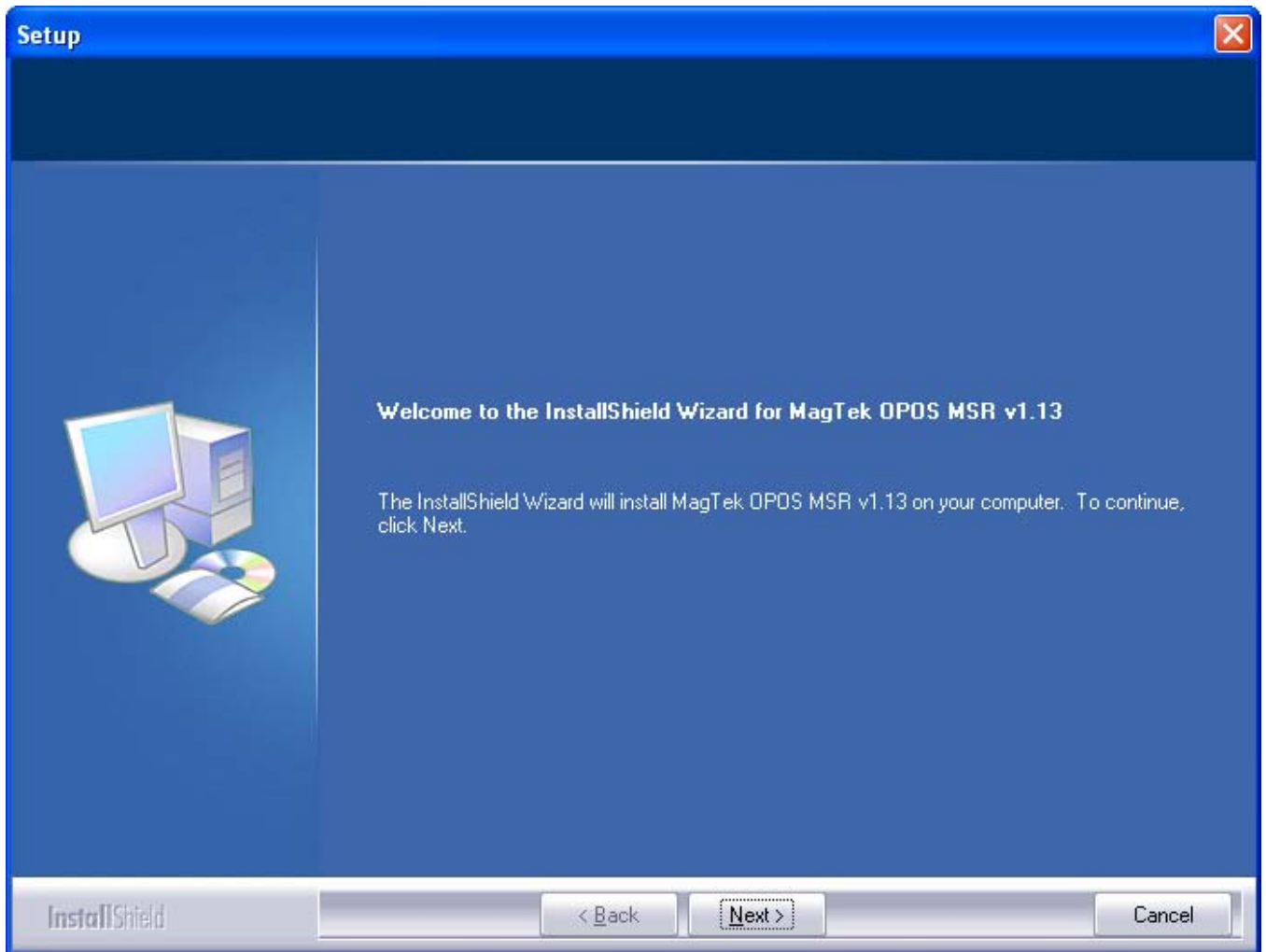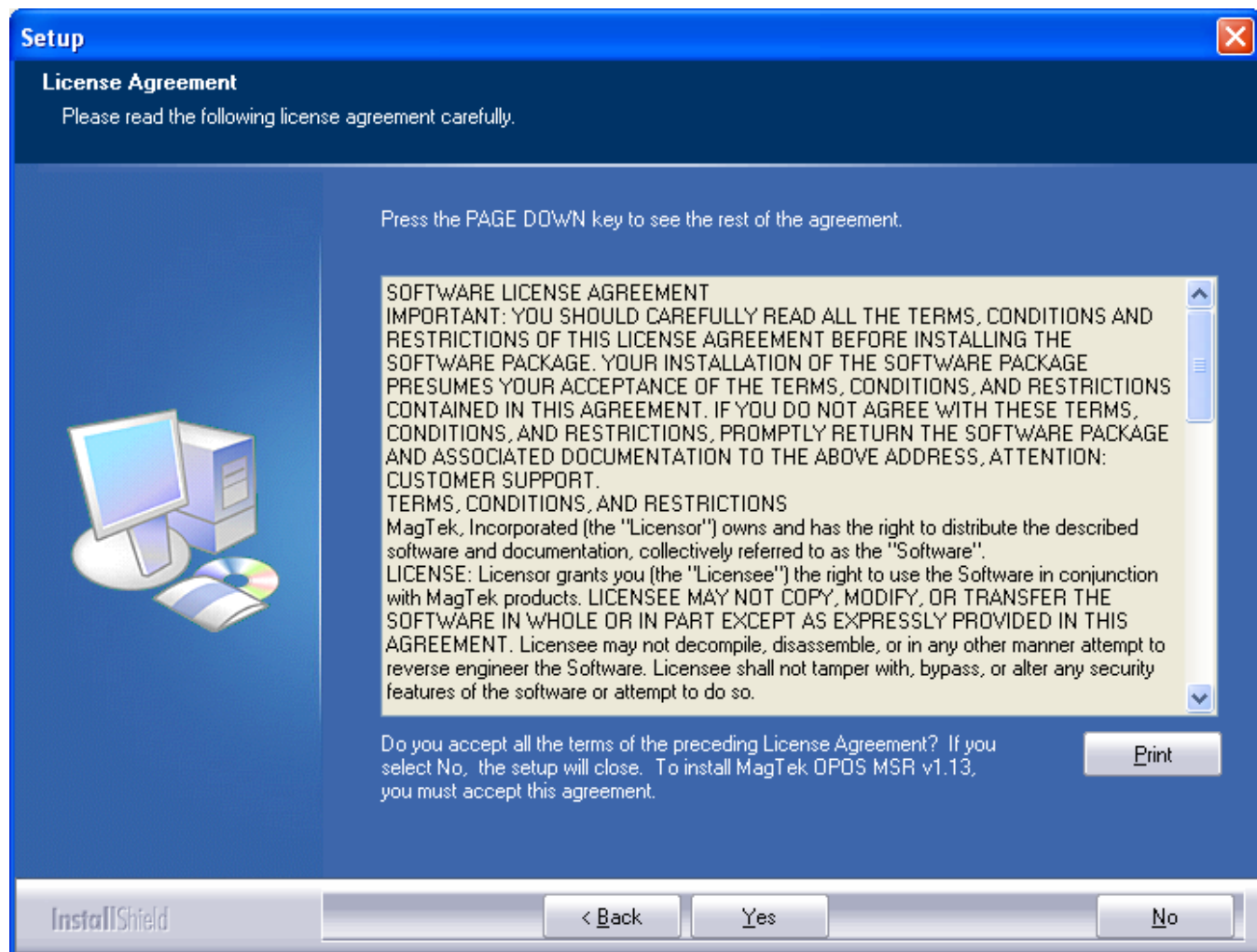
TABLE OF CONTENTS

