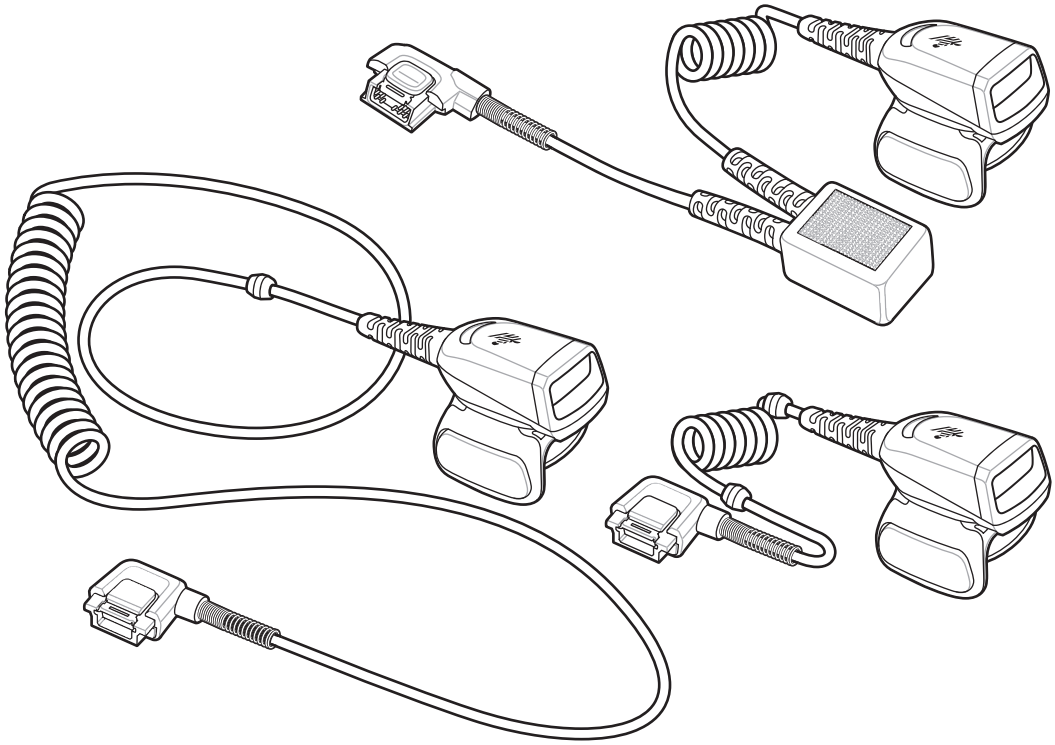
RS5000



Ring Scanner

Quick Start Guide

MN-002933-02

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Warranty

For the complete Zebra hardware product warranty statement, go to: http://www.zebra.com/warranty.

Service Information

If you have a problem using the equipment, contact your facility's Technical or Systems Support. If there is a problem with the equipment, they will contact the Zebra Global Customer Support Center at: http://www.zebra.com/support.

For the latest version of this guide go to: http://www.zebra.com/support.

Introduction

The RS5000 ring scanner is a modular, wearable imager scanner that allows the operator hands-free bar code scanning capability. The scanner is used with a wearable terminal.

The RS5000 is worn on the operator's index finger, and utilizes a thumb-operated trigger. The RS5000 connects via an interface cable to the wearable terminal, which provides power and performs the data collection functions.

The RS5000 is available in three configurations:

- RS5000-LCFSWR - Short cable version for connection to a wrist mounted WT6000.
- RS5000-LCFLWR - Long cable version for connection to a hip mounted WT6000.
- RS5000-LCBSWR - Short cable version with power buffer for connection to a wrist mounted WT41N0.

