

KOFAX



Kofax Reader Maintainer User Guide

2023-05-16

Version 6.0

Contents

Introduction.....	4
Purpose.....	4
Compatibility	4
System requirements.....	4
Installing the Reader Maintainer	5
Removing the Reader Maintainer.....	6
Using the Kofax Reader Maintainer.....	7
Starting the software.....	7
Connecting USB readers	8
Connecting Ethernet readers.....	8
Selecting an Ethernet Reader	9
Filtering the selection list.....	9
Selecting by IP address	10
Device not accessible error.....	10
Locked readers.....	11
The main window	12
Read Card Number function	13
Read Card Type function	14
Factory Reset function.....	15
Configure Network Settings function	16
Customizing readers	17
Mode selection	18
Programming a Stock Solution	19
Programming a Custom Solution	21
Software settings.....	22
Show Ethernet Readers	22

Show Read Counter	22
Show Full Configuration Info	22
Full Debug Logging.....	22
Troubleshooting	23
USB card reader not detected	23
Card not detected by Read Card Number function	25
Card not detected by Read Card Type function.....	26
Ethernet reader does not appear in Select Reader dialog.....	27
Reader Maintainer function buttons are disabled	28
Update Reader operation fails	28
Reader disappears following reset or reconnection not possible message	29
Appendix.....	30
Keyboard emulation options	30
Stock Solution files and descriptions	31
Reader Settings files and descriptions.....	35
Ethernet reader Maintenance Mode.....	36

Introduction

Purpose

This user guide provides information on the Kofax Reader Maintainer software used for the maintenance and support of Kofax RFID card reader products.

Compatibility

The Kofax Reader Maintainer software supports the following readers:

- Baltech Micro2 Card Readers
- Kofax Micro Card Readers
- Kofax Ethernet Card Readers
- Kofax ID Card Readers



System requirements

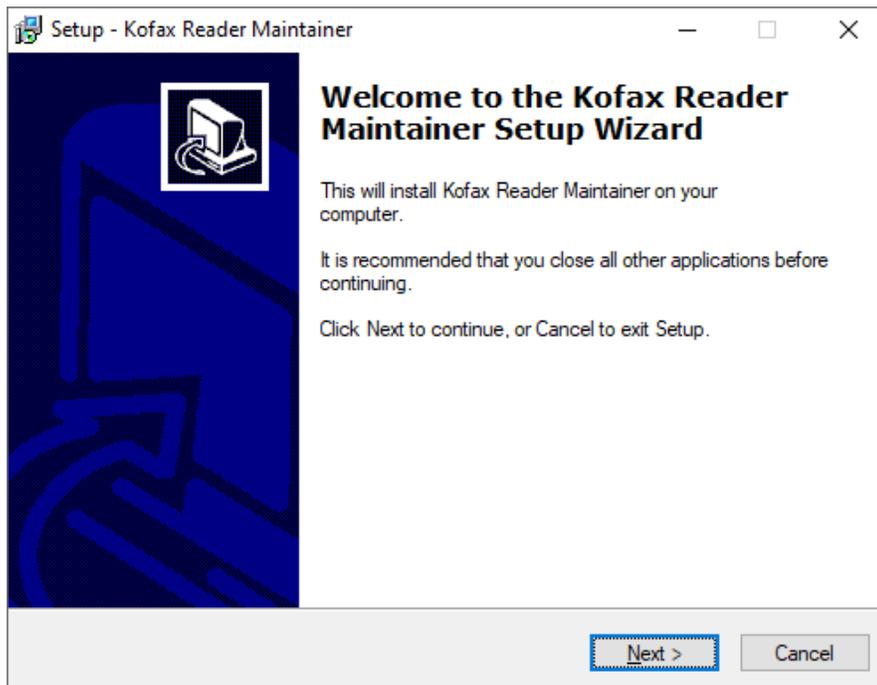
The Reader Maintainer works on any desktop computer, laptop, or server running the Microsoft Windows operating system. An empty USB 2.0 compatible port is required to work with USB connected card readers.

Installing the Reader Maintainer

If your computer has a previous version of the Reader Maintainer software on it, uninstall the old version before installing the newest. Refer to the section “Removing the Reader Maintainer”.

To install the Reader Maintainer:

1. Launch the 3510_kofax_reader_maintainer_2_XX_00.exe file.
2. If a Security Warning or User Account Control dialog appears, click Run or Yes to proceed.
3. When the Welcome page appears, click Next:



4. When prompted for a Destination Location, click Next.
5. When prompted for a Start Menu Folder, click Next.
6. Click Install to begin the installation.
7. Once installation completes, click Finish to close the installer.

Removing the Reader Maintainer

To remove the Reader Maintainer:

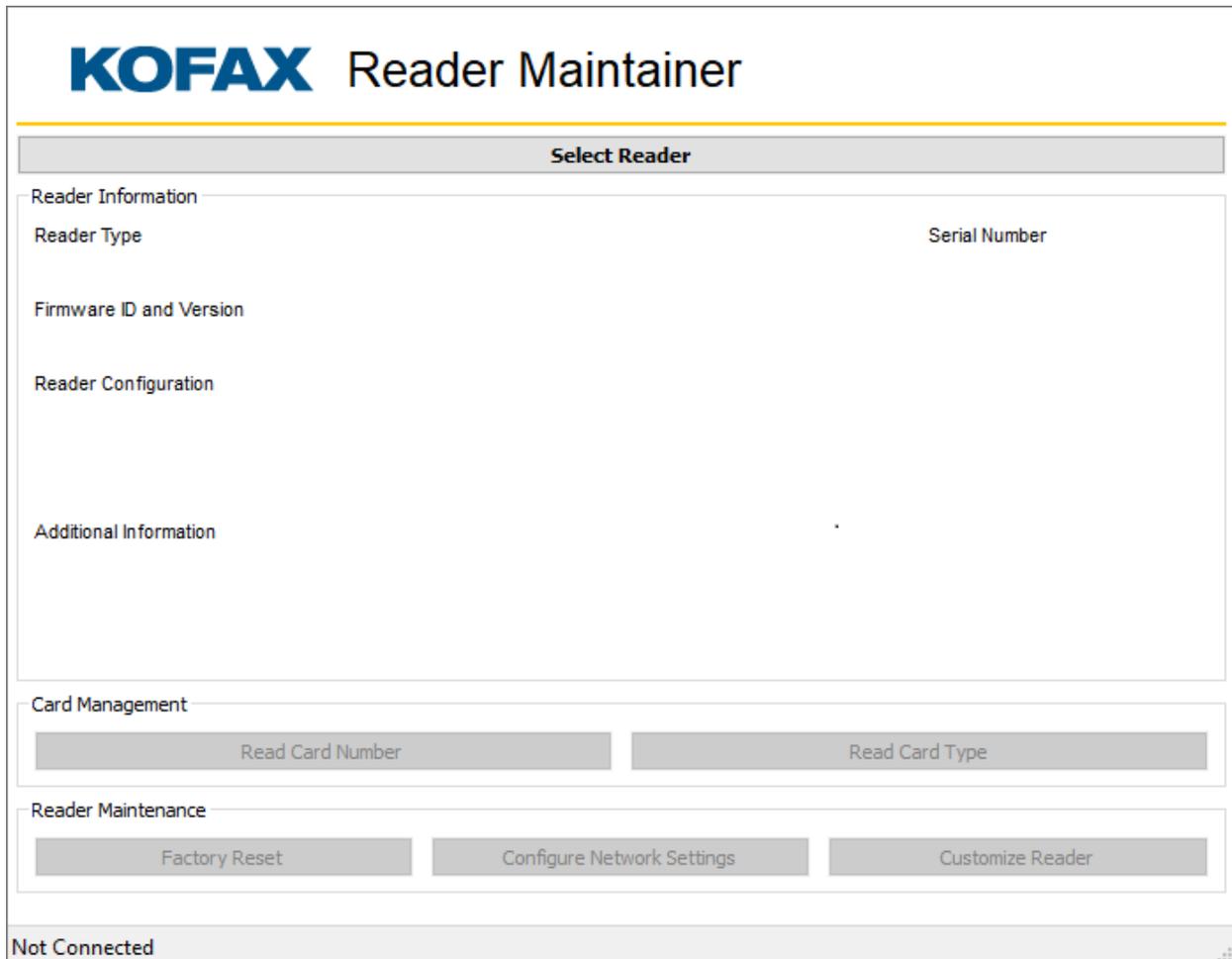
1. Press the <Windows> key, type "Program", then select "Add or remove programs".
2. Find and select the Reader Maintainer in the list of installed applications.
3. Click Uninstall.
4. If a User Account Control dialog appears, click Yes to proceed.
5. When prompted to confirm removal of the Reader Maintainer, click Yes.
6. Once removal completes, click OK to dismiss the prompt.

