Reader Configuration Utility









RF Code™
discover. track. monitor.

User Manual

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Bluetooth QD ID: B012541

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Reader Configuration Utility

The Reader Configuration Utility CD-ROM contains several items to assist partners and customers with using RF Code readers:

- Reader Configuration Utility – a Windows-based utility for upgrading firmware and configuring M200 Family Readers
- End-user documentation for RF Code M200 Family Readers, M250 Reader, M210 Mobile Reader, M220 Mobile Reader, R200 Reader, A700 Room Locator and A750 Room Locator

Introduction

The reader configuration utility is a Windows based software program that interfaces with an RF Code reader and is used to update firmware on a reader, or assign an IP address to a standard reader.

The reader configuration utility is typically used to upgrade the firmware embedded in one of the RF Code readers (mobile or standard reader). Updated firmware with new features and capabilities will periodically become available for the RF Code readers. All firmware upgrades will be provided as one firmware update package.

The firmware image file can be uploaded to a reader connected to a network or to a reader connected to your PC by a RS-232 serial cable, PCMCIA card, or USB cable.

Requirements

System Requirements:

- 83 MB available hard drive space
- Windows 2000, NT, XP, or Vista operating system

Installation

Insert the CD into your CD-ROM drive and click on "Install Reader Configuration Utility" to begin. If the CD autorun program does not launch the CD main menu, you can use a Windows explorer window to browse to your CD drive and double-click the RF Code Utility CD Menu file to start the autorun program or install the Reader Configuration Utility directly by double clicking on the setup.exe file.

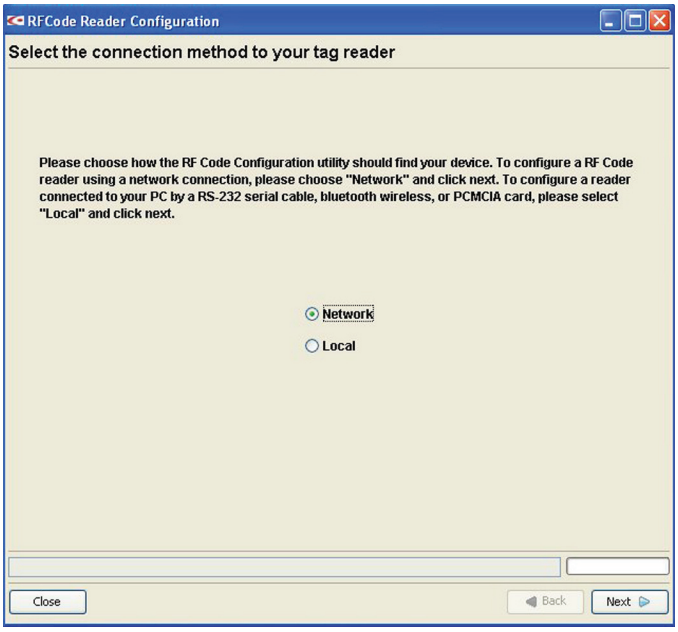
Launching Application

After installing the application from the CD, select **Start > All Programs > RF Code > Reader Configuration Utility > RF Code Reader Configuration Utility** to launch the application and display the main screen.

Main Screen

After launching the application, the main screen appears. You can select Network or Local and click **Next** to begin the setup. The network setup is used to configure a reader connected to a network by means of an ethernet connection. The local setup is used to configure a reader connected to your PC by a RS-232 serial cable, PCMCIA card, or USB cable.

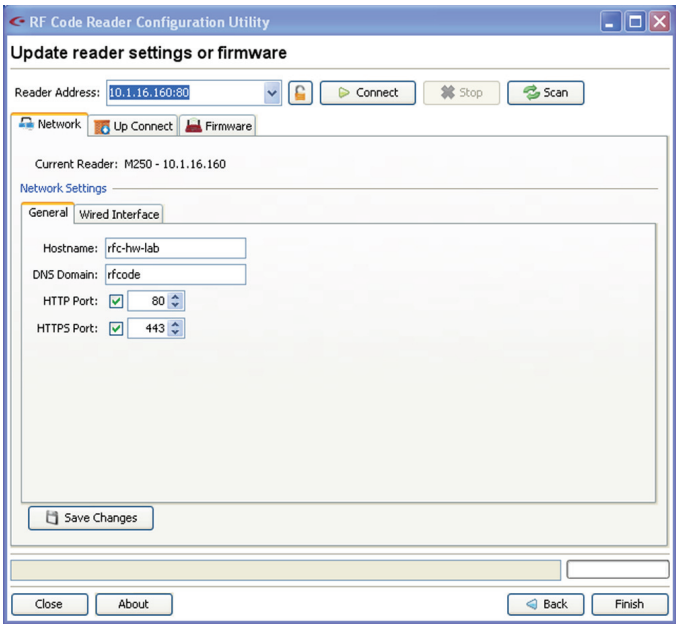
Figure 1: Main Screen



Network Connection

Select Network and click the **Next** button to display the setup screen.