iv

SECTION 1. INSTALLATION

The MagTek UPOS 1.13 OPOS MSR is installed via an InstallShield application. Within the Disk1 folder, double click on the 'setup.exe' file to launch the installation.
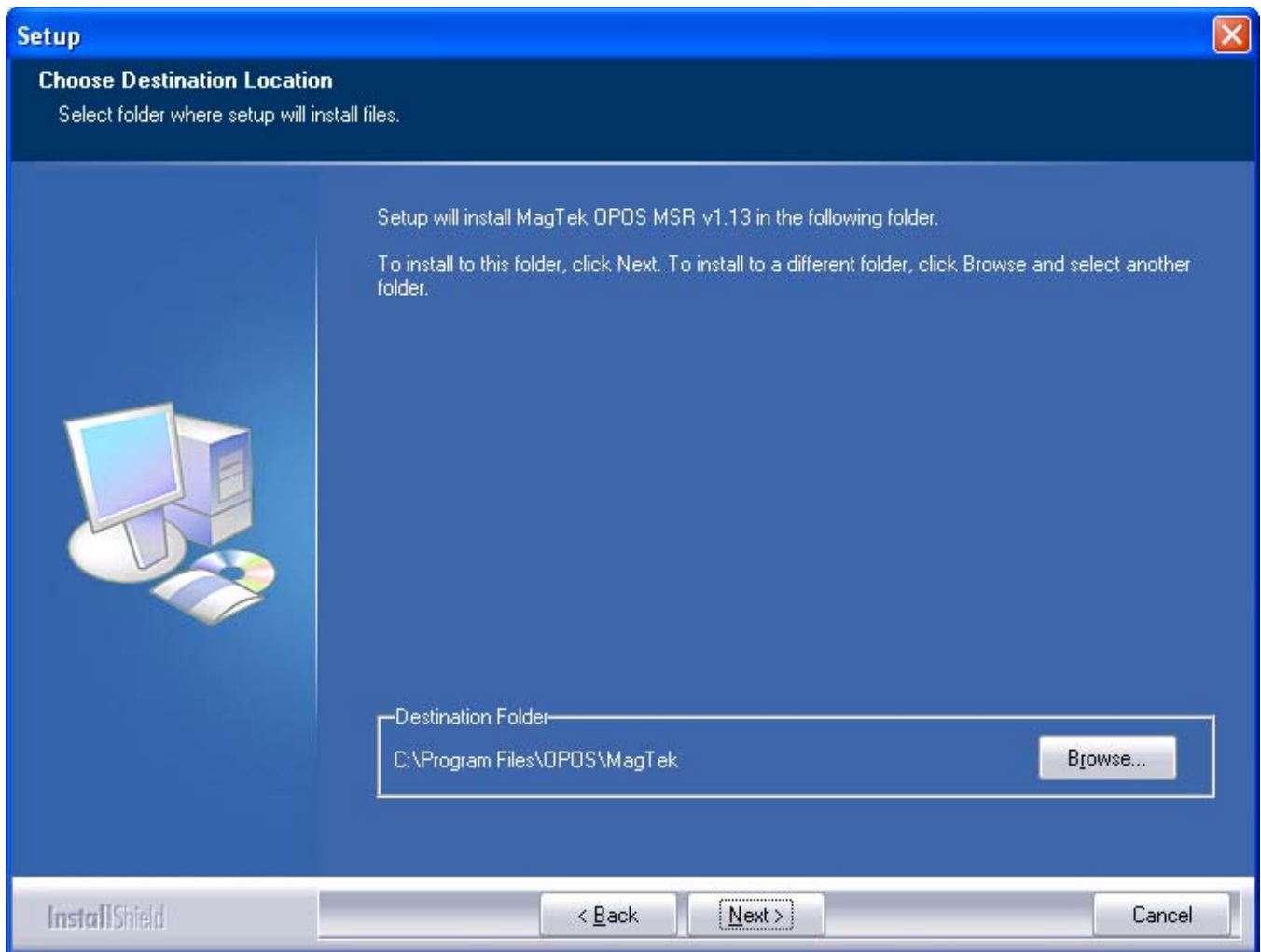
The following screen shots will be a guide through the installation:

The Initial welcome screen for the installation of the MagTek OPOS MSR.

