

RFD4031 RFID Premium/Premium+ Sled

Version 1.1



ZEBRA

Product Reference Guide

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About this Document

Related Documents

The following documents provide additional information about the RFD4031 sled:

- RFD4031 RFID Premium/Premium+ Quick Start Guide, p/n MN-004375-xx

Notational Conventions

The following conventions are used in this document:

Bold text is used to highlight the following:

- Dialog box, window, and screen names.
- Drop-down list and list box names.
- Checkbox and radio button names.
- Checkbox and radio button names • Icons on a screen.
- Key names on a keypad
- Button names on a screen
-

Bullets (•) indicate:

- Action items
- List of alternatives
- Lists of required steps that are not necessarily sequential

Sequential lists (for example, those that describe step-by-step procedures) appear as numbered lists.

Getting Started with the RFD4031

The RFD4031 UHF RFID Premium sled provides RAIN Radio Frequency Identification (RFID) tag reading, writing, and locating capability to supported Zebra mobile computers and other host devices.

To use the RFD4031 sled for the first time with a mobile computer:

1. Insert the battery into the device.
2. Charge the RFD4031 sled using the charging cradle, charging cup, or USB-C cable.
3. Replace the cover with the adaptor that is specific to the mobile computer to be used with the sled.
4. Place the mobile computer into the adaptor headfirst.
5. Secure the mobile computer into the adaptor by pressing down on the bottom of the mobile computer.
6. Set the region using 123RFID Desktop or 123RFID Mobile.

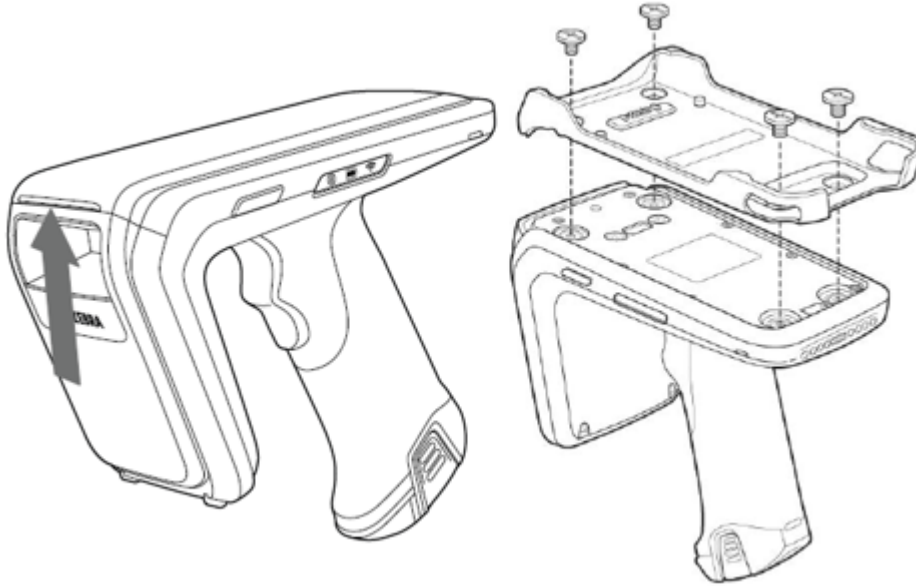
For the latest versions of guides and software, go to: zebra.com/support.

For detailed information, refer to the Product Reference Guide at: zebra.com/support.

Adaptor Installation

To install the adaptor:

Figure 1 Adaptor Installation



1. Remove the cover of the sled by pulling up on the lip.
2. Secure the adaptor onto the RFD4031 by fastening the four coin screws into the sled.

Features

The following table outlines the features of the RFD4031 RFID Premium/Premium Plus sled.

Figure 2 RFD4031 Premium/Premium Plus Sled Features

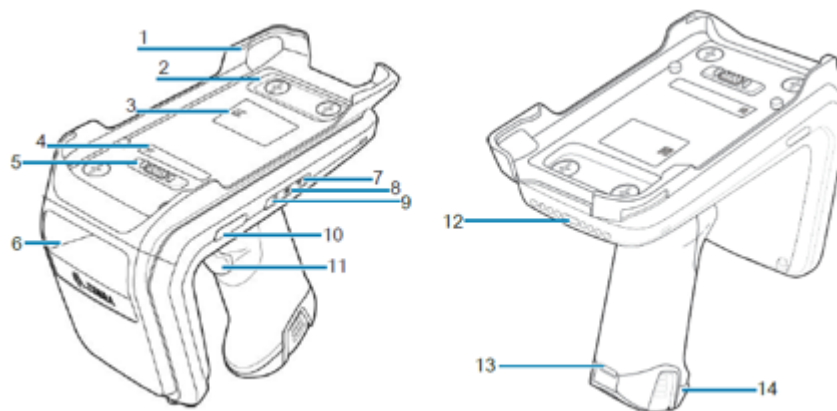


Table 1 RFD4031 RFID Premium/Premium Plus Sled Features

1	Adaptor (Sold Separately)
---	---------------------------

Table 1 RFD4031 RFID Premium/Premium Plus Sled Features (Continued)

2	Coin Screws (4)
3	Bluetooth Connection Manufacturing Label
4	Installation Video Label
5	eConnex Communication Port (eConnex enabled adaptors only)
6	Imager (Premium Plus Models Only)
7	Wi-Fi Status LED
8	Battery Status LED
9	Bluetooth Status LED
10	Decode LED
11	Tri-Function Trigger
12	Charging Contact and USB-C Port
13	Tethering Point for Handstrap
14	Rubber Foot

Device Installation

To secure a mobile computer to the RFD4031 sled, place the top of the device fully forward into the RFD4031 sled adaptor and push down on the bottom of the mobile computer.



NOTE: Refer to the installation visual aide on the adaptor to view the correct device orientation for installation. For additional installation information, scan the QR code on the label to view the installation video.



NOTE: Use caution while installing the mobile computer into the adaptor and do not collide with the eConnex Communication Port.

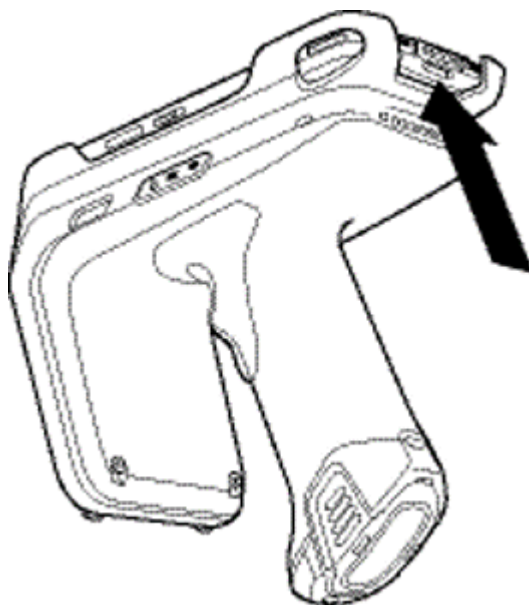
Figure 3 Device Insertion



Device Removal

To remove the mobile computer from the RFD4031 sled, firmly hold the sled handle and lift the device off of the sled adaptor.

Figure 4 Device Removal



Battery Replacement

The following section outlines the procedure for replacing the battery in the RFD4031.

To install the battery:

Figure 5 Battery Insertion



1. Align the battery with the notch facing the back of the device
2. Slide the battery into the handle of the device.
3. Snap the battery into the place.

Battery Removal

To remove the battery:

Figure 6 Battery Removal



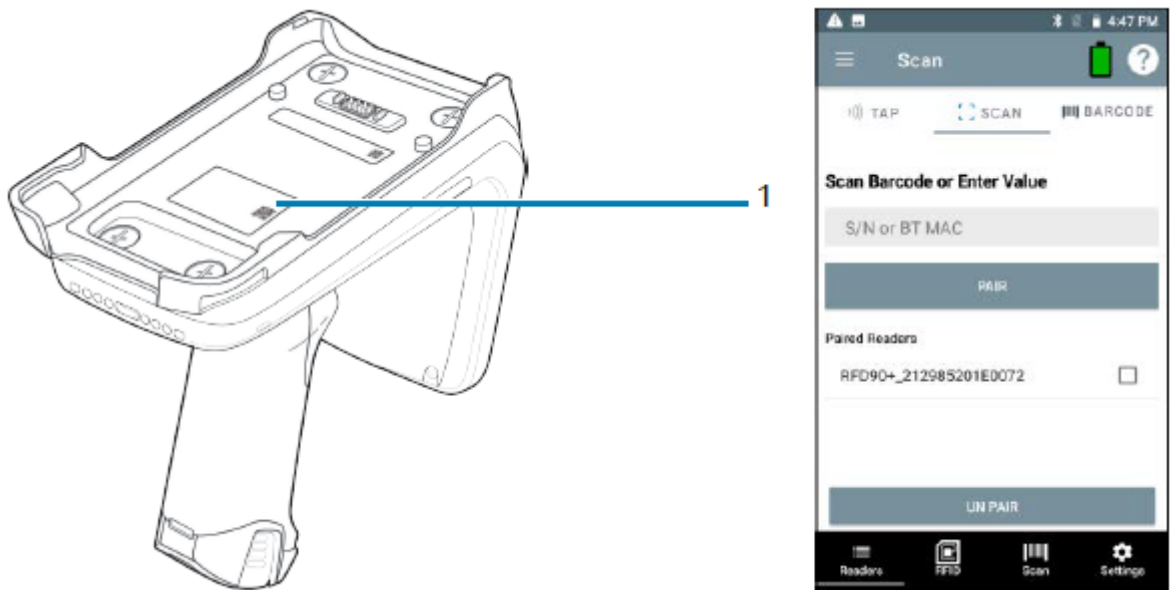
1. Pinch the clips on the battery to unlock.
2. Slide downwards to remove the battery from the device.

Pairing the Sled with a Mobile Computer

Pair the sled with a mobile computer by connecting directly with the communication port, scanning the barcode on the device, or by using the NFC feature on the RFD4031 to activate NFC Bluetooth pairing and facilitate Bluetooth communication between the sled and the mobile computer.

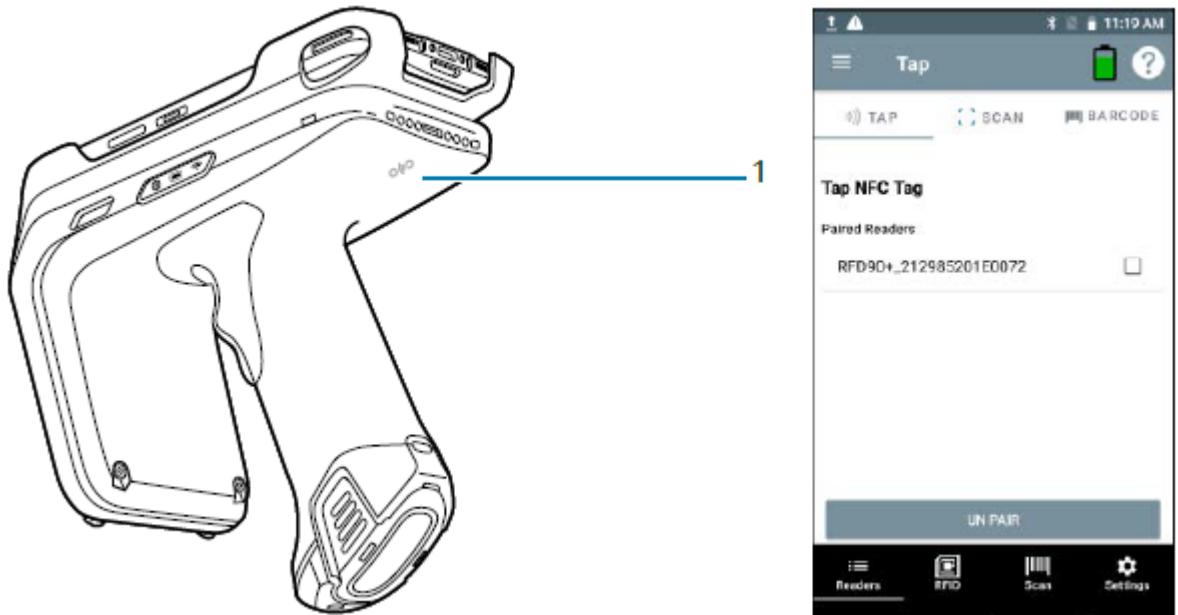
- To connect via scan, scan the code on the sled using the mobile computer to obtain the Bluetooth MAC address to pair the device to the sled.

Figure 7 Scan Bluetooth MAC Address



- To connect via NFC, align the NFC area behind the handle of the sled with the NFC area on the back of the mobile computer to pair.

Figure 8 Scan NFC Area to Pair Device

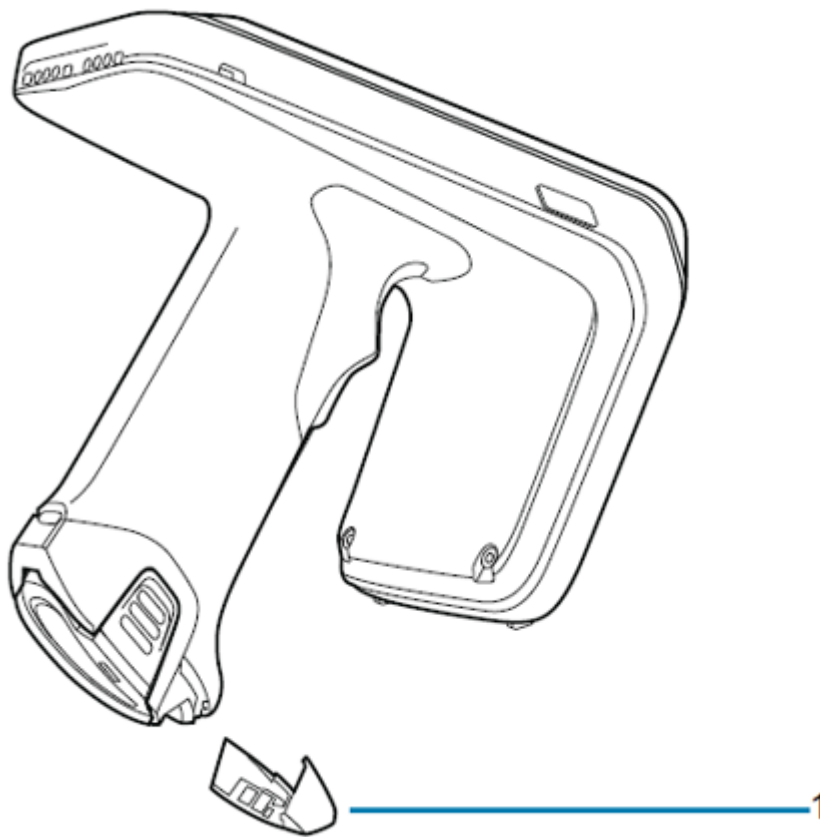


Once the sled has paired with a mobile computer, the sled recognizes the device going forward and automatically connects using the 123RFID Mobile or 123RFID Desktop Reader Discovery feature.

Using the Rubber Locking Foot

The RFD4031 comes with a standard rubber foot on the bottom of the sled. An optional locking foot that is used in place of the standard locking foot and secures the battery of the sled is available as a purchasable accessory. For a full list of accessories that can be used with the RFD4031 RFID Premium sled, refer to the product specific Technical Accessory Guide available at: zebra.com/support.

Figure 9 Rubber Locking Foot



1	Rubber Locking Foot
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Charging

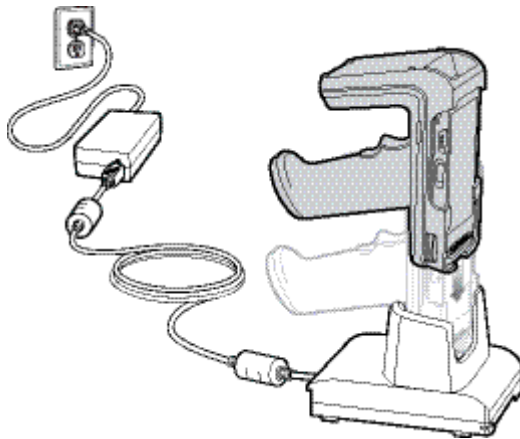
Before using the RFD4031 for the first time, fully charge the battery by placing it in the charging cradle until the LED Power/Charging Indicator turns solid green. The RFD40 RFID sled and mobile computer may be charged in the charging cradle individually or attached together.

When an RFD4031 RFID sled is removed from a charging cradle, it is automatically powered on. If a reader is not used for a duration of thirty minutes, the reader enters Off mode.



NOTE: The cradle does not charge the device if the battery is completely depleted.

Figure 10 Single-Slot Charging Cradle



NOTE: The cradle does not charge the device if the battery is completely depleted.

UI Indicators

The RFD4031 RFID Premium sled presents multiple forms of feedback to inform the user of various device states. The sled provides LED definitions for decode and battery status as well as beeper indications to indicate battery charge progress. The trigger on the device is capable of initiating a bootloader recovery and carrying out various programmable tasks.

LED Definitions

The sled provides user feedback in the form of LED indications for decode, battery, Bluetooth, and Wi-Fi states.

Decode LED Definitions

The following table outlines the context in which decode LED feedback is provided and the indication that is presented for a given device state.



NOTE: The LED indicators on the RFD4031 RFID Premium sled differ from the LED indicators on the mobile computer being used with the sled.

Table 2 RFD4031 Decode LED Indicators

Condition	Indication
Good Scan	Green
Scan Error	Red
RFID Rag Read Indicator Enabled	Green
Read Error	Red

Battery LED Definitions

The following table outlines the context in which battery LED feedback is provided and the indication that is presented for a given device state.

Table 3 RFD4031 Battery LED Definitions While Charging

Conditions	Indications
Pre-charging	Amber (Fast, Fast, Slow)
Charging	Amber (Blinking)
Fully Charged	Green (Stays On)

Table 3 RFD4031 Battery LED Definitions While Charging (Continued)

Conditions	Indications
Charging Error	Amber (Fast Blinking)

Bluetooth LED Definitions

The following table outlines the context in which Bluetooth LED feedback is provided and the indication that is presented for a given device state.

Table 4 RFD4031 Bluetooth LED Definitions

Condition	Indication
Looking to Pair	Amber (Blinking)
Pairing	Blue (Stays On)
Paired/Connected	Green (Stays On)
Error	Red (Stays On)

Wi-Fi LED Definitions

The following table outlines the context in which Wi-Fi LED feedback is provided and the indication that is presented for a given device state.

Table 5 RFD4031 Wi-Fi LED Definitions

Condition	Indication
Connecting	Green (Blinking)
Connected	Green (Stays On)
Transmission Error/Out of Range	Red (Stays On)

Beeper Indications

The sled provides user feedback in the form of beeper tones for decode, battery, Bluetooth, and Wi-Fi states.

Decode Beeper Indications

The following table outlines the context in which beeper feedback is provided and the indication that is presented for a specific decode event.

Table 6 RFD4031 RFID Decode Beeper Indications

Condition	Tone
Good Decode	Short high tone
Decode Transmission Error	No beep
Good RFID Decode	Short medium tone
RFID Error	No beep

Table 6 RFD4031 RFID Decode Beeper Indications (Continued)

Condition	Tone
Error Message (Other)	No beep
Sled Memory Full (Batch Mode)	Long tones for 5 seconds

Battery Beeper Indications

The following table outlines the context in which decode LED feedback is provided and the indication that is presented for a given device state.

Table 7 RFD4031 RFID Battery Beeper Indications

Condition	Tone
Low Battery (20%)	Medium-length tones
Lower Battery (10%)	Short tones - repeat
Suspend	High/Medium/Low
Charging	Short tone when the charger is connected.
Fully Charged	One beep
Charging Error	Three beeps (single occurrence)
Power On	Low/Medium/High beep

Bluetooth Beeper Indications

The following table outlines the context in which beeper feedback is provided and the indication that is presented for a specific Bluetooth state.

Table 8 RFD4031 Bluetooth Beeper Indications

Condition	Tone
On/Not Connected	No beep
On/Pairing in Process	No beep
On/Connected	Short/Low/High
Out of Range	Short/High/Low
Pairing Error	No beep
Off	No beep

Wi-Fi Beeper Indications

The following table outlines the context in which beeper feedback is provided and the indication that is presented for specific Wi-Fi states.

Table 9 RFD4031 Wi-Fi Beeper Indications

Condition	Tone
On/Not Connected	No beep

Table 9 RFD4031 Wi-Fi Beeper Indications (Continued)

Condition	Tone
On/Pairing in Process	No beep
On/Connected	Short/Low/High
Out of Range	Short/High/Low
Pairing Error	No beep
Off	No beep

Trigger Modes

The follow table outlines the supported trigger functions of the RFD4031.



NOTE: By default, the device assumes the upper trigger as the RFID decode trigger and the lower trigger as the mobile computer decode trigger.

Table 10 Trigger Modes

Condition	Upper Trigger	Lower Trigger	Both Triggers	Description
RFID Start/Stop	X	-	-	User Programmable
Barcode Start/Stop	-	X	-	User Programmable
Start Bootloader Recovery	-	X	-	Press and hold the lower trigger for five seconds while inserting the battery.
Configurable/Signal Intent to Mobile Device	-	-	X	Feature support is determined by the mobile computer being used with the device.

Installing the 123RFID Mobile Application for Android

Install the 123RFID Mobile Application on the mobile computer from zebra.com/support or from the Google Play Store. The procedure to install the software on an Android device is dependent upon the Android version.

To install the software:

1. Connect the Android device to your computer. It is connected as MTP Device and shown as a drive on the computer.

For information on transferring files using Media Transfer Protocol, refer to the Mobile Computer Integrator Guide at: zebra.com/support.

