



pcSwipe™

Configuration Utility
User Manual

Thank You!

Congratulations on your purchase of the pcSwipe magnetic stripe reader. RF IDEas knows you will enjoy using pcSwipe as much as we enjoyed creating and developing it. Configuration is easy, allowing you to quickly take advantage of a more secure environment in your business, school, or organization.

We are always discovering new applications for our products. In fact, there are several software developers licensing our technology, so the solution you are looking for may already be developed.

Please call the our Sales department if you have any questions or are interested in our Original Equipment Manufacturer (OEM) and Independent Developer's programs.

We look forward to your comments and suggestions for our line of products. Please go to www.RFIDeas.com and follow the **Support** ⇨ **Learning Center** link for more details about the products we offer.

Thank you,
The RF IDEas Staff

Need Assistance?

Ph: 847.870.1723

Fx: 847.483.1129

E: Sales@RFIDeas.com

TechSupport@RFIDeas.com

END-USER LICENSE AGREEMENT

LICENSE AGREEMENT

End-User License Agreement for RF IDEas™ SOFTWARE and HARDWARE—RF IDEas' pcSwipe™, Software Developer's Kit, and Reader DLLs, and Protocol(s).

IMPORTANT—READ CAREFULLY: This End-User License Agreement (“EULA”) is a legal agreement between you (either an individual or a single entity) and the manufacturer RF IDEas (“Manufacturer”) with which you acquired the RF IDEas software and hardware product(s) identified above (“PRODUCT”). The PRODUCT includes the RF IDEas reader, computer software, the associated media, any printed materials, and any “on line” or electronic documentation. By installing, copying, or otherwise using the PRODUCT, you agree to be bound by the terms of this EULA. The SOFTWARE PORTION OF THE PRODUCT includes the computer software, the associated media, any printed materials, and any “on line” or electronic documentation. If you do not agree to the terms of this EULA, RF IDEas is unwilling to license the PRODUCT to you. In such event, you may not use or copy the SOFTWARE PORTION OF THE PRODUCT, and you should promptly contact the vendor you obtained this PRODUCT from for instructions on return of the unused product(s) for a refund. The products described in this publication are intended for commercial applications. RF IDEas assumes no liability for the performance of product. RF IDEas products are not suitable for use in life-support applications, biological hazard applications, nuclear control applications, or radioactive areas. None of these products or components, software or hardware, are intended for applications that provide life support or any critical function necessary for the support of protection of life, property or business interests. The user assumes responsibility for the use of any of these products in any such application. RF IDEas shall not be liable for losses due to failure of any of these products, or components of these products, beyond the RF IDEas commercial warranty, limited to the original purchase price.

SOFTWARE PRODUCT LICENSE The PRODUCT is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The SOFTWARE PORTION OF THE PRODUCT is licensed, not sold.

1. GRANT OF LICENSE. This EULA grants you the following rights: *Software. You may install and use one copy of the SOFTWARE PORTION OF THE PRODUCT on the COMPUTER. *Network Services. If the SOFTWARE PORTION OF THE PRODUCT includes functionality that enables the COMPUTER to act as a network server, any number of computers or workstations may access or otherwise utilize the basic network services of that server. The basic network services are more fully described in the printed materials accompanying the SOFTWARE PORTION OF THE PRODUCT. *Storage/Network Use. You may also store or install a copy of the computer SOFTWARE PORTION OF THE PRODUCT on the COMPUTER to allow your other computers to use the SOFTWARE PORTION OF THE PRODUCT over an internal network, and distribute the SOFTWARE PORTION OF THE PRODUCT to your other computers over an internal network.

1.1 General License Grant. RF IDEas grants to an individual, a personal, nonexclusive license to make and use copies of the SOFTWARE PRODUCT for the sole purposes of designing, developing, and testing your software product(s) that are designed to operate in conjunction with any RF IDEas designed reader product. You may install copies of the SOFTWARE PRODUCT on an unlimited number of computers provided that you are the only individual using the SOFTWARE PRODUCT. If you are an entity, RF IDEas grants the right to designate one individual within your organization to have the sole right to use the SOFTWARE PRODUCT in the manner provided above.

1.2 Documentation. This EULA grants an individual, a personal, nonexclusive license to make and use an unlimited number of copies of any documentation, provided that such copies shall be used only for personal purposes and are not to be republished or distributed (either in hard copy or electronic form) beyond the user's premises and with the following exception: you may use documentation identified in the SOFTWARE PRODUCT as the file format specification for RF IDEas' readers solely in connection with your development of software product(s) or an integrated work or product suite whose components include one or more general purpose software products.

1.3 Storage/Network Use. You may also store or install a copy of the SOFTWARE PRODUCT on a storage device, such as a network server, used only to install or run the SOFTWARE PRODUCT on computers used by a licensed end user in accordance with Section 1.1. A single license for the SOFTWARE PRODUCT may not be shared or used concurrently by other end users.

1.4 Sample Code. RF IDEas grants you the right to use and modify the source code version of those portions of the SOFTWARE PRODUCT identified as “Samples in the SOFTWARE PRODUCT (“Sample Code”) for the sole purposes to design, develop, and test your software product(s), and to reproduce and distribute the Sample Code, along with any modifications thereof, only in object code form.

2. DESCRIPTION OF OTHER RIGHTS AND LIMITATIONS.

*Limitations on Reverse Engineering, Decompilation and Disassembly. You may not reverse engineer, decompile, or disassemble the PRODUCT, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation.

*You may not reproduce or otherwise emulate, in whole or in part, any form the protocol(s) defined within this PRODUCT for use without a RF IDEas PRODUCT (Redistributable Code). If you are authorized and choose to redistribute Sample Code (“Redistributables”) as described in Section 1.4, you agree to: (a) distribute the Redistributables in object code only in conjunction with and as a part of a software application product developed by you using the PRODUCT accompanying this EULA that adds significant and primary functionality to the SOFTWARE PRODUCT (“Licensed Product”); (b) not use RF IDEas' name, logo, or trademarks to market the Licensed Product; (c) include a valid copyright notice on the Licensed Product; (d) indemnify, hold harmless, and defend RF IDEas from and against any claims or lawsuits, including attorney's fees, that arise or result from the use or distribution of the Licensed Product; (e) otherwise comply with the terms of this EULA; and (g) agree that RF IDEas reserves all rights not expressly granted. You also agree not to permit further distribution of the Redistributables by your end users except: (1) you may permit further redistribution of the Redistributables by your distributors to your end-user customers if your distributors only distribute the Redistributables in conjunction with, and as part of, the Licensed Product and you and your distributors comply with all other terms of this EULA; and (2) in the manner described in Section 1.4.

*Separation of Components. The PRODUCT is licensed as a single product. Its component parts may not be separated for use on more than one computer.

*Single COMPUTER. The PRODUCT is licensed with the COMPUTER as a single integrated product. The PRODUCT may only be used with the COMPUTER.

*Rental. You may not rent or lease the PRODUCT without permission from RF IDEas.

*Software Transfer. You may permanently transfer all of your rights under this EULA only as part of a sale or transfer of the COMPUTER, provided you retain no copies, you transfer all of the PRODUCT (including all component parts, the media and printed materials, any upgrades, this EULA and, if applicable, the Certificate(s) of Authenticity), AND the recipient agrees to the terms of this EULA. If the PRODUCT is an upgrade, any transfer must include all prior versions of the PRODUCT.

*Termination. Without prejudice to any other rights, RF IDEas may terminate this EULA if you fail to comply with the terms and conditions of this EULA. In such event, you must destroy all copies of the SOFTWARE PORTION OF THE PRODUCT and all of its component parts.

3. UPGRADES. If the SOFTWARE PORTION OF THE PRODUCT is an upgrade from another product, whether from RF IDEas or another supplier, you may use or transfer the PRODUCT only in conjunction with that upgraded product, unless you destroy the upgraded product. If the SOFTWARE PORTION OF THE PRODUCT is an upgrade of a RF IDEas product, you now may use that upgraded product only in accordance with this EULA. If the SOFTWARE PORTION OF THE PRODUCT is an upgrade of a component of a package of software programs which you licensed as a single product, the SOFTWARE PORTION OF THE PRODUCT may be used and transferred only as part of that single product package and may not be separated for use on more than one computer.

4. OEM COPYRIGHT. All title and copyrights in and to the PRODUCT (including but not limited to images, photographs, animations, video, audio, music, text and "applets," incorporated into the PRODUCT), the accompanying printed materials, and any copies of the SOFTWARE PORTION OF THE PRODUCT, are owned by RF IDEas or its suppliers. The PRODUCT and SOFTWARE PORTION OF THE PRODUCT is protected by copyright laws and international treaty provisions. You may not copy the printed materials accompanying the PRODUCT.

5. DUAL-MEDIA SOFTWARE. You may receive the SOFTWARE PORTION OF THE PRODUCT in more than one medium. Regardless of the type or size of medium you receive, you may use only one medium that is appropriate for your single computer. You may not use or install the other medium on another computer. You may not loan, rent, lease, or otherwise transfer the other medium to another user, except as part of the permanent transfer (as provided above) of the SOFTWARE PORTION OF THE PRODUCT.

6. OEM PRODUCT SUPPORT. Product support for the product is not provided by RF IDEas or its subsidiaries. For product support, please refer to the OEM supplies support number provided in the documentation. Should you have any questions concerning the EULA, or if you desire to contact OEM for any other reason, please refer to the address provided in the documentation provided. FOR THE LIMITED WARRANTIES AND SPECIAL PROVISIONS PERTAINING TO YOUR PARTICULAR JURISDICTION, PLEASE REFER TO YOUR WARRANTY BOOKLET INCLUDED WITH THIS PACKAGE OR PROVIDED WITH THE SOFTWARE PRODUCT PRINTED MATERIALS.