Using the Kofax Reader Maintainer

Starting the software

Press the <Windows> key, type Kofax, and select the Kofax Reader Maintainer app.

If a reader is not automatically detected and selected (when working with an Ethernet reader or if multiple USB readers are connected), the main window appears empty with a Not Connected message in the lower left:

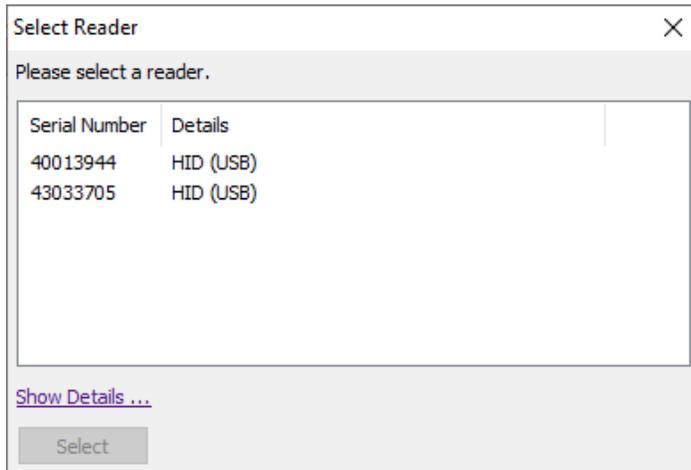


Note: USB connected readers configured with non-standard USB Vendor and Product ID (VID/PID) combinations do not appear in the Main Window. Pressing *Ctrl + Shift + R* sends them a Factory Reset command to restore their as-shipped configuration, re-enabling their use by the Reader Maintainer.

Connecting USB readers

When a single USB reader is connected to the PC it is automatically selected and accessible in the Reader Maintainer's main window.

If multiple USB readers are connected when the software is started or if you have recently connected another reader to work with, click Select Reader, choose the desired reader's serial number from the list, then click Select:



Note: Serial numbers are found on the underside of each reader.

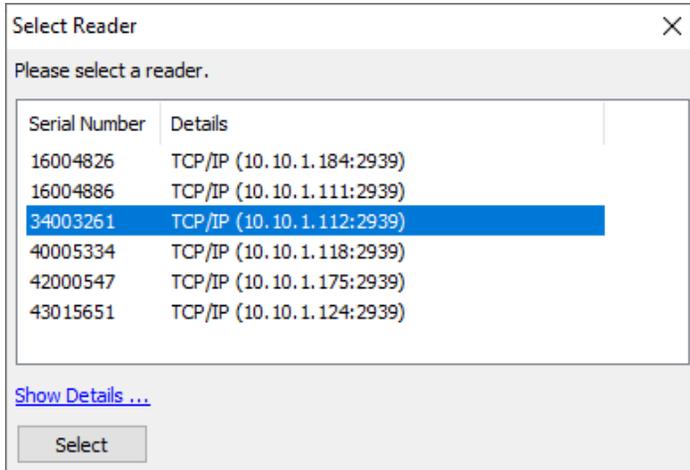
Connecting Ethernet readers

Ethernet readers differ from Micro and other USB connected readers in several ways:

- All communications with an Ethernet reader use the TCP/IP network protocol, with each reader having a unique IPv4 address on the network. Since a reader's IP address is difficult to determine, the Reader Maintainer broadcasts a Service Location Protocol (SLP) query to discover all the Ethernet readers on a network.
- SLP cannot bridge subnets without a Discovery Agent in place. Since these are rarely used, an Ethernet reader should be connected to the same subnet as the computer running the Reader Maintainer to ensure that it appears in the Select Reader dialog.
- Encrypted connections are used for all configuration and card access functions. It takes 25 seconds to authenticate and encrypt a connection with the reader. This happens several times while updating an Ethernet reader with the Customize Reader function, taking much longer than an equivalent update of a USB connected reader.

Selecting an Ethernet Reader

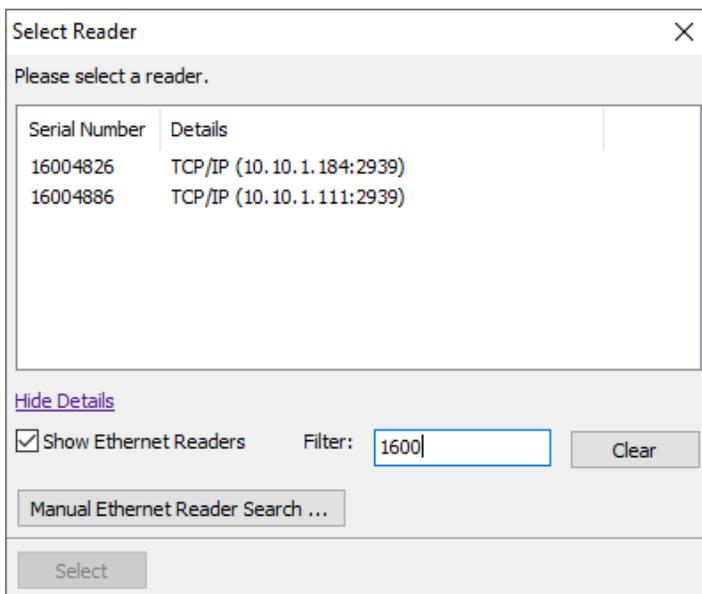
Connect the Ethernet reader to the same network and subnet as the computer running the Reader Maintainer. Click Select Reader, choose the desired reader's serial number from the list, then click Select:



Note: Serial numbers are found on the underside of each reader.

Filtering the selection list

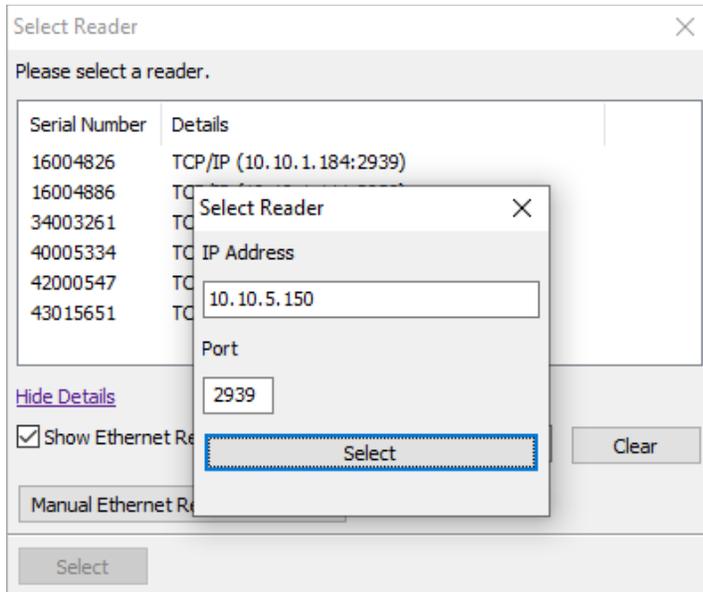
If the list of available readers is crowded, click Show Details, then use the Filter box to provide a partial serial number or IP address fragment:



Selecting by IP address

Limitations of the SLP protocol often prevent the Reader Maintainer from discovering Ethernet readers on other subnets.

