

Equitrac Reader Maintainer Tool User Manual

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				Added Removal section	
				Added Troubleshooting section	
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			Section 7	Added driver removal instructions	
			Section 9	Added reader information section	
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			Section 6.2, 6.3, 10.4	Added HID and Magswipe reader notes	
			Section 6.4.1	Stock Configuration usage changed	
			Section 6.6	Added Tool Settings section	
			Section 9.1	Updated Reader Types	
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			Section 6.1	Select Reader now uses dialog box	



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1 Purpose

This document provides the steps necessary to work with the Equitrac Reader Maintainer tool and Reader Adaptor Box to read project cards and identify and/or modify an Equitrac card reader's firmware and configuration.

2 Scope

This document pertains to the use of the Equitrac Reader Maintainer Tool with any Equitrac card reader. Also included in this document is the use of a Reader Adaptor Box (10B-0034), which may be required along with the Reader Maintainer Tool for certain reader types (Ie. EPA, Internal, Mini-DIN).

3 Responsibilities

- 1. It is the responsibility of all persons using this instruction to utilize only qualified components and equipment.
- 2. Anyone handling an internal card reader shall ensure adequate electrostatic discharge (ESD) precautions are used to protect the electronics from ESD damage.
- 3. Approval authorities listed on the cover page of this instruction are responsible to ensure their appropriate team members are aware of this document and the importance of following it as it is written.
- 4. All persons reading this document are responsible to submit suggestions for improvement for the process described in this document to the author and approval authorities of this instruction.

4 Required Equipment and Materials

- 1. 3510_equitrac_reader_maintainer_1_16_02.zip file
- 2. Equitrac card reader
- 3. 10B-0034 Reader Adaptor Box (only required for non-USB readers)
- 4. Windows PC with available USB port (2 available ports for non-USB readers)



5 Installing the Software and Drivers

- 1. Follow the instructions for removing the Equitrac Reader Maintainer tool and drivers in section 7 if the PC already has previous versions of the tool and drivers installed.
- 2. Unzip the 3510_equitrac_reader_maintainer_1_16_02.zip file to the C:\folder of the Windows computer using the password "Equitrac" (without quotes), and ensuring that the Use folder names option is selected.



3. Launch the 3510_equitrac_reader_maintainer_1_16_02.exe file found in the *C:\Equitrac* folder. The following window appears:



4. Click *Next* twice to proceed through the wizard with the default options.



5. If the *Equitrac Reader Maintainer* tool has previously been installed on your PC, a prompt similar to the following may appear:

Folder Exist	ts 📃 🗶
2	The folder: C:\Program Files (x86)\Equitrac\Equitrac Reader Maintainer already exists. Would you like to install to that folder anyway?
	Yes <u>N</u> o

Click Yes to proceed to the next step of the setup wizard.

- 6. Click *Next* then *Install* to begin the software installation.
- 7. Once installation has completed, click *Finish* to close the setup program.



The remaining steps are required only if you will be using a Reader Adapter Box to work with non-USB card readers.

- 8. Launch the BaltechVCPInstaller.exe file found in the C:\Equitrac\2100_usb_to_virtual_com_port_driver_6_04_00 folder.
- 9. If an *Open File Security Warning* dialog appears asking whether you wish to run the software, click *Run*.
- 10. If a *User Account Control* dialog appears asking whether you wish to allow the program to make changes to your computer, click Yes.



11. The following window appears:

🚜 Baltech USB-to-Virtual-COM-Port Driver Driver Installer				
	Baltech AG Baltech USB-to-Virtual-COM-Port Driver			
	Driver Version 6.4			
	Install Cancel			

- 12. Click Install.
- 13. If alerted that Windows can't verify the publisher of the driver software (or that the software has not passed Windows logo testing on Windows XP), click *Install this driver* software anyway:

😵 Wir	Windows Security				
\bigotimes	Windows can't verify the publisher of this driver software				
		Do <u>n</u> 't install this driver software			
		You should check your manufacturer's website for updated driver software for your device.			
	e	Install this driver software anyway			
		Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.			
	See <u>d</u> etails				

Note that this may happen one additional time.

14. If prompted that you must restart your computer, click Yes.



6 Using the Equitrac Reader Maintainer Tool

6.1 Opening The Tool and Connecting a Reader

1. Select *Start Menu> All Programs> Equitrac> Equitrac Reader Maintainer* to run the Equitrac Reader Maintainer tool. The following window appears:

Equitrac Reader Maintainer 1.16.02	
Settings	
equitr	ac
Select Reader	
Reader Information	
Current Firmware	
Serial Number Current Configuration	
Project Management	
Analyse Project Card ID Analyse Project Car	rd Type
Reader Maintenance	
Restore Reader Customize Re	ader
Not Connected	đ

If a reader is not connected to the computer, the tool indicates *Not Connected* in the bottom left corner.