2. Navigate to Device Settings > Security and check Unknown Sources to allow installation of applications from unknown sources.
3. Copy the 123RFID_Mobile_1.0.x.x.apk file to the mobile device.
4. Go to Settings > Security and select Unknown sources.
5. Use the File Manager to locate the 123RFID_Mobile_1.0.x.x.apk file in the folder to which it is copied in Step 3 and select it.
6. In the pop-up window, select the Android App installer to begin installation.

123RFID Mobile Application for Android

This application runs on Android mobile devices and demonstrates capability and tag operation functionality.

The application allows for navigating to all screens at any time, however, some actions are not permitted while the device is charging. These actions include any operation that involves Tag reading or writing (for example: Rapid Read, Inventory, Locate Tag, etc.).

Navigate to all screens when the inventory/locate operation is in progress. When the operation is in progress, the device displays Operation in Progress if additional operations are initiated.

Using the 123RFID Mobile Application for Android

To use the application for RFID operations:

1. Launch the 123RFID Mobile Application for Android on the mobile device.
2. From the Readers list, tap on the available device listed under Available Readers to connect and view the Rapid Read screen.
3. Tap Settings > RFID > Advanced Reader Options > Antenna.

Power Level is set to 27.0 dBm by default. However, it is shown as 270 dbm because the value used is in units of tens of dBm. Japan units are set to a different default power level depending on the SKU type.

4. Tap the **Back** button and select **Regulatory** to set the region in which the device is operating.



NOTE: By default, the fastest read profile is selected and configures the reader for the maximum power allowed based on the read profile. However, the dBm can be limited due to the regulatory requirements of the specified region in which the sled is being used.

- 5.

Navigating 123RFID Mobile

Navigate using the Home screen, menu, or bottom navigation bar. Switch between the Inventory screen and the Locate screen or the Inventory screen and the Rapid Read screen with a single tap of the appropriate icon.

To exit the application, tap the Back button, and click OK on the confirmation screen.

Menu

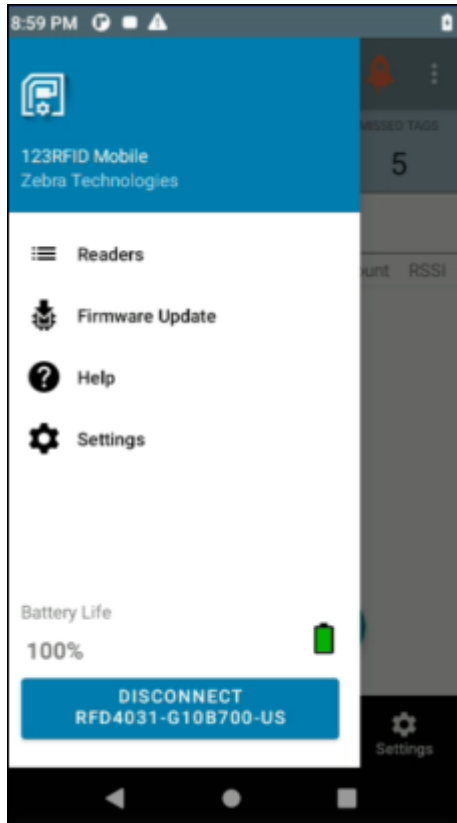
To access the menu, tap . The menu options include:

- Readers
- Firmware Update
- Help
- Settings

To disconnect the connected reader, tap the **Disconnect** reader button.



NOTE: The battery life (% charged) displays on this screen.



Navigation Bar

The Navigation Bar consists of the following tabs:

- **Readers** - displays a list of connected readers and available readers. On first time launch of the app, this is the tab that displays, unless the connection to the reader is over USB/CommonIO.
- **RFID** - select from RFID Settings, Locate Tag, Pre Filters, and Tag Write. This is the tab that displays most of the time when launching the app, if the reader has been previously connected to the app or the reader is connected over USB/Common IO.
- **Scan** - scan barcodes, view list of scanned barcodes or clear the scanned list.

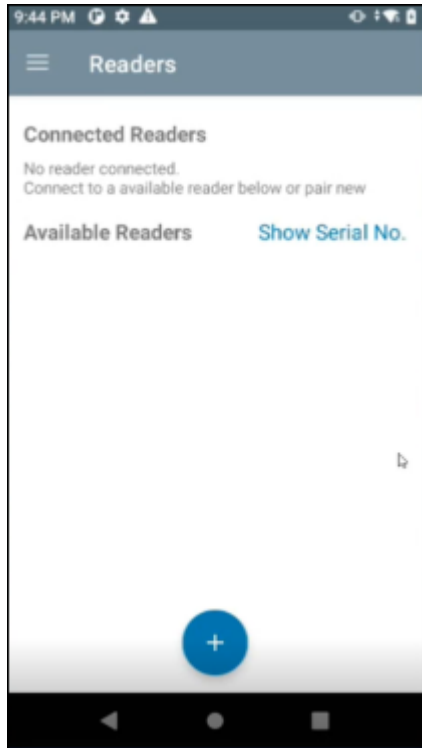


NOTE: Available only on RFD40 Premium and Premium+ devices with a built-in scanner.

- **Settings** - configure General, RFID, Application, and Scan settings.

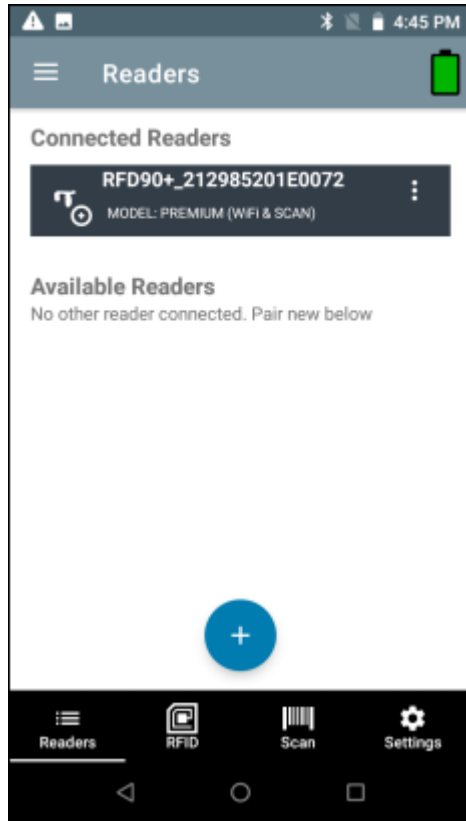
Readers List (Available vs. Connected)

The Readers list displays connected readers and available readers. After accessing 123RFID Mobile application for the first time, when no readers are available or connected, the following screen displays.



- **Connected Readers** - Lists the readers that are already connected and ready for use. Available options include:
 - Disconnect
 - Perform a firmware update
 - View reader details for a connected reader.

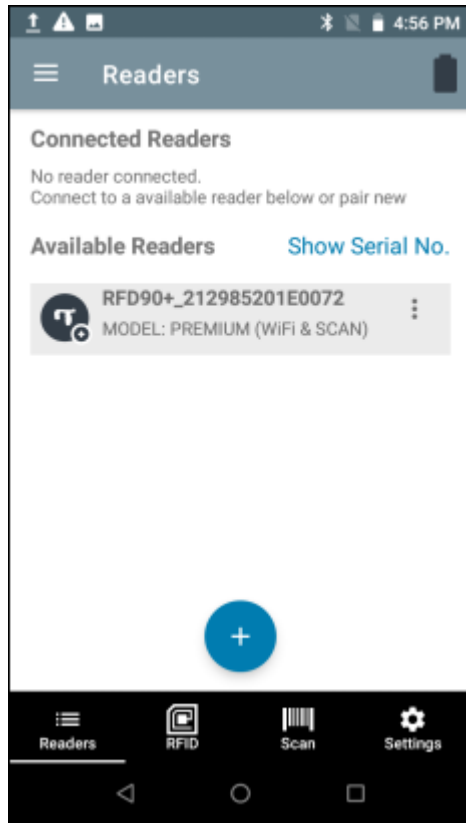
Readers List (Available vs. Connected)



IMPORTANT: You can only connect to one device at a time.

Readers List (Available vs. Connected)

- **Available Readers** - Lists the already paired devices that the user can choose to connect from. Available options include:
 - Connect
 - Unpair
 - View reader details for an available reader.




NOTE: The model name and description display under the reader name. To see the serial number, tap **Show Serial No.**

Connect a Reader



NOTE: A reader can be connected directly to the 8 pin common IO port (RFD40/RFD90 sleds only) or by using one of the three Bluetooth options.

To connect a reader:

1. From the bottom navigation bar, tap the Readers icon.
2. Tap a reader name from the Available Readers list to establish a session with the selected reader.
3. Tap again to terminate the session.
4. To obtain additional information about the device, tap  Reader Details within Connected Readers or Available Readers.

See Also

[Connect to Reader Directly Using USB](#)

[Connect to Reader Using Bluetooth](#)

Connect to Reader Directly Using USB/Common IO

There is no need to go through any manual steps or pairing. When connecting the RFD40 using USB, it connects directly.



NOTE: Use a USB eConnex pin if using the RFD40, or USB Serial connection if using the RFD2000.

1. Connect the RFD40 to USB.
2. Launch 123RFID Mobile App.

The RFID Rapid Read screen displays.

The RFD40 is directly connected.

Connect to Reader Using Bluetooth

Using Bluetooth, you can pair and connect to a reader in the following ways:

- Tap and Pair
- Scan and Pair
- Pair using Barcode

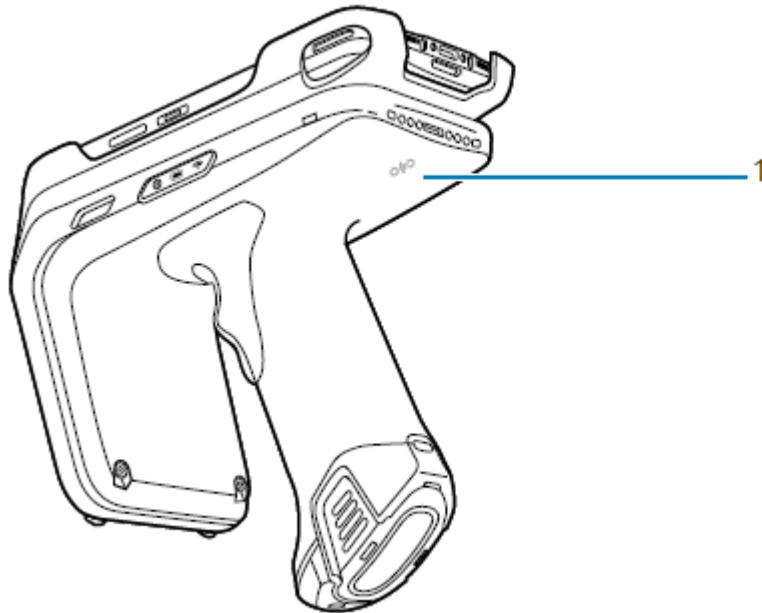
Pair Reader Using NFC Tag (Tap and Pair)



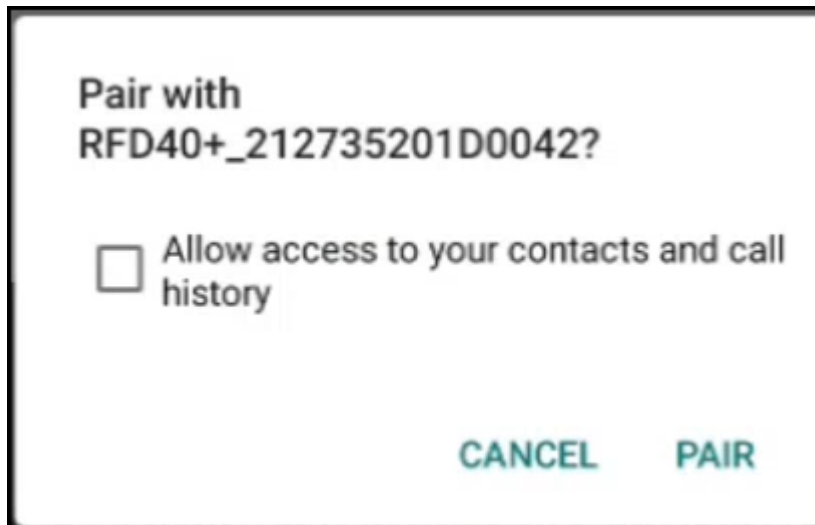
NOTE: Available only on RFD40 Premium and Premium +.

To pair a reader using the NFC tag:

1. From the bottom Navigation Bar, tap **Readers**.
2. Tap + icon.
3. To connect via NFC, align the NFC area behind the handle of the sled with the NFC area on the back of the mobile computer to pair.



4. On the **Pair with** screen:
 - a) (Optional) Check **Allow access to your contacts and call history**.
 - b) Tap **PAIR**.



The reader is paired with the mobile computer and the reader displays in the **Available Readers** list..

Once the sled has paired with a mobile computer, the sled recognizes the device going forward and automatically connects using the 123RFID Mobile Reader Discovery feature.

From the Readers list, select the checkbox for the paired reader and tap **UNPAIR** to unpair the reader from the mobile computer.

Scan and Pair - RFD40



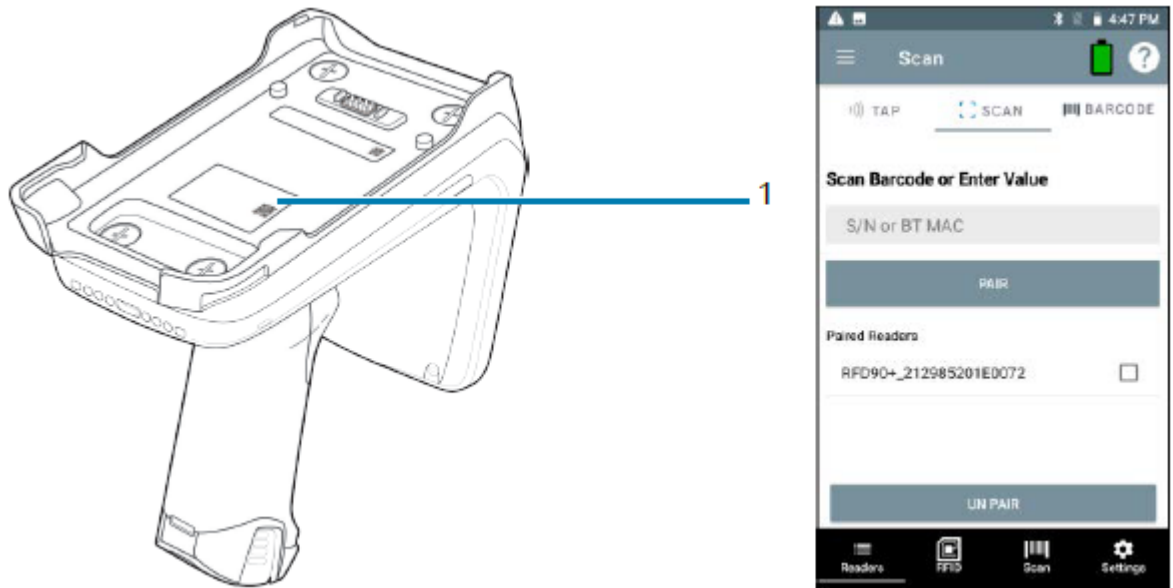
NOTE: Available only for Zebra Enterprise Mobile Computing devices and not third party Android devices.

The RFD40 Premium + can connect to a host device over Bluetooth via Scan & Pair.

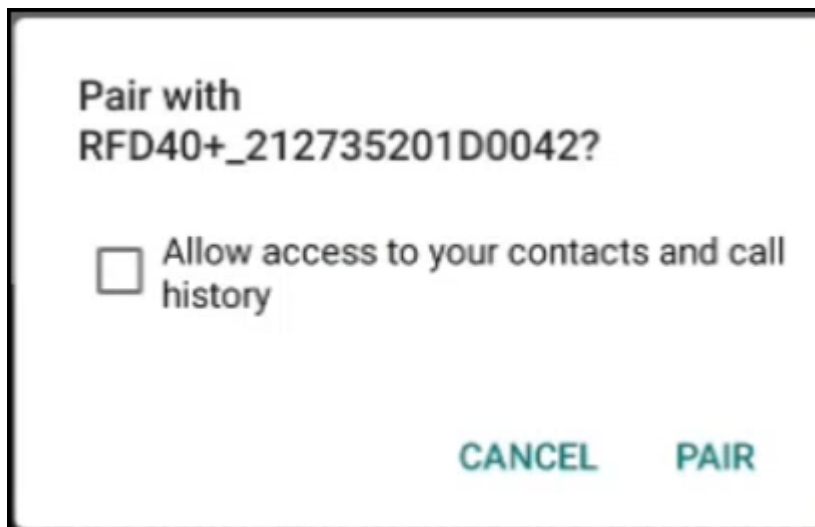
1. From the bottom Navigation Bar, tap **Readers**.
2. Tap + icon > Scan.

Connect to Reader Using Bluetooth

3. To connect via scan, scan the code on the sled using the mobile computer to obtain the Bluetooth MAC address to pair the device to the sled or you can scan the serial number of the device.



4. Tap **PAIR**.
5. On the **Pair with** screen:
 - a) (Optional) Check **Allow access to your contacts and call history**.
 - b) Tap **PAIR**.



The reader is paired with the mobile computer and the reader displays in the **Available Readers** list..

Once the sled has paired with a mobile computer, the sled recognizes the device going forward and automatically connects using the 123RFID Mobile Reader Discovery feature.

From the Readers list, select the checkbox for the paired reader and tap **UNPAIR** to unpair the reader from the mobile computer.

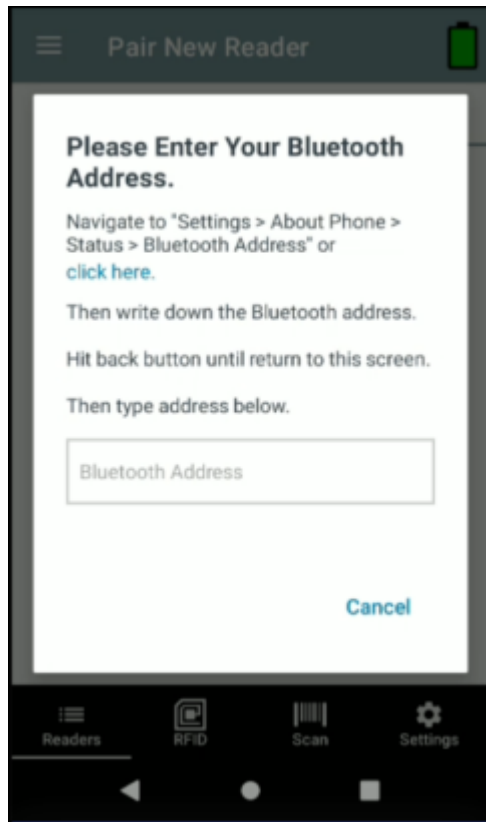
Pair Reader By Scanning a Barcode



NOTE: Available only on RFD40 Premium +.

To pair a reader by scanning a barcode:

1. From the bottom Navigation Bar, tap **Readers**.
2. Tap + icon > Barcode.
3. The very first time after you install the application, you will need to provide the Bluetooth address of the mobile computer. Navigate to **Settings > About Phone > Status > Bluetooth Address** or click the **click here** link on the **Please Enter Your Bluetooth Address** screen.

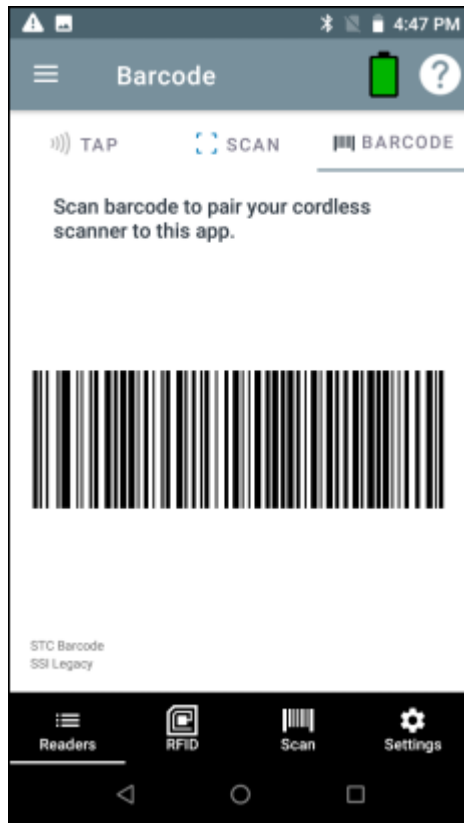


The **Settings** screen displays where you can locate the **Bluetooth address**.

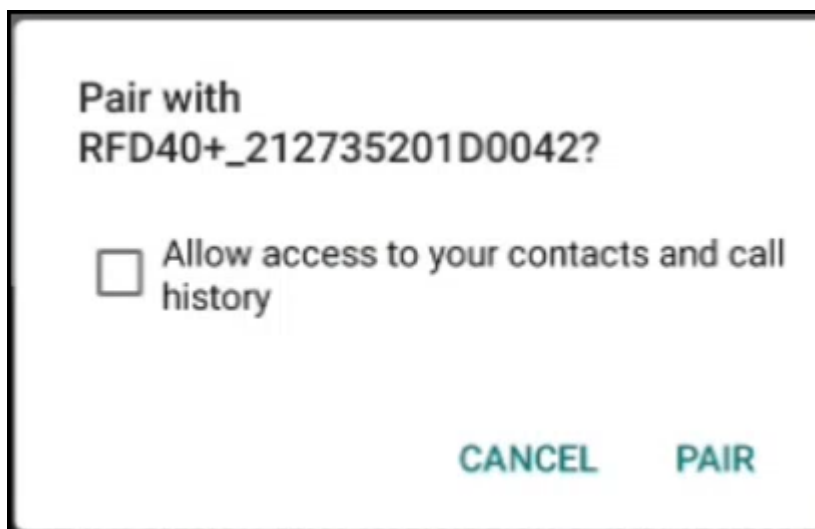
4. Tap **Bluetooth address** and tap **Copy**.
5. Paste the Bluetooth address in the **Bluetooth Address** field on the **Please Enter Your Bluetooth Address** screen.
6. Tap **Continue**.