If you know the IP address of the reader, click Show Details, followed by Manual Ethernet Reader Search. Enter the address, then click Select:



Device not accessible error

Ethernet readers allow only one connection at a time. The Reader Maintainer cannot access a reader if:

- It is in use by another computer running the Reader Maintainer
- It is already configured as part of a Kofax system and is contacting its server in response to a power cycle, cabling change, or other event

The following appears when the reader is inaccessible:

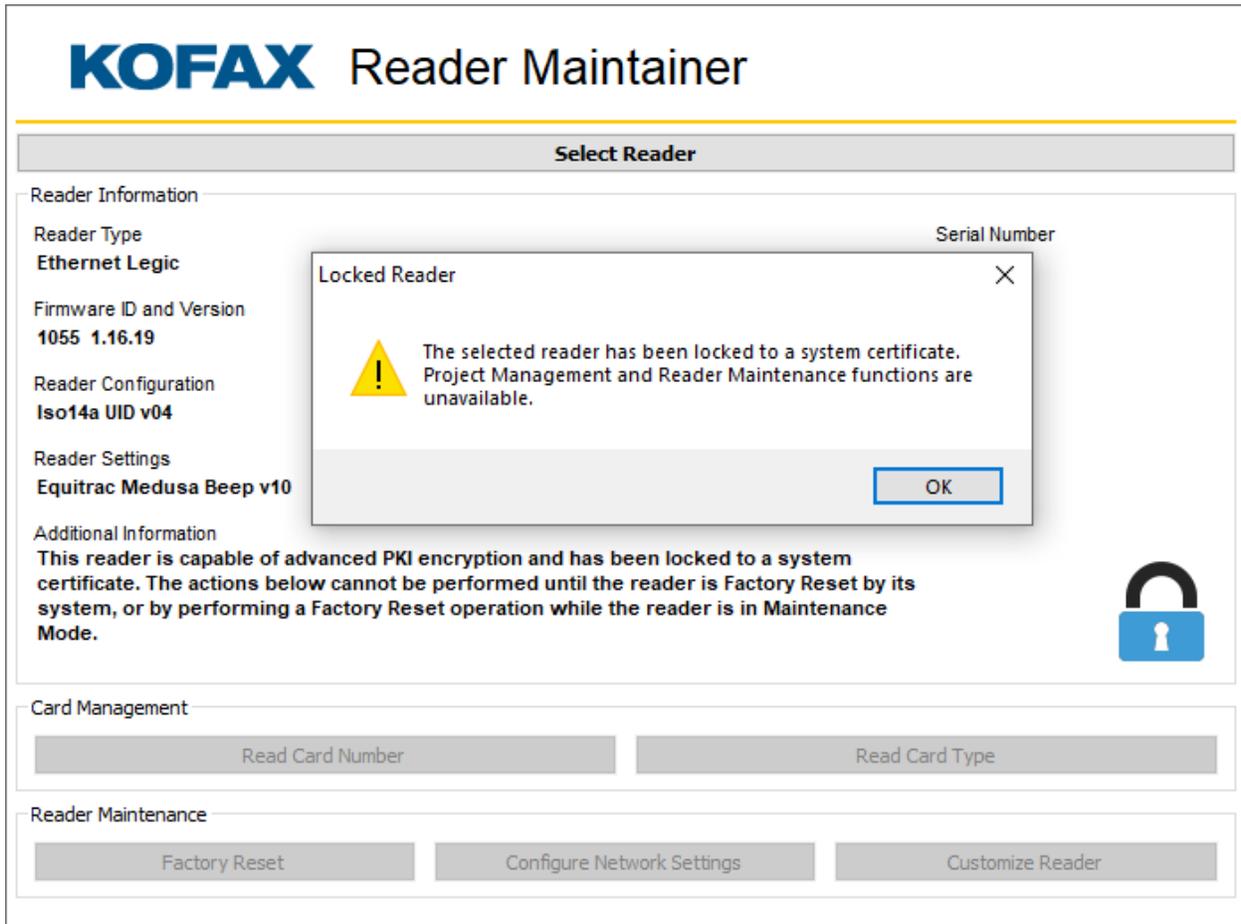


Allow one minute for the reader to time out any server connection attempts, then select the reader again. If the problem persists, refer to the section “Ethernet reader Maintenance Mode” for instructions on physically reconfiguring a reader to prevent it from contacting its server.

Locked readers

When a Kofax system configures an Ethernet reader, it writes a system-specific authentication certificate which locks it. This prevents other systems (including the Reader Maintainer) from establishing the encrypted connection required for configuration or card access.

A warning appears when selecting a locked reader, along with a message and lock icon in the main window:



Note: Only a Factory Reset can unlock the reader. This must either be done by the system which locked it, or by the Reader Maintainer after physically reconfiguring the reader into Maintenance Mode. Refer to the section “Ethernet reader Maintenance Mode” for details.

The main window

With a reader selected, the main window of the Reader Maintainer populates with its type, serial number, firmware, configuration, and settings info. All functions are accessed with buttons at the bottom of the window:

KOFAX Reader Maintainer

Select Reader

Reader Information

Reader Type	Serial Number
Micro Multi-Card (vid: 0x13AD, pid: 0x9CA5)	43033705
Firmware ID and Version	
1096 2.20.14	
Reader Configuration	
All Types v16	
Reader Settings	
Default v15	
Additional Information	

Card Management

Reader Maintenance

Read Card Number function

This displays the output from the selected reader as cards are presented to it.

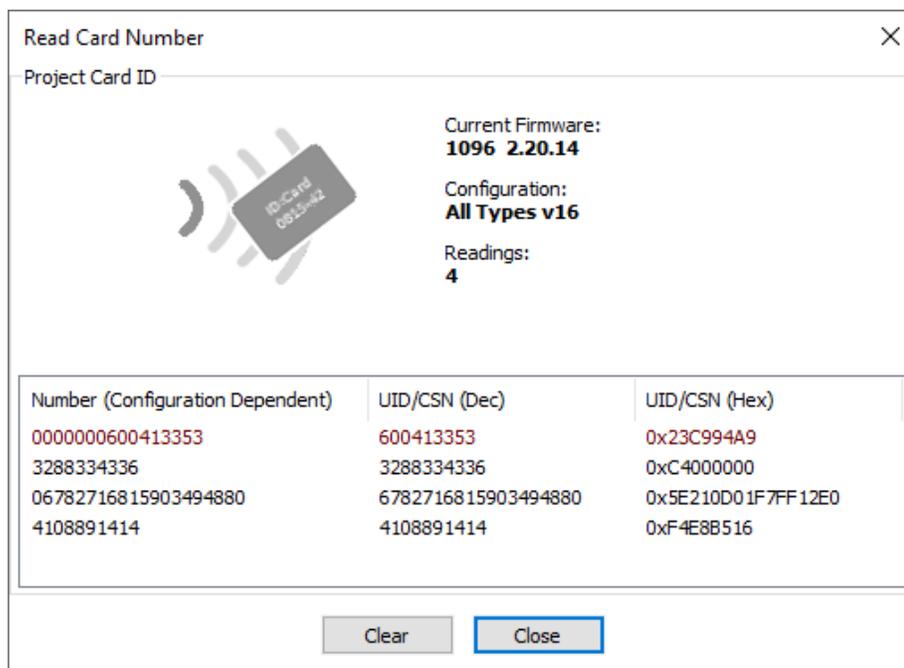
Note: The card types accepted, the data read, and the output data format are all determined by the reader’s configuration.

To read cards:

1. With a reader selected, click Read Card Number in the main window to display the corresponding dialog.
2. Present cards to the reader which are compatible with its configuration. Cards must be presented one at a time.

Note: If no data appears when cards are presented, refer to the section “Card not detected by Read Card Number function”.

3. The data from the most recently detected card is shown in red:



Reader output appears in the Number column, formatted according to the rules in the reader’s configuration. The Unique ID (UID) / Card Serial Number (CSN) information is independent of the configuration and provided for informational purposes only.

Tip: Some cards, particularly those from HID Global, may contain multiple transponders, each with their own data. When working with an unknown card, leave it on the reader for several seconds to ensure that all its transponders are detected.

4. To copy data into other applications, Right-click the desired row and select Copy Data. To copy all data at once, use Right-click> Copy All.
5. Click Clear if the dialog becomes too crowded with data from multiple cards.