The license agreement display for acceptance or cancellation for the installation of the MagTek OPOS MSR.
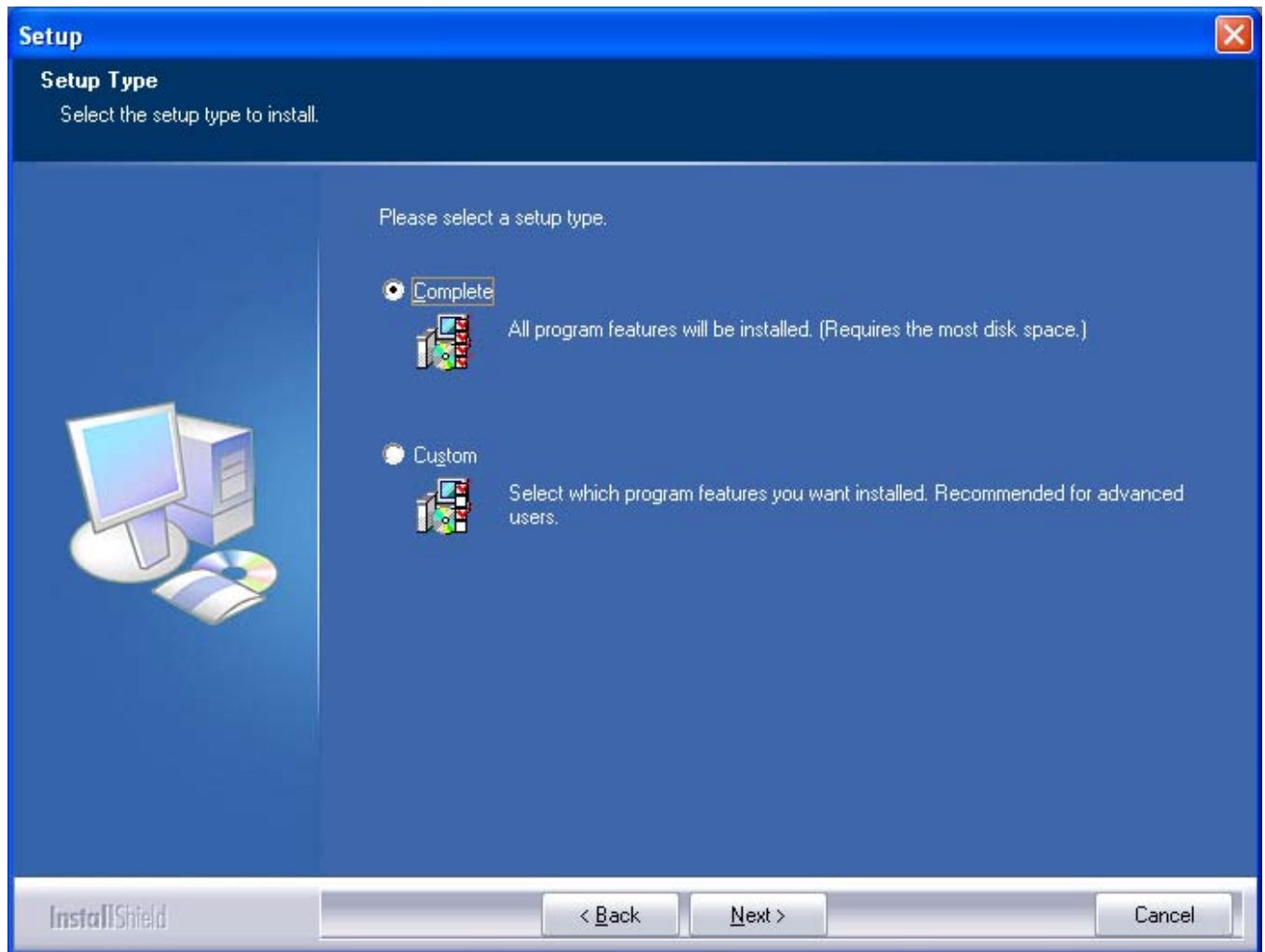
The target folder location for the installation of the MagTek OPOS MSR.
The default target folder :
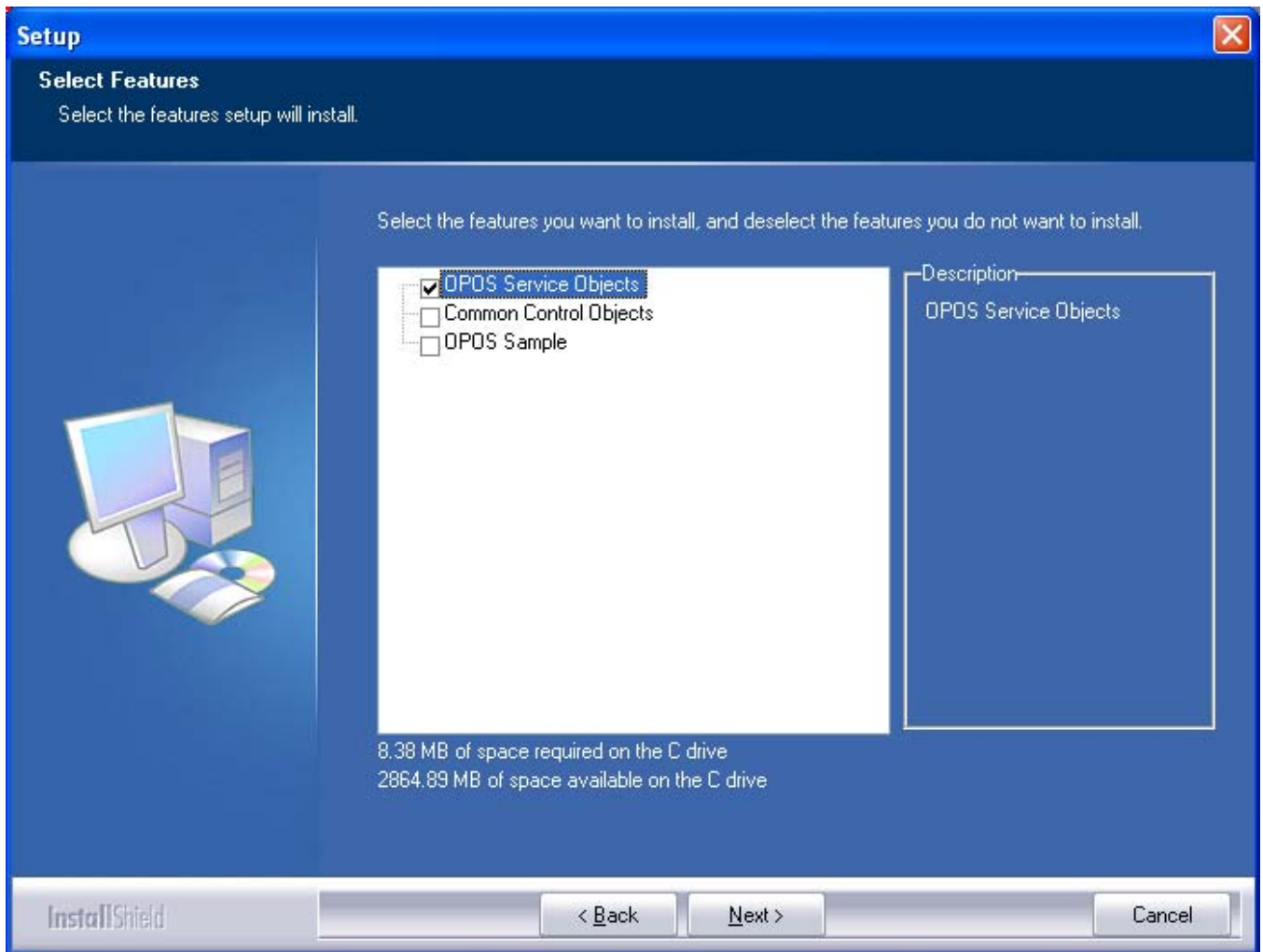For x86 platforms: C:\Program Files\OPOS\MagTek
For x64 platforms: C:\Program Files (x86)\OPOS\MagTek
Click on the 'Browse' button to change the installation folder.

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.