Limited Warranty: RF IDEas warrants to the original buyer of this product, that the hardware and related disk(s) are free of defects in material and workmanship for a period of one year from date of purchase from RF IDEas or from an authorized RF IDEas dealer. Should the RF IDEas products fail to be in good working order at any time during the one-year period, RF IDEas will, at its option, repair or replace the product at no additional charge, provided that the product has not been abused, misused, repaired or modified. This warranty shall be limited to repair or replacement and in no event shall RF IDEas be liable for any loss of profit or any commercial or other damages, including but not limited to special, incidental, consequential or other similar claims. No dealer, distributor, company, or person has been authorized to change or add to the terms of this agreement, and RF IDEas will not be bound by any representation to the contrary. RF IDEas SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE. Since some states do not allow such exclusion of limitation of incidental or consequential damages for consumer products, check the statute of the state in which your business resides. This warranty gives you the specific legal rights in addition to any rights that you have under the laws of the state in which your business resides or operates. Returns: RF IDEas PRODUCTS which require Limited Warranty service during the warranty period shall be delivered to the nearest authorized dealer or sent directly to RF IDEas at the address below with proof of purchase and a Return Materials Authorization (RMA) Number provided by RF IDEas Technical parts or complete boards become the property of RF IDEas. If the returned board or unit is sent by mail, the purchaser agrees to pre-pay the shipping charges and insure the board or unit or assume the risk of loss or damage which may occur in transit. The purchaser is expected to employ a container equivalent to the original packaging. Copyright: Copyright by RF IDEas 1997-2010. All rights reserved. Reproduction or distribution of this document in whole or in part or in any form is prohibited without express written permission from RF IDEas. Trademarks: All RF IDEas products are trademarks of RF IDEas. All other product names or names are trademarks or registered trademarks of their respective holders. Disclaimer: This User Manual is printed in the U.S.A. Any resemblance mentioned in the User Manual to persons living or dead, or to actual corporations or products is purely coincidental. RF IDEas believes that the information contained in this manual is correct. However, RF IDEas does not assume any responsibility for the accuracy of the content of this User Manual, nor for any patent infringements or other rights of third parties. RF IDEas reserves the right to make any modifications in either product or the manual without giving prior written notification.

Contents

6	Chapter 1: pcSwipe Overview	39	Chapter 7: Tips and Troubleshooting
2	Thank You!	39	Troubleshooting
6	pcSwipe Magnetic Stripe Card Reader	40	Appendix
6	Connectors	41	The pcSwipe for Password Security
7	Operating Modes and Output	42	pcSwipe Configuration Examples
8	pcSwipe Configuration Utility	43	Index
9	Chapter 2: Getting Started	44	Other Products and Accessories
9	Hardware Requirements		
9	Software Requirements		
9	Card Compatibility		
10	Chapter 3: Installation		
10	Installing a Reader		
11	Installing pcSwipe Configuration Utility		
13	Updating Software		
15	Chapter 4: Configuration		
15	Connecting to a Reader		
17	Multiple Reader Configuration		
18	Reader Configuration		
19	Viewing the Device Configuration		
19	Configuring Fields		
21	Field Processing		
21	Defining a User Field		
24	Defining a Flex Field		
25	Entering Special Keystrokes		
27	Configuring SDK		
27	Configuring LED and Beeps		
29	Applying Configurations to Readers		
29	Reset to Default Configurations		
30	Chapter 5: Files for Device Deployment		
30	Saving a Configuration		
30	Opening a Configuration		
31	Chapter 6: Utility Interface Reference		
31	File Menu		
31	Help Menu		
32	Connect Tab		
34	Fields Tab		
37	Keys Tab		
38	LED/Beep Tab		

pcSwipe Magnetic Stripe Card Reader

This manual is intended for personnel who are installing and/or configuring pcSwipe card readers. It provides a high-level overview of how the pcSwipe magnetic stripe card readers work, instructions for installing pcSwipe devices and the pcSwipeConfig utility, and information about configuration settings.

pcSwipe is an intelligent magnetic stripe card reader with an efficient solution for customers who want to leverage their existing base of magnetic stripe card-carrying personnel. Compatible with magnetic stripe cards already circulating worldwide, the reader is designed to meet the identification and security needs of customers in many different environments and industries. pcSwipe is your solution to reading magnetic stripe encoding based on the ISO-7811 standard.

pcSwipe can be utilized in many applications, including:

- Point-of-sale (POS)
- Card enrollment
- PC/LAN log-on
- Cafeteria purchases/vending
- Machine access
- Time/attendance
- Multiple function printer (MFP)
- Single sign-on (SSO)

pcSwipe can read credit cards, ID cards, hotel cards, and many more. When a card is swiped, forward or reverse, the reader interprets the card data as keystrokes or ASCII characters, depending on the operating mode. Data can be returned from any field or all fields from any of the three tracks on the card. With the optional Software Developer's Kit (SDK), a pcSwipe reader can be used as a stand-alone system or can be integrated into other software applications.

Connectors

Readers are available in different models to accommodate the needs of your existing hardware and applications. A variety of connection options allow pcSwipe to work with almost any host system:

- USB
- DB-9 plus PS/2 for power
- DB-9 power plug - 2.1 mm
- DB-9 power plug - 2.5 mm
- DB-9 - 9-pin power

The following illustration shows a pcSwipe reader, connectors, and output options.



Operating Modes and Output

pcSwipe readers operate in two primary modes: keyboard emulation/ASCII output, and the SDK mode which is based on the Application Programming Interface (API) defined in the SDK. These modes determine how card data is read and output.

USB reader modes:

- **USB Keyboard Mode** - The device reads and outputs the card data as keystrokes (as if the cardholder typed the ID data on a keyboard).
- **SDK Mode** - The reader does not automatically output the card data. The application uses the SDK to query and control the reader.

Serial, Ethernet, or USB virtual COM port reader modes:

- **ASCII Output Device Mode** - The device reads and sends card data as ASCII.
- **SDK Mode** - The device uses the API defined in the pcSwipe SDK. In this mode, the reader is attached to a computer serial port. The API reads the card and out-puts the entire card data to the active application.

The option to switch modes is only available if you have purchased the keystroking reader. The keystroking reader (xx81) can be made to be silent with the SDK or the pcProx configuration program. The SDK (xx82) reader is locked in "quiet" mode.

The SDK comes with a DLL for Microsoft® Windows® 32- and 64-bit operating systems and sample source code using this DLL for C++, C#, and Visual Basic.

pcSwipe Configuration Utility

pcSwipe readers come with the pcSwipeConfig utility that allows you to configure readers for the desired output. You can add additional keystrokes or ASCII characters to card data, define your own fields, and utilize flexible fields to accommodate both error handling and additional keystrokes or ASCII characters. The ability to save configuration settings lets you quickly configure additional devices. Several predefined configuration templates are available for different card types.

Note: Be aware that if the card reader is reading cards while you are configuring the device, the card data output may be sent directly into the active document/window.

Hardware Installation

The minimum system requirements for installing and using pcSwipe readers are outlined in the following table.

	Minimum System Requirements
HARDWARE	Pentium class PC
MEMORY	32 MB RAM
DISK	25 MB hard disk space
I/O	1 available serial or USB Port
Operating System	Any operating system that supports a USB keyboard including Microsoft Windows 2000, XP, Vista, Linux, Macintosh. Can be used for keystroke applications

Software Installation

The minimum system requirements for installing and using the pcSwipeConfig utility are outlined in the following table.

	Minimum Software Requirements
HARDWARE	Pentium class PC
MEMORY	32 MB RAM
DISK	25 MB hard disk space
Operating system	Microsoft Windows 2000, Windows XP, Windows Vista, or Windows 7

Note: The software does not perform any data validation checking. Be sure that there is known valid data on the card you are using to configure the User Fields.

Manufacturer/Vendor Card Compatibility

pcSwipe is compatible with all ISO-7811 magnetic stripe cards. Go to www.RFIDeas.com for specific device part numbers associated to card types.

American Association of Motor Vehicle Administrators (AAMVA) compatibility is also supported (i.e., drivers' licenses).

Note: Cards formatted to AAMVA standards are incompatible with the ISO-7811 format on track 3.

Installation Basics

To get started with pcSwipe, first install the card reader(s) onto a workstation, then install the pcSwipeConfig onto the same workstation. After installation and configuration, pcSwipe devices can be deployed immediately.

Installing a Reader

Reader installation is easy and for USB readers, generally consists of plugging the device into the host workstation and allowing the computer to recognize the device.

1. Place the card reader next to the monitor, beside the workstation, or another location near the workstation that will be accessible by card users.
2. Insert the reader's connector into an open port on the workstation (or into an applicable peripheral):
 - For USB readers, insert the USB connector into an open USB port.
 - For serial readers, connect the DB-9 connector to the mating connector on your serial port device (physical COM port, serial-to-USB adapter, or serial-to-Ethernet adapter).
3. Wait briefly while the reader connects to the host operating system. The LED will rapidly flash amber during this process. For USB readers, if the device is unable to connect after one minute, the LED will turn off but the reader will continue to try and connect with the host.

Note: Flash memory is validated each time you plug in a USB reader. If the flash memory is valid, the device will issue an audible beep and the LED will light in your Ready color (red by default). If the flash memory is not valid, it will be reset to its factory configuration. In this event, the device will issue three long, audible beeps and the LED will flash red as the memory is reset. The Logical Unit ID (LUID) will be reset to zero for factory defaults.

4. If you are installing a USB reader, upon connection, the workstation should detect the new hardware.

On Windows, this may be indicated with a balloon in the notification area. If you are unsure, you can use the Device Manager to verify that the workstation recognizes this connection.

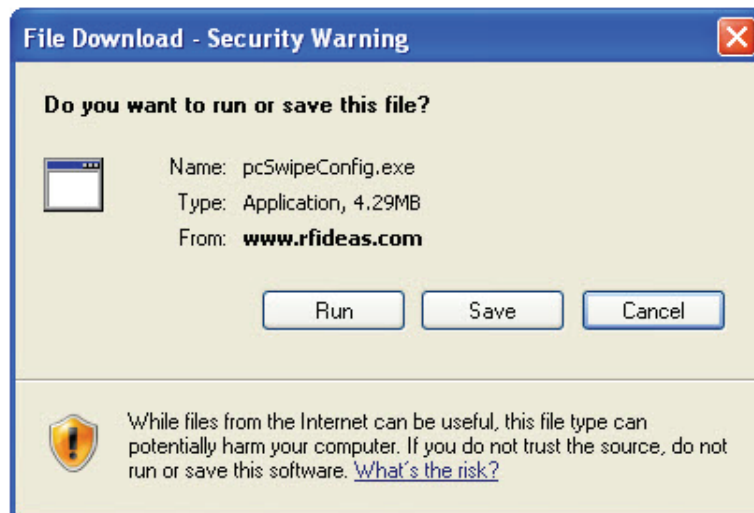
5. If you are installing a serial reader, check the COM port for serial DB-9 connections. You will need to specify the COM ports during the pcSwipe software installation. In Windows, you can use the Device Manager to obtain this information.