2. Connect the reader to a USB port on the computer.



If the reader is non-USB, connect the Reader Adaptor Box as per section 8 and then proceed with the following steps.

The Equitrac Reader Maintainer reports the connected reader's firmware, serial number, and configuration; as in the following example:

Equitrac Reader Maintainer 1.16.02					
Settings					
equitr	ac				
Select Reader					
Reader Information					
Current Firmware 1055 1.14.23					
Serial Number 37003026					
Current Configuration 10236-0000-3022-15 Equitrac Medusa					
USB-Type Shark M - Mifare / ISO14443 / ISO15693 / 125kHz (vendor id: 0x13AD, product id: 0x9CA5)					
Project Management					
Analyse Project Card ID Analyse Project Ca	ard Type				
Reader Maintenance					
Restore Reader Customize Re	eader				
Connected					

Record the current configuration of the reader in case it is needed for future reference.



3. The Reader Maintainer Tool works on only one reader at a time. When multiple readers are installed on your computer, clicking the Select Reader button opens the Selection of Reader dialog:

Equitrac Reader Maintainer 1.16.02	
Settings	
equitre	ac
Selection of Reader	
Curren Please select a reader you want to use for Equitrac Reader Maintainer	r
Serial Number Details	
Serial N 37003026 HID (USB) 39004322 HID (USB)	
Curren	
Select Reader	
Project Management	
Analyse Project Card ID Analyse Project Card	Type
Reader Maintenance]
Restore Reader Customize Rea	der



4. Click the Serial Number of the desired reader, followed by Select Reader:

s	Selection of Reader				
	Please select a reader you want to use for Equitrac Reader Maintainer				
	Serial Number	Details			
	37003026	HID (USB)			
	39004322	HID (USB)			
	Show Details				
	Select Reader]			



5. The Reader Maintainer Tool will report and operate on the selected reader:

Equitrac Reader Maintainer 1.16.02					
Settings					
equ	itrac				
Select R	eader				
Reader Information					
Current Firmware 1055 1.14.35					
Serial Number 39004322					
Current Configuration 10236-0098-3022-07 HID iClass SAM	4 printed card number				
USB-Type Shark M with SAM - Mifare / ISO14443 / ISO15693 / 125kHz (vendor id: 0x13AD, product id: 0x9CA5)					
Project Management					
Analyse Project Card ID	Analyse Project Card Type				
Reader Maintenance					
Restore Reader	Customize Reader				
Connected					



6.2 Analyzing Project Card ID

This function displays the ID that the reader returns to the host application.



By default this is a card's unique ID or raw magnetic swipe track information, but readers programmed with custom configurations may return alternate information derived from the card's contents.

1. With the Equitrac Reader Maintainer tool open and a reader connected (section 6.1), click on the *Analyse Project Card Id...* button. The following dialog appears:

Analyse Project	Card ID				x
Project Card II	D		Current Firmw	are:	
			1055 1.14.23 Current Configuration: 10236-0000-3022-15 Equitrac Medusa Readings: 0		
ID (Configur	ation Dependent)	Serial Number	(Dec)	Serial Number (Hex)	
		Clear	Close		



2. Present a compatible card to the reader. Once detected in the read field, its *ID* and *Serial Number* information is displayed in the dialog:





Additional cards may be presented one at a time without closing or clearing the information in the dialog. Their information will be displayed on additional lines, with the most recently detected ID line highlighted in red.

When working with the Magnetic Swipe or Gen 1 HID Proximity card reader, the Serial Number (Dec) and Serial Number (Hex) columns will show "no information". This is normal.

Some cards; particularly in the HID, Indala, EM-Marin, and Hitag families; may be multi-typed and return one of several different results when read. Leaving an unknown card in the read field for 30 seconds allows the reader to detect and return IDs from all RFID transponders contained within the card.