The 'Custom' setup type will enable the options for the Common Control Objects and the OPOS
Sample components to be installed for the MagTek OPOS MSR.
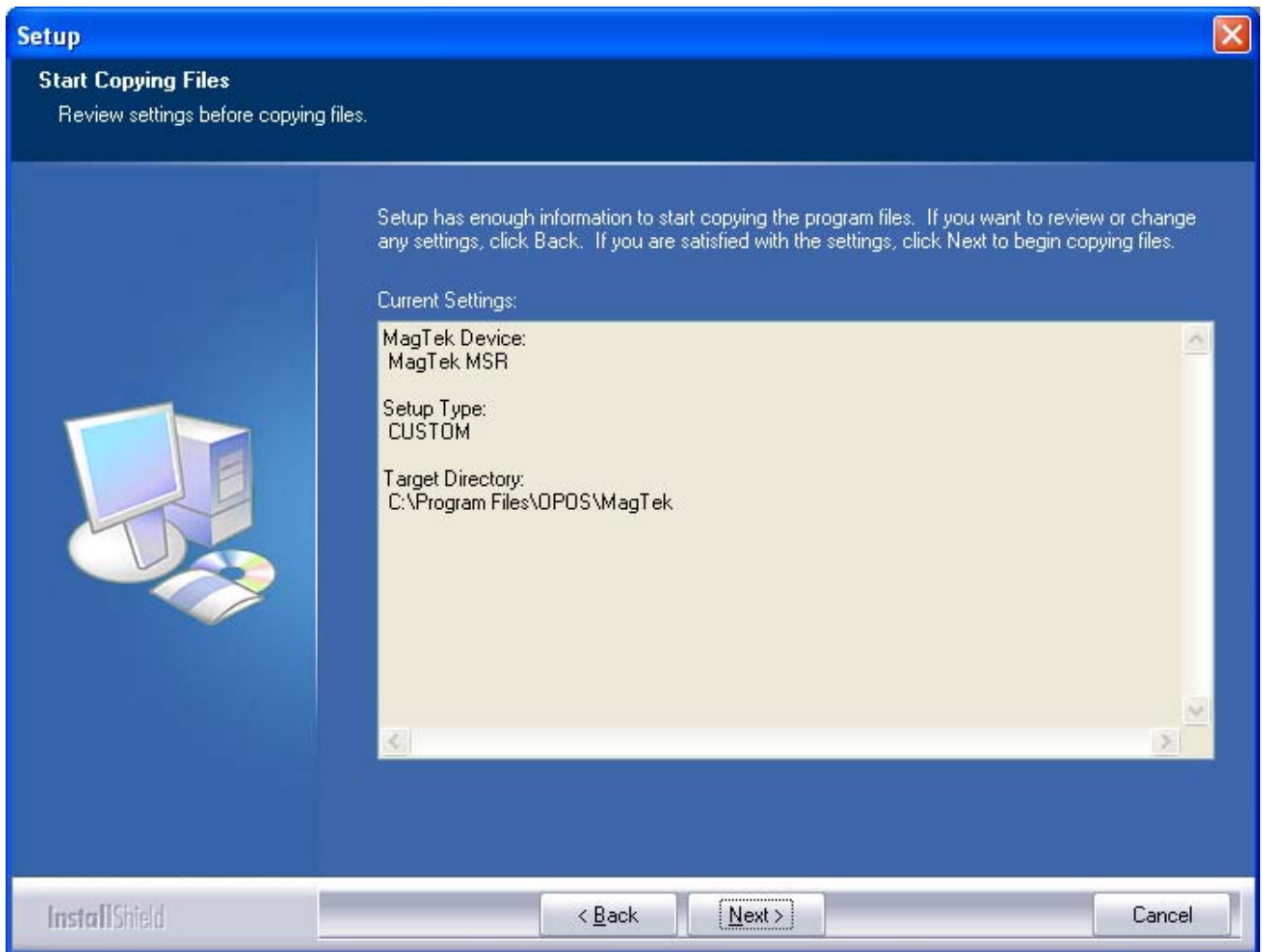
The current settings displayed prior to installation of the MagTek OPOS MSR.
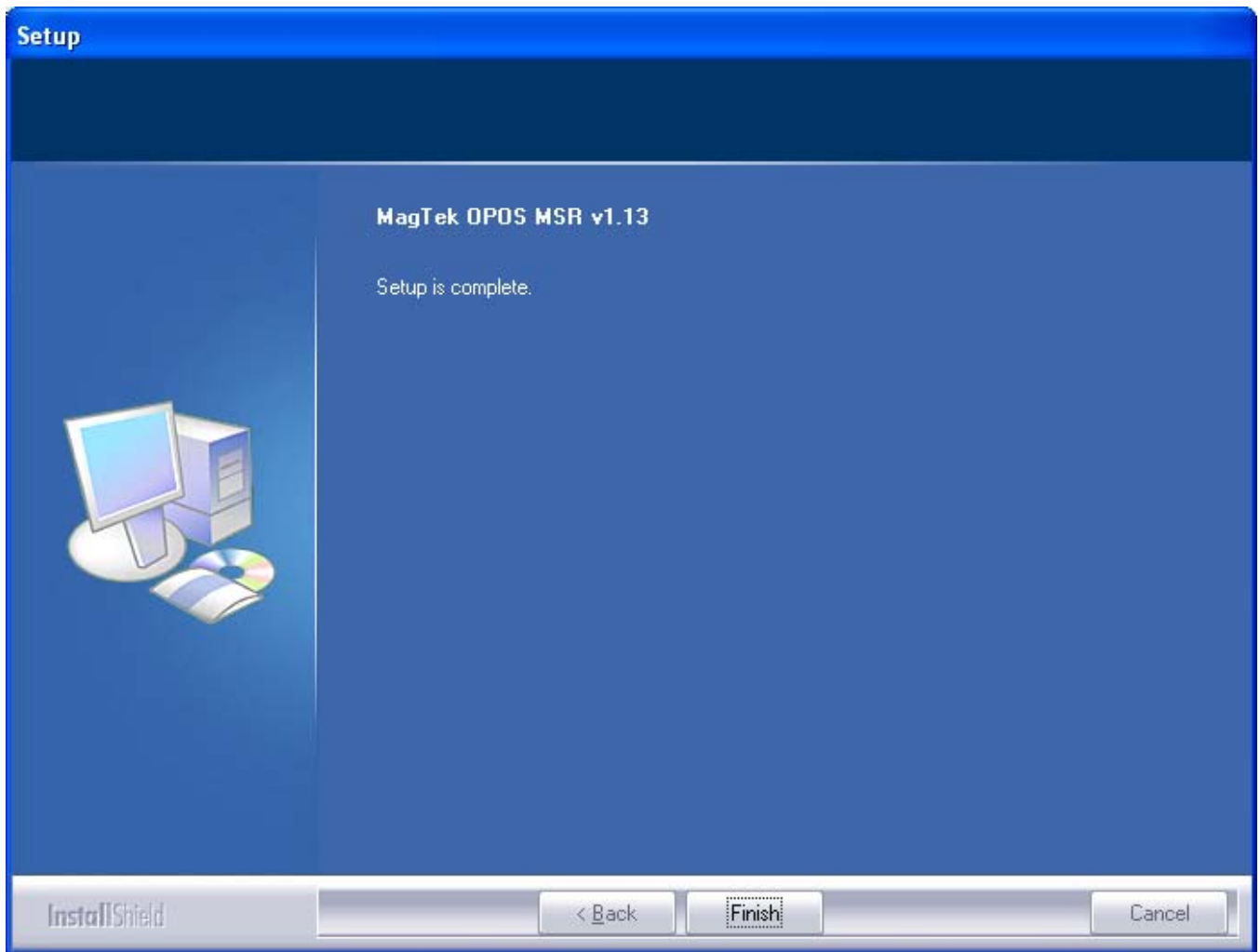
The setup complete will be displayed for a successful installation of the MagTek OPOS MSR.
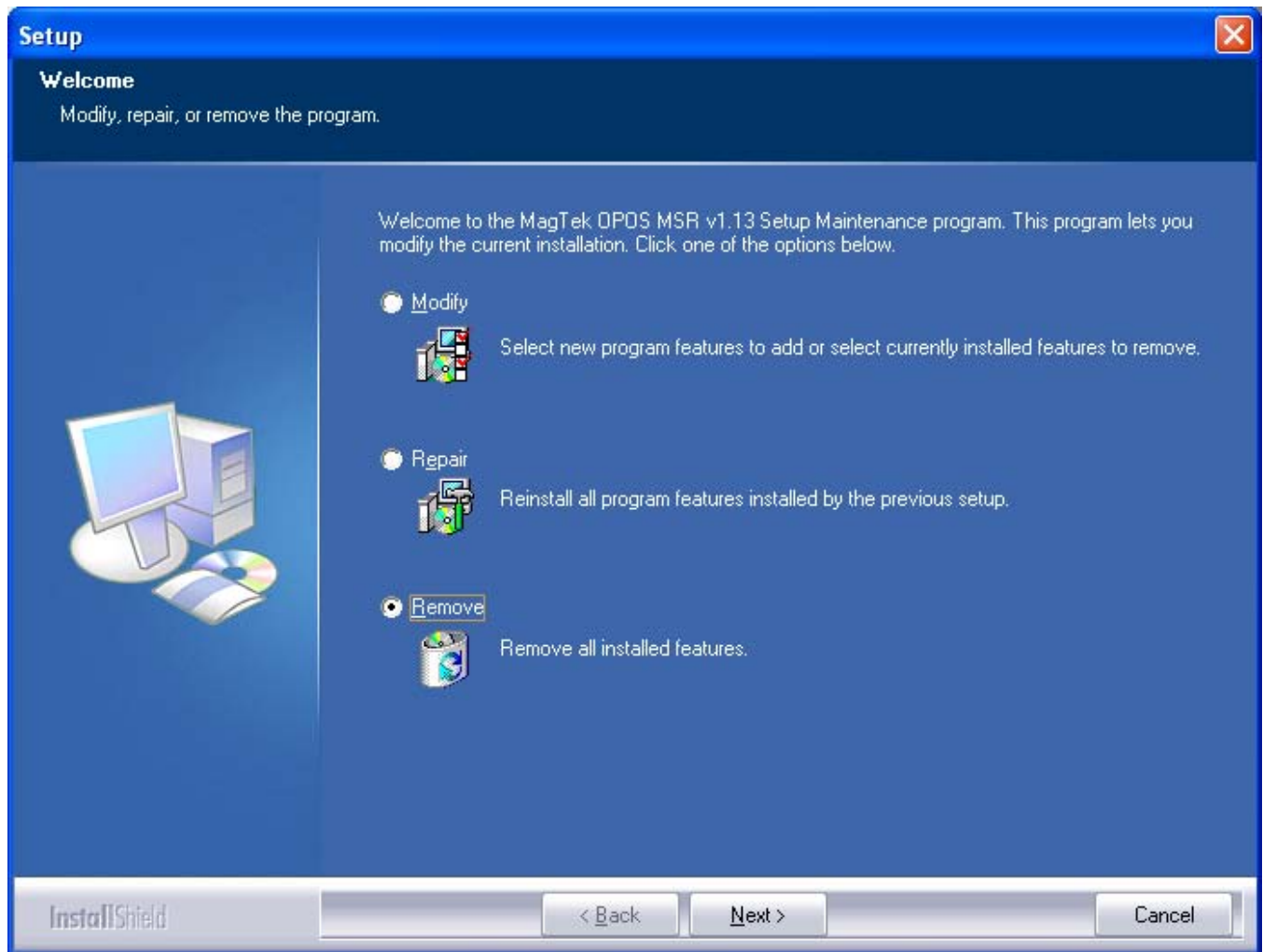
Maintenance for the MagTek OPOS MSR installation will include the options to Modify, Repair or Remove (default).