Once you do that, it sets the Bluetooth address barcode for you.

7. Scan the barcode using the sled.



8. Tap **PAIR**.
9. On the **Pair with** screen:
 - a) (Optional) Check **Allow access to your contacts and call history**.
 - b) Tap **PAIR**.



The reader is paired with the mobile computer and the reader displays in the **Available Readers** list..

Once the sled has paired with a mobile computer, the sled recognizes the device going forward and automatically connects using the 123RFID Mobile Reader Discovery feature.

From the Readers list, select the checkbox for the paired reader and tap **UNPAIR** to unpair the reader from the mobile computer.

Pair Reader Manually

If you do not use the Tap and Pair, Scan and Pair, or Scan a Barcode method to pair the reader, you can pair it manually.

1. Enable Bluetooth.
2. Discover Bluetooth devices.
3. Connect to a Bluetooth device.

See Also

[Enabling Bluetooth](#)

[Discovering Bluetooth Devices](#)

[Connecting to a Bluetooth Device](#)

RFID Operations

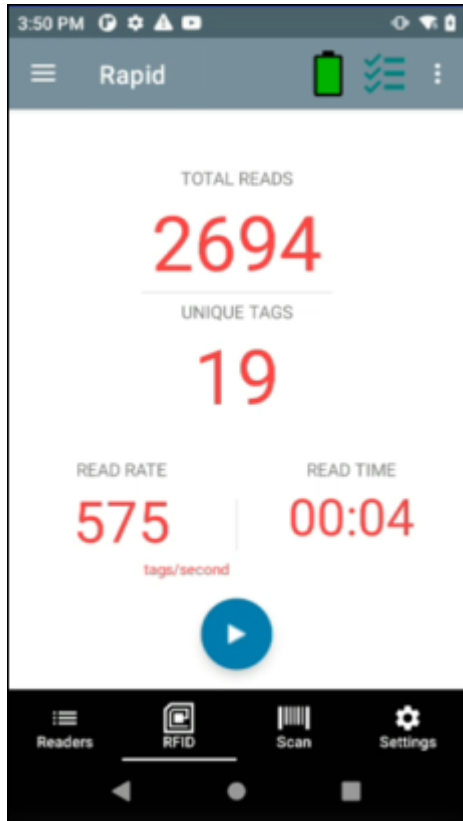
Access RFID operations for the following:

- Rapid Read - Displays a view of the inventory operation on the reader, including total reads, unique tag count, tag read rate, and read time.
- Inventory - Displays tag details, once tag reading begins.
- Locate Tag - Locates a single tag or multiple tags. Can be accessed from the Inventory screen.
- Tag Write - Allows you to write data to specified tags. Can be accessed from the Inventory screen.
- Pre-Filters - Allows you to set filters for tag data. Can be accessed from the Inventory screen.
- RFID Settings - Allows you to configure specific reader and antenna settings. Can be accessed from the Rapid Read and Inventory screens, as well as from Settings.

Rapid Read

The Rapid Read screen displays the following data:

- Total Reads
- Unique tag count
- Read time (mm:ss)
- Tag read rate (tags/sec).



The **Rapid Read** and **Inventory** screens present two different views of the inventory operation on the reader. The Start/Stop functionality can be used interchangeably on both screens. For example, when operation starts on the Rapid Read screen and you navigate to the Inventory screen, the button available on the Inventory screen is Stop. The same is true when the operation starts on the Inventory screen. During the rapid read process, you can navigate to the Inventory screen to view tag details along with tag counts for each tag. The statistics displayed are maintained on the Rapid Read and Inventory screens regardless of the screen used to start the process.

See Also

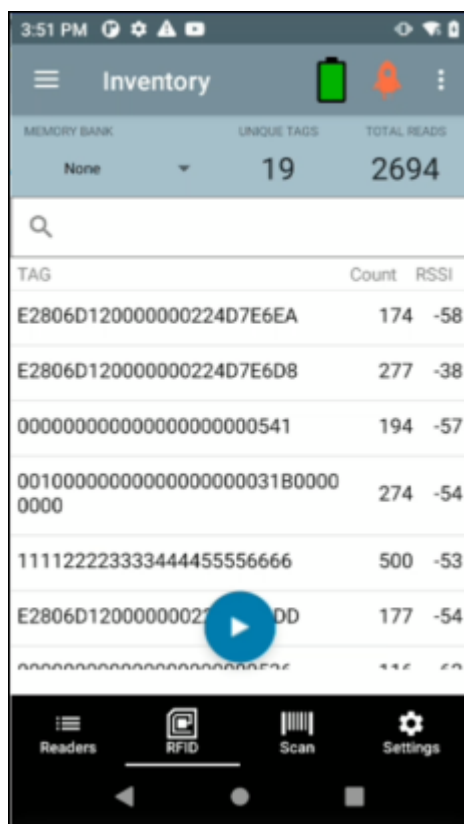
[Inventory](#)

Inventory

Once tags begin reading, the tag details populate the Inventory screen. Tag reading is started and stopped on this screen as well as on the Rapid Read screen. When the process starts, tag information displays on the screen.



NOTE: When the tag does not have printable ASCII data when in ASCII mode, a yellow highlighted background displays on the Inventory screen.



View Inventory Results

To view Inventory results:


1. Tap Inventory from the Home or Menu screen.
2. Tap Start to start the rapid read inventory operation.
The Start button changes to Stop.
3. Tap Stop to stop the read inventory operation.

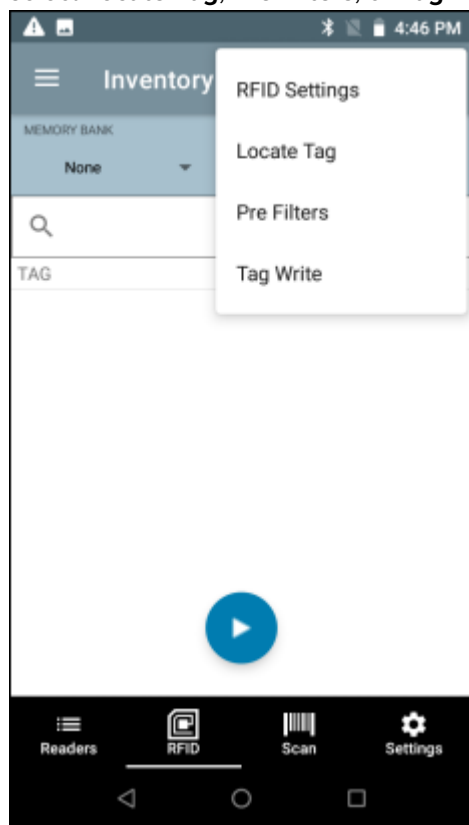
The Start button changes to Stop.



NOTE: The scan trigger on the device can also start and stop the inventory operation. Press the trigger to start, continue to hold and release to stop.

4. To filter information by type, tap the **Memory Bank** dropdown menu and select **User**, **Reserved**, **TID**, or **EPC**.

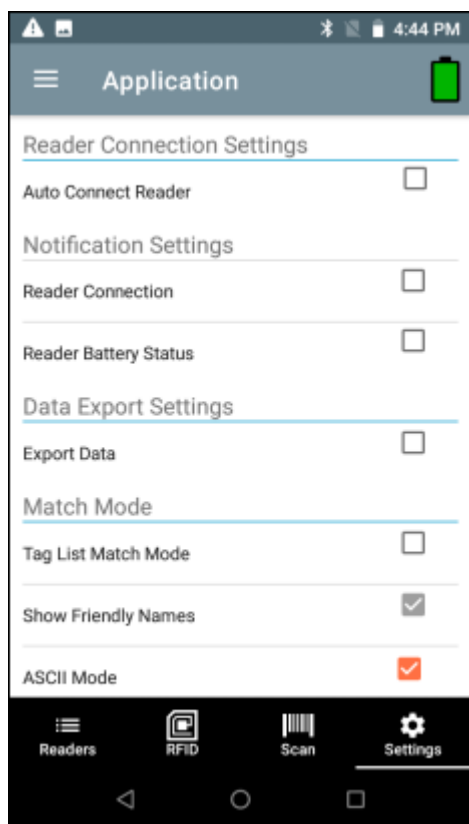
5. The tag ID selected can be used to locate, set pre-filters and tag write. After selecting a tag, tap  and select **Locate Tag**, **Pre Filters**, or **Tag Write**.



Progressing to another screen does not halt the operation. However, attempting to make changes or perform another operation while this operation is in process results in an error.



NOTE: Tags are fully convertible to ASCII format. ASCII mode may be enabled by selecting **Settings > Application Settings > ASCII Mode**.



See Also

[Rapid Read](#)

Inventory Screen Features

The following table provides information on various metrics that can be captured using the Inventory feature.

Table 11 Inventory Screen Features

Item	Description
Tags	<p>Tap Memory Bank to select one of the following memory bank options from the drop-down menu:</p> <ul style="list-style-type: none"> • None - Defaults to EPC. • User - Allows reading user memory bank data when the tag is inventoried. • Reserved - Allows reading reserved memory bank data when the tag is inventoried. • TID - Allows reading TID memory bank data when the tag is inventoried. • EPC - Allows reading EPC memory bank data when the tag is inventoried. When the next inventory operation starts, the details from the selected memory bank displays. This menu is inactive if there is an ongoing operation on the connected reader. • Default Display - None.
Search	Tap the Search icon and enter a tag ID. Tags that match the entry display in the content area.
Power Management	Icon indicates if Dynamic Power is on. See Power Management. Tap the Power Management icon to open the Battery Status screen.
Content Area (select a tag)	Tapping a Tag ID highlights the tag. The highlighted Tag ID is populated on the Tag Location text area as well as the Tag Pattern area in the Access Control screen. Tap Start to start searching for the tag. See Tag List Match Mode Operation. From this screen, return to the Menu or go to the Home screen and select Locate Tag.

Table 11 Inventory Screen Features (Continued)

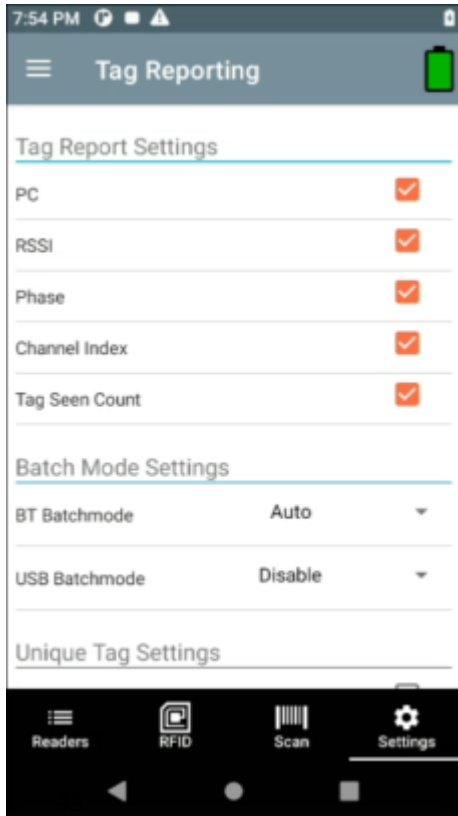
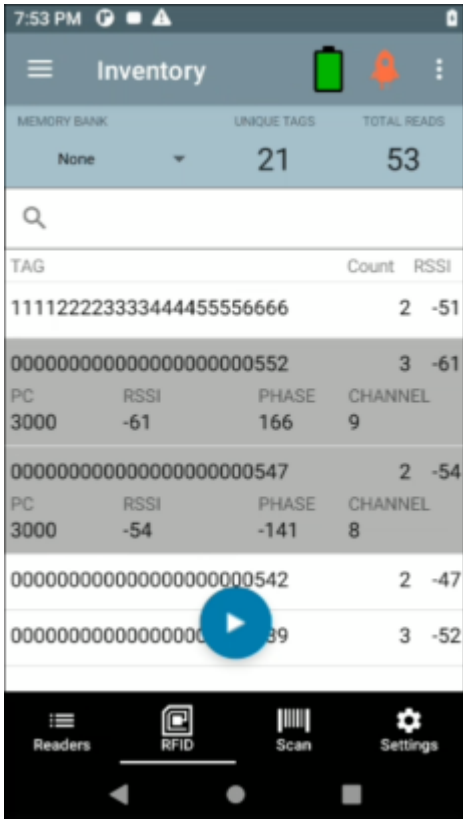
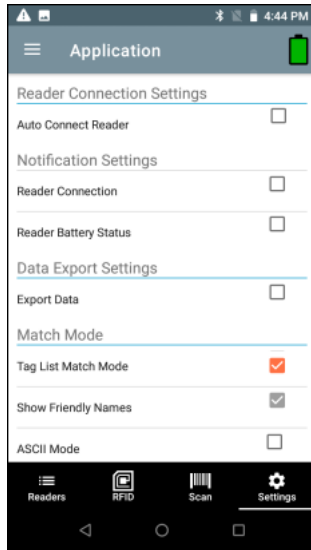
Item	Description
Content Area (select a tag)	<p>The tags displayed in this area are based on the option selected from RFID > RFID Advanced Settings > Tag Reporting. Tap the tag ID to expand details about the tag. Tap the tag ID again to collapse details.</p> <p>Example Default Tag Display:</p> <p>Tag ID Tag Count</p> <p>AD99 15404190725965400404</p> <p>Example Expanded Tag Display:</p> <p>Note: Expanded tag detail can only display when the inventory operation is stopped. Memory bank data is shown only when inventory is complete.</p> <p>Tag ID Tag Count</p> <p>AD99 15404190725965400404</p> <p>EPC MEMORY 3000</p> <p>RSSI</p> <p>-50</p> <p>Phase</p> <p>1800</p> <p>USER</p> <p>1122334455667788AABBCCDDEEFF</p> <p>1122334455667788AABBCCDDEEFF</p> <p>1122334455667788AABBCCDDEEFF</p>  <p>The screenshot shows the 'Tag Reporting' screen. At the top, there's a status bar with the time 7:54 PM and battery level. Below the title bar, there's a 'Tag Report Settings' section with five items: PC, RSSI, Phase, Channel Index, and Tag Seen Count, each with a red checkmark. Below that is a 'Batch Mode Settings' section with two items: BT Batchmode (set to Auto) and USB Batchmode (set to Disable). At the bottom is a 'Unique Tag Settings' section. The bottom navigation bar has four icons: Readers, RFID, Scan, and Settings.</p>

Table 11 Inventory Screen Features (Continued)

Item	Description
	

Tag List Match Mode Operation

When **Tag List Match Mode** is checked on the **Application Settings** screen, the application identifies tags from a given set of tags in csv tag list format (comma separated values file). Browse to choose the csv file. The contents of the csv file displays on the Inventory screen. By default, the application displays friendly names from csv files, if **Tag List Match Mode** is enabled. If you do not want to show friendly names, the setting can be disabled in Settings to show only EPC.



Before the inventory starts, the count is zero. The tag list can be sorted using the drop-down menu choices. Select an option to display the type of tags to show when the inventory starts.

- All
- Matching
- Missing
- Unknown

Figure 11 Tag List Match Mode Option Menu

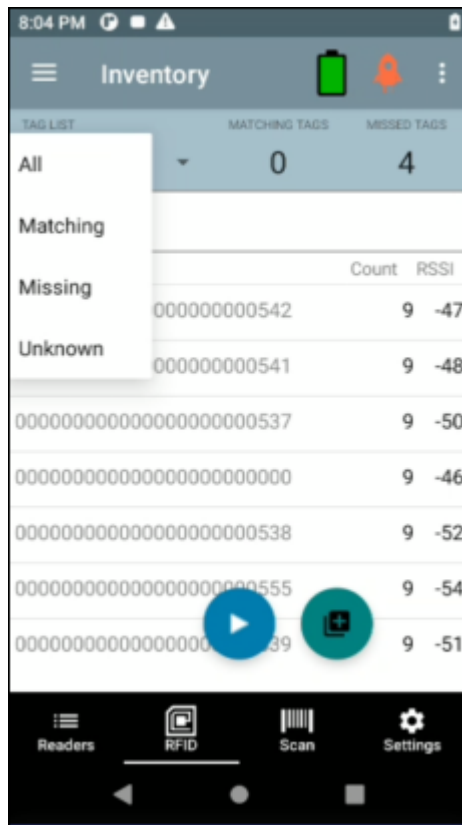
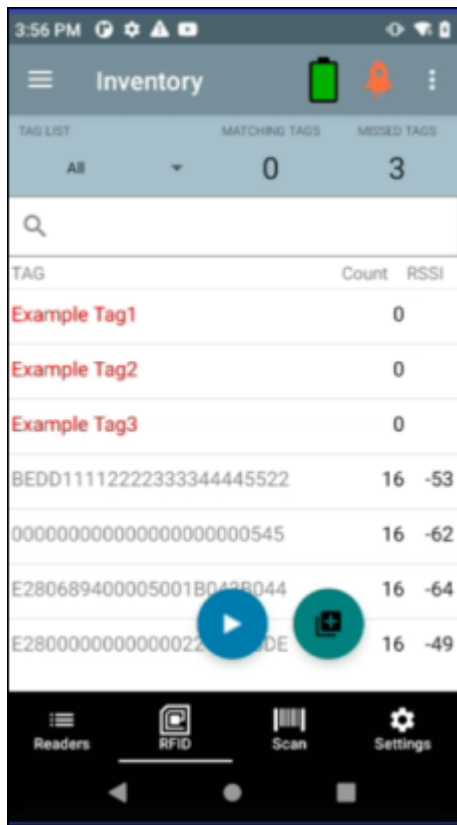


Figure 12 Tag List Match Mode Enabled with Friendly Names



If **Tag List Match Mode** is enabled, the text color changes accordingly:

- Matching = Green
- Missing/Expected = Red
- Unknown = Gray



NOTE: While running the inventory, you can re-import the csv file from the Inventory screen, by clicking **on the Re-import Tag list match mode csv file** icon.

See Also

[Sample 1 Inventory List: Tag List Enabled; Matching Tag Option Selected](#)

[Sample 2 Inventory List: Tag List Enabled; Missed Tag Option Selected](#)

[Sample 3 Inventory List: Tag List Enabled; Unknown Tag Option Selected](#)

[Sample 4 Inventory List: Tag List Enabled; All Tag Option Selected](#)

Locate Tag

Use Locate Tag to locate a single tag or multiple tags (Multi Tag). From the Inventory screen, tap and select **Locate Tag**.

Locate a Single Tag

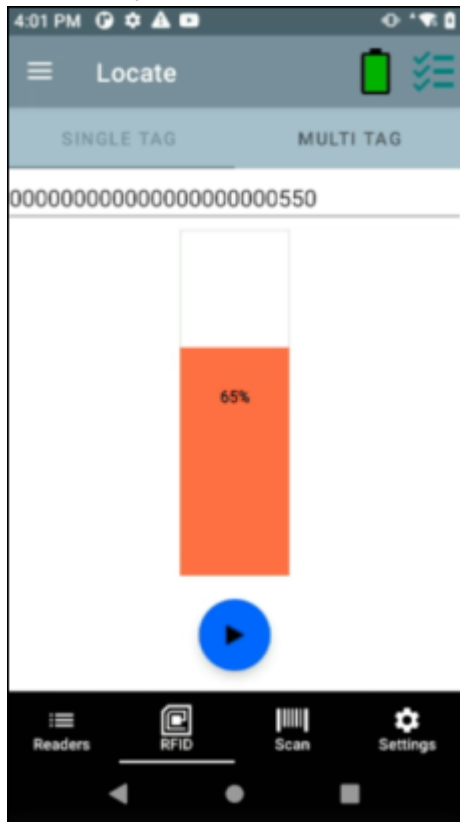
To locate a single tag:

1. Tap Locate Tag from the Home or Menu screen.
2. Enter the Tag ID in the text area or select a tag from the Inventory screen to pre-populate the Tag ID to search.
3. Tap Start to start the locate tag operation.
4. Tap Stop to stop the locate tag operation.



NOTE: The scan trigger on the device can also start and stop the locate tag operation. Press the trigger to start, continue to hold and release to stop.

The Locate Tag screen displays a color bar graph showing the proximity % (relative distance) of the tag. The % gives the relative distance, for example, from 0% to 100% where the tag is very far or very close respectively



Progressing to another screen does not halt the operation, until Stop is selected. However, attempting to make changes or perform another operation while the locate tag operation is in process results in an error.

Locate Multiple Tags (Multi Tag)

Locate multiple tags by importing a csv file.