6. Check the LED on the reader to determine the device status. When the device is Ready to be configured, the LED is steady red by default. (You can change the reader's LED colors and beeps—**Configuring Reader LED Colors and Beeps** for more information.)
7. Repeat this procedure if you need to install more readers on this workstation.

Installing the pcSwipeConfig Software

To install pcSwipeConfig:

1. Go to the www.RFIDeas.com website and click **Support** ⇒ **Software**.
2. Click **pcSwipeConfig.exe** to download the installation file. A File Download box will be displayed.



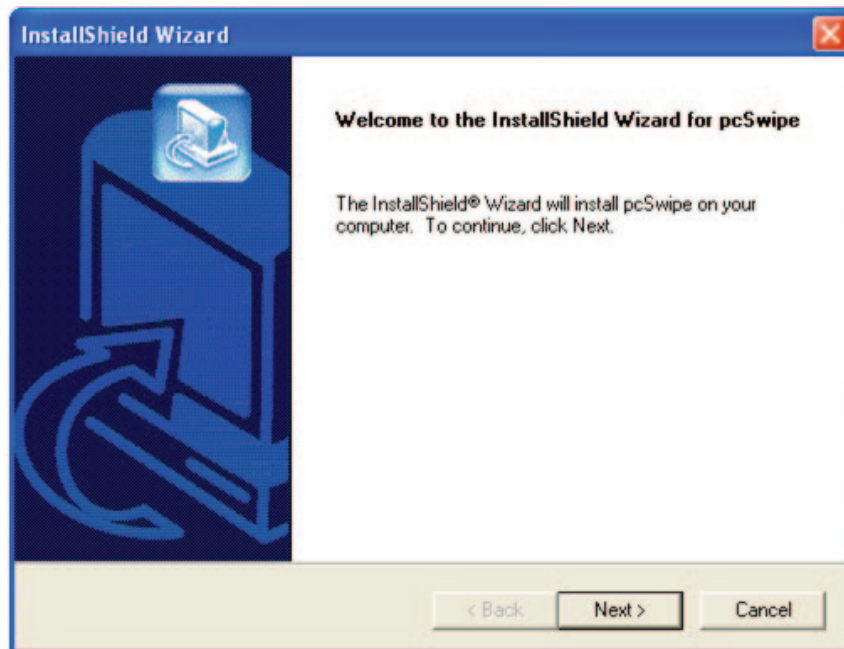
3. Click **Run** to start the download and installation.

This installer is digitally signed by RF IDEas to authenticate file integrity for your safety.

Alternately, click **Save** to save the installation program to a location on your computer for running at a later time. When you are ready to install, double-click **pcSwipeConfig.exe** to start the process, and continue to the next step.



4. In the Security Warning dialog box, click **Run** to start the installation. The InstallShield Wizard screen will be displayed.



5. Click **Next** on the InstallShield Wizard screen. The InstallShield Wizard Welcome screen will be displayed, which is identical to the previous screen.

6. Click **Next** on the InstallShield Wizard Welcome screen.

7. Follow the remaining screen instructions to complete the installation process.

8. Optionally, create a shortcut to the program on the desktop for easy access. On Windows, you can right-click on the program file and select **Send To** ⇒ **Desktop (create shortcut)**.

Once pcSwipeConfig is successfully installed, you can open the application and connect to any device attached to this system. (See—**Connecting to a Reader** for more information).

Updating Software

Before installing an updated version of pcSwipeConfig, you must first uninstall the previous version. In Windows, go to the Control Panel, click **Add/Remove Programs**, and remove the previous version. Then restart the computer and install the update using the Installing the **pcSwipeConfig Software** procedure.

If the installer detects a previous version, you will be prompted to remove it.

Connecting to a Reader

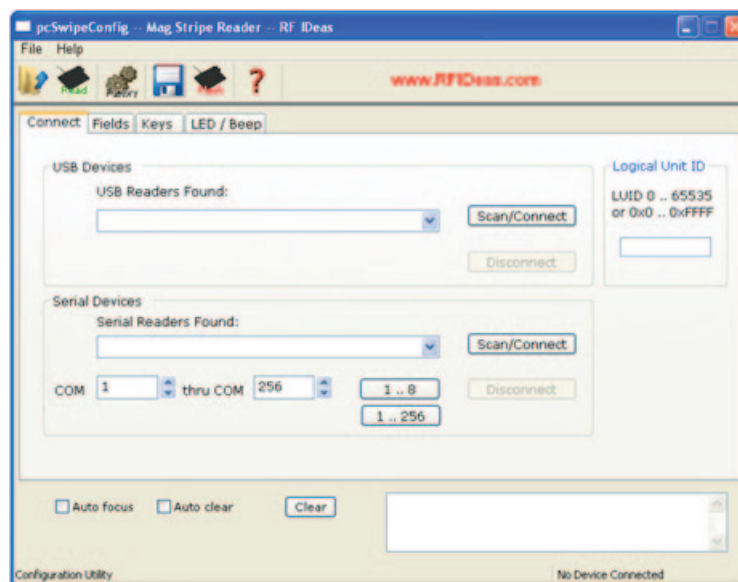
Each time you want to configure a reader in pcSwipeConfig, you must first scan to find and connect the device to the application. After configuring a reader, it can be deployed on any workstation. You can also configure multiple readers one after another before installing them on a destination workstation (See **Multiple Reader Configuration**).

To connect to a reader:

1. Ensure the reader is connected to the workstation. For USB readers, the computer should indicate that the device is found and connected (this can take a few seconds).

Note: While pcSwipeConfig can recognize up to 16 USB readers connected to the workstation, it is recommended that you connect and configure one at a time to prevent any confusion.

2. Start pcSwipeConfig. The application opens with the Connect tab displayed.



Note: For more information about the fields and buttons on the **Connect tab**, see the Connect Tab configuration interface section.

3. If you are connecting a serial device:
 - a. Next to the **COM** box, use the up/down arrows to select the starting COM port number.
 - b. Next to the **thru COM** box, select the ending COM port number.

Alternately, you can use the button shortcuts to the right of these boxes to automatically set the ports:

- Click **1.. 8** to specify COM 1 through COM 8.
- Click **1.. 256** to specify COM 1 through COM 256.

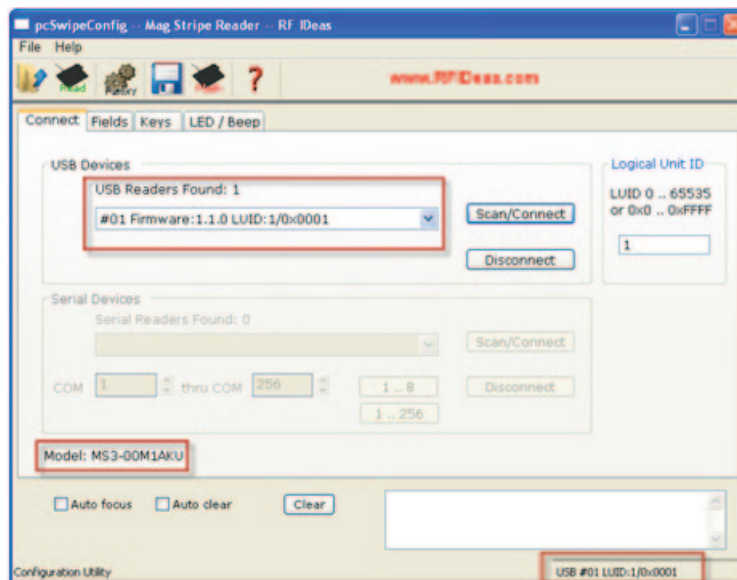
4. Click one of the following buttons:

- For a USB device, click **Scan/Connect** in the **USB Devices** section. During the scan, pcSwipeConfig searches only for USB readers.
- For a serial device, click **Scan/Connect** in the **Serial Devices** section. During the scan, pcSwipeConfig searches only for serial (and virtual serial) readers.

The scan stops after the first serial device is found or when up to 16 USB devices are found. The device's Logical Unit ID (LUID, decimal/hex) including the line number is populated in the drop-down list in the applicable section. If more than one USB device is found, all devices are populated in the drop-down list in the USB section, and you can select the device you wish to configure.

Note: When multiple USB devices are connected to the workstation, the devices may be populated into the drop-down list in a different order each time you scan/connect in pcSwipeConfig. For example, devices A, B, and C may be read in that order the first time you scan, and read as C, B, and A the next time you scan.

The LUID (including the line number) of the device currently selected in the drop-down list is also shown in the status bar of the application, and the device model is indicated near the bottom of the tab. These areas are highlighted in the following example of a USB connection.



Note: The drop-down list can hold up to 16 USB devices but only one serial device.

5. The card reader audibly beeps and the LED flashes green as the connection is established (about one second for USB readers, and several seconds for serial readers). The LED changes to steady red when the device is ready to be configured.

Repeat this procedure any time you configure a new reader or change a reader's configuration settings.

Multiple Reader Configuration

If you need to configure multiple readers of the same type (USB or serial), you can do them one after another:

1. Connect and configure the first reader.

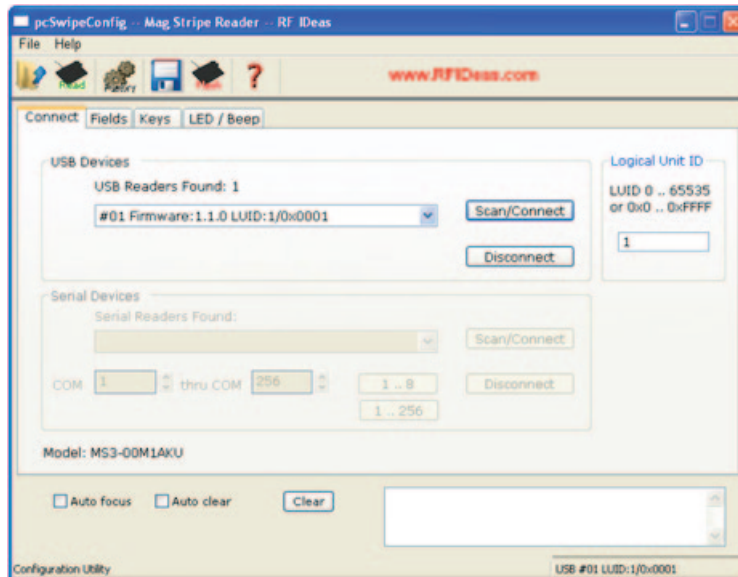
Note: The currently selected reader will beep and the LED will cycle through all colors when this operation is completed.