* InstallShield is a registered trademark of the Flexera Software Company.

SECTION 2. UTILITY

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.
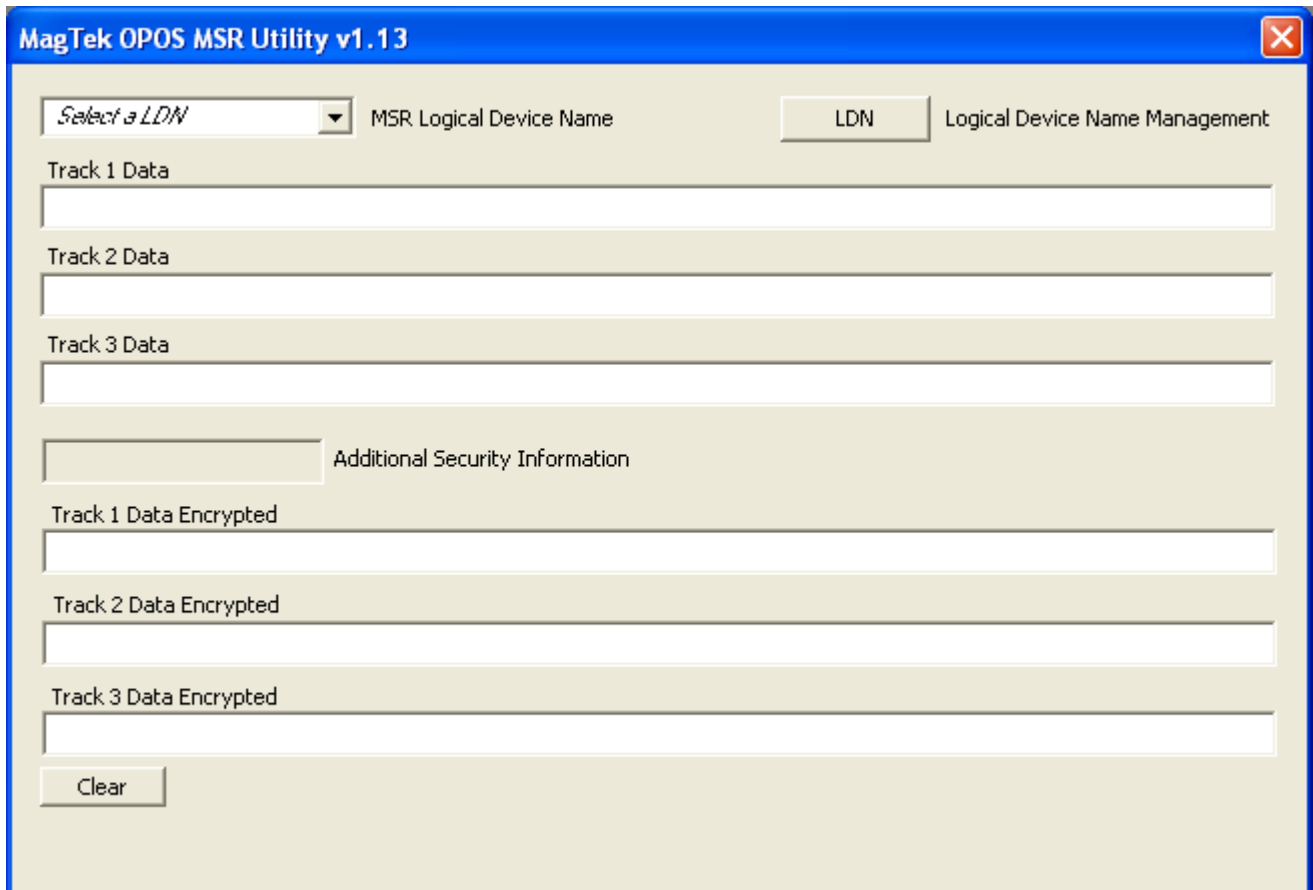

The MagTek OPOS MSR Utility application primary screen. The MSR Logical Device Name (LDN) within the combo box is to first be selected for the USB connected MagTek MSR device and tested by populating the fields below of the most recent swiped card data. The Clear button will clear all display data fields.

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 non-encrypted based reader) and 2) MagTek_MSR-2 (representing the encrypted based reader).

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 Utility v1.13

MagTekMSR ▼   MSR Logical Device Name   LDN   Logical Device Name Management

Track 1 Data

B4433604108827204^SMITH/JOHN ^10041010000111530674107510000000

Track 2 Data

4433604108827204=10041011104675203731

Track 3 Data

Additional Security Information

Track 1 Data Encrypted

Track 2 Data Encrypted

Track 3 Data Encrypted

Clear

MSR Device 'MagTekMSR' card read Successful, ready to swipe card...

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

The appropriate non-encrypted data fields are populated with clear text information.