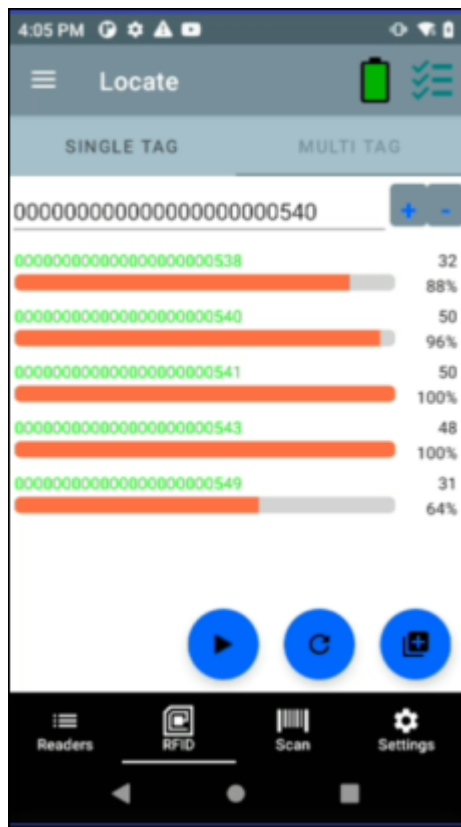
NOTE: Multi Tag Locate supports ASCII mode. Enable ASCII mode from **Settings > Application > Global Settings > Enable ASCII Mode**.

To locate and track multiple tags:


1. Tap Locate Tag from the Home or Menu screen.
2. Select the **Import csv file** on the Multi Tag panel.
The csv file holds the EPC ID and RSSI value. The default RSSI for the EPC will be -33.
3. Select the file containing the specific tag information from the file manager to bring the file into the application.
4. Tap the **Reset Data** icon to reset the tag count and RSSI proximity %.
5. Tap the **Add Tag ID** icon to add the EPC value of interest to the dynamic list of EPC's. It can only add the value which is present in the imported csv file.
6. Tap the **Remove Tag ID** icon to remove the EPC value of non-interest from the dynamic list of EPC's. It can only remove the value which is present in the csv file.

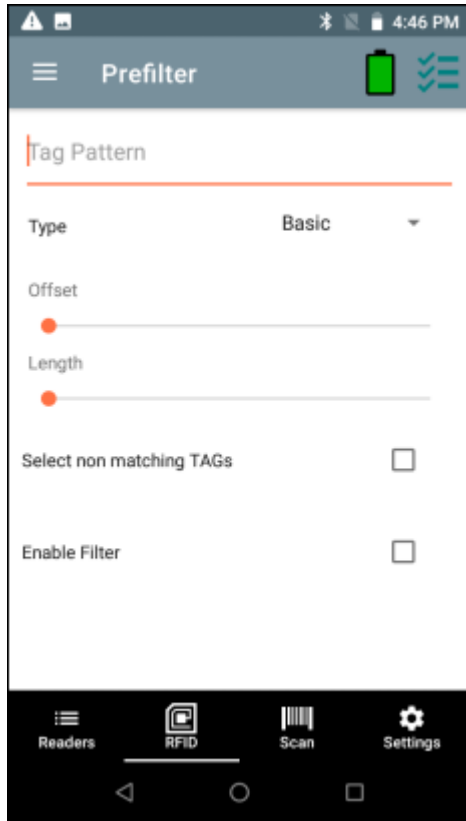


NOTE: Once you re-access the MultiTag Locate screen, the entire tag list from the csv file displays, if values were deleted dynamically.



Pre Filters

1. From the Inventory screen, tap  and select **Pre Filters**.




2. Select Basic or Advanced.
3. Complete the following:
 - a) Memory Bank - EPC, TID and USER.
 - b) Offset (words) - Offset in the memory bank is specified in words.
 - c) Length (octets) - pattern length.
 - d) Select non matching TAGs - Inventory shows tags which are not matching with Tag pattern entered.
 - e) Action:
 - INV A NOT INV B or ASRT_SL_NOT_DSRT_SL
 - INV A or ASRT SL
 - NOT INV B or NOT DSRT SL
 - INV A2BB2A NOT INV A or NEG SL NOT ASRT SL
 - INV B NOT INV A or DSRT SL NOT ASRT SL
 - INV B or DSRT SL
 - NOT INV A or NOT ASRT SL
 - NOT INV A2BB2A or NOT NEG SL
 - f) Target - SESSION S0, SESSION S1, SESSION S2, SESSION S3 & SL FLAG.



NOTE: Up to two pre-filters can be enabled.

Tag Write

1. From the Inventory screen, tap  and select **Tag Write**.
2. Select **Read/Write tags, Lock, Kill**.

Read/Write

The Tag Pattern area is automatically filled in when a tag is selected in the Inventory screen. The Read/Write access operation is simplified with offset and length fields are hidden. The user can tap the more/advanced options icon to see offset and length fields. Tap the icon again to hide the advanced options.

Memory Bank options now have extended menu options to choose directly interested area of memory bank. This avoids typing of offset and length etc.



NOTE: SDK 2.0.49 enabled with the Write + 1 retry feature, improves the efficiency during the Tag Write operation.

Read/Write options are:

- Tag ID and Password values are in hex. Tag ID is edited.
- Memory Bank options - EPC, TID, USER, PC and CRC, Access Password, Kill Password.
- Offset and Length values are in 16-bit words. This is only available after tapping the Advanced Options icon. To toggle visibility, tap Advanced Options again.
- Access operation screen maintains edited tag ID.



NOTE: The user can read/write to/from tags in ASCII mode.

Figure 13 Read/Write Basic

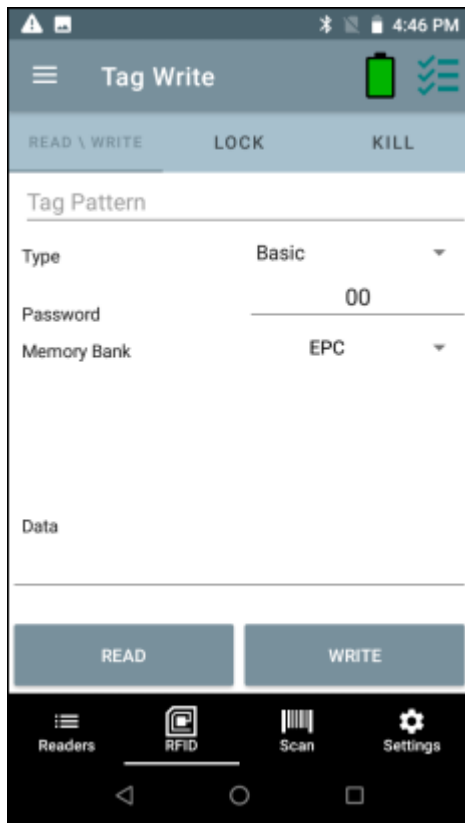
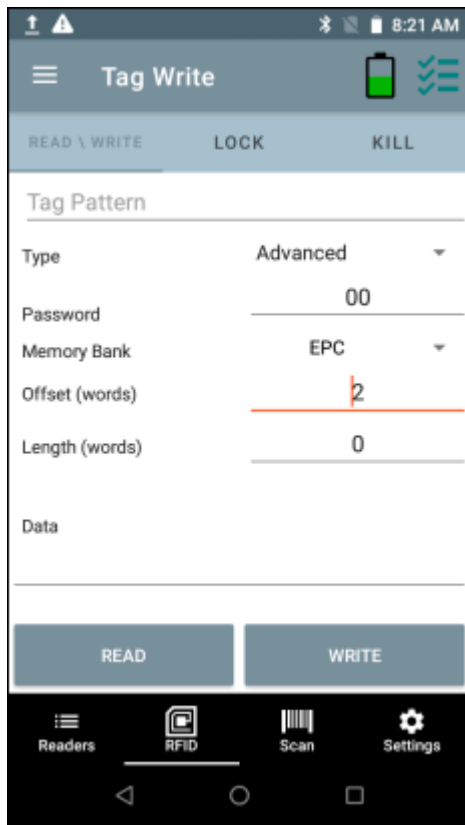


Figure 14 Read/Write Advanced



Lock

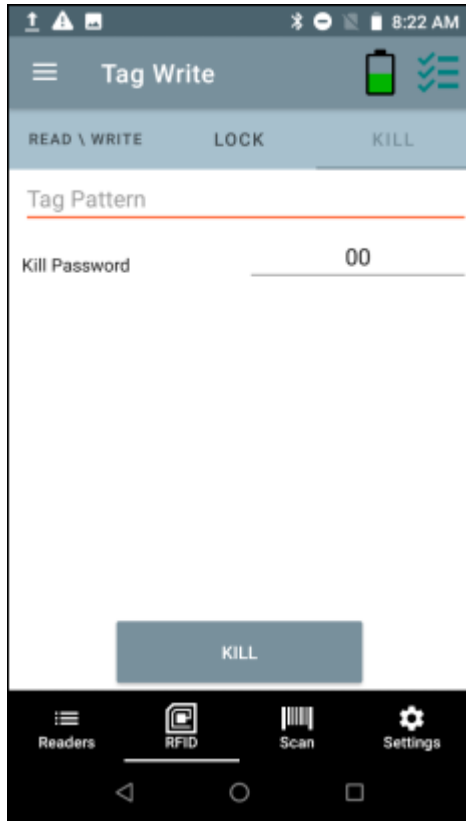
Lock privilege options are as follows:

- Read and Write
- Permanent Lock
- Permanent Unlock
- Unlock




Kill

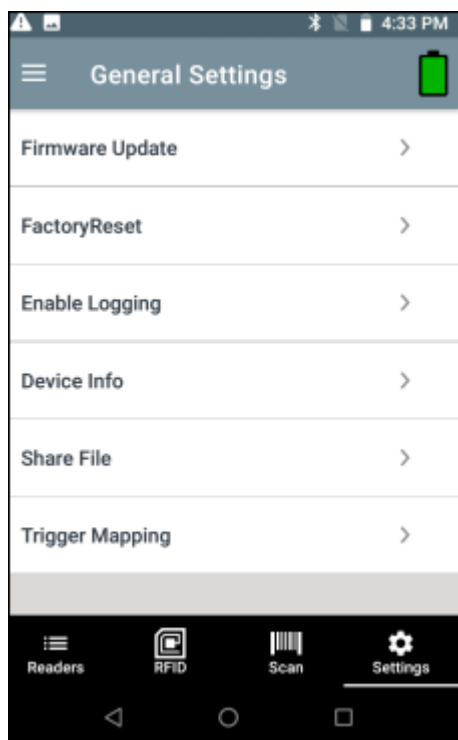
Permanently renders the tag unusable. A Kill Password must be provided.



General Settings

To access General Settings, from the bottom navigation bar, tap **Settings** > **General** or tap  > **Settings** > **General**. The General Settings screen options include:

- **Firmware Update** - Update the firmware on the reader.
- **Factory Reset** - Reset file settings on the reader to factory defaults.
- **Enable Logging** - Enable the logging of tag reads.
- **Device Info** - View information such as friendly name, serial number, and RFID/scan settings.
- **Share File** - Share a file with a paired device.
- **Trigger Mapping** - Change the mapping for the upper and lower trigger and designate the Upper Trigger for RFID decode and the Lower Trigger for Host Scan or the Upper Trigger for Host Scan and the Lower Trigger for RFID decode.



See Also

[Firmware Update](#)
[Factory Reset](#)
[Enable Logging](#)
[Device Info](#)
[Share File](#)
[Trigger Mapping](#)

Update the Device Firmware

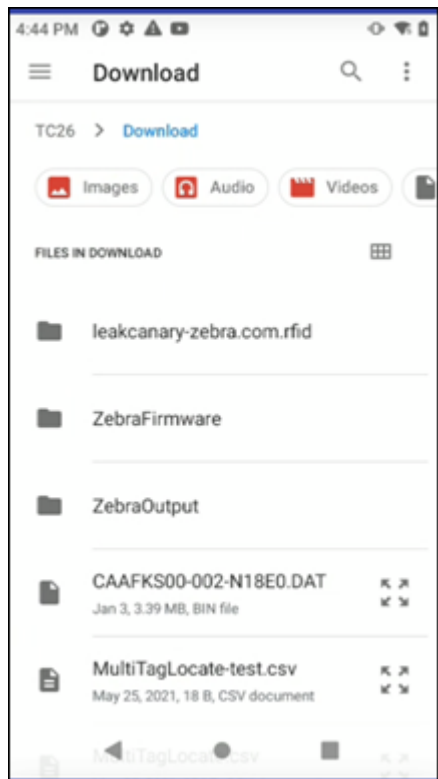


NOTE: Available only on RFD40.

To update device firmware:

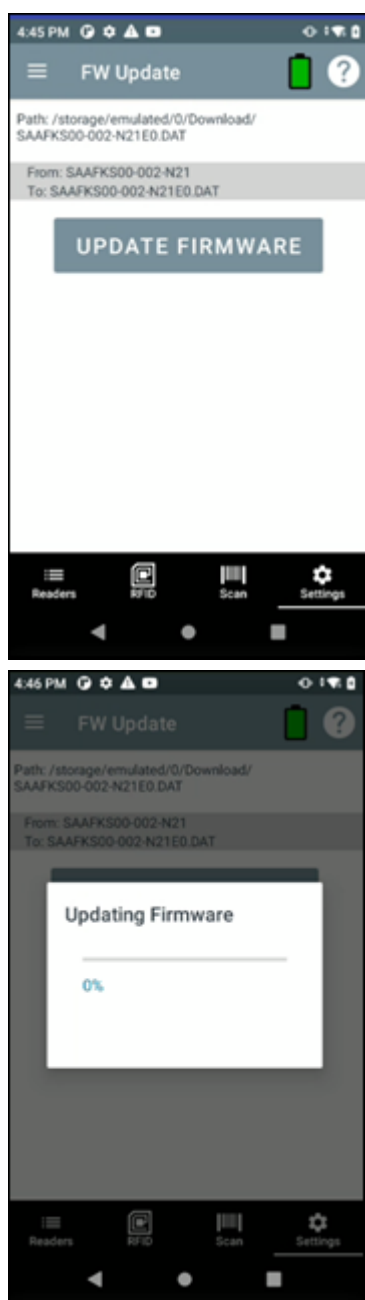
1. To access Firmware Update, from the bottom navigation bar, tap **Settings** > **General** > **Firmware Update** or tap **≡** > **Settings** > **General** > **Firmware Update**.

2. Select the firmware version to be loaded onto the device.



- a) Copy the correct .DAT file to /SDcard/download.
- b) Make sure the terminal is connected to the device.

3. Tap **Update Firmware**.



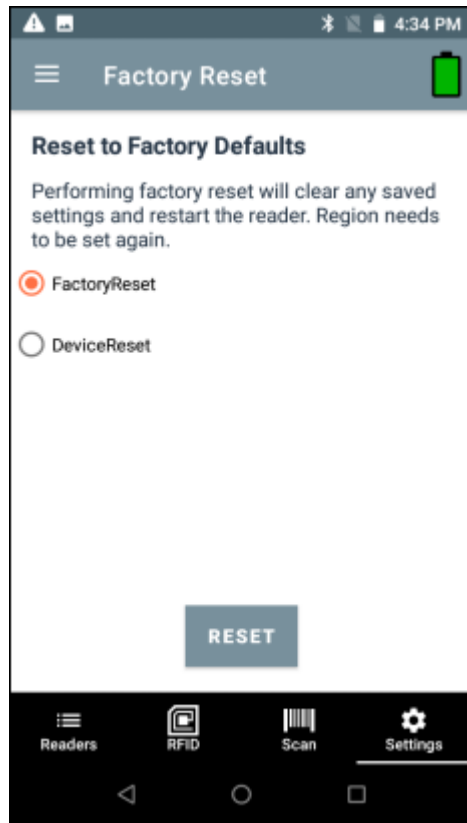
Factory Reset

Performing a factory reset will clear any saved settings and restart the reader. Region needs to be set again.

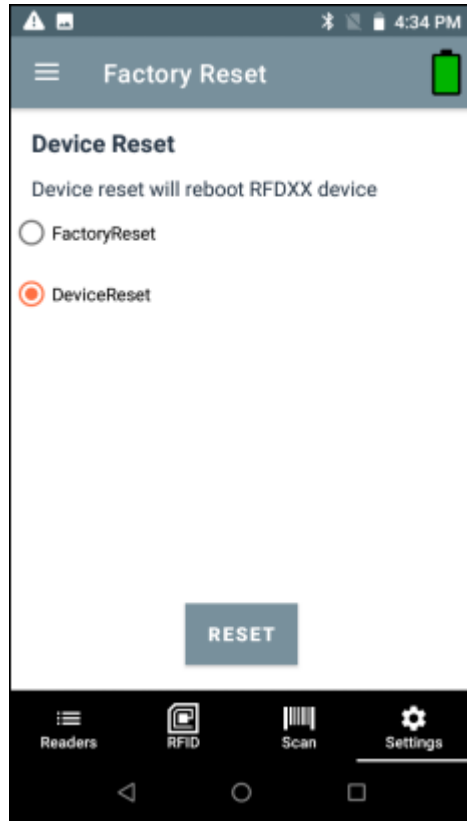
1. To reset to factory defaults, from the bottom navigation bar, tap **Settings** > **General** > **Factory Reset** or tap **≡** > **Settings** > **General** > **Factory Reset**.

2. Select one of the following:

a) **FactoryReset** to perform a factory reset.



b) **DeviceReset** to perform a device reset, which reboots the RFDXX device.



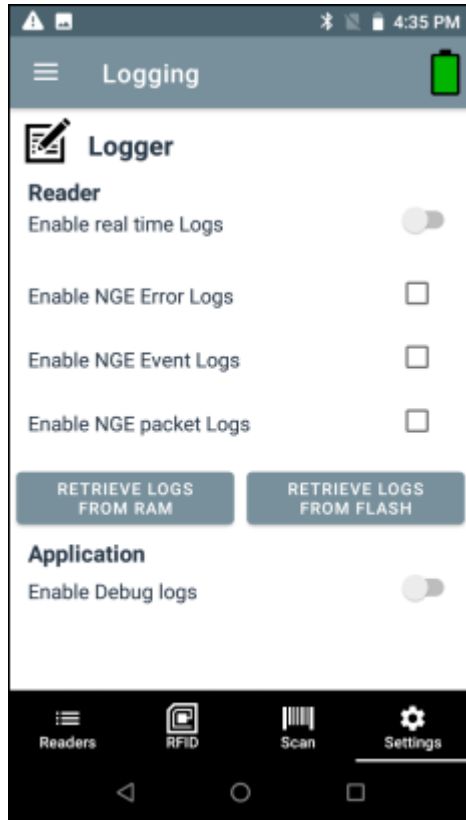
3. Tap **RESET**.

Enable Logging

1. To enable logging, from the bottom navigation bar, tap **Settings > General > Enable Logging** or tap **≡ > Settings > General > Enable Logging**. All the enabled logs are captured in logcat which can be retrieved through RxLogger for EMC devices.

2. Specify the following:

- Tap **Enable real time Logs** to toggle on or off.
- Tap **Enable NGE Error Logs** to select.
- Tap **Enable NGE Event Logs** to select.
- Tap **NGE packet Logs** to select.
- Tap **RETRIEVE LOGS FROM RAM** or **RETRIEVE LOGS FROM FLASH**.
- Tap **Enable Debug logs** to toggle on or off.

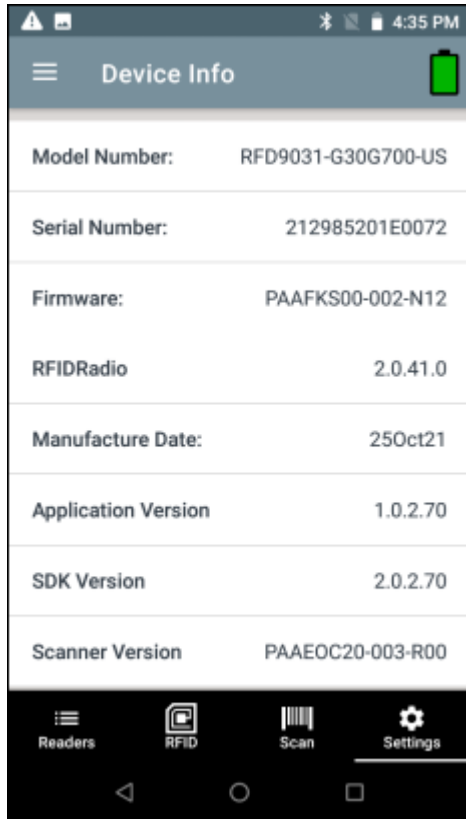


Device Info

To access Device Info, from the bottom navigation bar, tap **Settings** > **General** > **Device Info** or tap **≡** > **Settings** > **General** > **Device Info**.

Device Info displays the following:

- Model Number
- Serial Number
- Firmware
- Manufacture Date
- Application Version
- SDK Version

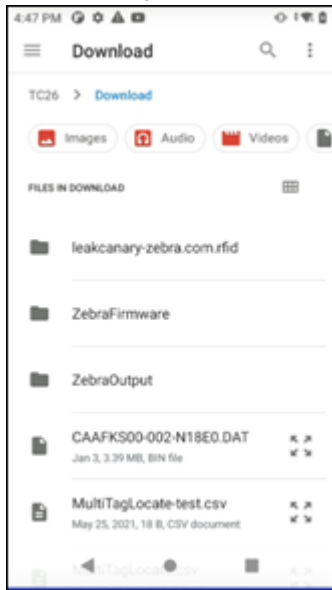


Share File

1. To share a file, from the bottom navigation bar, tap **Settings** > **General** > **Share File** or tap  > **Settings** > **General** > **Share File**.