Note: The Read Card Number function shows the *output* from a card, the Read Card Type function shows the *type* of card you have.

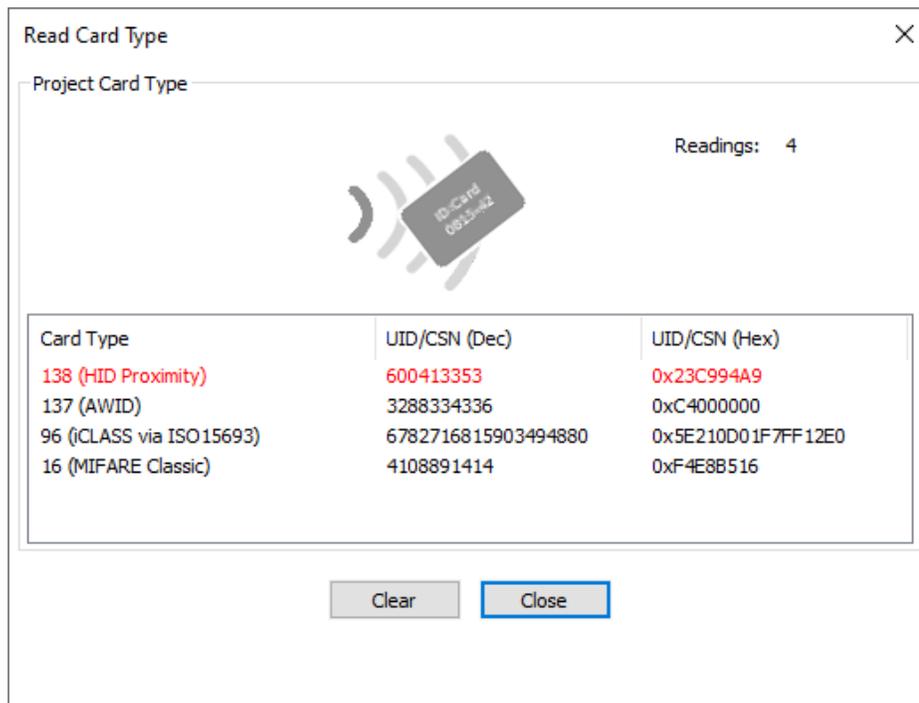
Read Card Type function

This displays the Card Type of each card presented to the selected reader.

Tip: For maximum compatibility, load the reader with the All Types configuration before using this function. Refer to the section “Programming a Stock Solution” for details.

To read card types:

1. With a reader selected, click Read Card Type in the main window to display the corresponding dialog.
2. Present cards to the reader one at a time.
3. Data from the most recently detected card is shown in red:



A Unique ID (UID) or Card Serial Number (CSN) is displayed along with the card type.

Tip: Some cards, particularly those from HID Global, may contain multiple transponders, each with their own data. When working with an unknown card, leave it on the reader for several seconds to ensure that all its transponders are detected.

4. To copy data into other applications, Right-click the desired row and select Copy Data. To copy all data at once, use Right-click> Copy All.
5. Click Clear if the dialog becomes too crowded with data from multiple cards.

Tip: Use the Card Type to configure readers to work only with certain cards, refer to the section “Programming a Stock Solution”.

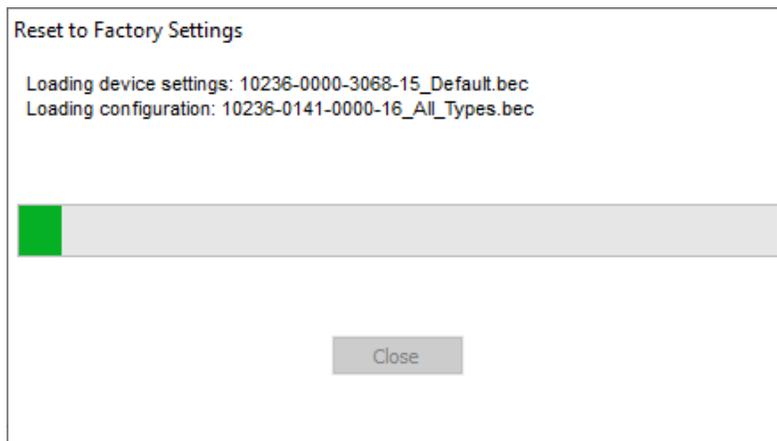
Note: The Read Card Type function shows the *type* of card you have, the Read Card Number function shows the configuration-dependent *output* from that card.

Factory Reset function

The Reader Maintainer can return a reader to factory settings if it is malfunctioning, or to ensure a fresh start when moving readers to another project.

To factory reset a reader:

1. With the reader selected, click Factory Reset in the main window, then Yes at the confirmation prompt.
2. When informed that the reader reboots following reset, click OK.
3. If the Reader Maintainer has newer firmware or configurations than those found in the reader after reset, you are prompted to upgrade. If you click Yes, a progress dialog appears:



4. Click Close once the upgrade has completed.

Note: An Ethernet reader that's locked to a Kofax system can only be Factory Reset by the Reader Maintainer if physically reconfigured into Maintenance Mode. Refer to the section "Ethernet reader Maintenance Mode" for more information.

Note: Pressing *Ctrl + Shift + R* in the main window automatically sends a Factory Reset command to all USB card readers connected to the system, even those configured with a non-standard USB VID and PID. This form of Factory Reset does not prompt you to upgrade a reader with an older firmware or configuration.

Configure Network Settings function

Some networks require pre-configuration of an Ethernet reader with a Static IP, or fixed speed and duplex settings prior to installation. This must be done on a network with DHCP, or by using a point-to-point connection while the reader is physically configured in Maintenance Mode. Refer to the section “Ethernet reader Maintenance Mode” for details.

Once an Ethernet reader is connected and selected:

1. Click Configure Network Settings. It takes about 25 seconds to authenticate and establish an encrypted connection before the dialog appears.
2. Select the desired settings, completing all four fields if assigning a Static IP:

Note: Readers must have firmware 1096 2.30.05 or higher to allow configuration of the Printer port, which defaults to Auto Negotiation otherwise.

3. Click Update Reader, then Yes when prompted to proceed.
4. When the reboot prompt appears, click OK.
5. The Reader Maintainer reauthenticates and focus returns to the main window.
6. If configuring multiple readers, connect and select the next reader, then click Configure Network Settings again.

Note: The Reader Maintainer remembers the last settings used, with the Static IP incremented by 1 upon successful update.

Customizing readers

Card readers are customized to suit the target Kofax product, restrict the card types accepted, change the output data format, or any combination of the three.

With a compatible reader selected in the Reader Maintainer, click Customize Reader in the main window to display the corresponding dialog:

Customize Reader

Select Mode

Default Silent MX Compatible

Beeper enabled, green LED

Configure

Stock Solution

All hardware supported card types

Default

Custom Solution

Configuration

NO UPDATE Browse... Clear

Firmware

NO UPDATE Browse... Clear

Upload

Update Reader

Close

Mode selection

Kofax card readers ship from the factory with the beeper enabled and a green LED, corresponding to the Default mode in the Customize Reader dialog:



The screenshot shows a dialog box titled "Customize Reader". Inside, there is a section labeled "Select Mode" with three radio button options: "Default" (which is selected), "Silent", and "MX Compatible". Below the radio buttons, the text "Beeper enabled, green LED" is displayed.

If configuring an Ethernet or Micro reader for addition to a legacy fleet of Equitrac ID card readers, choose Silent mode to disable the beeper.

If configuring a Micro reader for addition to a legacy fleet of Copitrak ID card readers, choose Silent mode with the Silent Keyboard option.

If configuring an Ethernet or Micro reader for addition to a legacy fleet of Kofax MX card readers, choose the MX Compatible mode to enable the beeper, use a red LED, and adjust the output format to match that of the Kofax MX readers.