2. Disconnect the first reader by clicking the Disconnect button in the applicable section.
3. Connect using the appropriate button, and configure the second reader.
4. Repeat this procedure for each reader of the same type that you need to configure.

The **Disconnect** button is only available when a device is currently connected.

Reader Configuration

The pcSwipeConfig interface contains a main menu, a toolbar, tabs with configuration options, and a card data test area with **Auto focus** and **Auto clear** options at the bottom of the screen (below the tabs).



The toolbar contains buttons that match the commands in the File menu, and a link to the RF IDEas website for quick access.



Command	Description
Load	Loads a configuration file into pcSwipe. (See Opening a Configuration File for more information).
Read	Loads the currently connected device's configuration into pcSwipeConfig. The currently selected reader will beep and the LED will cycle through all colors when this operation is completed. (See Viewing the Device Configuration)
Factory	Resets the connected device to the factory default configuration. The currently selected reader will beep and the LED will cycle through all colors when this operation is completed. (See Reset to Default Configuration)
Save	Saves device data to an ASCII .mag configuration file in the pcSwipe folder. (See Saving a Configuration to a File)
Flash	Saves the configuration to the device's flash memory. The currently selected reader will beep and the LED will cycle through all colors when this operation is completed. In the application, the message "Flashing Device...Done" is displayed in the bottom left corner when the operation is completed. (See Applying Configurations to Readers)
Help	Displays information about the application. (See Help Menu in the interface reference section for more details)

Regardless of the tab you are viewing, the menu, toolbar, and test area are always available. A status bar at the bottom of the screen displays the device that is currently connected in the lower right corner (matching the information in the Connect tab).

Context-sensitive help is displayed in a balloon tooltip when your pointer rests upon a field or button in the application. You can optionally turn off this feature using the **Help** ⇨ **Show Tooltip Balloon Help** menu item.

(For more information about the menu items, tabs, and options in pcSwipeConfig. (See **Utility Interface Reference**)

Viewing the Device Configuration

If you have already configured a reader using pcSwipeConfig, you can load the reader's configuration into the application for viewing or editing.

To do this, connect a reader, then select **File** ⇨ **Read configuration from device** or click the **Read** toolbar button. The currently selected reader will beep and the LED will cycle through all colors when this operation is completed. The configuration for the connected reader will be opened in the application.

After making changes, be sure to write the configuration back to the device. (See **Applying Configurations to Readers** for more details).

Configuring Fields

Cards formatted to ISO-7811 and AAMVA standards contain one, two, or three "tracks" of data. This data is stored in a magnetic stripe that has been printed on the card as part of the card manufacturing process.

A track consists of at least three key parts: a start sentinel character, data (followed by optional field separators and additional data), and an end sentinel character (followed by a Linear Redundancy Check [LRC]).

For example:

- Start Sentinel
- Data
- Optional field separator
- Optional additional data
- [More optional field separators and additional data]
- End Sentinel
- LRC

It is possible to read data from one or more of the three tracks. The data is read until the end sentinel character is reached.

Within each track, the data is read in one or more fields. These fields are separated by a specially designated character:

- On cards formatted to the ISO-7811 standard, the field separator character for track 1 is the caret (^), and for tracks 2 and 3, the equals (=) character.
- On cards formatted to AAMVA standards, the field separator on track 3 is the same as track 1.

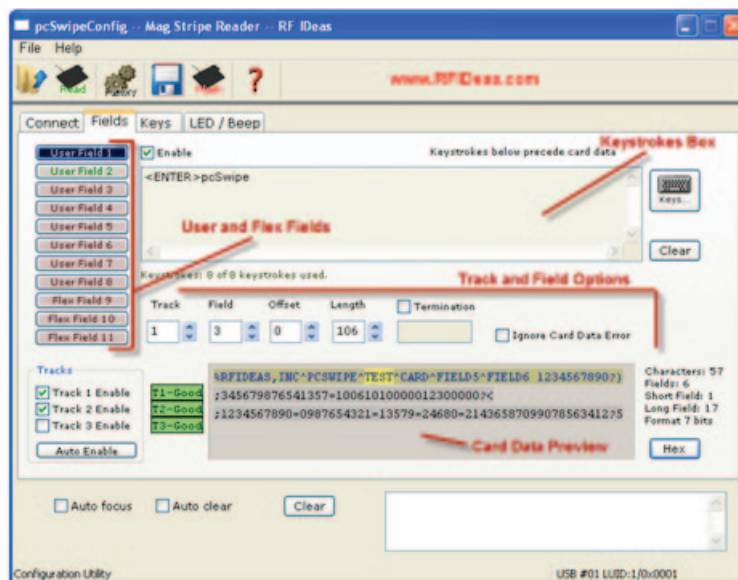
Any data before the first field separator is considered field 1, any data after the first field separator and before the second field separator is considered field 2, and so on. Field 0 is available if you want to select the entire track regardless of the number of fields it contains.

The reader finds these separators for you automatically. By configuring the track and field (and length and terminator) settings in the Fields tab, you can see exactly what data will be output for the selected User Field. The fields are output to the USB or serial port starting with field 1 and ending with field 8 (or field 11, depending on the **Skip** settings for fields 9, 10, and 11).

The pcSwipeConfig Fields tab provides buttons that allow you to define and configure 11 fields. Three of these fields are Flex (flexible) fields that can be used for error handling and/or normal output.

Each of the 11 user fields can hold up to eight keystrokes (for USB readers) or 16 characters (for serial readers), as well as the configured track data output. The track data to be output will be highlighted in yellow in the preview area. These eight keystrokes for USB readers, or 16 characters for serial readers, are known as delimiters. The delimiters, shown in the top text box, are always sent before the card data. For example, in the following image of User Field 1 configured for a USB reader, the card data will be preceded by a line break (ENTER) and the text "pcSwipe."

If you swipe a card with the Fields tab displayed and in focus, and a User Field is enabled, the preview area shows the card data with color-coding to indicate the selected track, field, and length of data that will be output for this configuration.



Note: For more information about the fields and buttons on the Fields tab, see the Fields Tab configuration interface section.

Field Processing

Fields on a track start at 1. Specifying field 0 will cause the entire track (with or without sentinels, separators, and LRC) to be output.

User Fields 1 through 8 are processed in order. The delimiter for each User Field will be output followed by the track data (if specified).

Flex Fields 9, 10, and 11 can be used for error handling of tracks 1, 2, and 3, or as standard User Fields depending on the **Skip** settings as well as the **Ignore Card Data Error** settings. Flex Fields provide a **Skip** option to prevent them from being processed after the User Fields. If an error is found on a track, the appropriate Flex Field will be output for each User Field that references that track unless **Ignore Card Data Error** is checked for that User Field.

Note: If the Keys tab option **Enables quiet mode** is selected, no keystroke or ASCII output is sent—the data is only available through the API. (See Configuring SDK Mode for more information).

Defining a User Field

To define a User Field:

1. Click the **User Field** button for the field you want to configure. By default, **User Field 1** is selected when you first open the tab.
2. Enable the field for configuration by selecting the **Enable** check box, if not already selected. (User Fields 1 and 2 are enabled by default.) When enabled, configuration elements are displayed in the tab.
3. Optionally add any keystrokes that should precede card data by clicking the **Keys** button.

Clicking **Keys** displays a dialog box that lets you insert keystrokes from the keyboard (for USB readers) or ASCII characters (for serial readers), including special keys such as ENTER, TAB, and SPACE. (See **Entering Special Keystrokes** for more information).

To delete unwanted keystrokes, place the cursor in the box after the keystrokes to be deleted and press the BACKSPACE key. To remove all keystrokes from the text area, click **Clear**.

4. In the **Track** field, select the magnetic stripe track number (1, 2, or 3) that should be read for this User/Flex Field. Select 0 to output the delimiter without any data from any track. If there are any errors on the selected track(s) when the card is read, the reader will emit one long beep by default.

To prevent notification errors on tracks known to be non-existing or containing inappropriate data, use the **Tracks** area to select only the tracks you want to enable (**Track 1 Enable**, **Track 2 Enable**, etc.). This can be useful for credit cards that contain only two tracks. Click **Auto Enable** to automatically select tracks matching User Fields with tracks selected. For example, if only User Fields 1 and 2 are enabled, and User Field 1 is set to read track 1 and User Field 2 is set to read track 3, **Auto Enable** will automatically select the **Track 1 Enable** and **Track 3 Enable** check boxes.

5. In the **Field** box, select the field that should be output for this User Field and proceed with the following substeps. Alternately, select 0 to specify the entire track and skip to the next step.

- a. In the **Offset** box, enter the number of characters from the beginning of the specified field to be skipped before output starts. For example, if you set the **Offset** to 10, then the first ten characters of the field will not be output.
- b. Either select your desired length for the data in the magnetic stripe field, and/or specify a termination character. This will limit maximum number of characters output.

For example, if you set the **Length** to 7, then up to seven characters will be output. If the number of characters left in the field after the offset is less than the length, then only those characters remaining in the field will be output.

To designate end of data with a termination character, select the **Termination** check box and enter a character in the box below it. For example, if you set the terminator to "-", the output will stop when a "-" has been found in the output data. If the terminator is not found then the entire field (or up to the specified character length) will be output.

The following conditions will cause output for that User Field to stop:

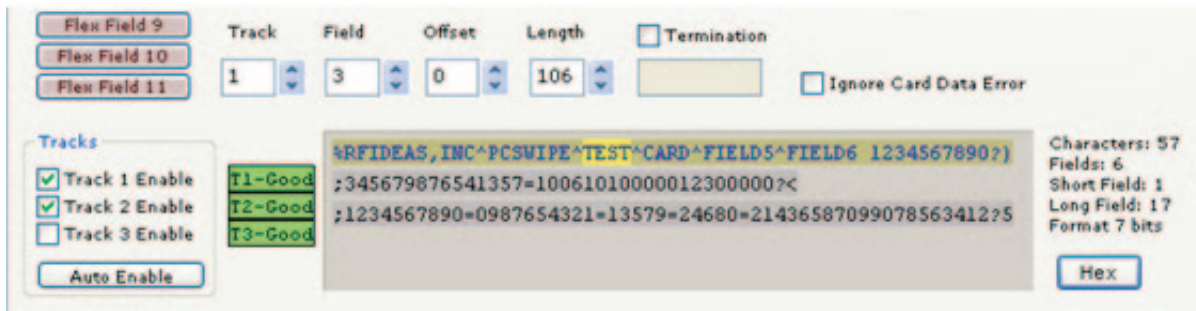
- The end of the field (or track) is reached.
- The number of characters specified in the **Length** box has been output.
- The **Termination** character is found in the field data.