11

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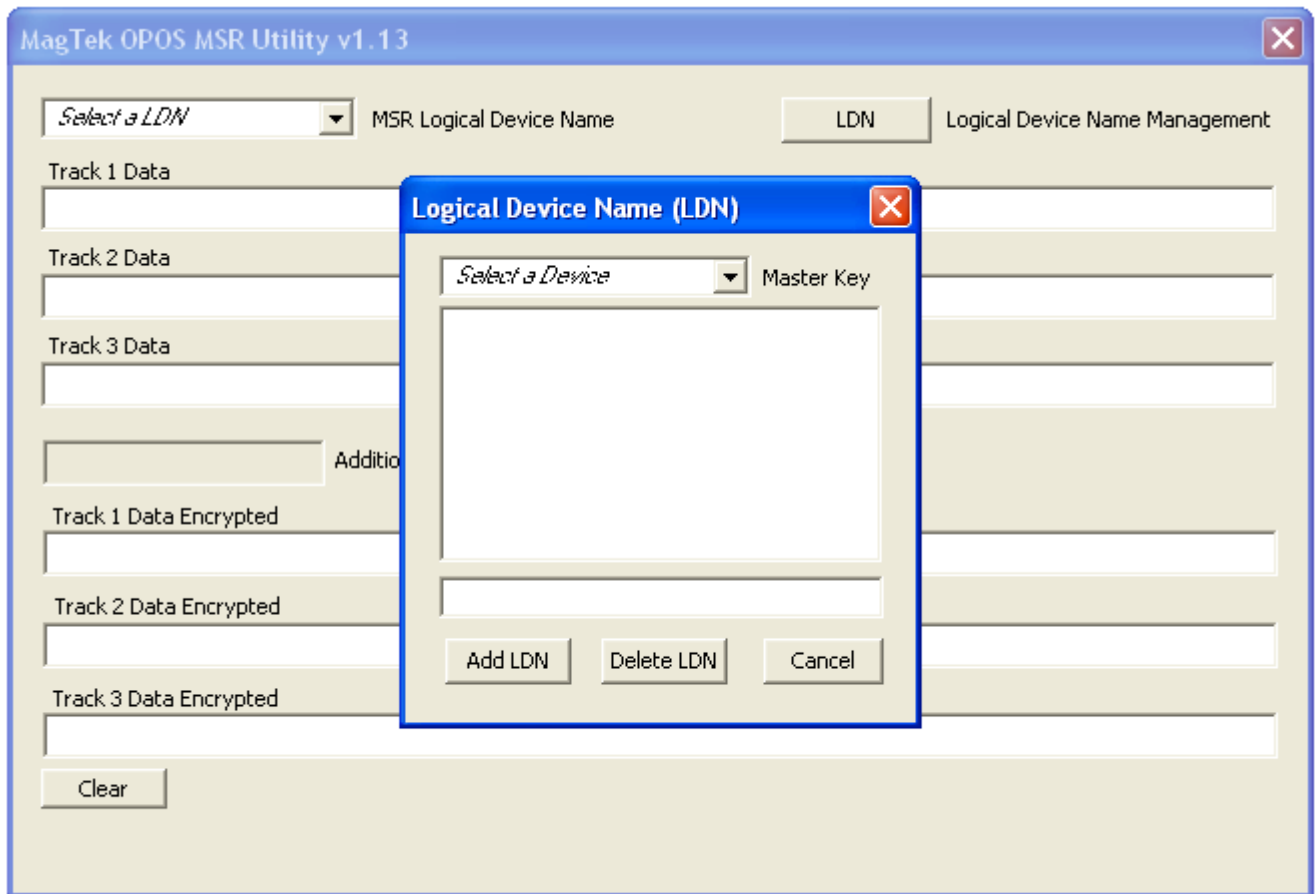
When clicking the LDN button, the Logical Device Name Management dialog is launched for adding and deleting Logical Device Names registrations for each MagTek MSR Master Key: 1) MagTek_MSR-1 (representing the non-encrypted based reader) and 2) MagTek_MSR-2 (representing the encrypted based reader).

13
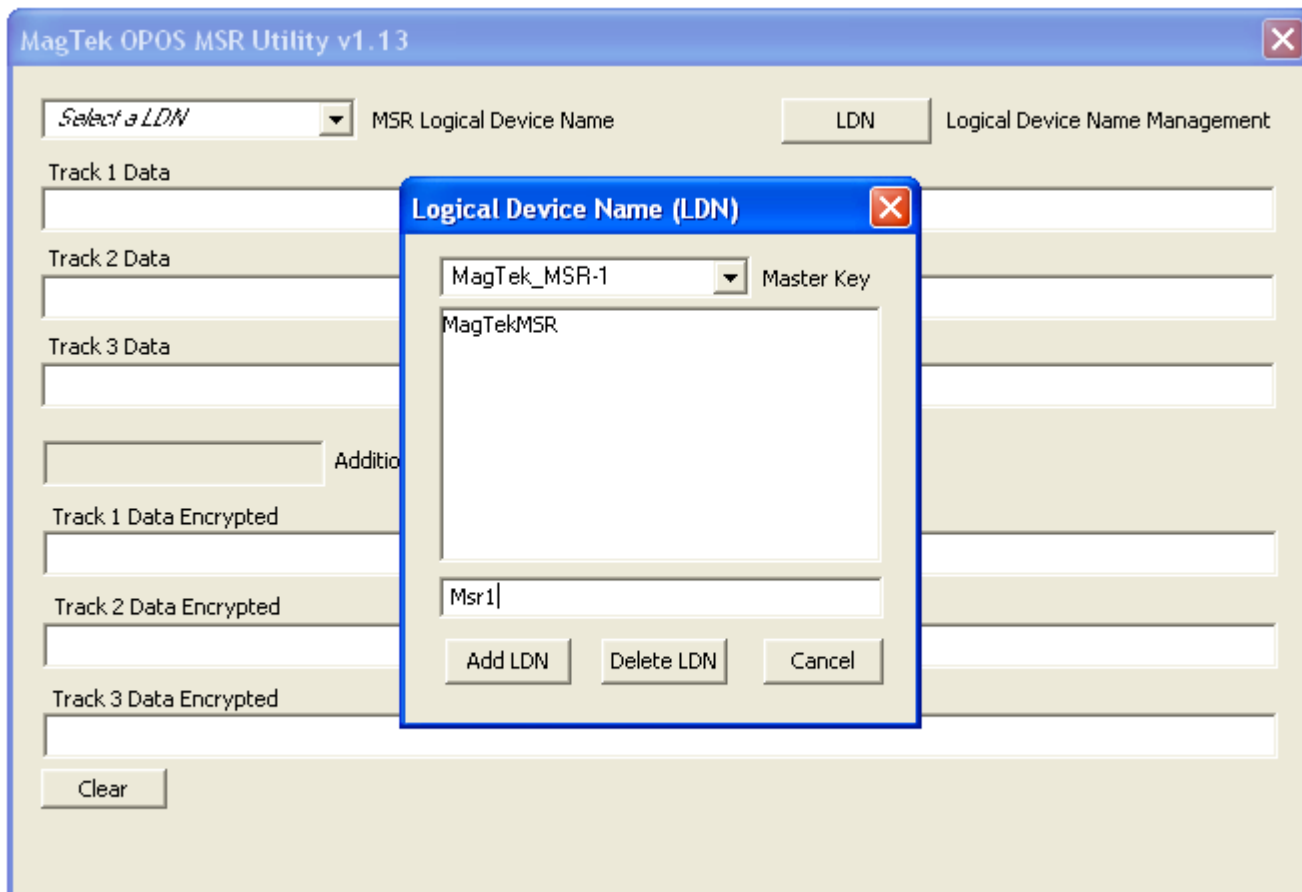
Select the MagTek Master Key via the 'Master Key' combo box to add or remove a Logical Device Name (LDN).

In the example above, 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.