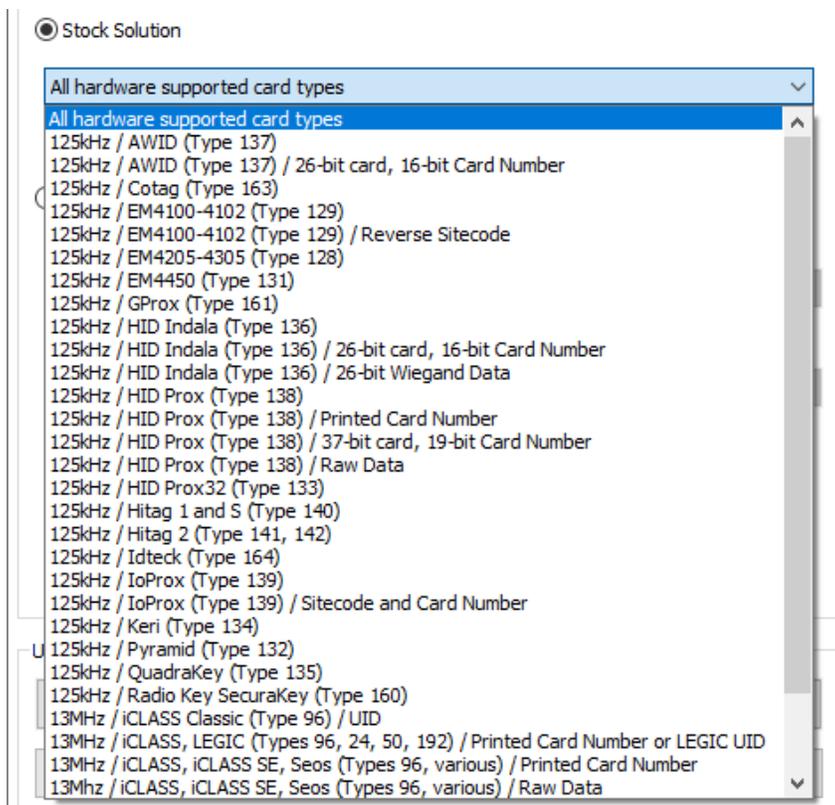
Programming a Stock Solution

Stock Solutions are pre-made configurations to address common use cases. They restrict the reader to work with certain card types, or to output card data other than its Unique ID.

Kofax card readers allow users to authenticate by presenting their RFID badge or key fob. Some users carry these in a wallet or purse with other RFID-enabled credentials for banking, credit, or customer loyalty. Restricting a reader to work only with a certain card type avoids invalid logins or “swipe to logout” workflows triggered by other credentials.

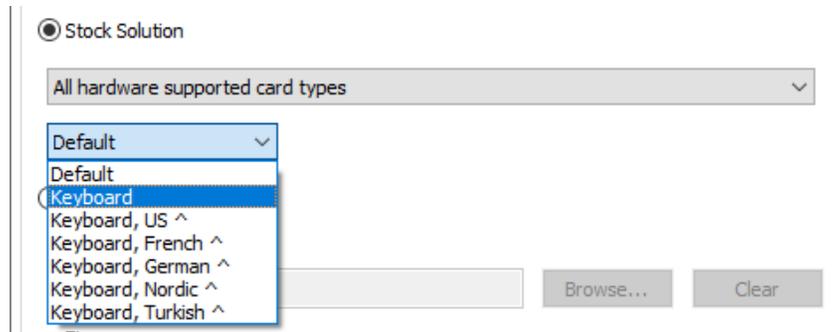
Tip: Use the Read Card Type function to determine the desired card type.

1. Select the Stock Solution option, then choose a solution from the drop-list matching the desired type:



2. If required, choose a keyboard emulation option.

Note: When configuring readers for use with Copitrak terminals and embedded clients, always select the Keyboard option:



Tip: Full descriptions of each option are provided in the Appendix.

3. Click Update Reader, then Yes, and wait for the progress bar to complete.

The reader's firmware, configuration, and settings are updated as necessary for the options selected. The main window behind the dialog refreshes automatically as changes are made.

Note: You may hear Windows' USB disconnect/reconnect sounds, followed by one or more notifications of "Setting up a Device". This is normal as the USB reader reconfigures during the update.

4. If configuring multiple USB readers, disconnect the initial reader, connect the next one, and repeat from step 3.

Programming a Custom Solution

Custom Solutions are configurations or firmware provided by support to address specific customer needs.

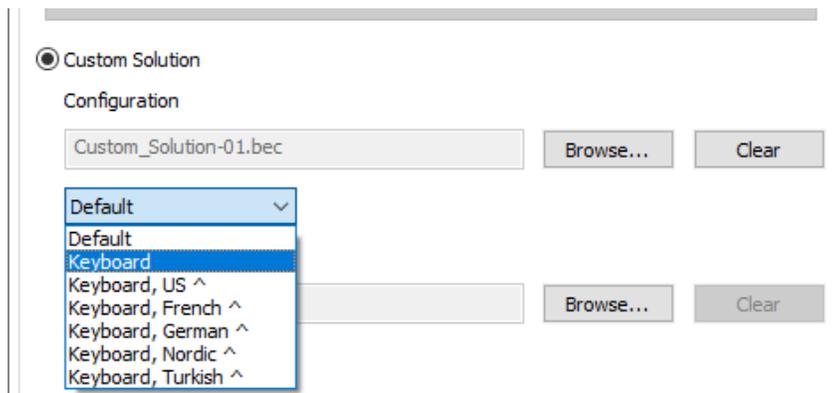
To program a Custom Solution:

1. Select the Custom Solution option, then Browse to and Open the configuration file (.bec, .bec2) provided by support:



2. If a firmware file (.bf2) was also provided, then Browse to and Open it as well.
3. If required, choose a keyboard emulation option.

Note: When configuring readers for use with Copitrak terminals and embedded clients, always select the Keyboard option:



Tip: Full descriptions of each option are provided in the Appendix.

4. Click Update Reader, then Yes, and wait for the progress bar to complete.

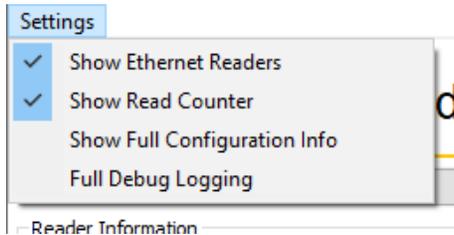
The main window behind the Customize Reader dialog refreshes automatically as changes are made.

Note: You may hear Windows' USB disconnect/reconnect sounds, followed by one or more notifications of "Setting up a Device". This is normal as the USB reader reconfigures during the update.

5. If configuring multiple USB readers, disconnect the initial reader, connect the next one, and repeat from step 4.

Software settings

Software settings are changed in the menu at the top of the main window:



Each setting is an option enabled or disabled by selecting it.

Show Ethernet Readers

Ethernet readers on the local network may clutter the Select Reader dialog when using the Reader Maintainer to work with USB readers.

Disable this setting to prevent Ethernet readers from appearing in the Select Reader dialog.

Show Read Counter

By default, the Read Card Number and Read Card Type functions each display a read counter.

Disable this setting to hide the counter.

Show Full Configuration Info

Stock Solutions and other configurations contain unique identity numbers.

These are hidden to avoid cluttering the display, but can be shown by enabling this setting.

Full Debug Logging

Support may ask you to enable this setting and provide the log if you encounter a reproducible problem with the Reader Maintainer.

The log is found in the folder C:\Users\YourName\AppData\Local\Kofax Reader Maintainer.

Troubleshooting

USB card reader not detected

Condition

A USB card reader is connected but no data appears in the main window.

Cause 1

Multiple USB readers are connected to the computer.

Remedy 1

Click Select Reader, then choose and Select the desired reader by serial number.

Cause 2

USB readers configured with non-standard USB Vendor and Product ID (VID/PID) combinations are assumed incompatible, and not queried by the software.

Remedy 2

Pressing *Ctrl + Shift + R* speculatively sends all connected USB HID devices a Factory Reset command, restoring the as-shipped configuration of any supported reader to re-enable its detection and use by the Reader Maintainer.