3. To copy card data to the Windows clipboard for use in other applications, *Right-click* the desired line and select *Copy Data*:

Analyse Project Card ID		×	
Project Card ID	Current Firmv 1055 1.14.3 Current Confi 10236-0000 Medusa Readings: 1	vare: 23 guration: D-3022-15 Equitrac	
ID (Configuration Dependent)	Serial Number (Dec)	Serial Number (Hex)	
4108971174 4108971174 0vF4F9FC46 Copy Data			
Clear Close			



4. If the display becomes too crowded with data from multiple cards, click the *Clear* button:

Analyse Project Card ID		×	
Project Card ID	Current Firi 1055 1.14 Current Co 10236-00 Medusa	nware: 1.23 nfiguration: 00-3022-15 Equitrac	
ID (Configuration Dependent)	Readings: 4 Serial Number (Dec)	Serial Number (Hex)	
000000234020437 12746346934386496224 00047698119685 4108971174	234020437 12746346934386496224 47698119685 4108971174	0xDF2DE55 0xB0E41F00F7FF12E0 0xB1B078C05 0xF4E9ECA6	
Clear Close			

5. When finished, close the dialog by clicking *Close*.



6.3 Analyzing Project Card Type

This function displays information about a card's type.



When working with multi-type cards, this function is used to determine which type corresponds to the desired information, so that the correct single-type Stock Solution may be programmed (section 6.4.1).

1. With the Equitrac Reader Maintainer tool open and a reader connected (section 6.1), click on the *Analyse Project Card Type…* button. The following dialog appears:

Analyse Project Card Type			x
Project Card Type	D State	Readings: 0	
Card Type	Serial Number (Dec)	Serial Number (Hex)	
	Clear Close		



2. Present a card to the reader. Once detected in the read field, its *Type* and *Serial Number* information is displayed in the dialog:

Analyse Project Card Type		×
Project Card Type		
)) estada	Readings: 2
Card Type	Serial Number (Dec)	Serial Number (Hex)
138 (HID Proximity)	1000160737023	0xE8DE39B6FF
96 (PICOPASS via ISO 15693)	13920122876070925024	0xC12E3600F9FF12E0
	Clear Close	



Additional cards may be presented one at a time without closing or clearing the information in the dialog. Their information will be displayed on additional lines, with the most recently detected information highlighted in red.

When working with the Magnetic Swipe or Gen 1 HID Proximity card reader, the reader LED will blink but no data appears. This is normal, as the Card Type and Serial Number info is not supported by these reader models.



Some cards; particularly in the HID, Indala, EM-Marin, and Hitag families; may be multi-typed and return one of several different results when read. Leaving an unknown card in the read field for 30 seconds allows the reader to detect and return data from all RFID transponders contained within the card.



3. To copy card data to the Windows clipboard for use in other applications, *Right-click* the desired line and select *Copy Data*:

Analyse Project Card Type		×
Project Card Type		Readings: 2
Card Type	Serial Number (Dec)	Serial Number (Hex)
138 (HID Proximity)	1000120727032	0xE8DE39B6FF
96 (PICOPASS via ISO 15693)	Copy Data	0xC12E3600F9FF12E0
	Clear Close	



4. If the display becomes too crowded with data from multiple cards, click the *Clear* button:

Analyse Project Card Type		×
Project Card Type	a saida asida	Readings: 4
Card Type	Serial Number (Dec)	Serial Number (Hex)
16 (Mifare classic)	4108971174	0xF4E9ECA6
48 (ISO 15693)	2124632835691120608	0x1D7C364EA98007E0
96 (PICOPASS via ISO 15693)	13920122876070925024	0xC12E3600F9FF12E0
138 (HID Proximity)	1000 160 73 70 23	0xE8DE39B6FF
	Clear Close	

5. When finished, close the dialog by clicking *Close*.



6.4 Customizing a Reader

1. With the Equitrac Reader Maintainer tool open and a reader connected (section 6.1), click on the *Customize Reader* button. The following dialog appears:

Customize Reader			
Stock Solution			
USB Connected Readers, Default Configuration			
Medusa Standard 🗸			
Custom Solution			
Configuration			
Browse Clear			
Firmware			
Browse Clear			
Update Reader			
· · · · · · · · · · · · · · · · · · ·			
Close			



6.4.1 **Programming a Stock Solution**

Several 'Stock Solutions' have been developed to address a number of common situations. Configurations to return just a single track from a magnetic swipe card or a specific type from a multi-typed card exist within the Reader Maintainer Tool.

1. In the *Customize Reader* dialog, click the *Stock Solution* button, then use the drop list to select the desired base configuration:

Customize Reader
Stock Solution
USB Connected Readers, Default Configuration USB Connected Readers, Default Configuration Magstripe Card / [Track1] Data Magstripe Card / [Track2] Data
Magstripe Card / [Track2] Data Magstripe Card / [Track3] Data 125kHz Card / AWID / UID (Type 137) 125kHz Card / EMarin / [EM4205+4305] Number (Type 128) 125kHz Card / EMarin / [EM4100+4102] Number (Type 129) 125kHz Card / EMarin / [EM4100+4102] Number (Type 129) - Reverse Sitecode 125kHz Card / EMarin / [EM4450] Number (Type 131) 125kHz Card / Indala / Number (Type 136) 125kHz Card / Indala / Number in Wiegand Format (Type 136) 125kHz Card / Indala / Wiegand Data (Type 136) 125kHz Card / Hitag / [Hitag1+HitagS] Number (Type 140) 125kHz Card / Hitag / [Hitag2] Number (Type 141 or 142)
125kHz Card / HD Prox / [HD Prox] Number (Type 138) 125kHz Card / HD Prox / [HD Prox32] Number (Type 133) 125kHz Card / ioProx / Number (Type 139) - Sitecode 125kHz Card / Keri / Number (Type 134) 125kHz Card / QuadraKey / Number (Type 135) 13MHz Card / iClass / UID (Type 96) 13MHz Card / iClass / Printed Number [via HID-SAM] (Type 96) 13MHz Card / iClass / Wiegand Data [via HID-SAM] (Type 96) 13MHz Card / ISO14443A / UID

Due to the proliferation of RFID enabled financial and identity cards, coupled with the ability of the Gen 2 readers to work with multiple card types, it is **strongly advised** that a Stock Solution be used to restrict the reader to work only with the desired type (refer to section 6.3, Analyzing Project Card Type).

This prevents the card reader returning erroneous ID information from other RFID cards that may unknowingly be carried by the user.



2. This base configuration can be modified with one of several USB Keyboard emulations, or a beeper enabled configuration:

Customize Reader				
Stock Solution				
USB Connected Readers, Default	USB Connected Readers, Default Configuration			
Medusa Standard 🗸 🗸				
Medusa Standard (Keyboard Emulation (US) Keyboard Emulation French Keyboard Emulation German Keyboard Emulation Turkish Keyboard Emulation Nordic Keyboard Emulation PC Only Beeper Enabled	Browse Clear			
	Browse Clear			
Update Reader				
Close				

MFP's that require the reader to use Keyboard Emulation also need a leading symbol character (\sim or $^{\circ}$) to differentiate card reader input from data typed in by the user. Since emulation returns keystrokes rather than characters, the symbol is sent as a combination of a Shift Key plus a Number Key.

For proper operation it is crucial that the Keyboard Emulation language chosen matches the regional settings of the MFP to which the card reader will connect.



The PC Only emulation returns the card ID without a leading symbol character, for use with the Release Station or other hosts where Keyboad Emulation is required without a leading symbol character.



3. To update the connected reader, click Update Reader.

Customize Reader
 Stock Solution USB Connected Readers, Default Configuration Medusa Standard Custom Solution Configuration Browse Clear Firmware Browse Clear
Update Reader Close

4. The following warning appears:



Click Yes.



5. The reader firmware and configuration are then updated as necessary. The dialog controls are disabled and a progress bar appears during this process:

Customize Reader			
Stock Solution			
125kHz Card / HID Prox / [HID Prox] Number (Type 138)			
Medusa Standard 👻			
Custom Solution			
Configuration			
Browse Clear			
Firmware			
Browse Clear			
Update Reader			
Close			



The message "*Please wait until the reader is found*" may appear one or more times. If it does not disappear within 20 seconds, there may have been a glitch during the update process. Click *Cancel* and refer to section 10 for troubleshooting instructions.



You may hear Windows' USB disconnection and reconnection sounds during this process, followed by the appearance of one or more "*New hardware found*" or "*Installing drivers*" notices. This is normal.

If the reader already has a similar configuration, the update occurs quickly and the dialog returns to normal almost immediately.



6. Upon completion of the update, the dialog re-enables and the window behind it refreshes to reflect the new firmware and configuration of the reader:

Equitrac Reader Maintainer	1.16.02		
Settings			
ec	quitr	ac	
	Select Reader		
Reader Information			
Current Firmware 1055 1.14.35			
Serial Number 37003026			
Current Configuration 10236-0097-3022-06	HD Prox		
	Customize Reader		
Shark M - Mifare / ISO (vendor id: 0x13AD, p	Stock Solution		
	125kHz Card / HID Prox / [HID Prox] N	umber (Type 138)	-
Project Management	Medusa Standard 🔹		
Analyse Project Ca	 Custom Solution Configuration 		
Reader Maintenance		Browse	Clear
Restore Read	Firmware		
Connected		Browse	Clear
	Update	e Reader	
		Close	
l			



7. To update another reader, simply unplug all original readers and plug in the next; then click the *Update Reader* button again.



The window behind the *Customize Reader* dialog refreshes to reflect the firmware and configuration of the currenty connected reader in realtime.