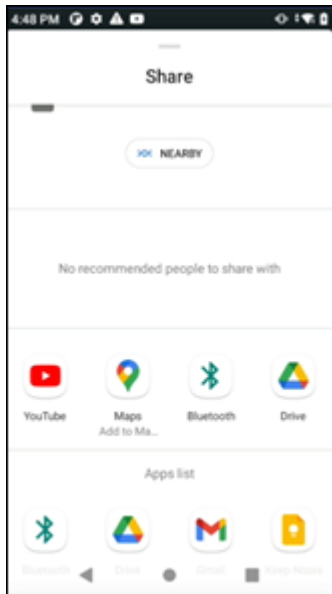
File Explorer opens.

2. Select a single file or multiple files.



User has an option to share the file(s) to a nearby device via Bluetooth or any other file sharing supported app.

3. Select from the provided options.



Trigger Mapping

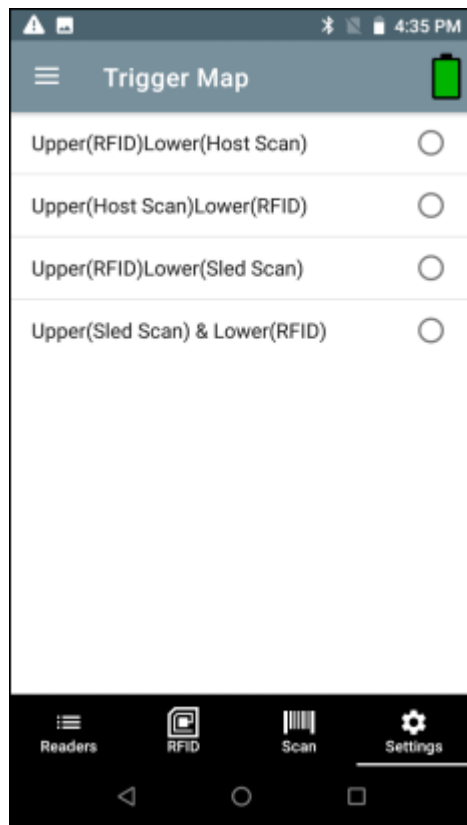
1. To map the trigger, from the bottom navigation bar, tap **Settings > General > Trigger Mapping** or tap **Settings > General > Trigger Mapping**.

2. Select one of the following options:



NOTE: For RFD40 Standard and RFD40 Premium, only the first two options are available.

- **Upper trigger - RFID Lower trigger - HOST:** Use upper trigger for RFID operations and lower trigger for scanning (Standard device = scanner on terminal; Premium device = scanner on terminal; Premium Plus device = scanner on sled device).
- **Upper trigger - HOST Lower trigger - RFID:** Use upper trigger for scanning (Standard device = scanner on terminal; Premium device = scanner on terminal; Premium Plus device = scanner on sled device) and lower trigger for RFID operations.
- **Upper trigger - RFID Lower trigger - Sled scan:** Use upper trigger for RFID operations and lower trigger for scanning (Standard device = scanner on terminal; Premium device = scanner on terminal; Premium Plus device = scanner on sled device).
- **Upper trigger - Sled scan Lower trigger - RFID:** Use upper trigger for scanning (Standard device = scanner on terminal; Premium device = scanner on terminal; Premium Plus device = scanner on sled device) and lower trigger for RFID operations.

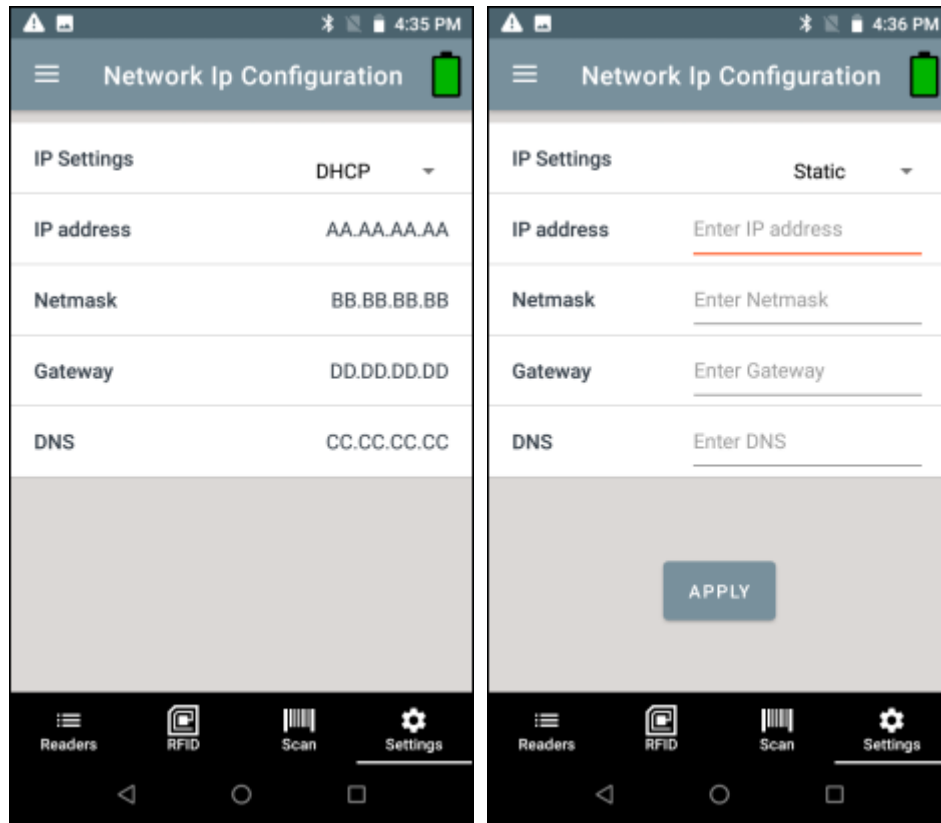


Network IP Config

Configure the network IP settings using DHCP or a static IP address.

1. Select one of the following:

- DHCP
- Static



2. If using static IP settings, enter the following:

- a) IP address.
- b) Netmask address.
- c) Gateway address.
- d) DNS address.

3. Tap **APPLY**.

RFID Settings

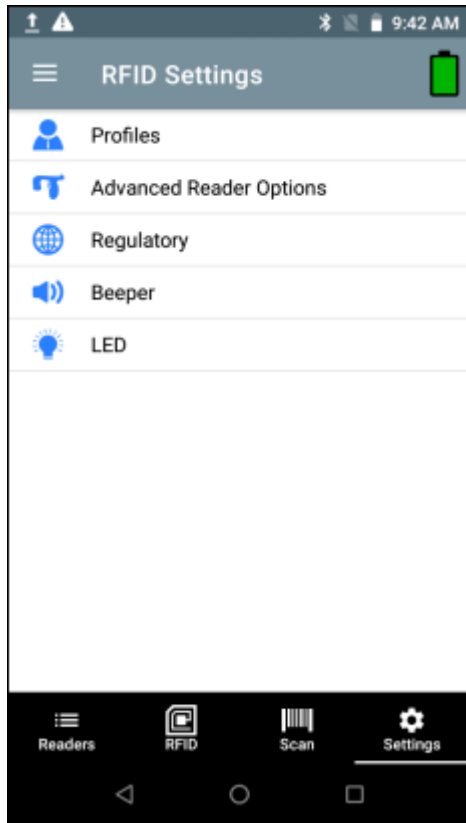
To access RFID Settings, from the bottom navigation bar, tap **Settings** > **RFID** or tap **≡** > **Settings** > **RFID** or from the Rapid Read or Inventory screens, tap **⋮** > **RFID Settings**. RFID Settings options include:

- Profiles - Displays Fastest Read, Cycle Count, Dense Readers, Optimal Battery, Balanced Performance, User Defined and Reader Defined profiles.
- Advanced Reader Settings - Antenna, Singulation Control, Start/Stop Triggers, Tag Reporting, Power Management and Save Configuration.
- Regulatory - Allows selection of region and available channels.
- Beeper - Provides the option to change the volume of both the host and sled device.

- LED - Enables/Disables Terminal/Host tag read LED for inventory indications.



NOTE: Available only on RFD8500 and MC33.



Profiles

To display the list of profiles, from the bottom navigation bar, tap **Settings > RFID > Profiles**.

- The currently selected profile is highlighted in orange.
- Tap profile item to expand the profile and view applicable configurations.
- Profiles can be selected or disabled by using the slider switch to the right of the profile name.

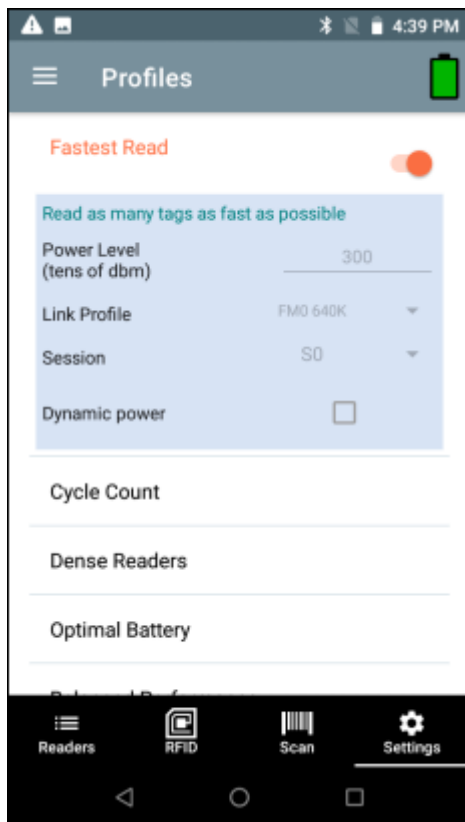
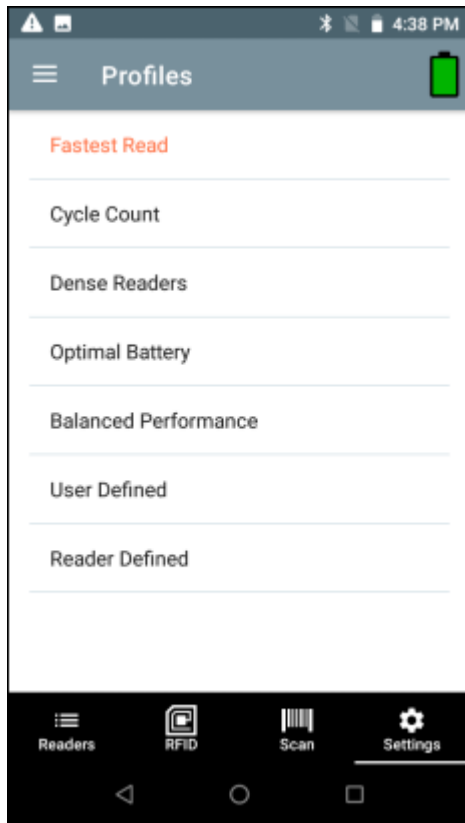


NOTE: If Power Level, Link Profile, Session, or Dynamic Power are modified from each respective screen, then the currently selected profile changes to User Defined profile and profile item values are modified with same values.

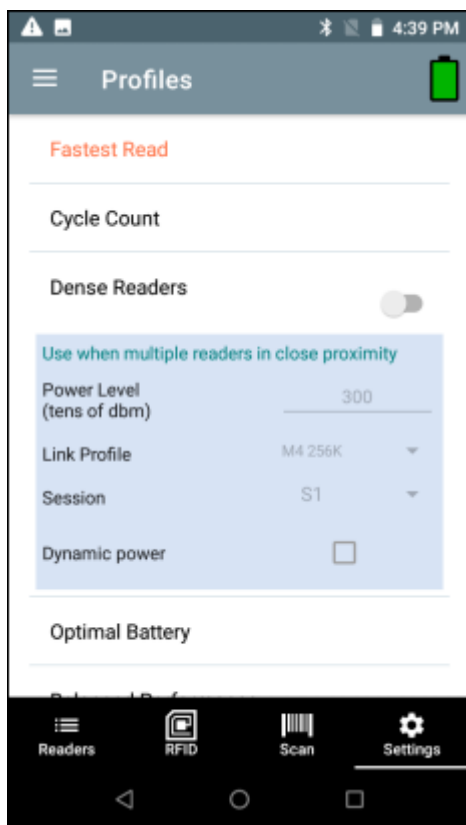
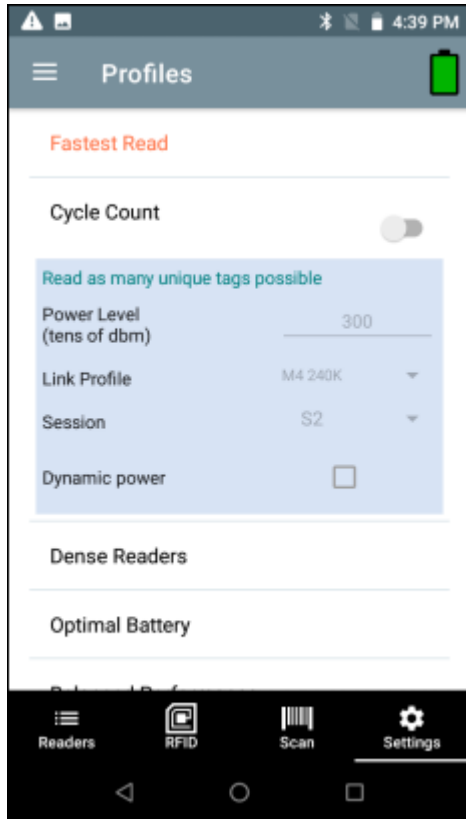
Profile setting options include:

- Fastest Read - Read as many tags as fast as possible.
- Cycle Count - Read as many unique tags as possible.
- Dense Readers - Use when there are multiple readers within close proximity.
- Optimal Battery - Provides best battery life.
- Balanced Performance - Maintains balance between performance and battery life.
- User Defined - Custom profile used for custom requirements.

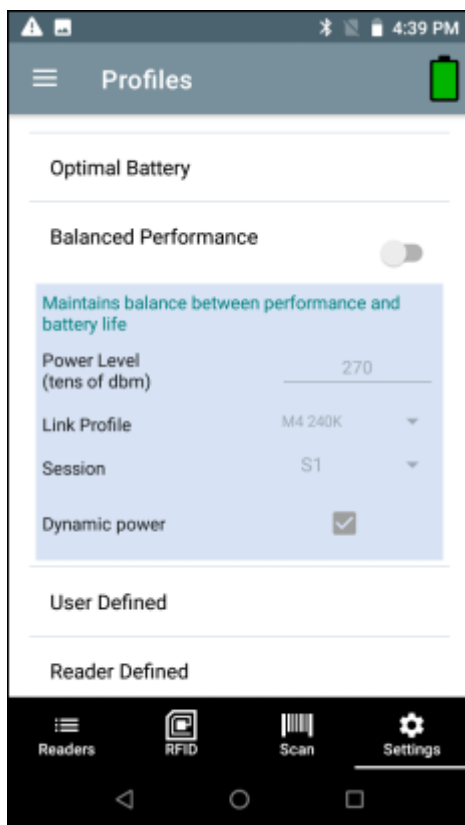
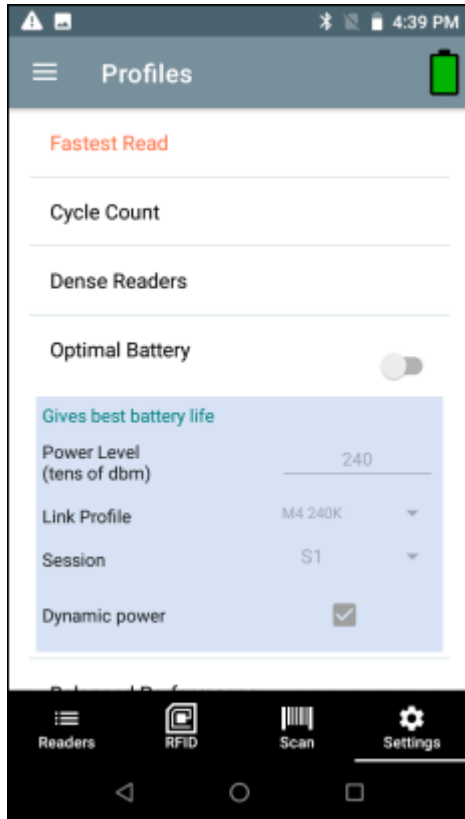
- Reader Defined - Maintains reader configurations.



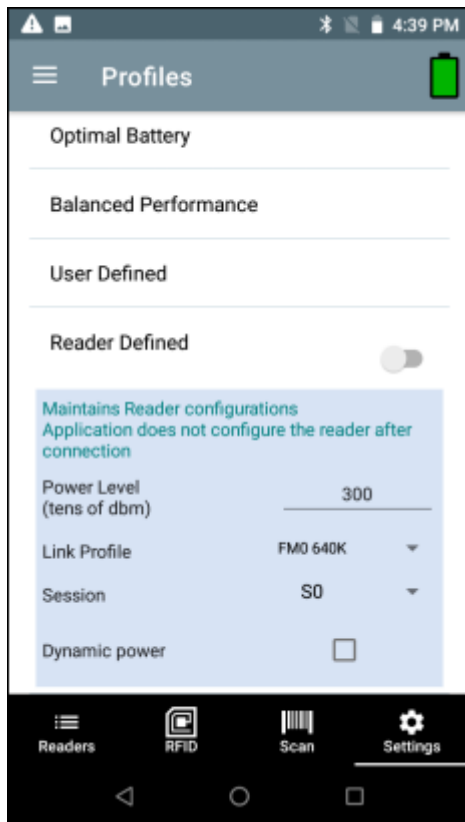
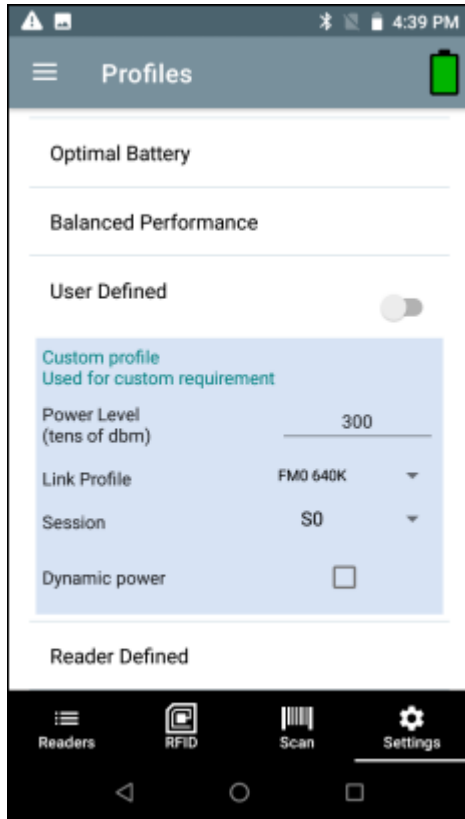
Connect to Reader Using Bluetooth



Connect to Reader Using Bluetooth



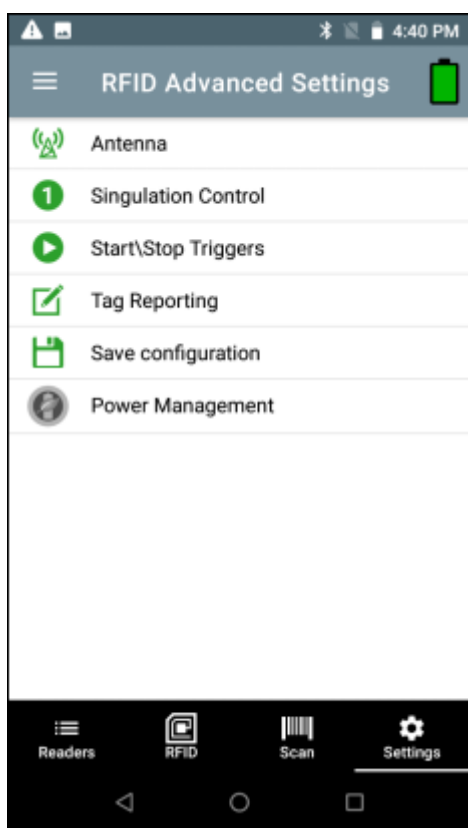
Connect to Reader Using Bluetooth



Advanced Reader Options

To set advanced reader options, from the bottom navigation bar, tap **Settings** > **RFID** > **Advanced Reader Options**. Advanced Reader Options include:

- Antenna
- Singulation Control
- Start/Stop Triggers
- Tag Reporting
- Save Configuration
- Power Management



See Also

[Antenna](#)

[Singulation Control](#)

[Start/Stop Triggers](#)

[Tag Reporting](#)

[Save Configuration](#)

[Power Management](#)

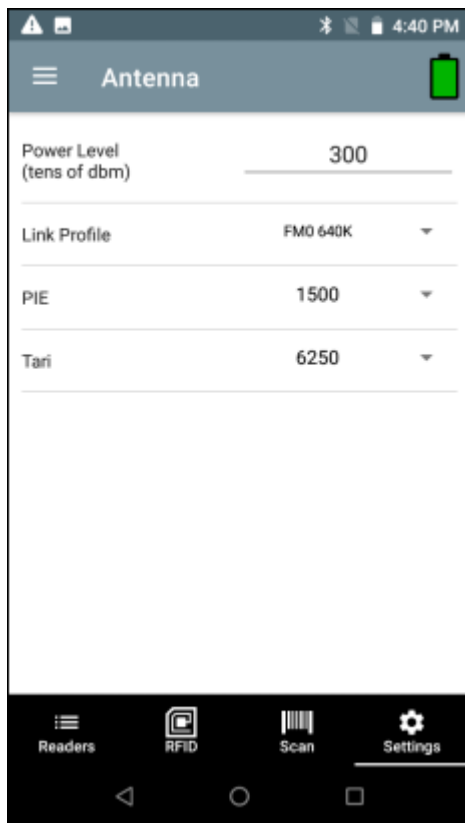
Antenna

To access the Antenna screen, from the bottom navigation bar, tap **Settings** > **RFID** > **Advanced Reader Options** > **Antenna**. The Antenna screen displays the following:

- Power Level - Displays the current selection and a text box for available power levels (as reported by the device). The default setting is 27.0 dBm (shown as 270; the value displayed is in units of tens of dBm). Japan units are set to a different default power level depending on the SKU type. The minimum power level when DPO is enabled is 3.1 dBm. When DPO is disabled, the minimum power level is 0 dBm.
- Link Profile - Displays the current selection and includes a drop-down list of available link profiles (reported by the device). Link Profile display format is as follows: Return link bit data rate in bis per second (e.g., 60000 -> 60 Kbs); Miller Value (e.g., MV_4 -> Miller 4); thus profile name M4 240K (240K becomes BLF) modulation type (PR ASK is the only one supported).
- PIE value has no units and is either 1500 and 2000 minimum.
- Tari applicable Tari value in thousands of micro seconds (e.g., 6250 -> 6.25 microseconds).