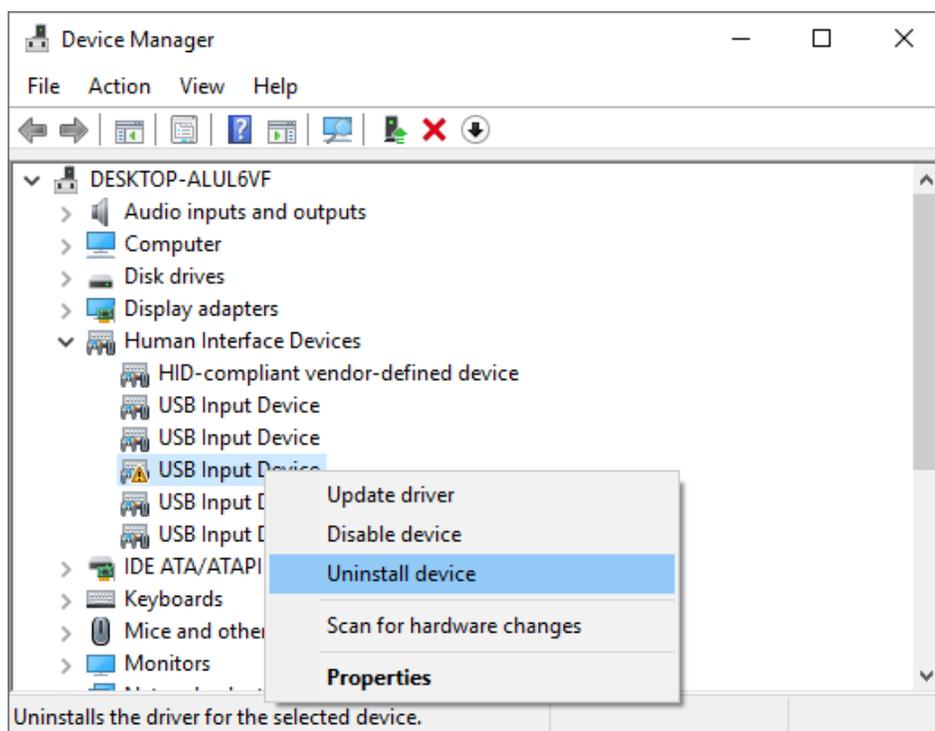
Cause 3

There is a mismatch between the reader's current configuration and the drivers originally loaded for it by Windows.

Remedy 3

Force Windows to re-install the reader driver:

1. Press the <Windows> and <Pause/Break> keys simultaneously to open the System properties.
2. Select Device Manager from the Relating Settings list.
3. Locate the USB Input Device with a yellow warning, right-click it, and select Uninstall device:



4. Disconnect and reconnect the card reader. Windows automatically installs the correct drivers, and the Reader Maintainer can detect it again.

Card not detected by Read Card Number function**Condition**

No data appears in the Read Card Number dialog when a card is presented to the reader.

Cause 1

The reader is loaded with an incompatible configuration.

Remedy 1

Use the Customize Reader function to load the Stock Solution “Default, All hardware supported card types”, then try the Read Card Number function again.

Cause 2

The card uses random UIDs instead of a fixed UID value. Random UIDs prevent the association of cards to specific users, so are suppressed by the reader to avoid nuisance workflows.

Remedy 2

Use the Read Card Type function to identify the card. If a Card Type and UID appear, then withdraw the card and present it again. If a different UID appears, then the card is randomizing its UID, and other data must be retrieved for authentication.

Contact support to obtain a solution for your card type.

Cause 3

The card is incompatible with the reader hardware.

Remedy 3

It may be possible to develop a solution for the target card system. Contact support for further assistance.

Card not detected by Read Card Type function**Condition**

No data appears in the Read Card Type dialog when a card is presented to the reader.

Cause 1

The reader is loaded with an incompatible configuration.

Remedy 1

Use the Customize Reader function to load the Stock Solution “Default, All hardware supported card types”, then try the Read Card Type function again.

Cause 2

The card may be damaged.

Remedy 2

Try a different card.

Cause 3

The card is incompatible with the reader hardware.

Remedy 3

Contact support to arrange for card analysis.

Ethernet reader does not appear in Select Reader dialog

Condition

An Ethernet reader connected to the network does not appear in the Select Reader dialog.

Cause 1

The reader has no power.

Remedy 1

Ensure that Power-over-Ethernet is available or connect the reader to its power supply. The reader LED is flashing, blinking, or lit solid when a reader has power, it should never be off.

Cause 2

The reader did not go online due to a network fault.

Remedy 2

Use the reader LED for troubleshooting. If it:

- Blinks green once then repeats: The reader has a link but could not obtain an IP address. Ensure that the network supports DHCP. If not, configure the reader into Maintenance Mode to establish a point-to-point connection.
- Blinks red once then repeats: The reader has no Ethernet link. Check all cables and connections between the reader and the network switch.
- Blinks red four times then repeats: The reader has an IP address conflict. Configure the reader into Maintenance Mode to establish a point-to-point connection, then use the Configure Network Settings function to either set it for DHCP or give it a new Static IP.

Cause 3

The reader is online with a valid IP address (the LED blinks green twice then repeats), but on a different subnet than the PC running the Reader Maintainer.

Remedy 3

Select the reader by its known IP address, connect it to the same subnet as the PC, or configure the reader in Maintenance Mode to establish a point-to-point connection.

Refer to the sections “Selecting by IP address” and “Ethernet reader Maintenance Mode” for additional details.

Reader Maintainer function buttons are disabled

Condition

A reader is selected with its details visible in the main window, but all the function buttons are disabled.

Cause

An Ethernet reader is connected but locked to another Kofax system.

Remedy

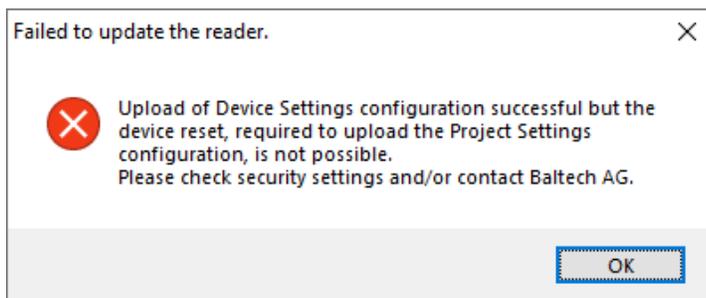
Unlock the reader by physically reconfiguring it into Maintenance Mode, then perform a Factory Reset.

Note: Refer to the sections “Ethernet reader Maintenance Mode” and “Factory Reset function” for additional details.

Update Reader operation fails

Condition

An error message appears when clicking Update Reader in the Customize Reader dialog:



Cause

The USB Product ID of a reader changes while loading firmware or transitioning in and out of keyboard emulation mode. Windows loads new drivers the first time this happens for a given reader, but if loading is delayed by disk encryption or anti-virus activity then the Update Reader operation can time out and fail.

Remedy

Disconnect and reconnect the card reader, wait for its information to appear in the main window, then click Update Reader again.

Reader disappears following reset or reconnection not possible message

Condition

The reader is invisible to the Reader Maintainer after performing the disconnect and reconnect cycle advised by the “Reset or Reconnection not Possible” message.