8. Repeat step 7 for each additional reader to be updated.



6.4.2 **Programming a Custom Solution**

Sometimes, a project-specific solution is required which will be produced and provided to you by Nuance or authorized partners. To program a custom solution:

1. In the *Customize Reader* dialog, click the *Custom Solution* button:

ustomize Reader
© Stock Solution
Custom Solution
Configuration
NO UPDATE Browse Clear
Firmware
NO UPDATE Browse Clear
Update Reader
Close

This enables the *Browse* buttons that allow you to select the specific configuration and/or firmware files which have been provided to you.



2. Click the *Browse…* button corresponding to the component, either configuration or firmware, to be programmed in the reader. A file selection dialog appears:

Please Select a Configuration File					x
Computer 🕨 Local Disk (C).) ▶ Equitrac ▶	- - i i j	Search Equitrac		٩
Organize 🔻 New folder				•	0
 ★ Favorites ⇒ Libraries ⇒ Documents → Music ⇒ Pictures ➡ Videos 	2100_usb_to_virtual_com_port P 10236-0112-0000-07_ioProx.be	_driver_6_04 ec	+_00		
Computer					
File <u>n</u> ame:		T	BEC / BCP / BPM fil	es (*.bex;*. Cance	.b •

Select the desired file and click Open.



If the custom solution consists of both a firmware file and a configuration file, click the *Browse…* button for the other component and select it in similar fashion.



3. Click Update Reader.

Customize Reader		
Stock Solution		
Custom Solution		
Configuration		
10236-0112-0000-07_ioProx.bec	Browse	Clear
Medusa Standard 🗸		
Firmware		
NO UPDATE	Browse	Clear
Update Reade	er	
Close		

4. The following warning appears:

Customize	Reader
?	Programming of specific firmware and/or configurations should only be performed when explicitly advised by Equitrac support staff. Continue?
	<u>Y</u> es <u>N</u> o





5. The reader firmware and configuration will be updated as necessary. The dialog controls are disabled and a progress bar appears during this process:

Customize Reader	
Stock Solution	
Custom Solution	
Interference Interference Interference]
Medusa Standard	
Update Reader]
Close	



The message "*Please wait until the reader is found*" may appear one or more times. If it does not disappear within 20 seconds, there may have been a glitch during the update process. Click *Cancel* and refer to section 10 for troubleshooting instructions.



You may hear Windows' USB disconnection and reconnection sounds during this process, followed by the appearance of one or more "*New hardware found*" or "*Installing drivers*" notices. This is normal.

If the reader already has a similar configuration, the update occurs quickly and the dialog returns to normal almost immediately.



6. Upon completion of the update, the dialog re-enables and the window behind it refreshes to reflect the new firmware and configuration of the reader:

Equitrac Reader Maintainer 1	1.16.02			\neg
Settings				
ec	lui	tr	ac	
	Select Reader			
Reader Information				
Current Firmware 1055 1.14.35				
Serial Number 37003026				
Current Configuration 10236-0112-3022-07 io	Prox			
USB-Type Shark M - Mifare / ISC	ustomize Reader			
(vendor id: 0x13AD, p	Stock Solution			-
Project Management	Custom Solution			
Analyse Project Ca	Configuration	-07 ioProx.bec	Browse	Clear
Reader Maintenance	Medusa Standard			
Restore Read	Firmware			
Connected	NO UPDATE		Browse	Clear
		Updat	te Reader	
			Close	



7. To update another reader, simply unplug all original readers and plug in the next; then click the *Update Reader* button again.



The window behind the *Customize Reader* dialog refreshes to reflect the firmware and configuration of the currently connected reader in realtime.

8. Repeat step 7 for each additional reader to be updated.



6.5 *Restoring Factory Default Behaviour*

1. With the Equitrac Reader Maintainer tool open and a reader connected (section 6.1), click on the *Restore Reader* button. The following dialog box appears:

Restore Reader
© Restore Factory Firmware/Configuration of Y591-IMIF-101 (Internal Mifare) Reader
© Restore Factory Firmware/Configuration of Y591-ILEG-101 (Internal Legic) Reader
Restore Factory Firmware/Configuration of all other Readers
Update Reader
Close

2. Select the correct option based on the type of reader connected, either an *Internal Mifare* reader, *Internal Legic* reader, or the *all other Readers* option.



3. Click *Update Reader*. The dialog controls disable and a progress bar appears during the update process:

Restore Reader
Restore Factory Firmware/Configuration of Y591-IMIF-101 (Internal Mifare) Reader
🔘 Restore Factory Firmware/Configuration of Y591-ILEG-101 (Internal Legic) Reader
Restore Factory Firmware/Configuration of all other Readers
Update Reader
Close



The message "*Please wait until the reader is found*" may appear one or more times. If it does not disappear within 20 seconds, there may have been a glitch during the restoration process. Click *Cancel* and refer to section 10 for troubleshooting instructions.