Figure 2: Main Screen



Network Tab

At the top of the screen is a **Reader Address** field to enter the IP address of a reader. This field displays the factory default IP address (192.168.1.129) assigned to all readers. Choose the **Connect** button to connect to the reader. Network settings are grayed out during a connection attempt. If necessary, choose the **Stop** button to terminate a connection attempt if the reader can not be located or you want to enter another IP address.

Note In versions prior to V 2.3.4, to change the IP address of a reader, you may have to change your PC's IP address in order to talk to the reader. You must match the subnet of your PC and the reader. Then you can contact the reader and change its IP Address. Then change your PC's IP address back to what it was before.

The Network tab consists of two groups:

- Network Settings
- Advanced Network Settings

In the Network Settings group you can specify the following after connecting to a reader:

- IP Address – Initially indicates last address that was successfully connected.
- Port - Enter the port over which you wish to communicate with the reader.
- IP Subnet Mask – Enter your subnet mask. This is used with the network address to determine which part of the address is the network address and which part is the host address.
- IP Gateway Address – Enter gateway address used as an entry point into another network. For example: 166.70.10.1 could be used as a gateway. It is common for .1 and .2 to be setup as a network's gateway. The gateway is commonly the address of a network device such as a network router.

In the Advanced Network Settings group you can specify the following:

- Keep Alive Requests – Enter number of requests for a connection to be reused. Persistent connections reduce lag, because the client does not need to re-negotiate the TCP connection after the first request has been sent.
- Keep Alive Timeout (ms) – Enter how long keep-alive connections are kept alive.
- MTU – Maximum Transmission Unit (MTU) refers to the size (in bytes) of the largest packet that a given layer of a communications protocol can pass onwards. The MTU may be fixed by standards (as with Ethernet) or decided at connect time (usually the case with point-to-point serial links). A higher MTU brings higher bandwidth efficiency. However large packets can block a slow interface for some time, increasing the lag on other packets.
- Network Timeout (ms) – Refers to the time allowed before a network connection attempt is terminated.

Click the **Apply Settings** button after defining the desired settings.

In the Network tab, click the **Finish** button to close the application.

Security Tab

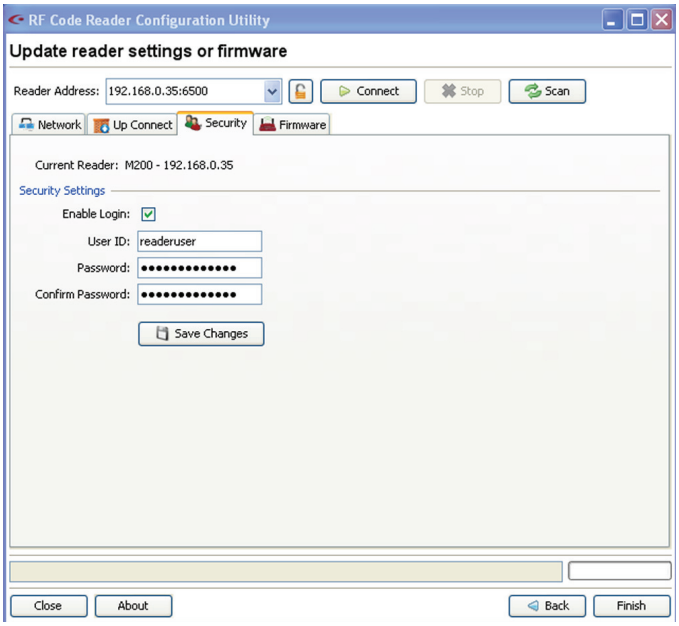
The Security tab allows you to grant or restrict access to the mobile reader through the use of a username, password, or both. The security feature is only functional for version 2.3.4 or later.

To use the Security tab to grant access to a new user, perform the following steps:

Note Security Tab will not appear if you are using the Reader Configuration Utility with the M250 Reader.

Click on the Security tab so that the security options are displayed.