6. Test a card swipe. You can test a card swipe at any point to see how the selected User Field is configured. Card data will be displayed in the gray shaded text area (preview area) below the options, with the data selected by the current User Field configuration highlighted.

Text to the right of the box shows the following statistics:

- Number of characters
- Number of fields
- Number of characters in the shortest field
- Number of characters in the longest field
- The bit format for the currently selected track

7. In the preview area, card data is color-coded to indicate your selections. For example, in the following image, the first line (track 1) is shaded with a light yellow background.



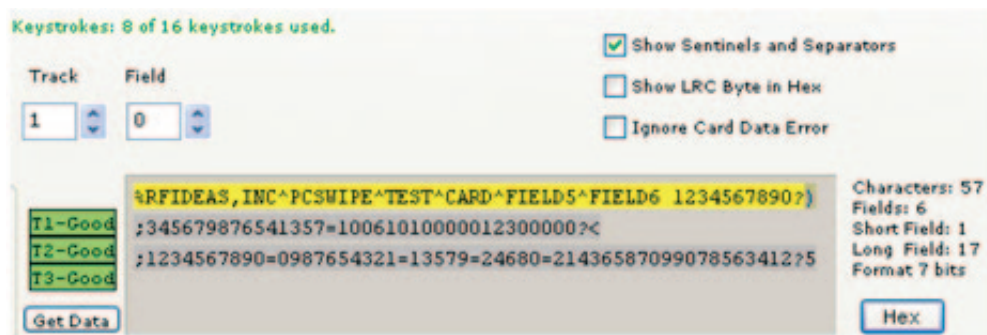
As you change the **Track** numbers, you can see the shading applied to each selected track. Notice that field 3 is selected, and the preview shows the third field highlighted in bright yellow ("TEST").

Click through the field numbers to see the associated field highlighted. If an **Offset** of 2 was selected, the highlighted portion would be "ST". With a zero **Offset** and a **Length** of 2, the highlight would show "TE."

8. To view the selected test data as hexadecimal numbers, click the **Hex** button. This will toggle between hex and character displays.

9. If you selected a track (greater than zero), and specified 0 for the **Field**, options to enable output of the sentinel and field separator characters and the LRC data are available. Optionally select one or both of the following:

- **Show Sentinels and Separators** - In the ISO-7811 magnetic card standard, certain characters are set aside as indicators (sentinels and field separators) and are not considered to be part of the track data (for example, "%", "^", and "?", as shown in the following image). Select this option to include those indicators in the fields that are being displayed.



- **Show LRC Byte in Hex** - In the ISO-7811 magnetic card standard, all tracks end with a Linear Redundancy Check (LRC) byte as a method of ensuring data accuracy. Select this option to display the hexadecimal LRC code as part of the card data. The LRC for each track will be placed after the data for the user field.

10. Optionally, select **Ignore Card Data Error** to show the card data even if the LRC is incorrect. The reader performs several checks on the read from each track to ensure data integrity. If the data fails this check, then normally the Error User Field for that track is called. If you select this option, the track/field data will be output. Otherwise, the appropriate Error User Field may be output. (See Defining a Flex Field for more information).

Note: If **Ignore Card Data Error** is selected, the reader attempts to determine what should be output. However, the results may not always be what you expect. Use this option with care.

11. Repeat the previous steps to configure more fields.

12. When finished configuring User and Flex Fields, apply the configuration to the device by selecting **File** ⇒ **Write/Flash configuration to device** from the main menu, or clicking the **Flash** toolbar button (See Applying Configurations to Readers).

13. Optionally, you can save the configuration so you can apply it to the next reader if you need to configure multiple readers. Click the **Save** toolbar button or select **File** ⇒ **Save to template file** from the main menu. pcSwipe configuration files are saved as ASCII with a .mag extension. (See pcSwipe Files for Device Deployment for more information).

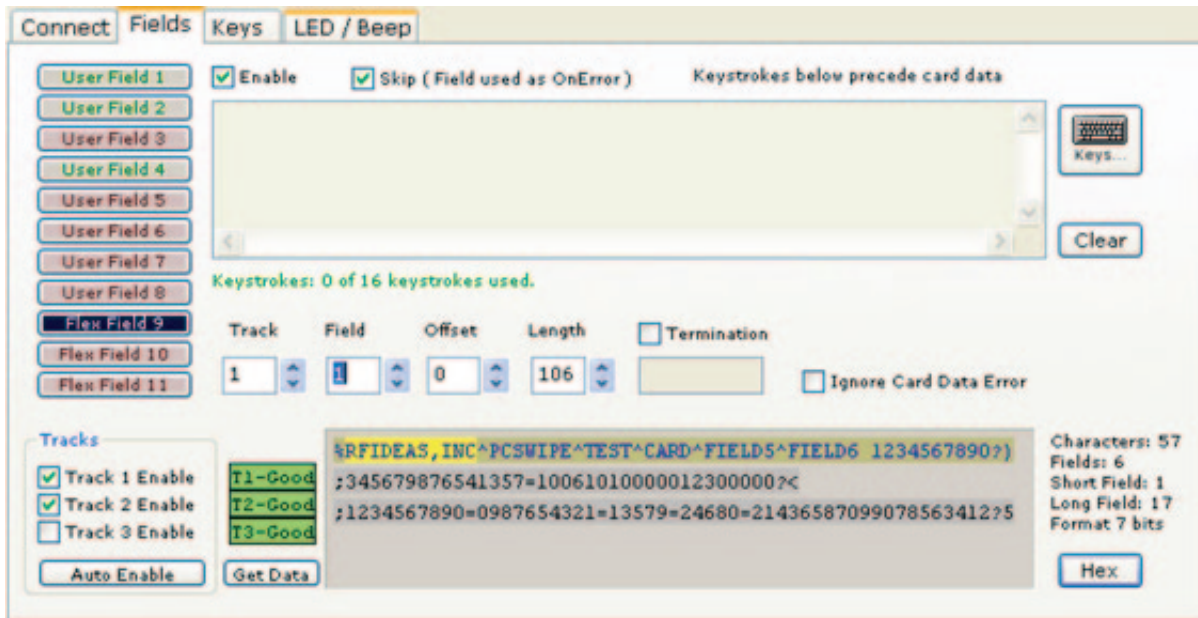
Defining a Flex Field

If an error is encountered reading the data for an enabled track (See Track 1 Enable - Track 3 Enable in the Fields tab reference section), any User Field that references that track will instead output the appropriate Flex Field for that track (Track 1 uses Flex Field 9, Track 2 uses Flex Field 10, and Track 3 uses Flex Field 11).

Flex Fields have an additional option: **Skip (Field used as OnError)**. When this option is enabled (the box is checked) the normal User Field processing will skip this Flex Field. It can then be used for error handling.

If the **Skip** option is not enabled, the Flex Field will function like a User Field and also be output if an error occurs.

To disable error processing for any track, disable the appropriate Flex Field.



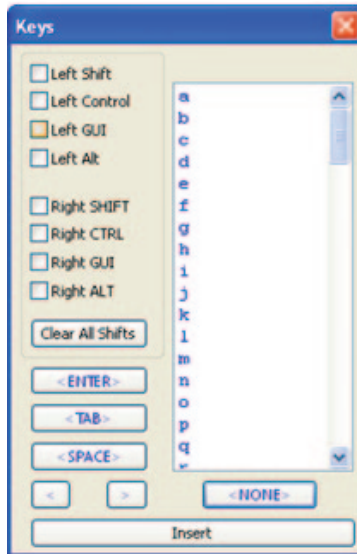
To use a Flex Field as a normal User Field, you must select the Ignore Card Data Error option for all User Fields.

Entering Special Keystrokes

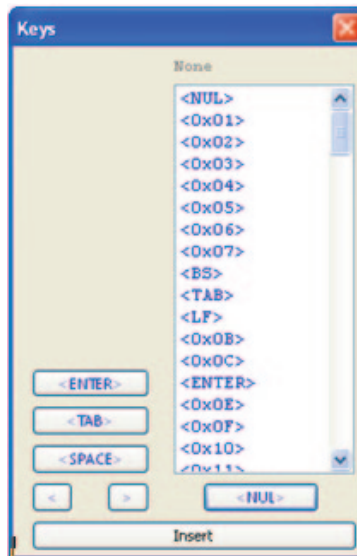
To input special keystrokes or ASCII characters into the Keystrokes text box when defining a field:

1. Click the **Keys** button to the right of the text area.

If you are configuring a USB reader, the Keys dialog box contains key modifier check boxes in the top left portion, a list of keys in the right portion, and shortcut button to insert common keys.



If you are configuring a serial reader, the dialog box displays a list of ASCII characters in the right portion.



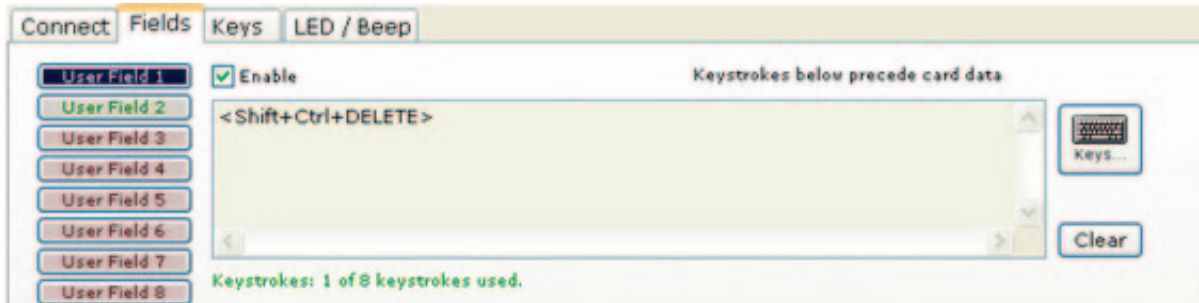
2. For a USB reader, optionally use the check box(es) in the top left portion of the dialog box to select key modifiers (such as SHIFT or CTRL). For example, to specify CTRL+SHIFT, select **Left Shift** and **Left Control**. To clear all of your selections, you can click **Clear All Shifts**.