You may hear Windows' USB disconnection and reconnection sounds during this process, followed by the appearance of one or more "*New hardware found*" or "*Installing drivers*" notices. This is normal.

4. If the message "Failed to update the reader" appears, click OK to close the message then click Update Reader again.



Should the second update also fail, refer to section 10 for troubleshooting instructions.



5. Upon completion of the restore operation, the dialog re-enables and the main window behind it refreshes to reflect the new firmware and configuration of the reader:

Equitrac Reader Maintainer 1.16.02
Settings
equitrac
Select Reader
Reader Information
Current Firmware 1055 1.14.35
Serial Number
37003026
Current Configuration 10236-0000-3022-18 Equitrac Medusa
USB-Type Shark M - Mifare / ISO14443 / ISO15693 / 125kHz (vendor id: 0x13AD, product id: 0x9CA5)
Restore Reader
Project Restore Factory Firmware/Configuration of Y591-IMIF-101 (Internal Mifare) Reader
Restore Factory Firmware/Configuration of Y591-ILEG-101 (Internal Legic) Reader
Restore Factory Firmware/Configuration of all other Readers
Update Reader
Connector
Close



The firmware and configuration installed during restoration are those shipped for the selected option at the time of the Equitrac Reader Maintainer tool's release, and may not match those contained in the reader as originally shipped. It is the factory default **behaviour** which is restored by this option.



6. To restore another reader, simply unplug all original readers and plug in the next; then click the *Update Reader* button again.



The window behind the *Restore Reader* dialog refreshes to reflect the firmware and configuration of the currently connected reader in realtime.

7. Repeat step 6 for each additional reader to be restored.



6.6 Tool Settings

The main window of the Reader Maintainer Tool contains a Settings menu at the top left:

Equitrac Reader Maintainer 1.16.02	
Settings	
equitr	ac
Select Reader	
Reader Information	
Current Firmware	
Serial Number	
Current Configuration	
Project Management	
Analyse Project Card ID Analyse Project Card	d Type
Reader Maintenance	
Restore Reader Customize Rea	der
Not Connected	



6.6.1 Read Counter

The *Read Counter* setting controls the presence of the Readings count in the *Analyse Project Card ID* and *Analyse Project Card Type* windows.

The default *Read Counter* setting is enabled, when disabled the aforementioned windows no longer contain the Readings count:

Analyse Project Card ID					x
Project Card ID		a	Current Firmw 1055 1.14.3 Current Config 10236-0000 Medusa	are: 5 juration: -3 022-18 Equitra c	
ID (Configuration Dep	endent)	Serial Number	(Dec)	Serial Number (Hex)	
Analyse Project Card Typ	ре				×
Project Card Type			areas		

Card Type	Serial Number (Dec)	Serial Number (Hex)
	Clear Close	



7 Removing the Equitrac Reader Maintainer Tool & Drivers

7.1 On Windows XP

- 1. Open the *Add or Remove Programs* window by selecting *Start menu> Control Panel* and then double-clicking *Add or Remove Programs*.
- 2. In the *Currently installed programs* box, select *Equitrac Reader Maintainer* then click *Remove*.
- 3. When prompted "Are you sure you want to completely remove Equitrac Reader Maintainer and all of its components?", click Yes.
- 4. In the *Currently installed programs* box, select *Baltech USB-to-Virtual-COM-Port Driver* (*Driver Removal*) then click *Change/Remove*.
- 5. When the *Baltech USB-to-Virtual-COM-Port Driver Driver Uninstaller* appears, click *Uninstall.*
- 6. If prompted to reboot the PC click Yes, otherwise simply close the Add or Remove *Programs* window.

7.2 On Other Windows Versions

- 1. Open the *Programs and Features* window by selecting *Start button> Control Panel> Programs> Programs and Features*.
- 2. Double click Equitrac Reader Maintainer in the programs list or select it and click Uninstall.
- 3. When prompted "Are you sure you want to completely remove Equitrac Reader Maintainer and all of its components?", click Yes.
- 4. Double click *Baltech USB-to-Virtual-COM-Port Driver (Driver Removal)* in the programs list or select it and click *Uninstall/Change*.
- 5. When the Baltech USB-to-Virtual-COM-Port Driver Driver Uninstaller appears, click Uninstall.
- 6. If prompted to restart your computer click *Restart Now*, otherwise simply close the *Programs and Features* window.