SECTION 3. SAMPLE

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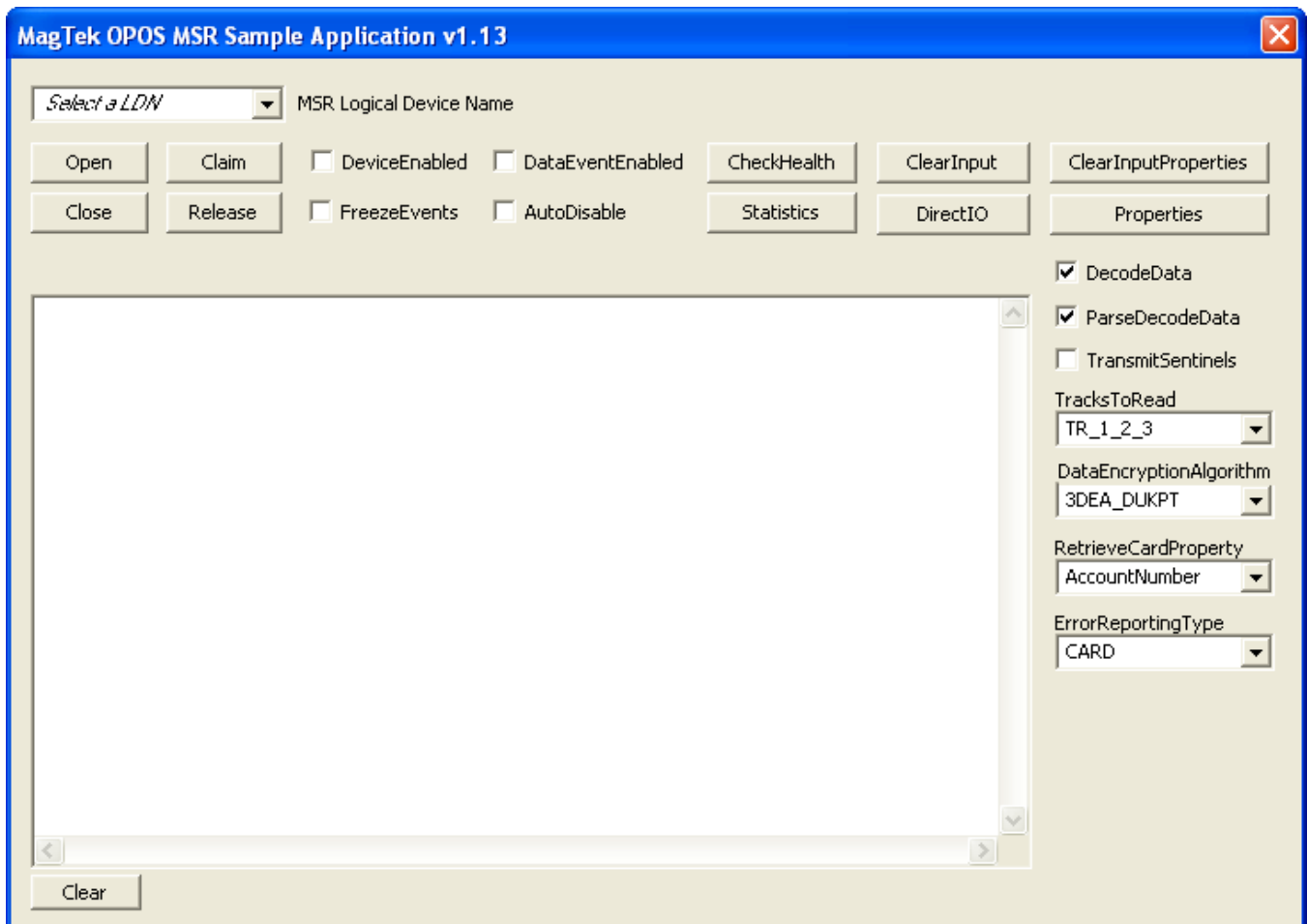
The MagTek OPOS MSR Sample application screen. The MSR Logical Device Name (LDN) within the combo box is to first be selected for the USB connected MagTek MSR device for OPOS Properties, Methods and Events operations.

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).

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.

16

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.

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.

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]
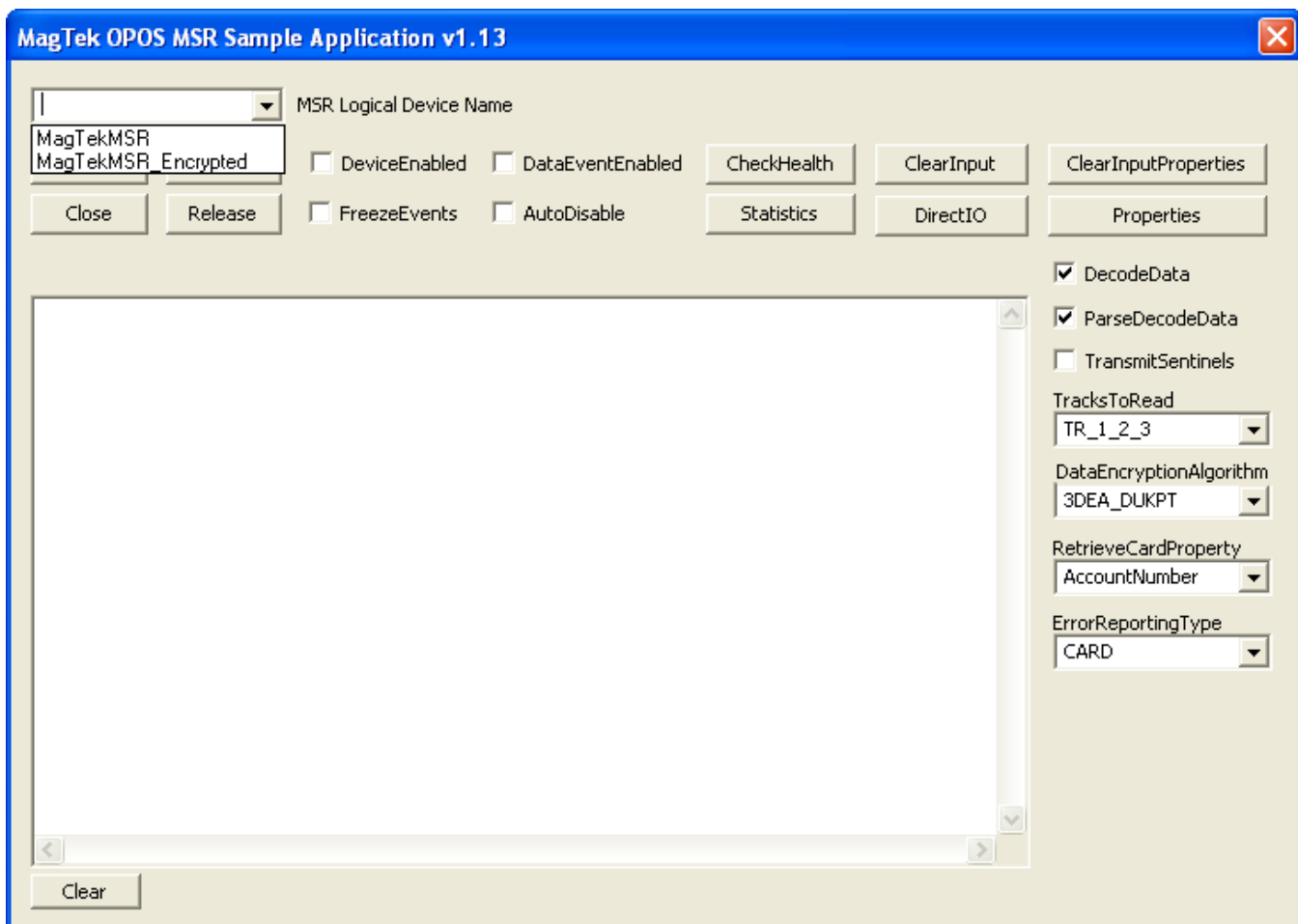This button will release the MagTek OPOS MSR device object from exclusive use.
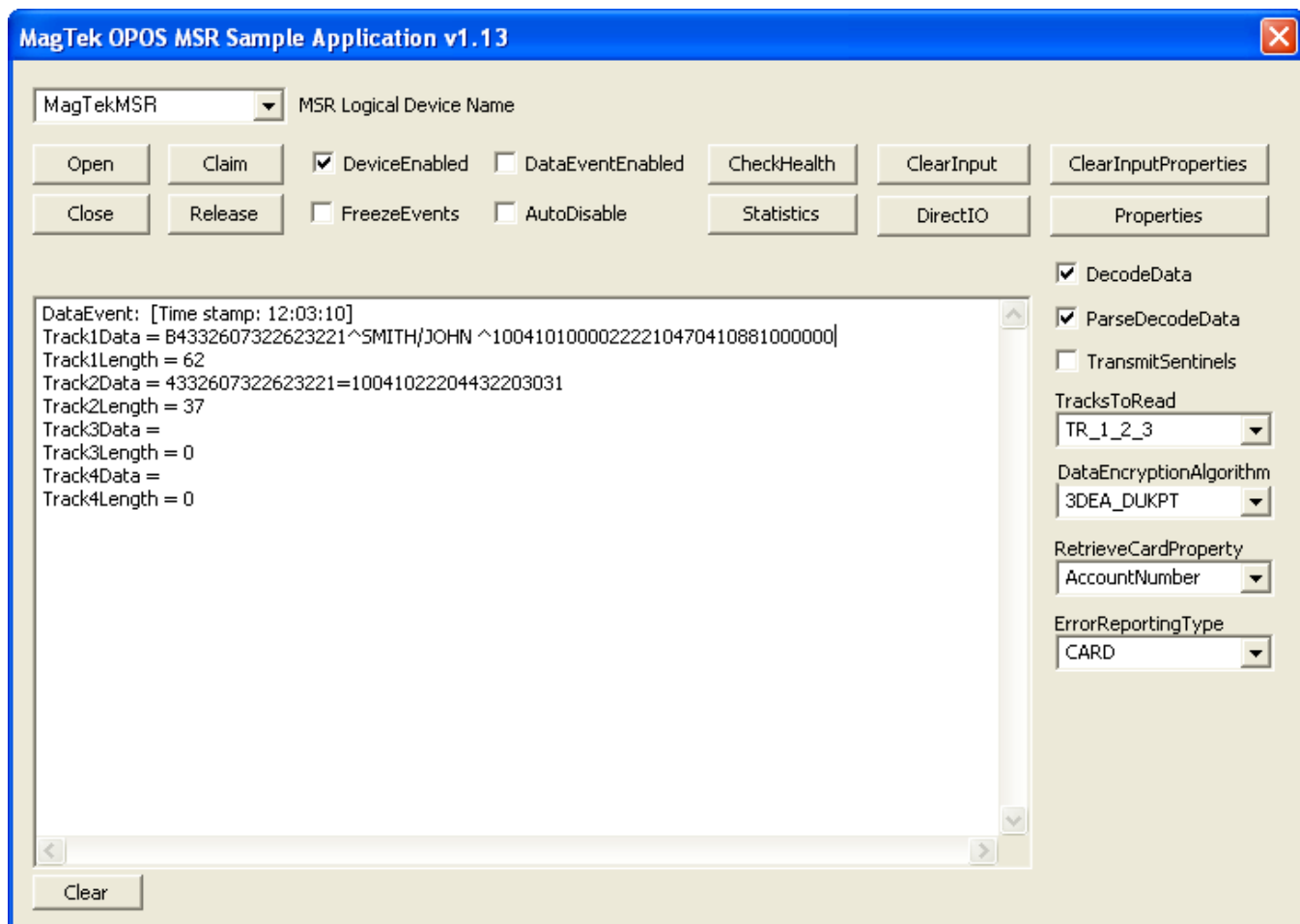
OPOS Close method
[Button]
This button will close the MagTek OPOS MSR device object instantiation.