3. Select the desired character from the list box of keyboard keys or ASCII characters. For example, to insert CTRL+SHIFT+DELETE for a USB reader, with the **Left Shift** and **Left Control** boxes checked, select **DELETE** in the list box.

The list box contains all of the keys on the keyboard including letters, numbers, and special characters. Buttons for **ENTER**, **TAB**, **SPACE**, **LESS THAN (<)**, **GREATER THAN (>)**, and **NONE** for USB readers or **NUL** for serial readers, are shortcuts that place the focus on that character in the list box. Select **NONE** or **NUL** if you do not want to select a character (for a USB reader, just the keystroke check boxes you selected will be inserted).

When you select a character, the scan code output is displayed above the list.

4. Click **Insert**. The keystroke you selected will be inserted into the Keystrokes text area.



5. Repeat steps 2–4 to insert more keystrokes. When you are finished, close the dialog box.

Configuring SDK Mode

The Software Developer's Kit (SDK) is a software application interface that assists software developers, authors, and IT professionals with integrating card data to a physical device or database/software program.

The RF IDEas SDK uses leading-edge technology and works for almost every type of manufacturer credentials, giving you more flexibility when marketing your product.

Using the SDK, you can read card data using functions included in the SDK, then deliver the data through your software to a device or program to perform a specific function. In SDK mode, all keystroke or serial send-data can be inhibited.

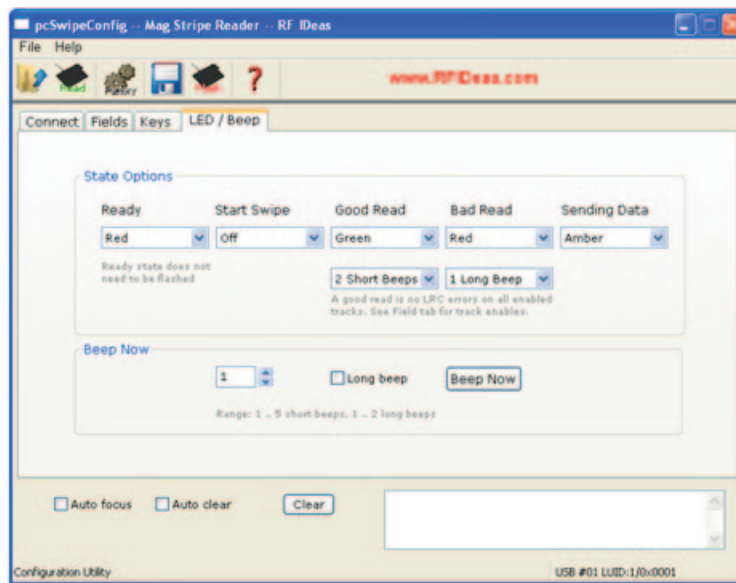
The SDK is sold separately. Software developers who purchase the SDK can change the pcSwipe device mode of operation. This does not apply to the SDK-only series readers. On keystroking readers, the keystroking output can be enabled (Keystroking) or disabled (quiet mode). The SDK functionality can be used in either mode.

Use the Keys tab in pcSwipeConfig to configure the device's keyboard parameters and SDK advanced features. (See the Keys Tab configuration interface section for details about the available options).

Visit www.RFIDEas.com for more details about the SDK for pcSwipe.

Configuring LED and Beeps

pcSwipe readers have an LED that indicates the status of the device. Readers also sound audible beeps to indicate status. To configure the LED colors and beeps, select the LED / Beep tab.



LED Colors

There are five possible states for a reader, as described in the following table. For each state, you can use the drop-down box to turn the LED off or to select a color.

State	Default Color	Indication
Ready	Red	The reader is idle, waiting for a card to be read.
Start Swipe	Off	The reader has detected the first magnetic flux.
Good Read	Green	A card has been swiped and all tracks that have been enabled were verified “good” according to the ISO-7811 standard.
Bad Read	Red	A card has been swiped and the reading is “bad” in that there was at least one enabled track that did not pass the ISO-7811 standard validation.
Sending Data	Amber	Data is being keystroked by the reader (if enabled on keystroke-series readers) and/or being sent to the application via the SDK.

Audible Beeps

You can also customize the audible beeps sounded for good reads and bad reads. Use the drop-down boxes below the **Good Read** and **Bad Read** LED settings to set the beeps to silent, or specify up to four short beeps or two long beeps for each type of read.

The **Beep Now** section lets you test beeps. Select the number of beeps to be sounded, then click **Beep Now**. To hear long beeps instead of short beeps, select the **Long beep** option. You can specify up to five short beeps and two long beeps for testing.

Applying Configurations to Readers

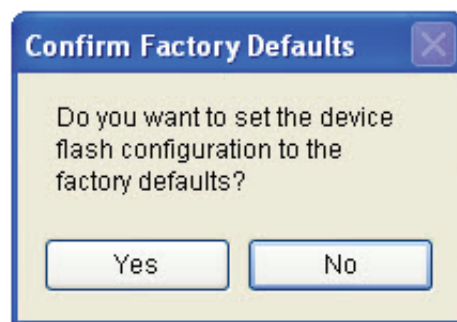
After configuring a reader, you must write the configuration to the connected reader by selecting **File** ⇒ **Write/Flash configuration to device** from the main menu, or clicking the **Flash** toolbar button.

While the configuration is being written, the pcSwipeConfig status bar states “Flashing device” (in the lower left corner). The reader being flashed will beep, the LED will blink, and the status bar will state “Flashing Device...Done” when this operation is completed.

Resetting the Default Configuration

To reset the configuration for the currently connected reader back to the factory default settings:

1. Click the **Factory** toolbar button. A confirmation dialog box is displayed.



2. Click **Yes**.

The reader’s flash configuration will be restored to the factory defaults. The new configuration will be read back from the reader and pcSwipeConfig will reflect the new configuration.

Note: The currently selected reader will beep and the LED will cycle through all colors when this operation is completed.

You can save a reader's configuration (to your computer, a USB memory stick, etc.). This allows you reload a configuration into pcSwipeConfig for reconfiguring a connected reader or other readers at a later time.

Configuration files end with the extension MAG. The default folder is the pcSwipeConfig program folder, but the application will remember the last folder used. The default folder contains several predefined configuration templates that you can use for different card types.

Saving a Configuration to a File

Note: Be sure to test a card swipe to verify that the new configuration was correctly read before saving it.

To save a reader's configuration:

1. Select **File** ⇒ **Save to template file** from the main menu or click the **Save** toolbar button.
2. Type a name for the configuration. The default extension is .mag. If no extension is specified, this will be used.

By default, pcSwipeConfig will only show .mag files when reading or saving template files—using the default extension is recommended.

Opening a Configuration File

To open/load a configuration file:

1. With a reader connected, select **File** ⇒ **Open template file** from the main menu or click the **Load** toolbar button.
2. Navigate to the folder where you have stored your configuration files. The sample template files are stored in the pcSwipe program folder (C:\Program Files\RF IDEas\pcSwipe on most systems).
3. Select the file to load. You can load a file that you have previously saved or one of the predefined templates for different card types.
4. Click **Open** to display the configuration in the utility.
5. To apply the configuration to the connected reader, select **File** ⇒ **Write/Flash configuration to device** or click the **Flash** toolbar button.

The currently selected reader will beep and the LED will cycle through all colors when this operation is completed.

6. Check the pcSwipeConfig status bar to verify that the configuration was written successfully.

Menus

The pcSwipeConfig contains a File menu and a Help menu.

File Menu

The File menu contains the same commands as the toolbar, with an additional command to exit the application:

- Open template file
- Read configuration from device
- Factory defaults
- Save to template file
- Write/Flash configuration to device
- Exit

Help Menu

The Help menu contains the following items:

- Help (open the pcSwipe.pdf) - Opens this user manual in the workstation's de-fault PDF application.
- Show Tooltip balloon help - When checked (the default), information about the field or setting in which the pointer is positioned is displayed in a balloon tooltip. To turn the tooltips off, click this menu item to uncheck it.
- www.RFIDeas.com - Opens the RF IDEas website in a new browser window.
- Check website for updates - Automatically searches the RF IDEas website for software updates and notifies you if an update is available.
- About... - Displays a box showing the pcSwipeConfig version number. If a de-vice is connected, as shown in the following image, the box also displays the cur-rent up-time of the application, the total number of cards read (including any reads from factory testing), and diagnostics (for internal use only).

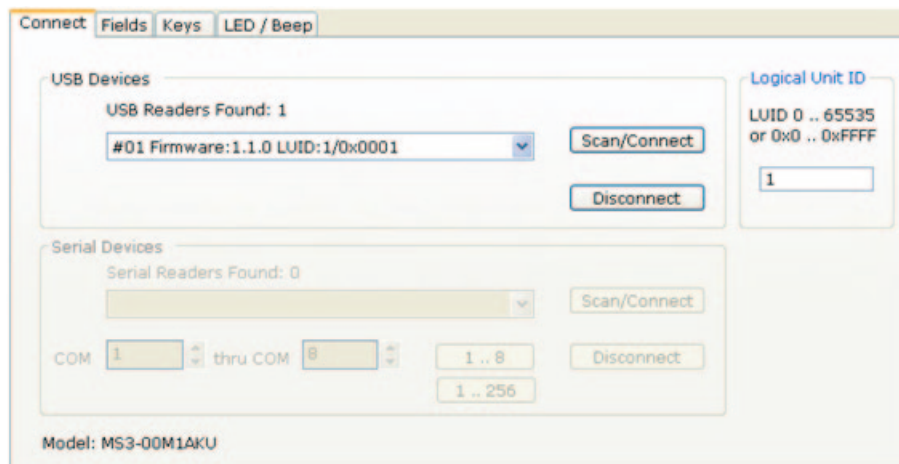
Note: Your pcSwipeConfig version and library versions may differ from those shown in the image.



- The total up-time is the total time that the pcSwipe unit has been powered on without experiencing a “watch dog” reset due to an internal fault. This time may be reset if the computer is rebooted, depending on how the system BIOS affects the USB ports. From pcSwipeConfig, the total up-time has a range of 0 days 00:00:01 to 198 days 20:11:09. From the SDK, the range is between .004 seconds to 17,179,869.184 seconds.
- The counter for the total number of cards read resets to zero after 65,535 reads.

Connect Tab

The Connect tab allows you to scan your system for up to 16 USB readers or one serial reader, and select which reader to configure.