8 Connecting the Reader Adaptor Box

- 1. Connect the USB power cord to the Reader Adaptor Box and to the Windows PC.
- 2. Connect the Reader Adapter Box USB cable to the Windows PC.





3. Connect the card reader to the appropriate connector on the Reader Adaptor Box:



Mini-DIN connection

EPA connection Internal reader connection



The ribbon cable provided with the Reader Adaptor Box must be used to connect to internal card readers.



9 Card Readers

There are many different Nuance/Equitrac card readers, depending on the application type and card technology.

9.1 Reader Types

Nuance/Equitrac card readers come in four different application types:

- Internal readers which are pre-installed in certain PageCounter models.
- Mini-DIN readers which connect to the PageCounter Mini, Xerox Secure Access Unified ID System Controller, or TouchPoint Console
- EPA readers which connect to the EP Accessory interface port on select Fuji Xerox MFPs.
- USB readers which connect to the USB port of partner MFPs running embedded applications.

Various models of each type exist for compatibility with different card technologies:

- Magnetic swipe readers for use with magnetic swipe cards.
- Mifare readers for use with MiFARE and other 13.56 MHz ISO standards-based card technologies.
- Legic readers for use with LEGIC Prime and Advant cards.
- HID/Indala readers for use with various 125 KHz card technologies.
- Multi-Card readers for use with 13.56 MHz ISO standards-based and various 125 KHz card technologies.



While support for a new card type can sometimes be added to existing readers via updated firmware and configuration files, this may not be possible for all reader application types.

It is crucial that customer cards be qualified by Nuance personnel for compatibility with the desired application.



9.2 LED Behaviour

The behavior of the LED on the card reader is dependent on the reader application type.

9.2.1 Mini-DIN Readers

The host device directly controls the colour and state (solid, blinking, flashing) of the LED via dedicated signal lines in the mini-DIN cable. The LED does not directly react to card presentations.



As the mini-DIN reader's LED is entirely controlled by the host, it may not be lit even though the reader has power and is functioning properly!

9.2.2 EPA Readers

The LED has different colours and conditions (solid, blinking, flashing) dependent on the operating state of the host MFP, and does not directly react to card presentations. Card activity is communicated to the host, which then changes its state (and therefore that of the reader LED) accordingly.

9.2.3 USB Readers

The LED becomes solid green upon application of power. When a card is detected the LED blinks off, returning to solid green if the card was readable or red if the card was not accepted.



The host may command the reader LED to reflect its own login and server communications status. This is dependent upon the embedded application in use, as not all MFP platforms permit this operation.



10 Troubleshooting

10.1 Reset or Reconnection Not Possible

Symptom: During an Update Reader operation the following dialog appears:



After disconnecting and reconnecting the reader to the PC as advised, the reader remains invisible/unavailable to the Reader Maintainer Tool.

Cause: There is a mismatch between the new (or restored) reader capabilities and those of the driver and settings already associated with it by the operating system.



10.1.1 Resolution on Windows XP

4. Press the **Windows + Pause/Break** key combination to open the *System Properties* dialog:

System Properties			? 🛛
System Restore A	System Restore Automatic Updates		Remote
General Computer Name	e	Hardware	Advanced
	Sy Re Co	stem: Microsoft Window Professional Version 2002 Service Pack 3 egistered to: mputer: Intel(R) Celeron(R) CPU 2 2.66 GHz, 1.00 G	.66GHz B of RAM
	ОК	Cancel	Apply



5. Select the Hardware tab, then click Device Manager.

System Properties			? 🔀	
System Restore General Comp	Automat uter Name	tic Updates Hardware	Remote Advanced	
Device Manager The Device Mon your comp	Manager lists all t uter. Use the De	he hardware device evice Manager to ch	es installed hange the	
properties of a	any device.	Device Ma	anager	
Drivers Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.				
Driver	Signing	Windows L	Jpdate	
Hardware Profiles Hardware profiles provide a way for you to set up and store different hardware configurations.				
		Hardware	Profiles	
	ОК	Cancel	Apply	



6. In the Device Manager window that appears, the card reader appears as a *Human Interface Device* with a yellow warning exclamation.

Right-click to select it, then click on Uninstall.

🚚 Device Manager	
File Action View Help	
Computer Computer Disk drives Display adapters DVD/CD-ROM drives Floppy disk controllers Floppy disk drives Floppy disk drives Human Interface Devices Update Driver Disable Uninstall Scan for hardware changes Properties System devices Universal Serial Bus controllers	
Uninstalls the driver for the selected device.	



7. When prompted to Confirm Device Removal, click OK:



- 8. Disconnect and reconnect the card reader.
- 9. Windows reports "New Hardware Found" followed by "Your hardware is installed and ready to use".
- 10. The Equitrac Reader Maintainer tool will again be able to connect to the card reader.