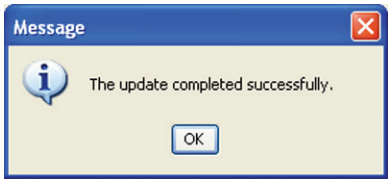
Figure 3: Security Settings



Check the Enable Login box and enter the username and/or the password that you wish to grant access to. Click **Apply Settings.**

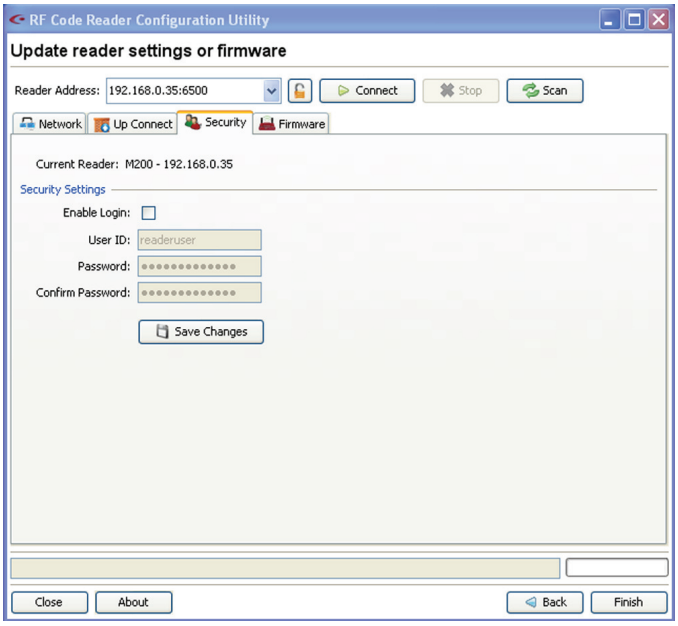
Once you have added the user, a completion dialog will appear to indicate that you have successfully given the user access. Click **OK** to continue.

Figure 4: Update Dialog



To use the Security tab to remove access of a user uncheck the enable dialog box and click **Apply Settings**.

Figure 5: Disable Password



Once you have removed the user, a completion dialog will appear to indicate that you have successfully removed the user's access. Click **OK** to continue.

Up Connect Tab

The feature of the Reader Configuration Utility allows for reader communication with Zone Managers to be more "firewall friendly". When this option is selected, the utility configures the reader to initiate the contact with the Zone Manager rather than requiring that access be granted to allow the Zone Manager to connect to readers behind a firewall.

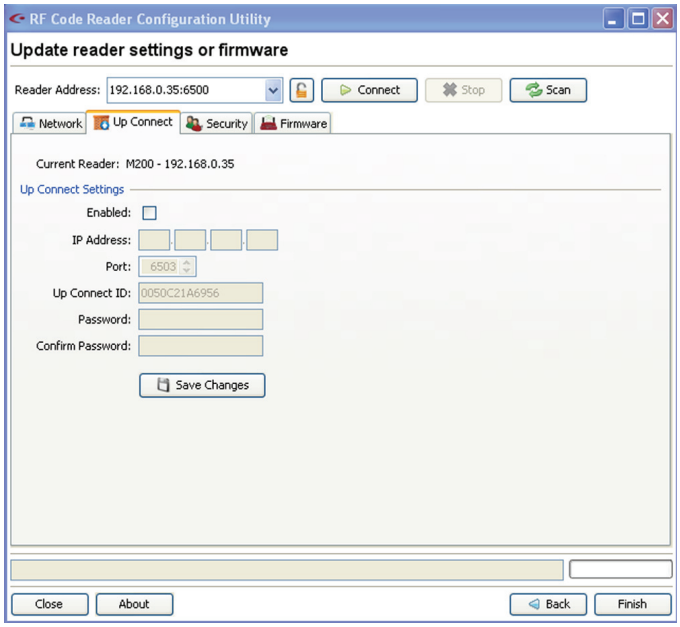
The Up connect tab consists of the following options.

- **Enable Up connect** - Check this box to enable the reader to up connect to a Zone Manager.
- **Up connect IP Address** - Input the IP address of the Zone Manager that the reader should connect to.
- **Up connect Port** - Input the port number over which the reader will communicate with the Zone Manager.
- **Up connect Reader ID/Password** - Input and verify a reader ID and password that will be utilized in the up connect configuration of Zone Manager and Asset Manager.

To enable the reader for up connect settings, check the enable box and enter an Up Connect Reader ID (required). The Up Connect settings can be password protected (optional) by entering and confirming a password. To activate the reader for Up Connect capabilities, click **Apply Settings**.