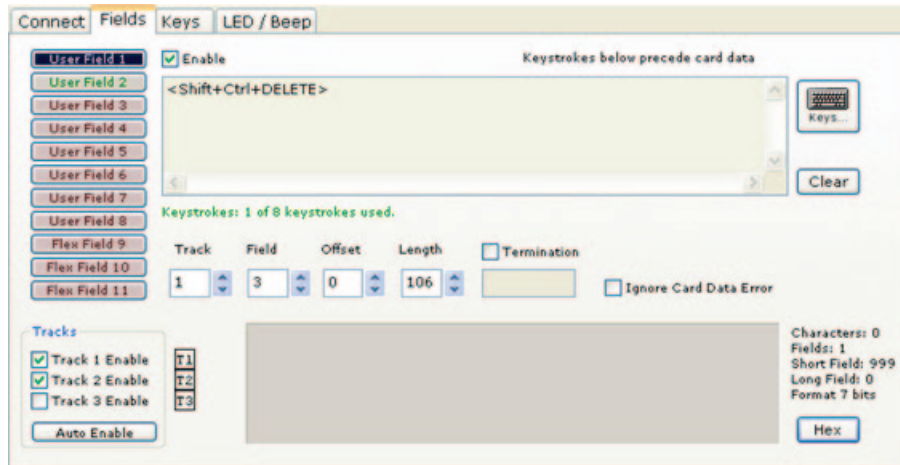
The functions on this tab are described in the following table.

Connect Tab Function	Description
Scan/Connect	Searches for any USB or serial device connected to the workstation and stops when the first serial device is found or when up to 16 USB devices are found. A message states the number of devices connected. Click the device list to connect to a different device. Click Disconnect to connect to a different device.
USB Readers Found	For USB devices only. Displays the number of readers connected to the workstation. Up to 16 different pcSwipe USB readers can be connected to the workstation at one time. The selected reader will beep and the LED will flash when a reader is connected, and every time pcSwipeConfig communicates with the reader.
Serial Readers Found	For serial devices only. Displays the number of readers connected to the workstation; however, currently only one serial reader can be connected to the workstation at one time. The selected reader will beep and the LED will flash when a reader is connected, and every time pcSwipeConfig communicates with the reader.
Readers list boxes	When a serial reader is connected, the drop-down list box in the Serial Devices section shows the device ID. The list box in the USB Devices section holds IDs for up to 16 connected USB devices, and can be used to select the USB device you want to configure.
Logical Unit ID (LUID)	The LUID applies to all devices and is intended to be used by the SDK as a means of determining which reader is sending the data. If more than one device is connected, you can attach the devices one at a time and assign an LUID to each by entering the specific device's leading characters into the text box in the LUID section, in either hex or decimal format. The factory default LUID is 0000. We recommend setting LUIDs to 1 or higher. This allows you to detect if the units are reset to factory defaults. If you are using the SDK, enter the address for the attached device here.
Disconnect	Disconnects the displayed device.
COM thru COM	For serial devices only. Use these fields to set the starting and ending COM port numbers to be searched for when connecting to a serial reader.
1..8	For serial devices only. Click to check only ports 1 through 8.
1..256	For serial devices only. Click to check all ports 1 through 256.

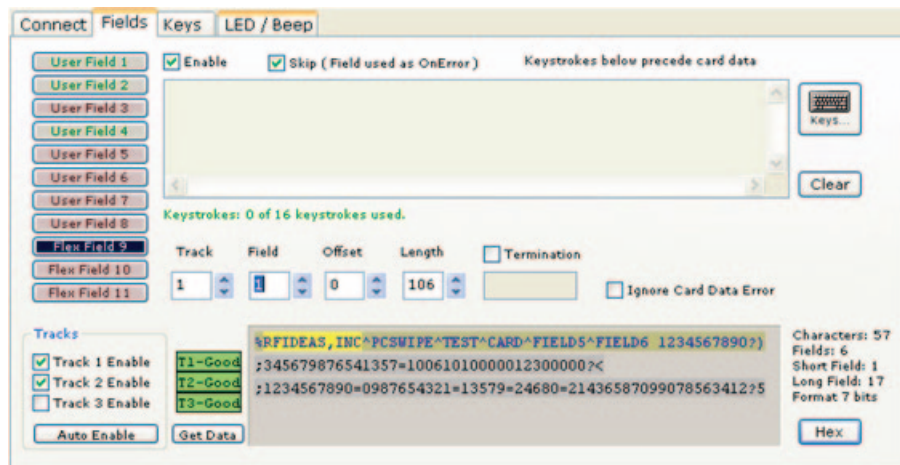
Fields Tab

Use the Fields tab to configure the delimiters that should be sent to the card's data before it is output.

The Fields tab for a USB connection is shown in the following example:



The Fields tab for a serial connection is shown in the following example :



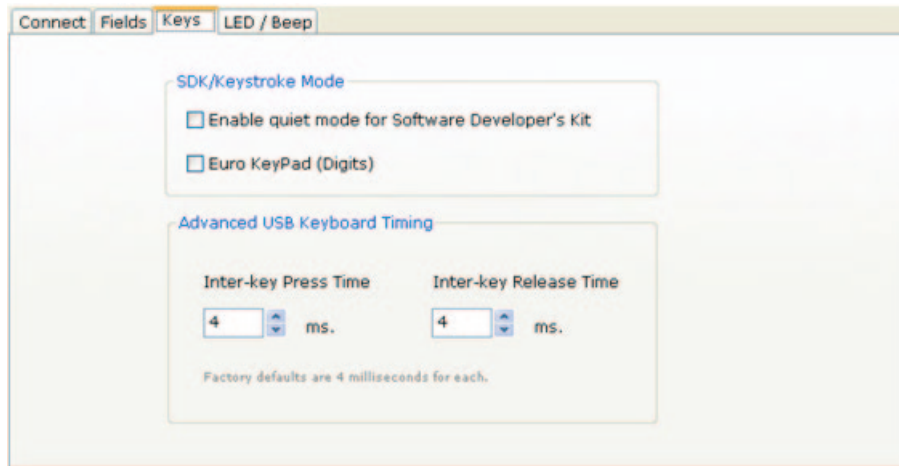
The functions on this tab are described in the following table.

Fields Tab Function	Description
User Fields 1 - 8	Used to define up to eight output sequences that contain delimiters and/or magnetic track data. The User Fields that are enabled are indicated with a light gray shading on the button and green text in the label. The User Fields that are not enabled are indicated with a darker shading and dark red text in the label.
Flex Field 9	Used for error handling for track 1 or as an additional standard field. To use the Flex Fields exclusively as User Fields, note that the Ignore Card Data Error check box must be selected for all User Fields referencing track 1.
Flex Field 10	Used for error handling for track 2 or as an additional standard field. To use the Flex Fields exclusively as User Fields, note that the Ignore Card Data Error check box must be selected for all User Fields referencing track 2.
Flex Field 11	Used for error handling for track 3 or as an additional standard field. To use the Flex Fields exclusively as User Fields, note that the Ignore Card Data Error check box must be selected for all User Fields referencing track 3.
Enable	When selected, the reader will process this User Field. If this option is not selected, the reader will not process this User Field and pcSwipeConfig will not display any configuration information for the User Field.
Keystrokes Text Box	Displays the delimiters that will precede the card data. You can type in this box or use the Keys button to enter keystrokes.
Keys	Displays a dialog box that lets you insert any keyboard key into the text box, such as ENTER, TAB, and SPACE. (See Entering Special Keystrokes)
Clear	Clears the keystrokes text box.
Track	Specifies the magnetic stripe track number to be read for this User Field/Flex Field. Zero is off.
Field	Only displayed when a Track number greater than zero is specified. It's used to select the field that will be read for this User Field/Flex Field. Select from fields 1 through N, based on the number of fields in the selected track. A value of zero specifies the whole track.
Offset	Only displayed when a Field greater than zero is specified. Use this to select the number of characters to offset from the previous field separator. Zero is the first character.

Fields Tab Function	Description
Length	Only displayed when a Field greater than zero is specified. Use to specify the length of the card data, in number of characters. You can also use a termination character to indicate the end of the data (see below), with or without a length specified—whichever comes first will terminate the data.
Termination	Only displayed when a Field greater than zero is specified. When selected, you can enter a character in the text box below the option that indicates what character will act as the terminator of the data field. You can use this in combination with Length (see above).
Show Sentinels & Separators	Only displayed when a Field of zero is specified. When selected, sentinels and field separators are displayed as part of the card data. Different track formats have different Start and End sentinels and field separators.
Show LRC Byte in Hex	Only displayed when a Field of zero is specified. When selected, the hex LRC code is displayed as part of the data.
Ignore Card Data Error	When selected, the card data is displayed even if the LRC is incorrect.
Track 1 Enable - Track 3 Enable	When a track is enabled, the reader will process all User Fields that reference that track including error processing. Also, if the reader encounters an error reading that track, the reader may beep and signal an error read via the LED. When a track is disabled, all processing of that track is disabled. No errors will be reported for that track and any User Fields/Flex Fields that reference that track will not be output. This can be useful when scanning cards known to contain only one or two tracks, such as credit cards.
Auto Enable	Automatically scans through your configured User Fields to determine the Track Enable settings, and only enables tracks that are specified in the field settings.
Card Data Preview Area	The dark gray text area to the right of the Tracks box displays card data as it is swiped, color-coded to indicate the currently selected User Field configuration. This can be used for testing as you configure fields.
Hex	Click to view the data in the preview area in hexadecimal format. Click again to display the data as characters.
Get Data	For serial devices only. When connected to a serial reader, after presenting card to the reader, click to display the card data in the preview area.

Keys Tab

Use the Keys tab to enable or disable the SDK/keyboard and to set timing values



The functions on this tab are described in the following table.

Keys Tab Function	Description
Enable quiet mode for Software Developer's Kit	If you are using the SDK, you can select this option to stop the device from sending card data as keystrokes or ASCII characters. When this option is not selected, the pcSwipe reader emulates a keyboard. Note that an SDK-only reader cannot be configured to disable quiet mode (i.e., when this box unchecked). If you try to flash an SDK-only reader with this box unchecked, the reader will automatically re-enable quiet mode. This will be reflected by this box being checked again afterwards.
Euro KeyPad (Digits)	This option allows you to handle the differences associated with European keyboards. Select this option to use the keypad for 0-9. When this option is not selected, the program assumes you are using the number keys 0-9 above the QWERTY keyboard.
Inter-key Press Time	If you need to specify a key press time, enter the length of time the key is held down (in milliseconds) in the Inter-key Press Time box. The minimum and default value is 4, which works fine for most cases. The maximum value is 1,020. Note: If this time is greater than the "Key repeat delay period" setting on your system, then the key will start to auto-repeat and each character output will be repeated multiple times.
Inter-key Release Time	If you need to specify a key release time, enter the length of time (in milliseconds) between the time the key is released and the next key is pressed. The minimum and default value is 4, which works fine for most cases. The maximum value is 1,020.