NOTE: By default, the fastest read profile is selected and configures the reader for the maximum power level allowed based on the read profile. However, the dBm can be limited due to the regulatory requirements of the specified region in which the sled is being used.

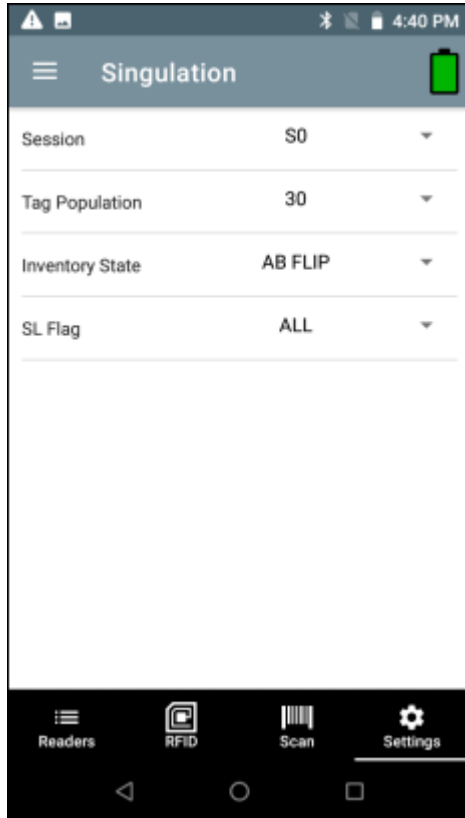


NOTE: The Power Level and Link Profile are blank when there is no connection to the reader.

Singulation Control

To access Singulation Control, from the bottom navigation bar, tap **Settings** > **RFID** > **Advanced Reader Options** > **Singulation Control**. View or configure the singulation control settings for each antenna.

- Session - The drop-down list includes the available session options (S0, S1, S2, S3).
- Tag Population - A numeric value of the estimated number of tags in the Field of View (FOV). Values shown are 30, 100, 200, 300, 400, 500, 600.
- Inventory State - State A, State B, AB Flip.
- SL flag - ALL, DEASSERTED, ASSERTED.



Start and Stop Triggers

To access the Start and Stop Triggers screen, from the bottom navigation bar, tap **Settings** > **RFID** > **Advanced Reader Options** > **Start/Stop Triggers**.

The Start Trigger Periodic displays the Period input box (in milliseconds).

The Stop Trigger Duration, Tag Observation and N attempts display numeric value input boxes.

All time entries are in milliseconds. All the required details for saving triggers to the reader must be entered or the application does not save the trigger settings to the reader.

Required input for Start/Stop Trigger settings are as follows:

- Start Trigger
 - Immediate (default)
 - Handheld - Select either the Trigger Pressed or Trigger Released check box.
 - Periodic - Enter the period of time in milliseconds.
- Stop Trigger
 - Immediate (default)
 - Hand-held - Select either the Trigger Pressed or Trigger Released check box along with Timeout in milliseconds.
 - Duration - Enter duration in milliseconds.
 - Tag Observation - Enter the tag count along with timeout in milliseconds.
 - N Attempts - Enter the number of attempts along with timeout in milliseconds.



If the start trigger type is set to Hand-held trigger (pressed or released), the application sets the repeat for the operation to ensure the use case if repeated operations can be demonstrated.

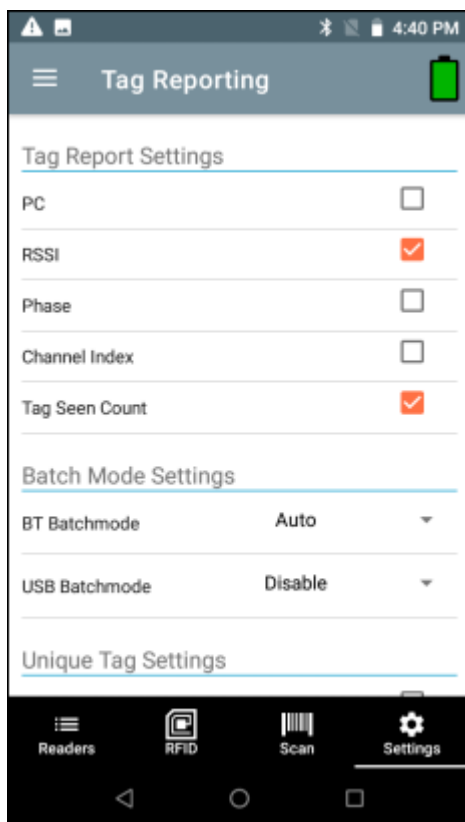
If any trigger is defined as Hand-held, the application does not act on immediate trigger type for a Hand-held trigger action.

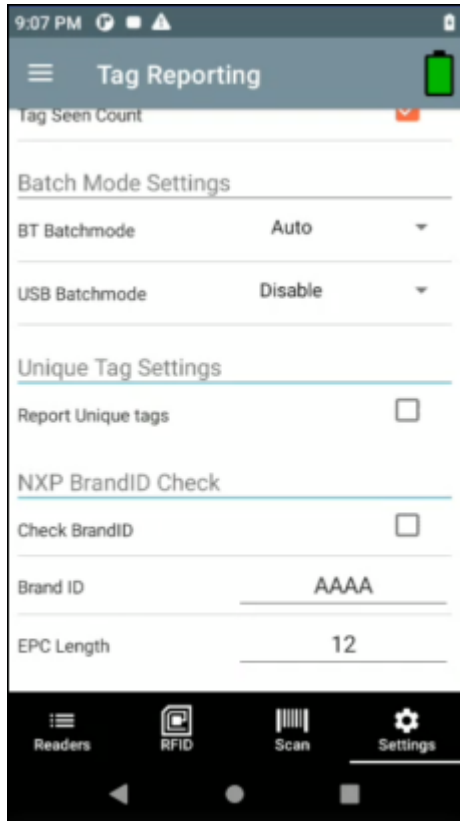
Tag Reporting

To access Tag Reporting, from the bottom navigation bar, tap **Settings > RFID > Advanced Reader Options > Tag Reporting**.

Tag Reporting screen options include:

- **Channel Index** - Select to indicate whether or not the Regulatory Channel Index is reported as part of the Tag Data.
- **Tag Seen Count** - Select to indicate whether or not the Tag Seen Count is reported as part of the Tag Data.
- **Report Unique Tags** - When this option is enabled, the reader reports only unique tag reads. The Unique Tag reporting feature can be enabled when using Tag List Match mode.
- **Check BrandID** - Check box to enable the Brand ID option.
- **Brand ID** - Perform NXP BrandID check (supported only on NXP U-Code 8 and above tags that supports this functionality). Brand ID check can be initiated by enabling BrandID. Reader performs an inventory operation with additional verification on whether or not the tag inventoried matches the BrandID and reports.
- **EPC Length** - The EPC length provided will consider the length of EPC data to be matched for Brand ID tags from offset 0.
- **PC** - Select to allow reporting the PC as part of the Tag Data.
- **RSSI** - Selection indicates whether or not the RSSI (Received Signal Strength Indication) is reported as part of the Tag Data.
- **Phase** - Select to indicate whether or not the Phase is reported as part of the Tag Data.



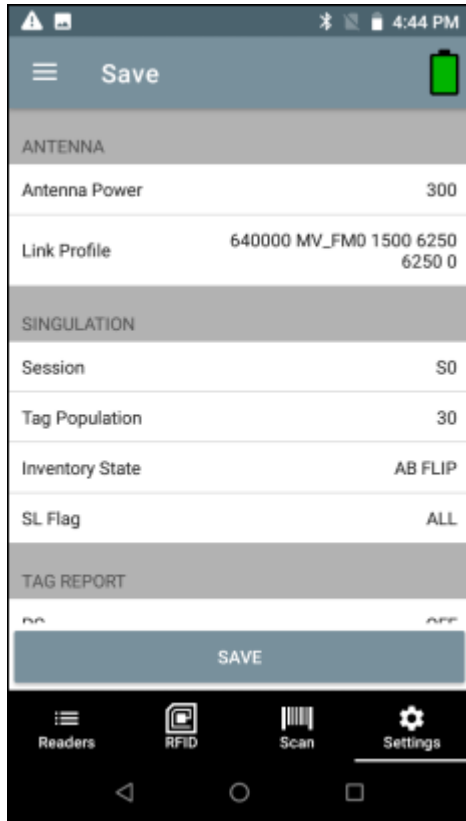


Save Configuration

To access Save Configuration, from the bottom navigation bar, tap **Settings > RFID > Advanced Reader Options > Save Configuration**. This screen is used to save the settings and displays the current settings on the device.

The settings are saved on the device until a reset to factory defaults is performed on the unit (see Settings).

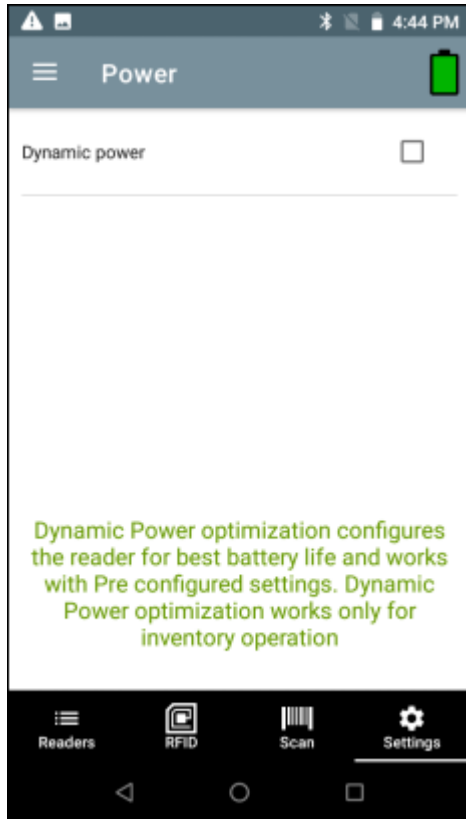
The Tag Pattern form field is automatically populated with tag data when a tag is selected from the Inventory Screen.



Power Management

To access Power Management, from the bottom navigation bar, tap **Settings** > **RFID** > **Advanced Reader Options** > **Power Management**. This screen provides an option to enable Dynamic Power Optimization (DPO) in the reader. Enabling DPO enhances battery life during inventory operations.

If Dynamic Power is On, a green battery icon appears in the title bar of the application. Tapping on this opens the Battery Status screen.



Regulatory

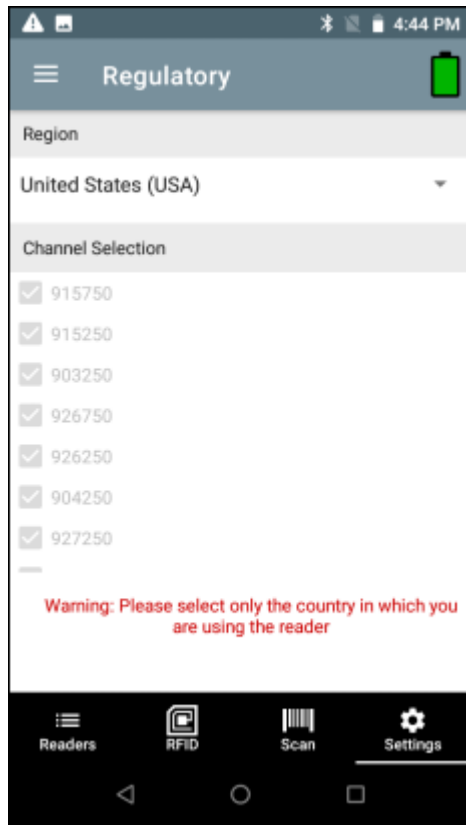
1. To set regulatory options, from the bottom navigation bar, tap **Settings** > **RFID** > **Regulatory**.



WARNING: Select only the country in which you are using the reader.

2. Select the region from the drop-down list.

3. Select from the available channels.

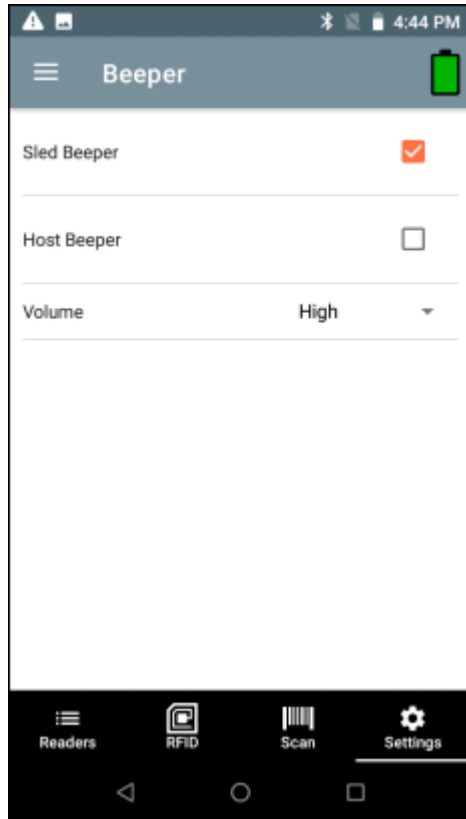


Beeper

1. To set beeper options, from the bottom navigation bar, tap **Settings** > **RFID** > **Beeper**.
2. Enable/disable the beeper on the sled.
3. Enable/disable the beeper on the host.

4. Select the volume:

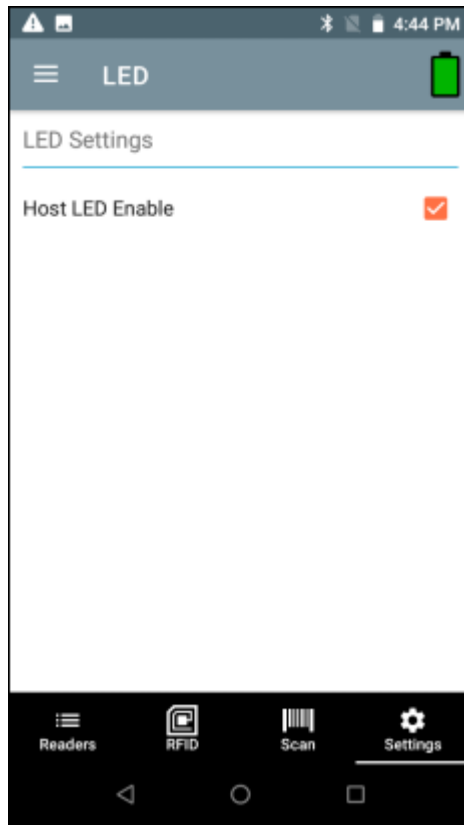
- High
- Medium
- Low




LED

1. To set LED options, from the bottom navigation bar, tap **Settings** > **RFID** > **LED**.

2. Enable/disable the LED on the host.



Application Settings

To access Application Settings, from the bottom navigation bar, tap **Settings** > **Application** or tap  > **Settings** > **Application**.

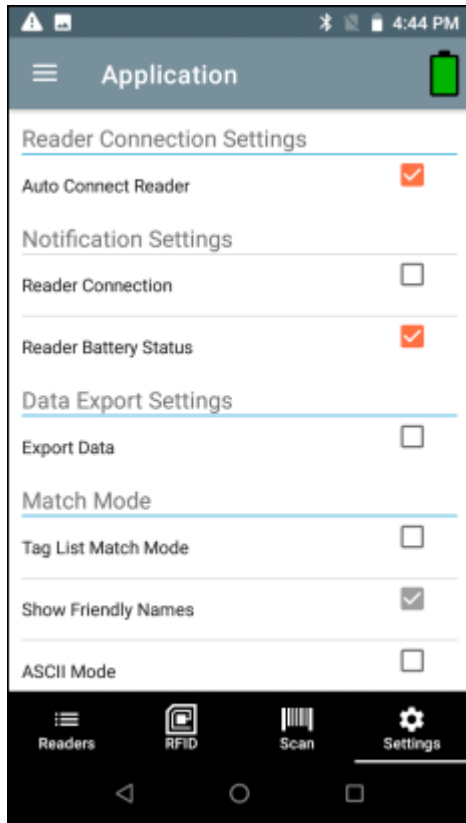
The Application Settings screen includes:

- Auto Reconnect Reader - When checked, the device connects to the RFID service which manages the connection to the reader.
- Reader Connection Notification - When checked, the application notifies the user when the reader is connected or disconnected.
- Reader Battery Status Notification - When checked, the application notifies the user when the battery has reached specific critical states.
- Export Data - When checked, the application writes the inventoried RFID data to a file when the inventory operation stops. On Android platforms the file is saved in a fixed directory. Check the files in file browsing in the Inventory directory (Sdcard/inventory/<files>). The files may be copied to a PC.

When **Profile** is set to **Cycle Count** and **Export Data** is enabled: If you start/stop inventory multiple times from the same screen, it will append cycle count data to existing data and generate a csv file (delete old csv) rather than creating a new csv file on each start/stop.

- Tag List Match Mode - Check to enable matching mode.
- Show Friendly Names - Check to show the tag's friendly names instead of EPC ID. Show friendly names is only available when Tag List Match Mode is enabled.

- **ASCII Mode** - Displays tag ID in ASCII format. If the full tag ID or memory bank data is convertible to ASCII format, then the application only shows the same. Inventory, Locate, Access, and Pre Filters show ASCII mode represented data in respective sections.



Scan Settings

To access Scan Settings, from the bottom navigation bar, tap **Settings** > **SCAN** or tap > **Settings** > **SCAN**. Scan Settings options include:

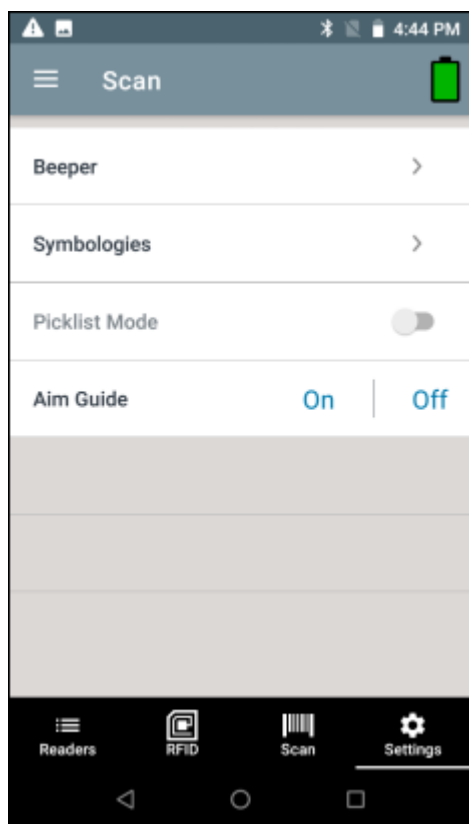
- **Beeper** - allows you to change the beeper volume.



NOTE: Available only on hand-held devices with a scanner (RFD40 Premium and Premium+ and RFD8500 with imager).


- Provides option to change the scanner beeper volume to high, medium or low.

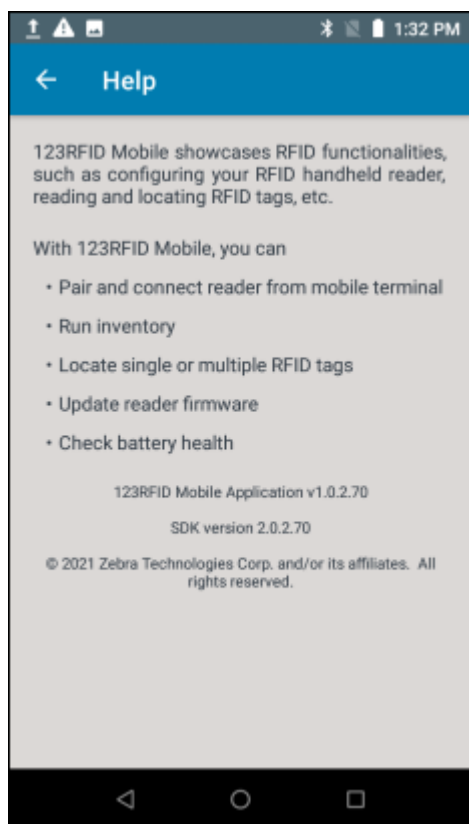
- **Symbologies** - Allows user to select/enable specific barcode types. Supported symbologies include: UPC-A, UPC-E, UPC-E1, EAN-8/JAN8, EAN-13/JAN13, Bookland EAN, Code 128, GS1-128, Code 39, Code 93, Code 11, Interleaved 2 of 5, Discrete 2 of 5, Chinese 2 of 5, Codabar, MSI, Code 32, Data Matrix, PDF417, ISBN, UCC Coupon Extended Code, ISSN EAN, ISBT 128, Trioptic Code 39, Matrix 2 of 5, Korean 3 of 5, GS1 DataBar-14, GS1 DataBar Limited, GS1 DataBar Expanded, MicroPDF417, Maxicode, QR Code, Aztec, Han Xin Code, Australian Post, US PLANET, US POSTNET, Netherlands KIX, USPS 4CB, UK Postal, Japan Post, UPU FICS, MicroQR, Composite C, Composite AB, TLC39, Dot Code.
- **Picklist Mode** - Toggle to turn picklist mode on or off. Default is Off.
- **Aim Guide** - Provides an aimer light which can be switched on or off.