Please keep note of the Up Connect Reader ID and password (optional) specified as this will be used in the Reader Configuration of Asset Manager.

Figure 6: Up Connect Settings Tab



Firmware Tab

The Firmware tab consists of the following options:

- Current Firmware - Displays firmware version currently installed on reader.
- Firmware Build - Displays firmware build for version 2.3.4 or later.
- Available Firmware Images - Drop down list of available firmware images that can be uploaded to a reader.

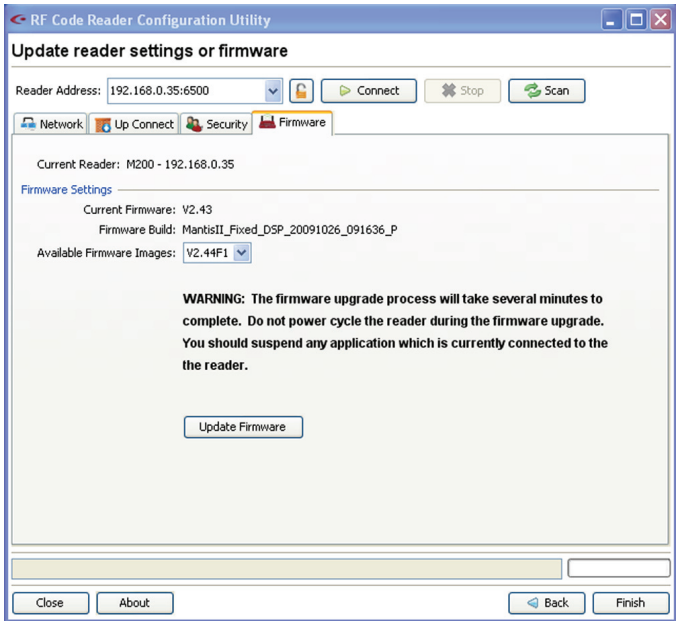
Readers can not downgrade to previous versions of firmware. Readers can use existing firmware or greater.

If you are upgrading the reader from a laptop, it is recommended to use the laptop's AC adapter instead of laptop batteries.

The M220 Mobile Reader should be upgraded via the USB connection rather than the Bluetooth connection because it is a more reliable connection.

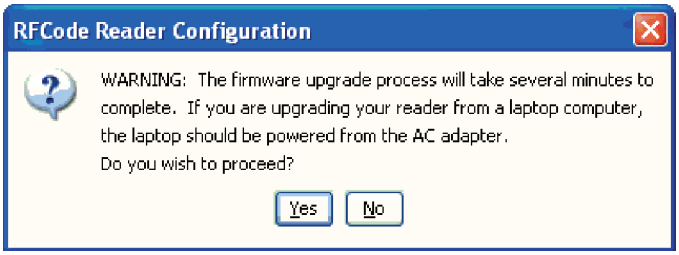
Select a firmware image from the dropdown list and click the **Update Firmware** button to begin the firmware upgrade process.

Figure 7: Firmware Options



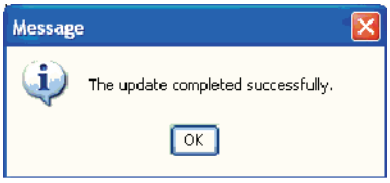
A warning dialog will appear. Click **Yes** to proceed with the upgrade process.

Figure 8: Warning Dialog



After the process is complete the reader will be rebooted and a completion dialog will appear. Click **OK** and the configuration utility will attempt to reconnect to the reader.

Figure 9: Completion Dialog



Before performing an upgrade process you can click **Finish** to cancel the process and close the application. After an upgrade process is complete, click **Finish** to close the configuration utility.

Note Firmware upgrades will take longer when uploading to a mobile PC Card reader.