LED / Beep Tab

The LED / Beep tab provides options to configure a reader's LED light colors and audible beeps.

The screenshot shows a software interface with a tabbed menu at the top containing 'Connect', 'Fields', 'Keys', and 'LED / Beep'. The 'LED / Beep' tab is active. Below the tabs is a 'State Options' section with five columns: 'Ready', 'Start Swipe', 'Good Read', 'Bad Read', and 'Sending Data'. Each column has a dropdown menu. The 'Ready' dropdown is set to 'Red', 'Start Swipe' to 'Off', 'Good Read' to 'Green', 'Bad Read' to 'Red', and 'Sending Data' to 'Amber'. Below these dropdowns, there are two more dropdowns: '2 Short Beeps' and '1 Long Beep'. A note below these says 'A good read is no LRC errors on all enabled tracks. See Field tab for track enables.' Below the 'State Options' section is a 'Beep Now' section. It contains a numeric spinner set to '1', a checkbox for 'Long beep' which is unchecked, and a 'Beep Now' button. Below this section is a range note: 'Range: 1 .. 5 short beeps, 1 .. 2 long beeps'.

(See **Configuring LED and Beeps** for more information about these options).

Troubleshooting

If a reader is not working properly, perform the following steps to troubleshoot the device:

1. Check to make sure the device is plugged into the USB or serial port. When the workstation is on and no card is being read, the LED lights red. A valid magnetic stripe card causes the LED to light in green. When a USB device is being enumerated, the LED flashes amber.
2. Make sure the port and workstation connector are compatible.
3. For serial readers:
 - a. Make sure that another COM port is not using the same port as the serial reader.
 - b. Make sure that the appropriate power pin/connector has correct voltage.
4. If the device still does not work:
 - a. Unplug the reader.
 - b. For USB readers, remove the General USB Device hardware from the workstation. On Windows, this is performed through the Device Manager.
 - c. Reboot the workstation.
 - d. After the workstation reboots, re-attach the device. For USB readers, the operating system should re-install the driver automatically.

If the device is not reading cards properly:

1. Try changing the **Inter-key Release Time** on the **Keys** tab to 1000. This will slow down the device's processing.
2. Open a text editor such as Notepad or Microsoft Word and swipe a card. Examine the displayed card data to see the actions of any non-printable symbols. This may help determine the problem.
3. If the device still does not read the card(s), contact the card manufacturer/vendor to verify that the card type is compatible with the device model.

Standard 26 Bit Format Structure

On a standard magnetic card, data is allocated into three tracks. A magnetic stripe card may have any of these tracks, or a combination of these tracks.

Track 1

Track 1 was the first track standardized. It was developed by the International Air Transportation Association (IATA) and is still reserved for their use. It is 210 bpi with room for 79 7-bit characters.

This track is also used by most credit/debit/ATM cards and contains the information on track 2 plus additional information (such as the owner's name).

This track is also used by the AAMVA.

Track 1 is encoded with a 7-bit scheme (six data bits plus one parity bit) that is based on ASCII but there are no "control" characters. The seventh bit is an odd parity bit on each byte.

Track 2

Track 2 was developed by the American Bankers Association (ABA) for online financial transactions. It is 75 bpi with room for 40 5-bit numeric characters.

Track 2 is encoded with a 5-bit scheme (four data bits plus one parity bit.) To convert this data into ASCII, add 0x30 to each byte.

Track 3

Track 3 is also used by the AAMVA as well as for financial transactions, the difference being its read/write ability. This track is often used for magnetic access cards (parking lots, health clubs, etc.) with non-ISO 7811 standard data. It is 210 bpi with room for 107 numeric digits.

Track 3 is used to store the enciphered PIN, country code, currency units, amount authorized, subsidiary account information, and other account restrictions. Track 3 has the same properties as track 1 (start and end sentinels and an LRC byte), except that there is no standard for the data content or format.

Track 3 is not currently used by any national bank card issuer. In those rare systems where the PIN is stored on the card, this is the track where it is stored.

Use the pcProx Device for Password Security

Several companies have adopted a policy that requires users to change their password after a certain number of days to increase security. The PIN is the portion of the password the user changes every x number of days.

To help your organization adhere to this policy, it is possible, with certain limitations, to use a magnetic stripe card as a password for an application or operating system logon. The unique card data can contain the username or the entire password. You can use a portion of the password for two-factor authentication. You must have a special magnetic stripe encoder to create the appropriate data on the card.

You can configure the device to allow operation under either a one- or two-factor authentication system.

One-Factor

In a one-factor system, the user simply scans the ID card. You can configure the device to add any required keystrokes before or after the data (i.e., TAB, ENTER, etc.).

Two-Factor

A two-factor authentication system is made up of:

- Card ID data
- Personal information

The two-factor approach is especially useful when insisting on password construction rules or periodic changing of passwords.

In a two-factor system, the user can enter the PIN either before or after the card data. If the user adds the PIN before the card data, the device can be configured to append the ENTER keystroke.

Configuration Examples for pcSwipe

You can configure a pcSwipe device to enter a password, log on to a system, or unlock a workstation.

For example, to use a reader as a password device, change the password on the workstation to match the user's password so that when the user swipes the card, the input is captured into the log-on dialog box. This operation is performed differently for each operating system and application. Refer to your operating system's documentation for details. On Windows, you can do this with the following steps:

1. Enter the old password.
2. With the cursor in the **New Password** field, scan the ID card to enter the new password and press ENTER, then repeat the above step to enter the new password into the **Confirm Password** field.
Alternately, if the new password is made up of the card data and a user-supplied PIN, scan the card and type the PIN in both the **New Password** and **Confirm Password** fields.
3. If the pcSwipe device is configured to append the ENTER keystroke:
 - a. Reconfigure the device for this Change Password operation to deselect the ENTER keystroke.
 - b. Once the password change is flashed to memory, add the ENTER keystroke.
4. Change the workstation log-on password. This operation is performed differently for each operating system and application. Refer to your operating system's documentation for details.

The process is similar if you need to use a reader as a log-on device or to unlock a workstation.

- A
- API 7
- B
- Bad reads 28-29
 - Beep configuration 25
- C
- Card compatibility 9
 - Card data
 - Test area 18
 - Tracks 19-24, 35, 40
 - COM port 11, 15-16, 33, 39
 - Configuration Examples 42
 - Configuration files 30
 - Configuration interface 15-29
 - Connect Tab 32
 - Connecting devices 13
 - Connectors 7
 - Counter 32
- D
- Defining fields 21
 - Delimiters 20, 34-35
 - Device ID 16
 - Diagnostics 31
- E
- Enable fields 21, 35
 - Enable tracks 22, 36
 - Enter password 41
 - Error 8, 20-21, 24, 35-36
 - European keyboards 37
- F
- Factory defaults 10, 29, 31, 33
 - Field processing 21
 - Fields tab 34-36
 - File menu 18, 31
 - Find and connect 15
 - Flash memory 10, 18
 - Flex fields 21, 24, 35-36
- G
- Good reads 29
- H
- Help menu 18-19, 31
 - Hex 16, 23, 33, 36
- I
- Installing readers 10-11
- K
- Keys tab 21, 27, 37
 - Keystrokes 6, 8, 20-21, 25, 27, 35, 27, 41
- L
- LED / Beep tab 38
 - LED color 28, 11
 - Load configuration 18-19, 30
 - Log-on configuration 42
 - LRC 19, 21, 23-24, 36, 40
 - LUID 10, 16, 33
- M
- Menus 31
- O
- Operating modes 7
- P
- Password security 41
 - PIN 40-42
 - Predefined configurations 30
- R
- Read configuration 19, 31
- S
- Save configuration 8, 30
 - SDK 6-7, 21, 27, 32-33, 37, 44
 - Sentinels 21, 23, 36, 40
 - Separators 19-21, 23, 36
 - Software update 13, 31
 - Special keystrokes 21, 25, 35
 - System requirements 9
- T
- Templates 8, 30
 - Timing values 37
 - Toolbar 19, 31
 - Tooltips 31
 - Track data 20-21, 23, 35
 - Troubleshooting 39
 - Two-factor authentication 41
- U
- Unlock workstation 42
 - Up-time 31-32
 - USB connector 10
 - User fields 9, 20-22, 25, 35-36
- V
- Version number 31
- W
- Write configuration 31

Other Products & Accessories



Software Developer's Kit

Allows independent developer's to use their application to read proximity access badge Read ID data of more than 1 billion cards in the field



PVC Label Proximity Card

Credit card size with paper release liner, 500 cards per box



Complete selection of various manufacturers proximity cards, labels and key fobs. Marked with data code and ID number, available in several Wiegand formats



AIR ID Read/Write Contactless SDK

Reads and writes directly to the smart cards



AIR ID Writer and Playback

Desktop read-only for iCLASS and NXP and smart cards



AIR ID Playback Starter Kit

Plays back card sector data in ASCII or keystrokes



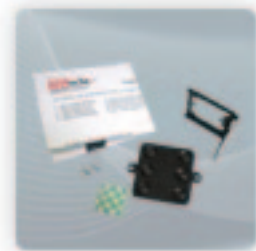
pcProx Sonar

Presence detector configured as a keyboard



PS/2 to USB Power Tap

Powers a USB RF IDEas device from a PS/2 port



Mounting Brackets

Further adjust the standard mounting of the device angle

RF IDEas Inc.
© 2011 RF IDEas. All rights reserved.

Specifications subject to change without notice.

Windows, Macintosh, Solaris, Sun Ray and Linux are trademarks of their respective companies.
All other trademarks, service marks and product or service names are property of their respective owners.

Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. RF IDEas assumes no responsibility with regard to the performance or use of these products.
All understandings, agreements, or warranties, if any, take place directly between the vendors and the prospective users.

Please feel free to call, e-mail or visit our web site for a full list of applications, products, configuration options, supported cards and form factor specifications. Our web site includes application videos, support materials, case studies and detailed information about our product line.

Every effort has been made to ensure that the information in this manual is accurate. RF IDEas is not responsible for printing or clerical errors.