Getting Help

On-screen help is available within 123RFID Mobile Application.

To access the Help screen, tap  > **Settings** > **Help** or when available, tap the ? icon in the upper right hand screen.



123 RFID Desktop Application

123RFID Desktop is a setup and optimization tool for the RFD40 Premium RFID Sled. This section describes the application and its features.

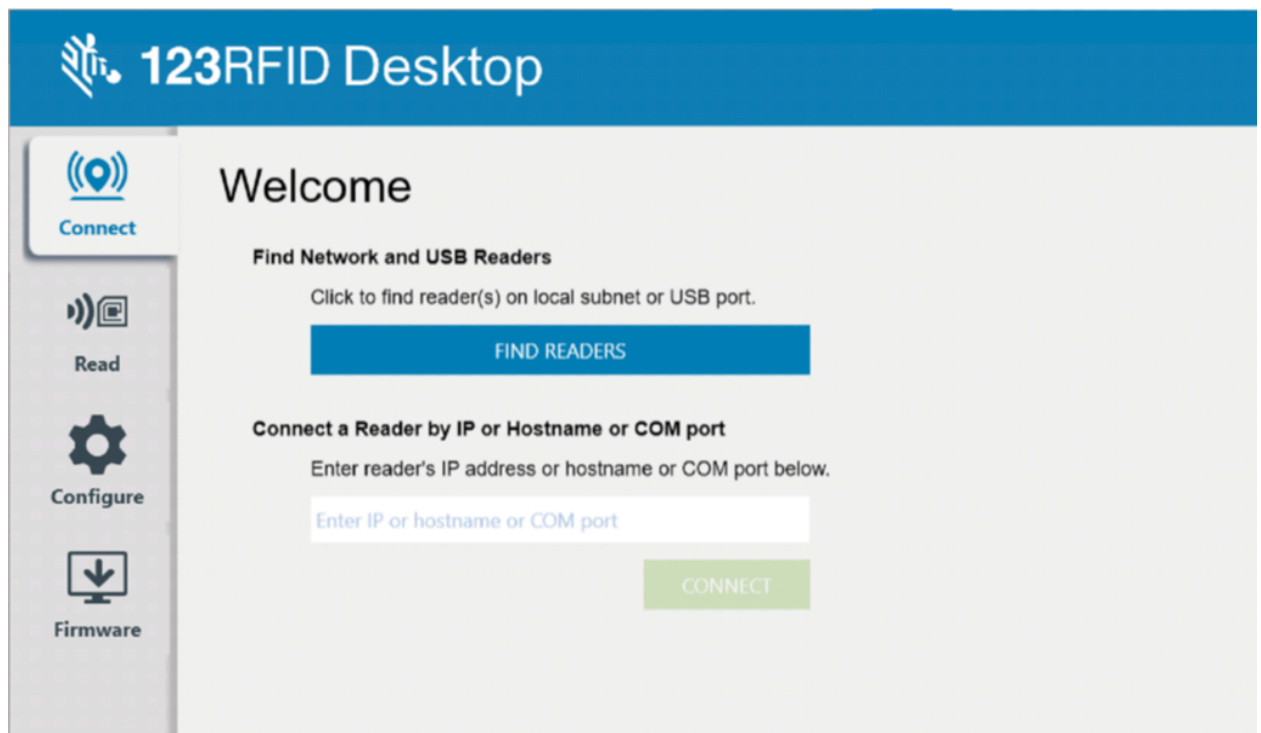
Application Features

- Connect - allows users to search for readers on the local subnet or USB port.
- Read - allows users to start an inventory, view summary metrics on tag reads and sort, filter and export tag data. Select an antenna and set the power level to begin building an inventory.
- Configure - allows users to configure reader and antenna settings. Settings can be saved to a file or as a printed report.
- Firmware - allows users to update the firmware on up to five devices.

Connect

Users can locate readers on the local subnet or via USB port by clicking the Find Readers button or by entering the IP, hostname or COM port and clicking Connect.

Figure 15 Connect



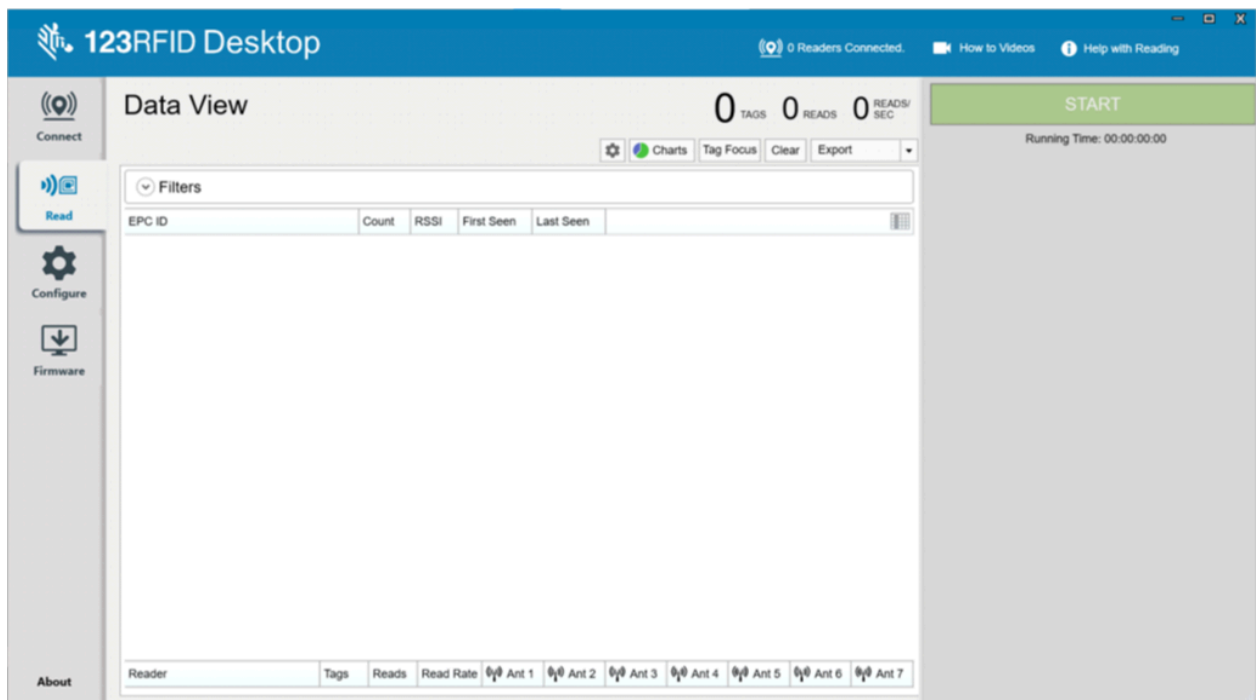
To discover readers on the network, view the Available Readers section of the application and click Connect on one of the associated rows to connect to the specified reader.

Figure 16 Reader Discovery

Read

The read feature allows users to start an inventory. Users can view summary metrics on tag reads by reader, sort, filter and export tag data to a file. Select antenna and set power level to do inventory.

Figure 17 Data View



Click the Start button to start reading tags and recording an inventory.

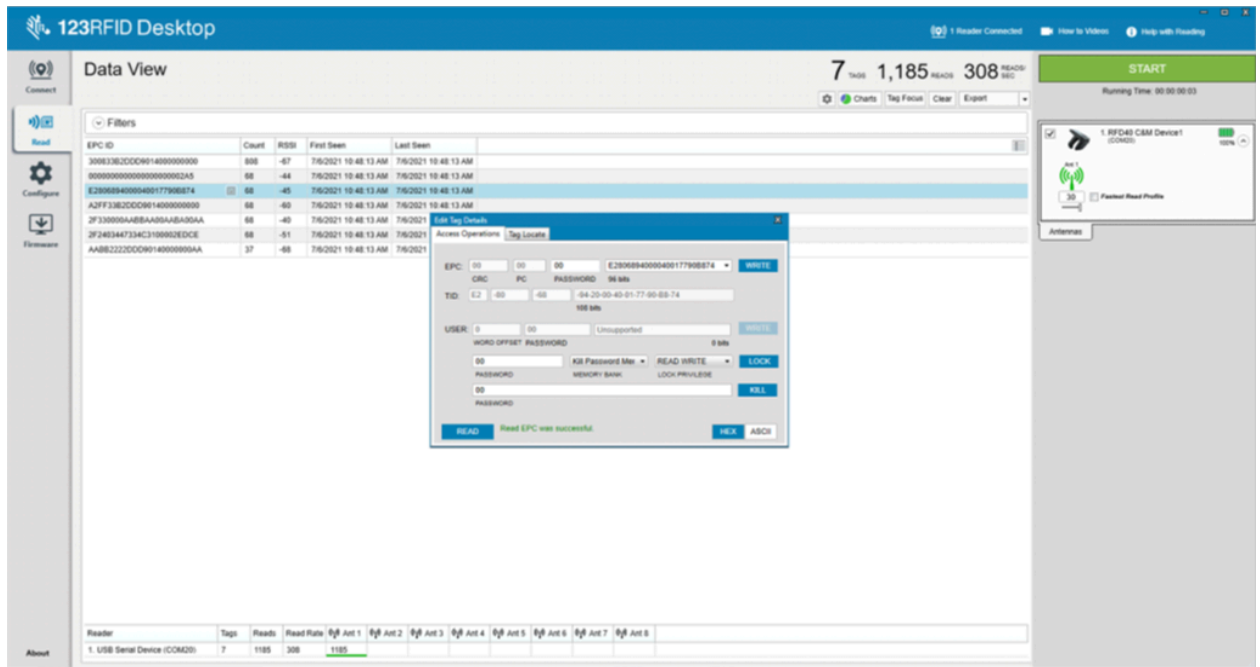
Figure 18 Inventory View

To download the inventory data for offline view, click the Export button to export tag data to excel.

- Export Summary - save a snapshot of all the tag reads displayed on Read screen, in excel.
- Export History – Save timeline data for tags read, in excel.

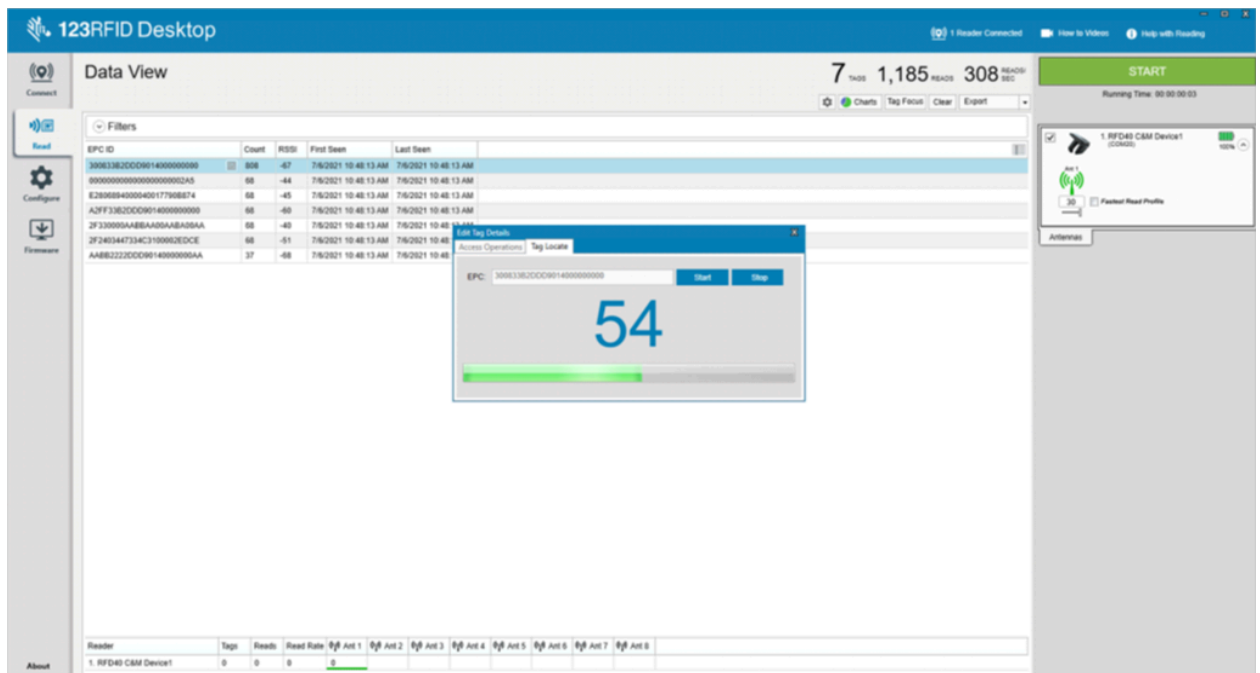
To edit access operation information on a specific tag, select and double click on the associated tag row.

Figure 19 Access Operations



To access specific tag location details, click on the Tag Locate tab.

Figure 20 Tag Locate Data



Reader Configuration

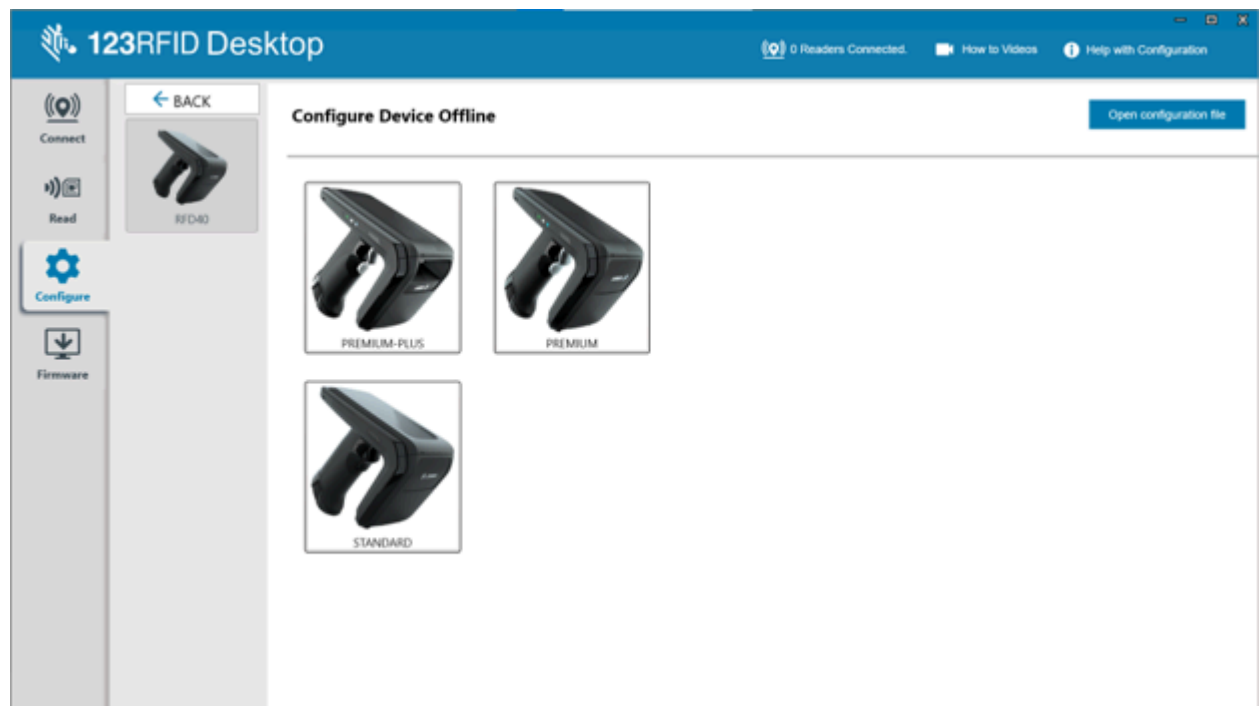
The Reader Configuration wizard configures the reader and antenna settings and saves them instantly. Users can also save settings to a file on the PC or print a report.

Click Edit Configuration on Reader to edit reader's settings and use the wizard to do the following

- Assign names to reader and its connected antennas.
- Set antenna settings or reset them to factory defaults.
- Change reader's region configuration.
- Create rules for your GPIO (General Purpose Input/Output) accessories on when to trigger inventory and output results.
- Save/print configurations to a file.

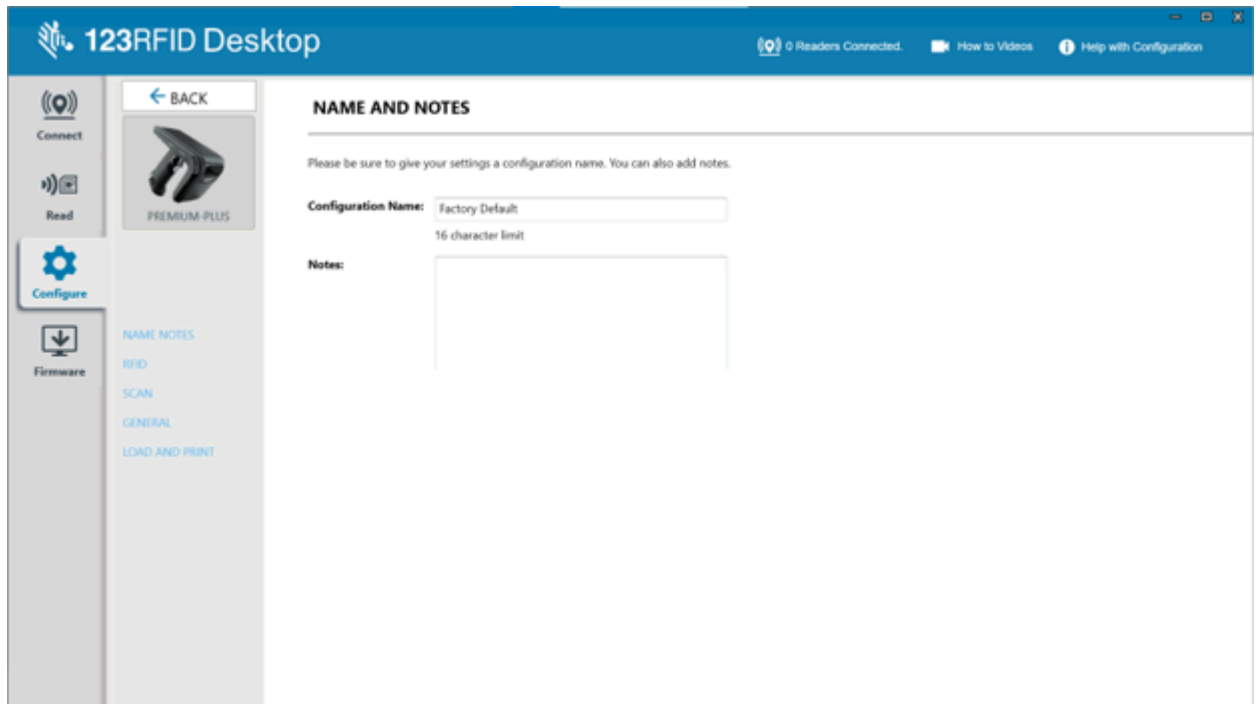
Click Load a Saved Configuration File to Reader to load a saved configuration file from the PC to another connected reader.

Figure 21 Select Configuration



Reader Name

Figure 22 Name the Configuration

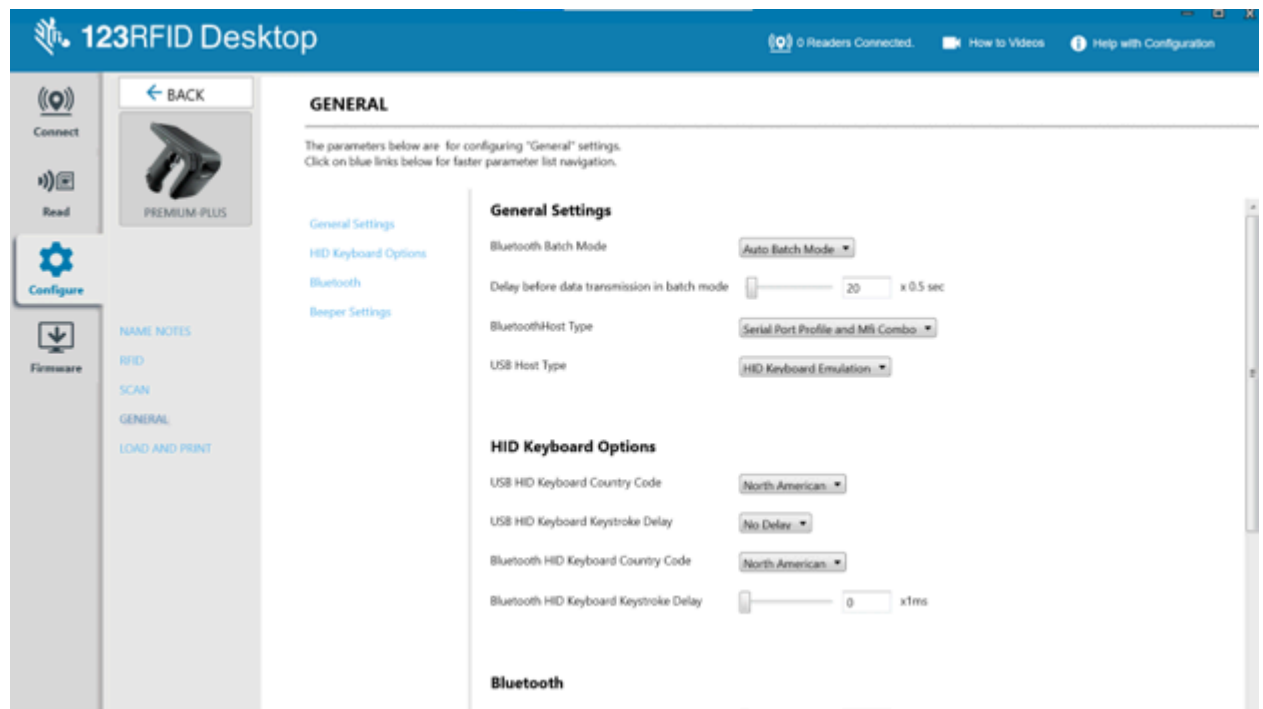


Parameter Settings

General Settings that are configurable include enabling Bluetooth Batch Mode, setting a delay before data is transmitted in Bat Mode, setting the Bluetooth Host Type and setting the USB Host Type.