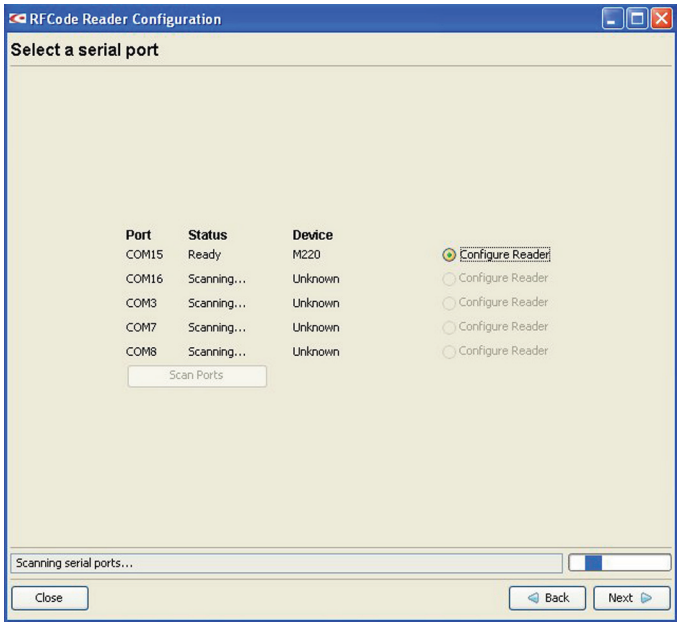
Do not reboot the reader while the firmware image is uploading to the reader. This will corrupt the firmware image.

Local Connection

Use the Local Connection settings to configure a reader connected to your PC by a RS-232 serial cable or PCMCIA card.

On the main screen select local then click **Next** to begin a search of defined com ports.

Figure 10: Com Port Selection

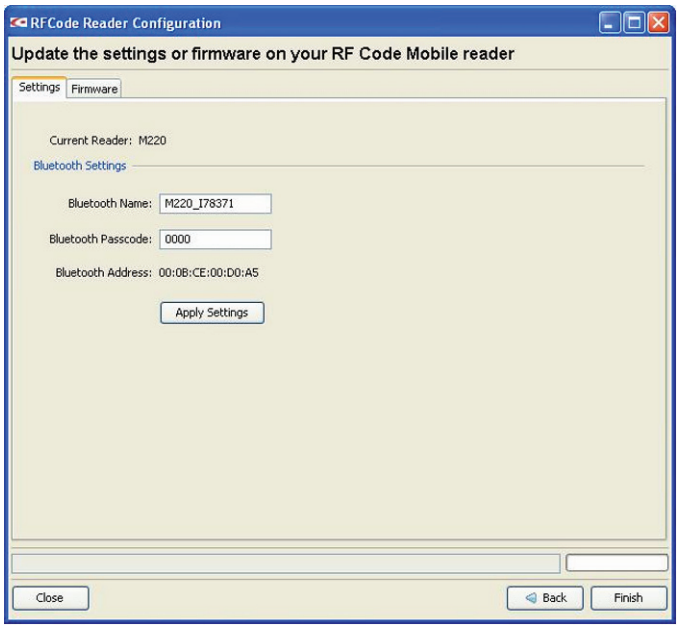


If necessary, choose the **Scan Ports** button to re-scan ports for connected readers. Select the Configure Reader radio button next to the reader you wish to upgrade and click **Next**.

Bluetooth Passcode

After you have connected to your reader locally, there is an option to set a *Bluetooth* passcode for your reader **This feature only applies to the M220 Mobile Reader. It does not apply to fixed readers.** To do this click on the Settings tab and enter the passcode you wish your device to have (the default is 0000). Click Apply Settings to implement the new passcode for the reader as shown below.

Figure 11 *Bluetooth* Passcode Settings



Command Line Interface

The firmware upgrade feature can also be performed using the Command Line Interface (CLI). This may be particularly useful for users needing to upgrade many readers on a network. There are several parameters that can be used in the CLI:

-h	allows connection to a specified IP address or hostname
-p	allows specification of a port number
-v	allows specification of the version of firmware
-c	allows connection to a specified COM port
-u	allows specification of user credentials (username and/or password) when connecting to the reader

Instructions for using the RCU CLI

To use the RCU CLI, change directory to the RCU installation directory - typically this is:

C:\Program Files\RF Code\Reader Configuration Utility

Then issue the following command:

run -h <ip address> -p <port> -v <version of firmware>

So in a typical install the command would look similar to the following:

run -h 10.1.18.108 -p 80 -v 240



The "-p 80" is optional. It will default to 6500 (the default reader port).

The command just issued would attempt to contact the reader whose ip is 10.1.18.108 and upgrade the firmware to version 2.40.

You can also use the CLI to upgrade the reader via a serial port using the following command:

run -c com1 -v 240

Where “com1” is the serial port.

The RCU also supports an additional paramter “-u” which allows the user to specify the credentials used when connecting to the reader. The syntax is:

-u user:password (Both user and password configured on reader securitysettings)
-u user (Just user configured on reader security settings)
-u :password (Just password configured on reader security settings)

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Third, contact the RF Code Customer Support via the Support Line.

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