Example of the Logical Device Name combo box containing the default OPOS MSR registered Logical Device Names (LDN).
Additional Logical Device Names may be added or removed via the MagTek OPOS MSR Utility application.

MagTek OPOS MSR Sample Application v1.13

MagTekMSR ▼   MSR Logical Device Name

| Open | Claim | ☑ DeviceEnabled | ☐ DataEventEnabled | CheckHealth | ClearInput | ClearInputProperties |
| Close | Release | ☐ FreezeEvents | ☐ AutoDisable | Statistics | DirectIO | Properties |

☑ DecodeData

DataEvent: [Time stamp: 12:03:10]
Track1Data = B4332607322623221^SMITH/JOHN ^10041010000222210470410881000000|
Track1Length = 62
Track2Data = 4332607322623221=10041022204432203031
Track2Length = 37
Track3Data =
Track3Length = 0
Track4Data =
Track4Length = 0

☑ ParseDecodeData

☐ TransmitSentinels

TracksToRead
TR_1_2_3 ▼

DataEncryptionAlgorithm
3DEA_DUKPT ▼

RetrieveCardProperty
AccountNumber ▼

ErrorReportingType
CARD ▼

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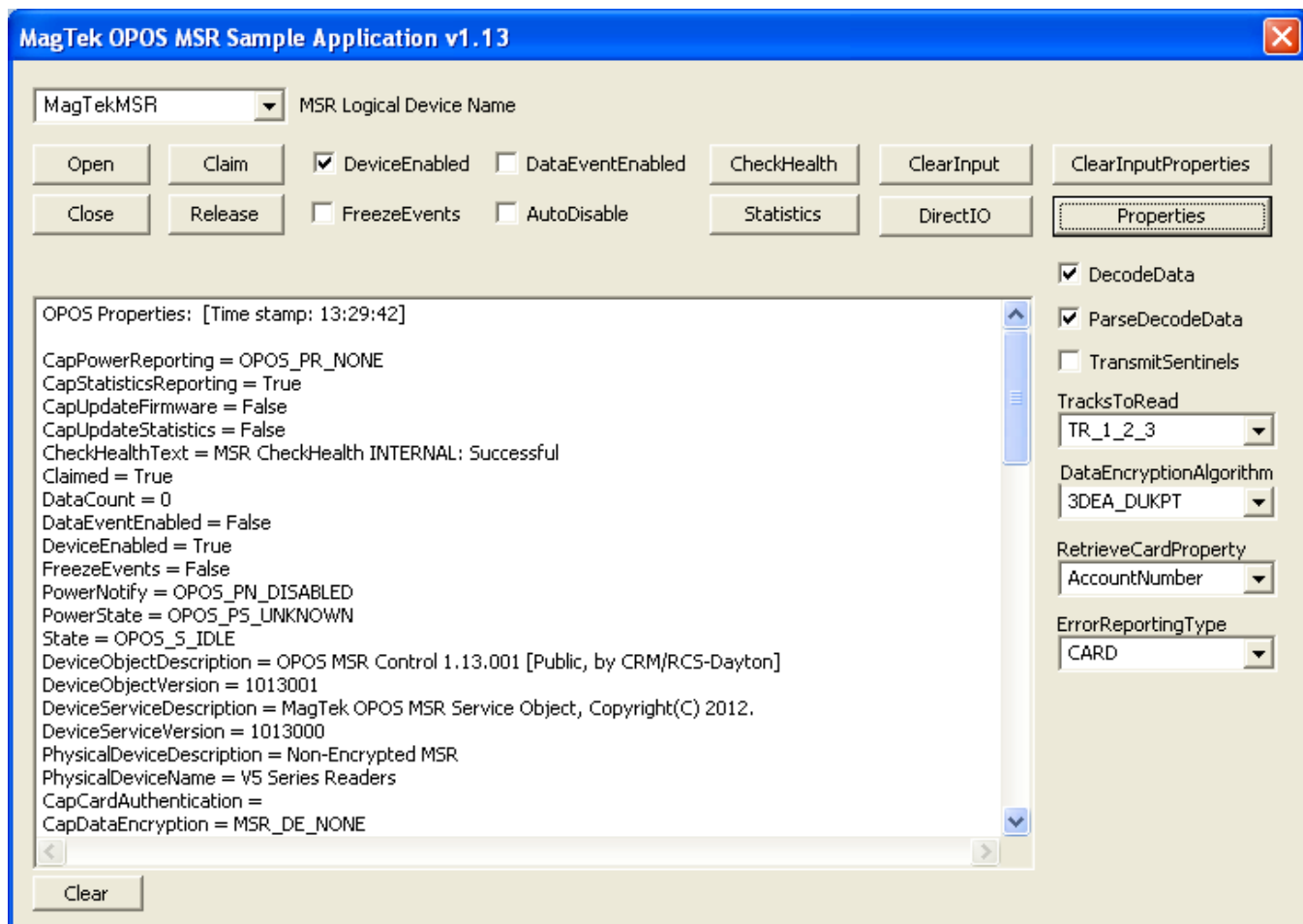
Example of clicking the Properties button displaying the OPOS MSR populated Properties of the most recently swiped card.

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.

22

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.

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.