HID Keyboard Options include selecting the country code and keystroke delay. Bluetooth settings include enabling the device to attempt to reconnect automatically upon losing connect, beeper feedback when the device reconnects, set a timeout period for the device to become discoverable, and automatically attempt to reconnect to the Bluetooth host. Beeper Settings include volume, tone, whether the sled beeps to confirm a successful decode, and the ability to suppress power up beeps.

Figure 23 General Settings



RFID Configuration

To set up the region in which the reader will be used, select the Region of Operation from the drop down menu. Next, select the appropriate channels by clicking the associated check boxes.

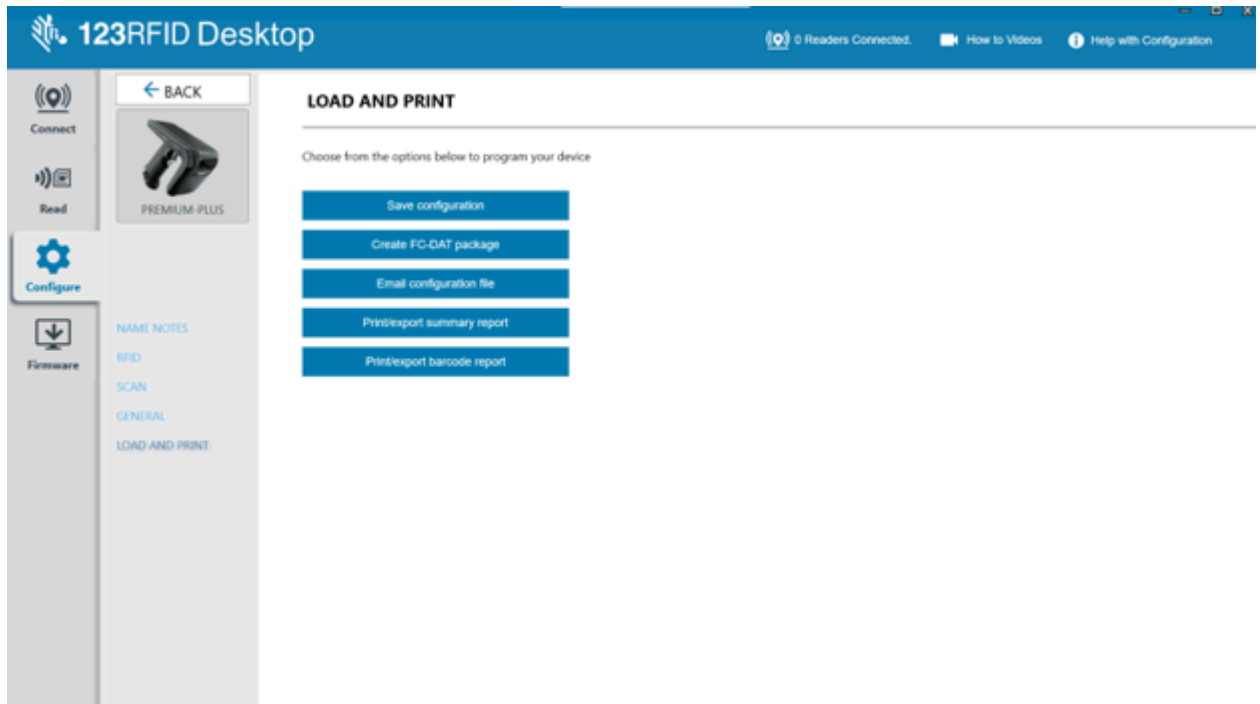
Scanning Configuration

Configurable scanning settings include enabling or disabling specific symbologies and enabling/disabling specific settings at the system level such as transmitting the no read message or the device's trigger mode.

Print Configuration

Load the configuration file to the PC, push the antenna settings to the reader, or reset the antenna settings to factory defaults at the end of the configuration workflow.

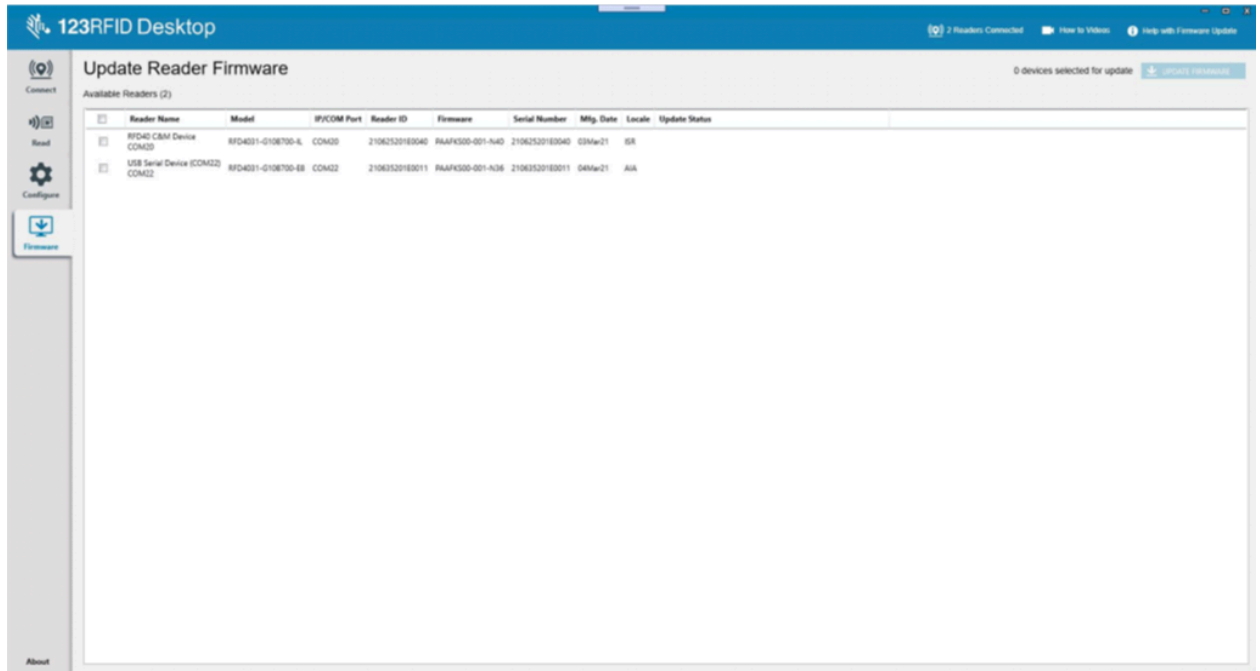
Figure 26 Save Configuration



Firmware Management

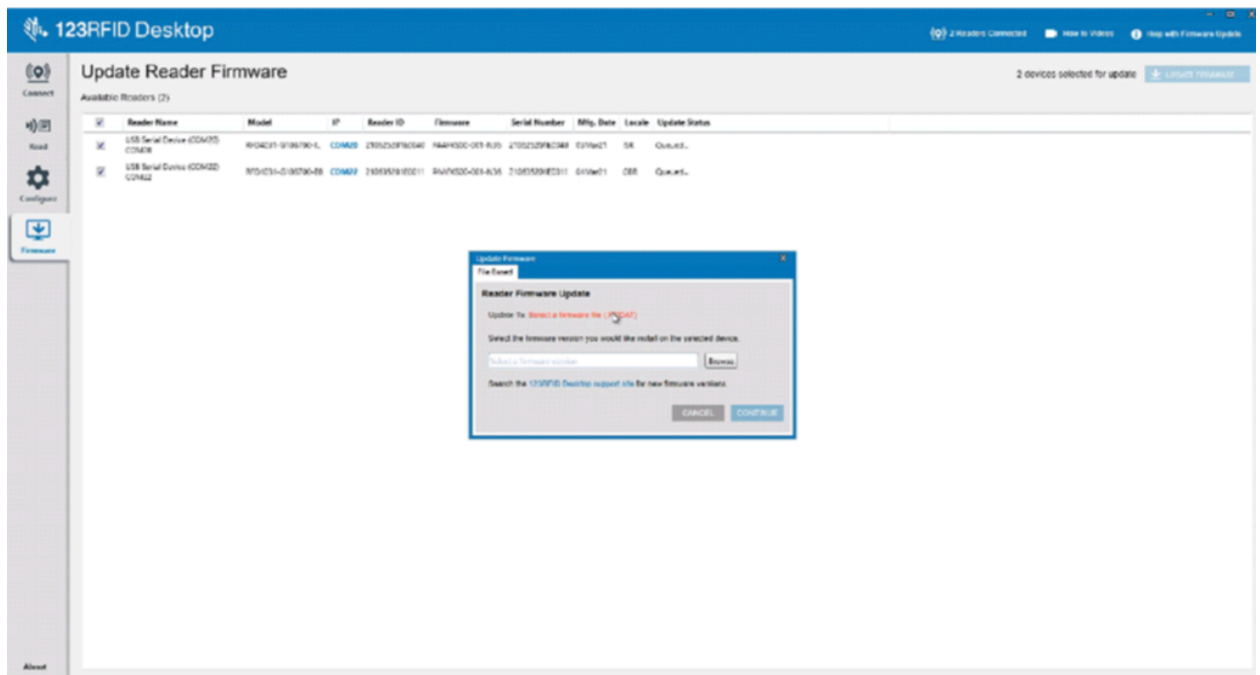
To update reader firmware on up to five devices simultaneously, select the devices on the table by clicking the associated checkbox and click the Update Firmware button.

Figure 27 Select Devices to Upgrade



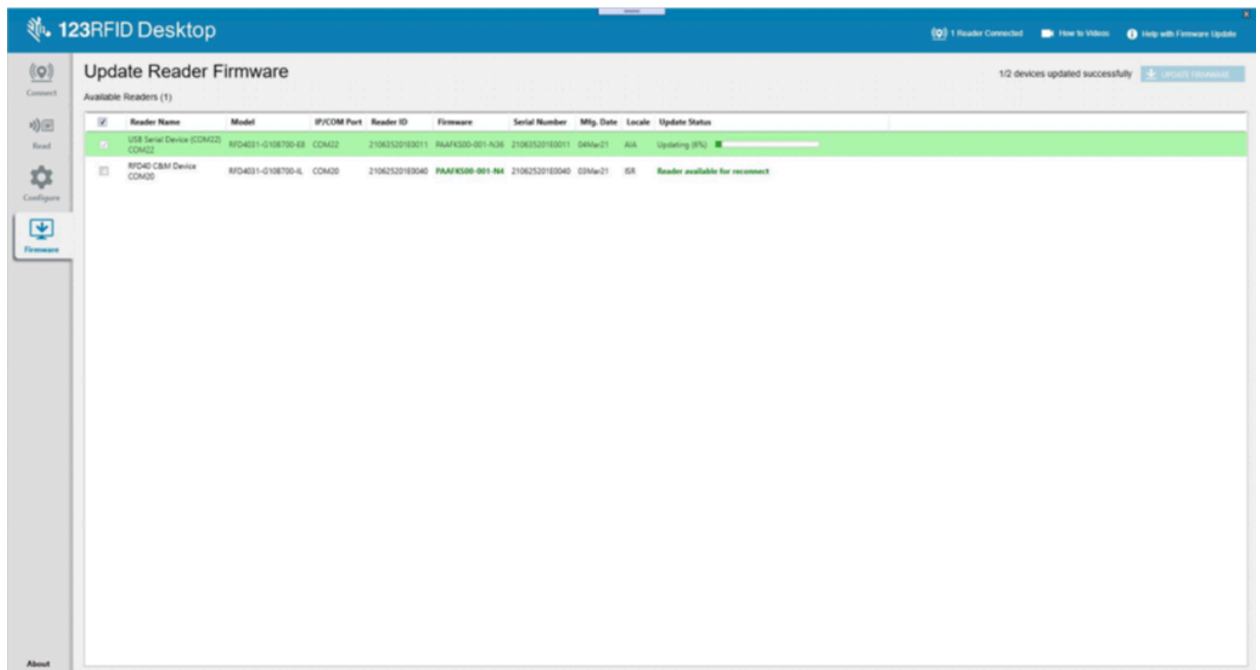
Next, the Reader Firmware Update window displays. Click Browse to select the firmware version to be enabled onto the selected device.

Figure 28 Select a Firmware Update



Once the firmware file is selected, the update starts and the progress bars next to the associated readers indicate the completion percentage of the update.

Figure 29 Firmware Update in Progress



Maintenance

This chapter provides suggested sled maintenance, troubleshooting, and technical specifications.



NOTE: Always wear eye protection. Read warning label on compressed air and alcohol product before using. If you have to use any other solution for medical reasons please contact Zebra for more information.



NOTE: Avoid exposing this product to contact with hot oil or other flammable liquids. If such exposure occurs, unplug the device and clean the product immediately in accordance with these guidelines.



NOTE: Use pre-moistened wipes and do not allow liquid cleaner to pool. Ensure the following items are addressed when using sodium hypochlorite (bleach) based cleaners:

- For device only. Do not use on cradle.
- Always follow the manufacturer's recommended instructions: use gloves during application and remove the residue afterwards with a damp cloth to avoid prolonged skin contact while handling the device.
- Due to the powerful oxidizing nature of sodium hypochlorite, the metal surfaces, including electrical contacts on the device, are prone to oxidation (corrosion) when exposed to this chemical in the liquid form (including wipes) and should be avoided. In the event that these type of disinfectants come in contact with metal on the device, prompt removal with a dampened cloth after the cleaning step is critical.



NOTE: To avoid damage to the device, use only approved cleaning and disinfecting agents listed below. The use of non-approved cleaning or disinfecting agents may void the warranty.

Harmful Ingredients

The following chemicals are known to damage the plastics on Zebra devices and should not come in contact with the device:

- Acetone
- Ammonia solutions
- Aqueous or alcoholic alkaline solutions
- Aromatic and chlorinated hydrocarbons
- Benzene
- Carbolic acid

- Compounds of amines or ammonia
- Ethanolamine
- Ethers
- Ketones
- TB-lysoform
- Toluene
- Trichloroethylene.

Approved Cleaners

The following solutions are approved for cleaning the sled.

- Isopropyl alcohol 70% (including wipes)
- 10% Bleach (Sodium Hypochlorite 0.55%) and 90% Water solution
- 3% Hydrogen Peroxide and 97% Water solution
- Mild dish soap.

Cleaning the Sled

Routinely cleaning the exit window is required. A dirty window may affect scanning accuracy. Do not allow any abrasive material to touch the window.

To clean the device:

1. Dampen a soft cloth with one of the approved cleaning agents listed above or use pre-moistened wipes.
2. Gently wipe all surfaces, including the front, back, sides, top and bottom. Never apply liquid directly to the device. Be careful not to let liquid pool around the device window, trigger, cable connector or any other area on the device.
3. Be sure to clean the trigger and in between the trigger and the housing (use a cotton-tipped applicator to reach tight or inaccessible areas).
4. Do not spray water or other cleaning liquids directly into the exit window.
5. Wipe the device exit window with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.
6. Immediately dry the device window after cleaning with a soft non-abrasive cloth to prevent streaking.
7. Allow the unit to air dry before use.

8. Connectors:

- Dip the cotton portion of a cotton-tipped applicator in isopropyl alcohol.
- Rub the cotton portion of the cotton-tipped applicator back-and-forth across the connector on the Zebra sled at least 3 times. Do not leave any cotton residue on the connector.
- Use the cotton-tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
- Use a dry cotton tipped applicator and rub the cotton portion of the cotton-tipped applicator back-and-forth across the connectors at least 3 times. Do not leave any cotton residue on the connectors.

Technical Specifications

The following table outlines the physical characteristics and user environment of the RFD4031 RFID Premium/Premium+ sled.

Table 12 RFD4031 RFID Premium/Premium+ Technical Specifications

Item	Description
Physical Characteristics	
Dimensions	Height: 15.6 cm (5.94 in.) Width: 8.4 cm (3.3 in.) Length: 16.6 cm (6.5 in.)
Weight	Premium: ~18.8 oz./~544 grams (sled with battery) Premium+: ~19.4 oz./~550 grams (sled with battery)
Power	PowerPrecision+ 7000 mAh Li-Ion battery
Frequency Range/RF Output	US: 902-928 MHz; 0 - 30 dBm (EIRP) EU: 865-868 MHz; 0 - 30 dBm (EIRP) Japan: 916-921 MHz (w LBT); 0 - 30 dBm (EIRP)
User Environment	
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°F to 104°F)
Relative Humidity	Operating: 5 to 85% non-condensing
Sealing	IP54
Drop Specification	Multiple 5 ft./1.8 m drops onto concrete
Tumble Specification	500 1/2 meter tumble cycles (1000 drops) at 20°C
Electrostatic Discharge	± 15 kV air discharge ± 8 kV direct discharge ± 8 kV indirect discharge

Troubleshooting

The table below outlines possible troubleshooting cases that may occur when using the sled related to data communication, barcode decode, and Bluetooth.

Table 13 Troubleshooting the RFD4031

Problem	Cause	Solution
The RFID sled does not read tags.	The RF region configuration is not set.	Use the 123RFID Desktop or 123RFID Mobile application to set the regulatory region or country operation per the application instructions.
The RFID sled is attached to mobile device and it is not responsive to a RFID application, even after the trigger is pressed.	Battery is too low and not able to power the RFID sled.	Press the trigger for a couple of seconds to power the RFID sled On. The RFID sled LED blinks amber when it is turned On. (By default, pressing the trigger turns On the RFID sled if it is in Off mode. However, the RFID sled can be disabled in which case this step is not necessary.) Place the RFID sled in the charging cradle. The RFID sled blinks amber LEDs indicating charging commenced.
	Zebra supported mobile computer is not properly inserted in the RFID Sled.	Reinsert the Zebra supported mobile device securely in the RFID sled and ensure that the USB cable is correctly inserted.
	Damaged battery.	If the RFD4031 RFID sled LED does not blink amber after sitting on charging cradle for a while, request service to replace battery.
The RFID31 sled is responsive but cannot read tags.	Battery is critically low.	Place the RFID sled in the charging cradle. The RFID Sled LED blinks amber. The RFID sled can be used when its LED turns on momentarily amber or green upon removal from charging cradle.

Table 13 Troubleshooting the RFD4031 (Continued)

Problem	Cause	Solution
The RFD4031 RFID sled LED blinks fast amber when in the cradle.	Charging error.	Restart charging by removing the RFID sled from the cradle and inserting it back in the cradle. If issue persists, request service to replace battery.
The RFID sled LED blinks red, or LED blinks red alternating with green or amber while in use (not while charging).	Battery end of life indication.	Request service to replace battery.
Zebra supported mobile computer battery is not charging.	Charging cradle was unplugged from AC power.	Ensure the charging cradle is receiving power.
	The Zebra supported mobile computer is not fully seated in the cradle.	Remove and re-insert the zebra supported mobile computer into the cradle, ensuring it is firmly seated in the charging cradle.
Data Communication		
During data communication with a host computer, no data transmitted, or transmitted data was incomplete.	Sled removed from cradle during communication.	Replace the sled in the cradle and re-transmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software was incorrectly installed or configured.	Perform setup.
During data communication over Wi-Fi, no data transmitted, or transmitted data was incomplete.	Wi-Fi radio is not on.	Turn on the Wi-Fi radio.
	User moved out of the range of an access point.	Move closer to an access point.
During data communication over Bluetooth, no data transmitted, or transmitted data was incomplete.	Bluetooth radio is not on.	Turn on the Bluetooth radio.
	You moved out of range of another Bluetooth device.	Move within 10 meters (32.8 feet) of the other device.
Decode		
The sled does not decode with reading barcode.	Scanning application is not loaded.	Load 123RFID Mobile on the device or 123RFID Desktop on the PC. See the system administrator.
	Unreadable barcode.	Ensure the symbol is not defaced.
	Distance between exit window and barcode is incorrect.	Place the device within proper scanning range.
	Device is not programmed to generate a beep.	If the sled does not beep on a good decode, set the application to generate a beep on good decode.

Table 13 Troubleshooting the RFD4031 (Continued)

Problem	Cause	Solution
	Battery is low.	If the sled stops emitting a laser beam upon a trigger press, check the battery level. When the battery is low, the sled shuts off before the low battery condition notification.
Bluetooth		
Device cannot find any Bluetooth devices nearby.	Too far from other Bluetooth devices.	Move closer to the other Bluetooth device(s), within a range of 10 meters (32.8 feet).
	The Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) to find.
	The Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode.