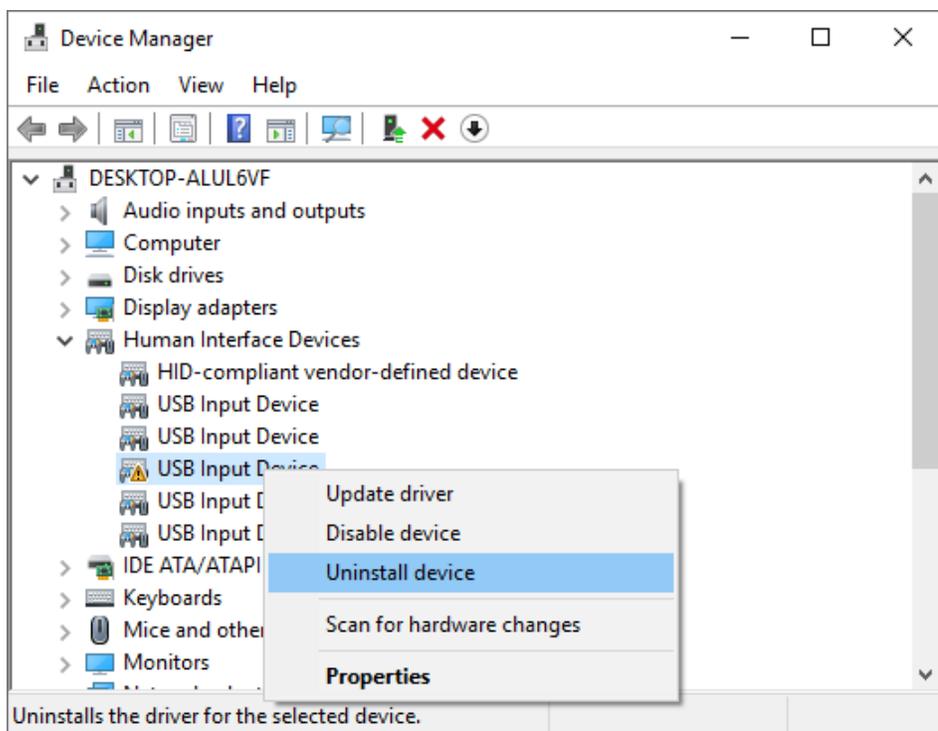
Cause

There is a mismatch between the reader’s present configuration and the drivers originally loaded for it by Windows.

Remedy

Force Windows to re-install drivers:

5. Press the <Windows> and <Pause/Break> keys simultaneously to open the System properties.
6. Select Device Manager from the Relating Settings list.
7. Locate the USB Input Device with a yellow warning, right-click it, and select Uninstall device:



8. Disconnect and reconnect the card reader. Windows automatically installs the correct drivers, and the Reader Maintainer can detect it again.

Appendix

Keyboard emulation options

While many MFP clients natively support Kofax' card readers, some require them to emulate a keyboard by returning data as if it were typed one digit at a time. Certain older clients also require a ^ character ahead of the keyboard data, a process complicated by the various international keyboard layouts placing the ^ symbol on different keys.

The Customize Reader function presents mode-dependent keyboard emulation options:

Mode			Keyboard Emulation
Default	Silent	MX Compatible	
Default	Silent	MX Default	Disabled
Keyboard	Silent Keyboard	MX Keyboard	Returns card data as keystrokes
Keyboard, US ^	Silent Keyboard, US ^		Returns card data as keystrokes with leading ^ character (Shift + 6 key)
Keyboard, French ^	Silent Keyboard, French ^		Returns card data as shifted number strokes with leading ^ character (French ^ key)
Keyboard, German ^	Silent Keyboard, German ^		Returns card data as keystrokes with leading ^ character (German ^ key)
Keyboard, Nordic ^	Silent Keyboard, Nordic ^		Returns card data as keystrokes with leading ^ character (Shift + " key)
Keyboard, Turkish ^	Silent Keyboard, Turkish ^		Returns card data as keystrokes with leading ^ character (Shift + 3 key)

Note: All keyboard emulations send <Enter> as the final keystroke.

Note: When selecting a ^ option the language chosen must match the MFP's language setting.

Stock Solution files and descriptions

Copittrak, Equitrac, and Output Manager products can centrally push a .bec file to all Ethernet card readers in a fleet for significant time and labor savings. The Stock Solution files from Reader Maintainer 2.21.01 are distributed along with it for this purpose:

Filename	Description
All_Types-16.bec	All hardware supported card types. The output format varies by card type.
AWID-10.bec	AWID cards only, output matches All_Types-16.bec
AWID_26-16_Card_Number-07.bec	AWID cards only, decimal Card Number from 26-bit Wiegand format cards. Values from AWID cards with other lengths or formats are not guaranteed to be unique.
Cotag-04.bec	Cotag cards only, output matches All_Types-16.bec
EM4100-4102-16.bec	EM4100/4102 cards only, output matches All_Types-16.bec
EM4100-4102_Reverse_Sitecode-06.bec	EM4100/4102 cards only, decimal Card Number and Site Code
EM4205-4305-15.bec	EM4205/4305 cards only, output matches All_Types-16.bec
EM4450-17.bec	EM4450 cards only, output matches All_Types-16.bec
GProx-07.bec	G-Prox cards only, output matches All_Types-16.bec
HID_Indala-14.bec	HID Indala cards only, output matches All_Types-16.bec
HID_Indala_26-16_Card_Number-16.bec	HID Indala cards only, decimal Card Number from de-scrambled 26-bit Wiegand format cards. Values from Indala cards with other lengths or formats are not guaranteed to be unique.
HID_Indala_26-bit_Wiegand_Data-14.bec	HID Indala cards only, de-scrambled 26-bit card data output as 8 decimal digits with leading zeroes. Values from Indala cards with other lengths are not guaranteed to be unique.
HID_Prox-11.bec	HID Proximity cards only, output matches All_Types-16.bec: Raw data (minus headers) in octal using 16 digits for single width cards and 32 digits for double width cards holding 48 bits or more.
HID_Prox_Printed_Card_Number-06.bec	HID Proximity cards only, decimal Card Number from four common HID formats: <ul style="list-style-type: none"> • H10301 format, 26-bit cards with 8-bit Facility Code and 16-bit Card Number • H10302 format, 37-bit cards with 35-bit Card Number • Corporate 1000-35, 35-bit cards with 12-bit Company ID and 20-bit Card Number • Corporate 1000-48, 48-bit cards with 22-bit Company ID and 23-bit Card Number Other card lengths ignored; output from 26, 35, 37, or 48-bit cards in other formats does not match numbers printed on cards. Card Number is output as 5 decimal digits with leading zeroes, for example card 15 outputs 00015 while card 123456 outputs 123456.

Filename	Description
HID_Prox_37-19_Card_Number-08.bec	HID Proximity cards only, Card Number from 37-bit H10304 format cards with 16-bit Facility Code and 19-bit Card Number. Other card lengths ignored; values returned from 37-bit cards in other formats do not match numbers printed on cards. Card Number is output as 5 decimal digits with leading zeroes, for example card 15 outputs 00015 while card 123456 outputs 123456.
HID_Prox_Raw_Data-03.bec	HID Proximity cards only, raw data (including headers) in octal using 16 digits for single width cards and 32 digits for double width cards with 48 bits or more. Intended for card analysis only.
HID_Prox32-11.bec	HID Prox32 cards only, output matches All_Types-16.bec
Hitag_1_and_S-16.bec	Hitag 1 / Hitag S cards only, output matches All_Types-16.bec
Hitag_2-14.bec	Hitag 2 cards only, output matches All_Types-16.bec
iCLASS_Printed_Card_Number-19.bec	HID iCLASS ¹ , iCLASS SE ² , or iCLASS Seos ² cards only. Decimal Card Number from decrypted iCLASS Physical Access Control System (PACS) data in four common formats: <ul style="list-style-type: none"> • H10301 format, 26-bit cards with 8-bit Facility Code and 16-bit Card Number • H10302 format, 37-bit cards with 35-bit Card Number • Corporate 1000-35, 35-bit cards with 12-bit Company ID and 20-bit Card Number • Corporate 1000-48, 48-bit cards with 22-bit Company ID and 23-bit Card Number Other lengths ignored; output from 26, 35, 37, or 48-bit cards in other formats does not match numbers printed on cards. The Card Number is output as 5 decimal digits with leading zeroes, for example card 15 outputs 00015 while card 123456 outputs 123456.
iCLASS_Printed_Card_Number_or_LEGIC_UID-02.bec	HID iCLASS ¹ or LEGIC cards only. Outputs iCLASS Card Numbers in same fashion as iCLASS_Printed_Card_Number-19.bec, and LEGIC UIDs in same fashion as LEGIC_Prime_and_Advant_UID-05.bec.
iCLASS_Raw_Data-11.bec	HID iCLASS ¹ , iCLASS SE ² , or iCLASS Seos ² cards only. Decrypted Physical Access Control System (PACS) data: Hexadecimal length byte followed by 18 left justified hexadecimal digits. For example, 26-bit PACS data 3000003h is output as 1AC00000C000000000.
iClass_UID-10.bec	HID iCLASS or iCLASS SE cards only. Output matches All_Types-16.bec: The ISO15693 UID output as 20 decimal digits with leading zeroes.
Idteck-03.bec	IDTECK cards only, output matches All_Types-16.bec
IoProx-12.bec	IoProx cards only, output matches All_Types-16.bec
IoProx_Sitecode_and_Card_Number-07.bec	IoProx cards only, decimal Site Code and Card Number

¹ Reading data from iCLASS cards requires an iClass & Legic or iClass Seos + Multi-Card reader.