10.1.2 Resolution on Other Windows Versions

1. Press the **Windows + Pause/Break** key combination to open the *System Properties* window:

Control Panel +	All Control Panel Items + System	n 🔻 🍫 Search Control	Panel 🔎
File Edit View Tools Help			
Control Panel Home	View basic information	about your computer	
🛞 Device Manager	Windows edition		
😯 Remote settings	Windows 7 Enterprise		
😯 System protection	Copyright © 2009 Microsoft Corporation. All rights reserved.		
Advanced system settings			
	System		
See also	Rating:	4,5 Windows Experience Index	
Action Center	Processor:	Intel(R) Core(TM)2 Duo CPU T960	0 @ 2.80GHz 2.80 GHz
Windows Update	Installed memory (RAM):	4.00 GB	
Performance Information and Tools	System type: Pen and Touch:	64-bit Operating System No Pen or Touch Input is available fo	or this Display



2. Click Device Manager to open the Device Manager window:





3. The card reader appears as a *Human Interface Device* with a yellow warning exclamation. Right-click to select it, then click on *Uninstall*:

File Action View Help
Computer Batteries Biometric Devices Bluetooth Radios Computer Disk drives Display adapters DVD/CD-ROM drives Human Interface Devices HID-compliant device HP Quick Launch Buttons 64 Key Tronic USB Keyboard Logitech USB Wheel Mouse USB Inp Update Driver Software Disable IEEE 1394 B Mice and o Modems Modems Network adapters Network adapters Bluetooth Device (Personal Area Network) Bluetooth Device (RFCOMM Protocol TDI) Cisco Systems VPN Adapter for 64-bit Windows Intel(R) 82567LM Gigabit Network Connection



4. When prompted to Confirm Device Uninstall, click OK:



- 5. Disconnect and reconnect the card reader.
- 6. Windows reports "Installing device driver software" followed by "Your device is ready to use".
- 7. The Equitrac Reader Maintainer tool will again be able to connect to the card reader.



10.2 No Reader Information Shown

Symptom: A reader is connected and the status bar shows "Connected to a reader, valid firmware", yet no reader information is shown:

Equitrac Reader Maintainer 1.05.01	
equitr	ac
Reader Information	
Current Firmware	
Serial Number	
Current Configuration	
Project Management	
Analyse Project Card ID Analyse Project Card	ard Type
Reader Maintenance	
Restore Reader Customize R	eader
Connected to a reader, valid firmware	

Cause: The reader has been programmed with prototype development firmware which does not support re-configuration or re-programming.

Resolution: The reader can only be reprogrammed by disassembly at the factory. Special arrangements must be made through your Nuance or partner support representative.



10.3 Card not Detected by Analyse Project Card ID Dialog

Symptom: A reader is connected but no data appears in the *Analyse Project Card ID* dialog when a card is presented to the reader.

Possible Cause: The reader has been customized but the card presented is of a different type or configuration than that used by the customization. Since a configuration dependent Project ID cannot be retrieved, no result is displayed.

Confirmation: Use the Analyze Project Card Type function to detect the card. If the card is detected by this function, Restore the reader (section 6.5) and then use the Analyse Project Card ID function again to retrieve the default card ID.

10.4 Card not Detected by Analyse Project Card Type Dialog

Symptom: A reader is connected but no data appears in the *Analyse Project Card Type* dialog when a card is presented.

Possible Cause: A Magnetic Swipe or older HID Proximity reader is being used. In this case the LED will blink when a card is presented but no data is returned. This is normal, as Card Types and Serial Numbers do not apply with these reader models.

Possible Cause: The card type is not supported by the reader. If this is an unknown card from a new project, try it against both the Multi-Card and Legic card readers in their factory default configuration.

Project cards often come from a pre-existing security system installed at the customer site, and the IT personnel involved with the project may be misinformed about the card type(s) used by their system.



Always try cards provided with a new project quotation against both the Multi-Card and Legic card readers in their factory default configuration.

Possible Cause: The card is damaged. If another card from the same project is available (or another card compatible with the reader model in use), try it against the same reader.

Possible Cause: The reader is damaged. If another reader of the same model is available, try the card against the other reader.

Possible Cause: The card type is not supported by any existing Equitrac reader model. If the account is large enough to justify new development, then escalate to eq_rdrdev@nuance.com for further analysis.



11 Contact Information

For questions, suggestions or concerns regarding this document, please email:

eq_rdrdev@nuance.com

Include reference number PDI-RM01 in the subject line of the email.