² Reading data from iCLASS SE or iCLASS Seos cards requires an iClass Seos + Multi-Card reader.

Filename	Description
ISO_14443A_UID-06.bec	ISO-14443A based cards only, output matches All_Types-16.bec: <ul style="list-style-type: none"> • 32-bit fixed UIDs in 10 decimal digits, 32-bit random UIDs ignored • 56-bit UIDs in 18 decimal digits • 80-bit UIDs in 26 decimal digits
Keri-07.bec	Keri cards only, output matches All_Types-16.bec
LEGIC_Advant_UID-04.bec	LEGIC Advant cards only, output matches All_Types-16.bec: <ul style="list-style-type: none"> • 32-bit fixed UIDs in 10 decimal digits, 32-bit random UIDs ignored • 56-bit UIDs in 18 decimal digits • 64-bit UIDs in 20 decimal digits • 80-bit UIDs in 26 decimal digits
LEGIC_Prime_and_Advant_UID-05.bec	LEGIC Prime or Advant cards only, output matches All_Types-16.bec: <ul style="list-style-type: none"> • 32-bit fixed UIDs in 10 decimal digits, 32-bit random UIDs ignored • 56-bit UIDs in 18 decimal digits • 64-bit UIDs in 20 decimal digits • 80-bit UIDs in 26 decimal digits
LEGIC_Prime_UID-04.bec	LEGIC Prime cards only, output matches All_Types-16.bec: 32-bit UIDs in 10 decimal digits
Pyramid-05.bec	Farpointe Data Pyramid cards only, output matches All_Types-16.bec
Quadrakey-12.bec	Honeywell NexWatch QuadraKey cards only, output matches All_Types-16.bec
SecuraKey-07.bec	Radio Key SecuraKey cards only, output matches All_Types-16.bec

Filename	Description
MX_All_Types-23.bec	All hardware supported card types. Output matches Kofax MX reader default for AWID, Cotag, EM4100/4102, EM4205/4305, EM4450, FeliCa, HID Indala, HID Proximity, HID Prox32, Hitag 1/S, Hitag 2, iCLASS, loProx, ISO14443 based, Keri, LEGIC, Pyramid, and QuadraKey cards. Output from other card types matches All_Types-16.bec.
MX_AWID-07.bec	AWID cards only, output matches Kofax MX reader default
MX_Cotag-04.bec	Cotag cards only, output matches Kofax MX reader default
MX_EM4100-4102-03.bec	EM4100/4012 cards only, output matches Kofax MX reader default
MX_EM4205-4305-02.bec	EM4205/4305 cards only, output matches Kofax MX reader default
MX_EM4450-03.bec	EM4450 cards only, output matches Kofax MX reader default
MX_HID_Indala-04.bec	HID Indala cards only, output matches Kofax MX reader default
MX_HID_Prox-06.bec	HID Proximity cards only, output matches Kofax MX reader default
MX_HID_Prox32-04.bec	HID Prox32 cards only, output matches Kofax MX reader default
MX_Hitag_1_and_S-02.bec	Hitag 1 / Hitag S cards only, output matches Kofax MX reader default
MX_Hitag_2-04.bec	Hitag 2 cards only, output matches Kofax MX reader default
MX_iClass_UID-02.bec	iCLASS or iCLASS SE cards only, output matches Kofax MX reader default
MX_loProx-04.bec	loProx cards only, output matches Kofax MX reader default
MX_ISO_14443A_UID-03.bec	ISO14443 based cards only, output matches Kofax MX reader default
MX_Keri-03.bec	Keri cards only, output matches Kofax MX reader default
MX_LEGIC_Advant_UID-04.bec	LEGIC Advant cards only, output matches Kofax MX reader default
MX_LEGIC_Prime_and_Advant_UID-05.bec	LEGIC Prime and Advant cards only, output matches Kofax MX reader default
MX_LEGIC_Prime_UID-03.bec	LEGIC Prime cards only, output matches Kofax MX reader default
MX_Quadrakey-04.bec	Honeywell NexWatch QuadraKey cards only, output matches Kofax MX reader default

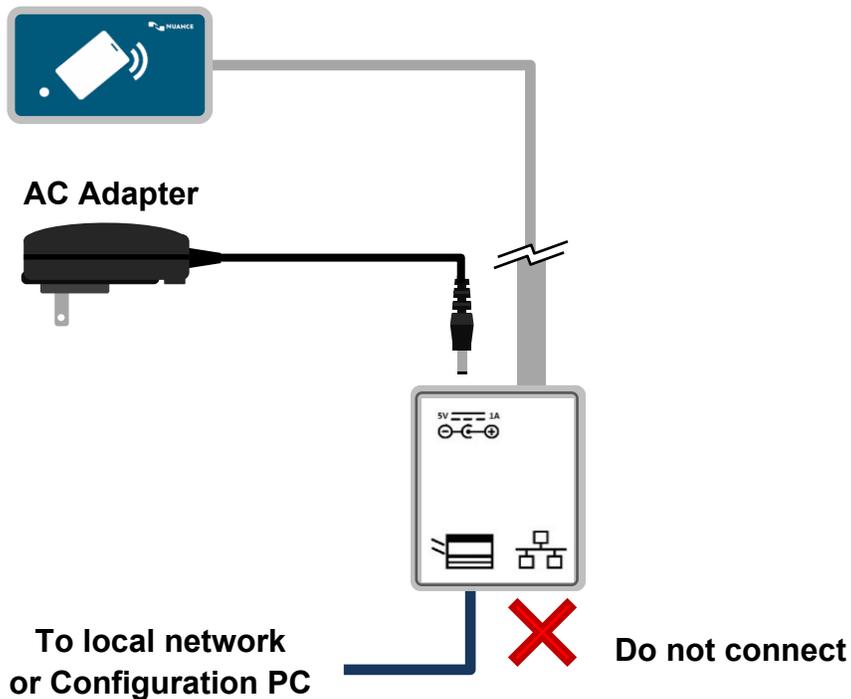
Reader Settings files and descriptions

Copitrak, Equitrac, and Output Manager products can centrally push a .bec file to all Ethernet card readers in a fleet for significant time and labor savings. The Reader Settings files from Reader Maintainer 2.21.01 are distributed along with it for this purpose:

Filename	Description
Default-15.bec	Default mode settings (green LED, beep on successful card read)
Silent-33.bec	Silent mode settings (green LED, no beep on successful card read)
MX_Default-03.bec	MX Default mode settings (red LED, beep on successful card read)

Ethernet reader Maintenance Mode

An Ethernet reader locked to a Kofax system or configured with invalid network settings is accessed by physically reconfiguring it into Maintenance Mode using only its Power and Printer connections:



In Maintenance Mode the reader LED repeatedly blinks red-green-off, and it operates with the following temporary settings:

- The Static IP is disabled
- DHCP addressing is enabled
- Link Local addressing (Auto IP) is enabled
- Server IP and Port settings are ignored
- The Factory Reset command can always be sent by the Reader Maintainer

Note: Link Local Addressing allows point-to-point connections without a DHCP server. The PC running the Reader Maintainer establishes an Auto IP address when set for DHCP and given 1 minute to time out after connecting it directly to the reader. An alternate method is to assign the PC the IPv4 address 169.254.1.1 and subnet mask 255.255.0.0 *before* connecting it to the reader. The reader chooses a random non-conflicting Auto IP of its own in the 169.254.x.x range, allowing for discovery and selection by the Reader Maintainer.