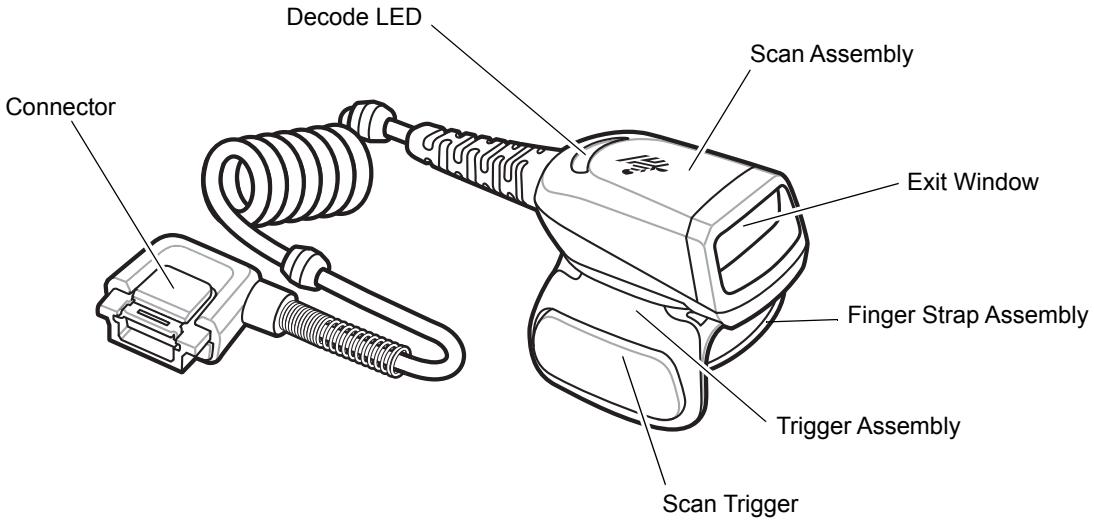

Figure 1 *RS5000 with Short Cable*

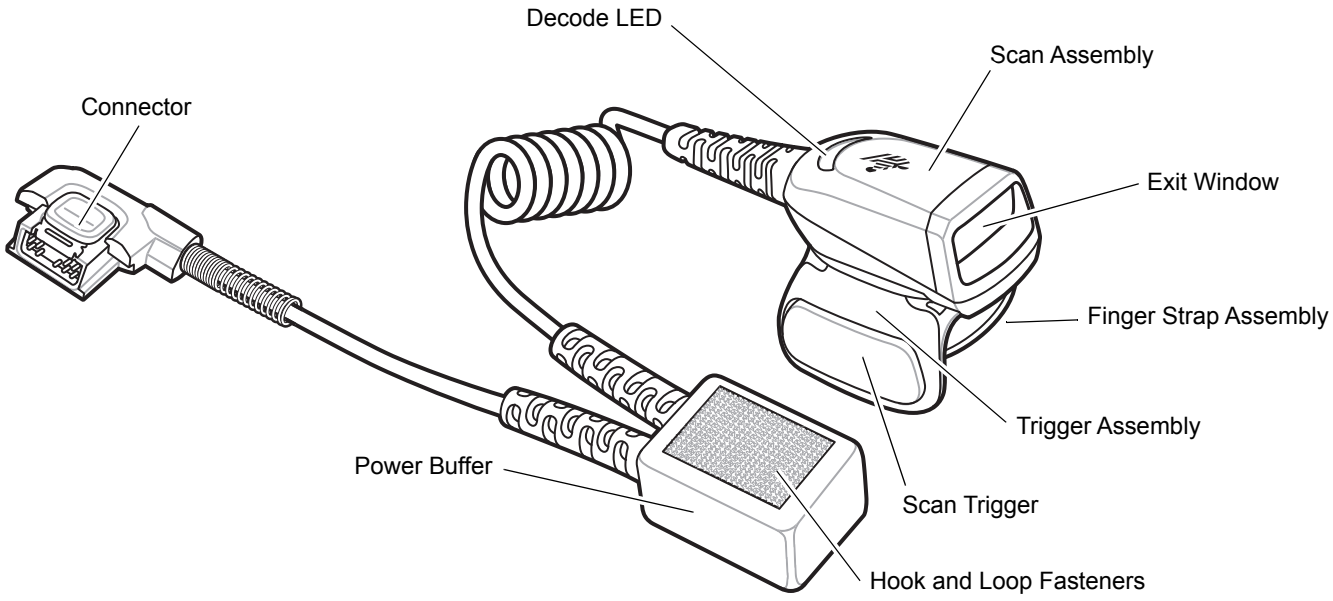

Figure 2 *RS5000 with Short Cable with Power Buffer*

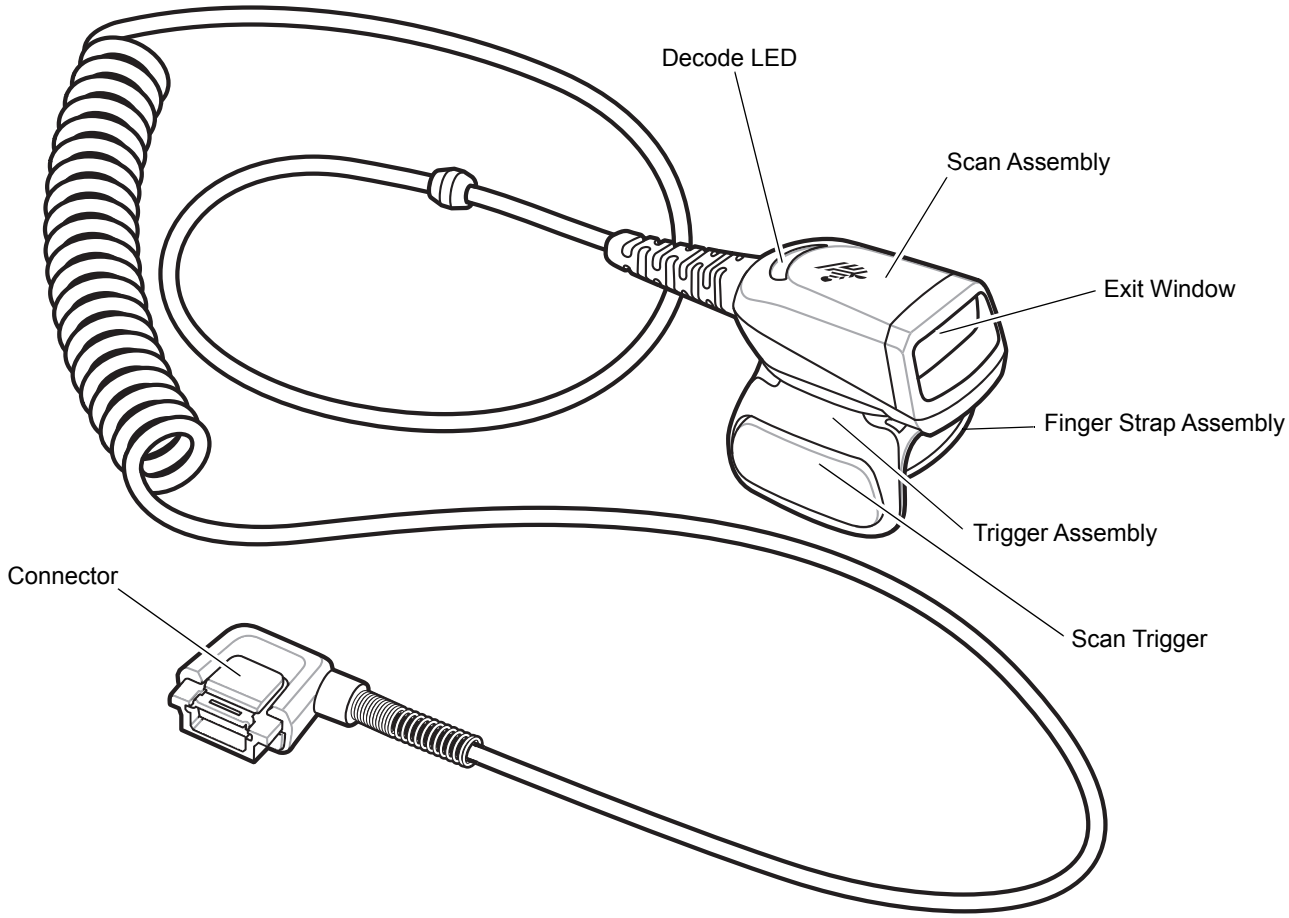

Figure 3 *RS5000 with Long Cable*

Changing Trigger Position

The trigger assembly of the RS5000 rotates to provide left-hand or right-hand use.

CAUTION The trigger assembly only rotates 180° around the back of the scan assembly. Do not rotate the trigger assembly past the designed stops.

1. Determine whether the RS5000 is used on the right or left hand.

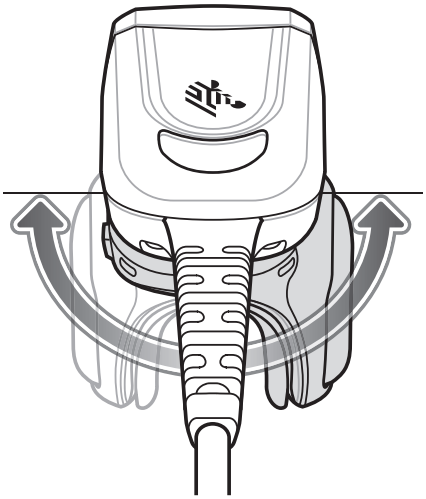

Figure 4 *Rotate Trigger Assembly*

2. Rotate the trigger assembly so that the scan trigger is positioned next to the thumb when the RS5000 is placed on the index finger.

Installation

The RS5000 connects to the wearable terminal and mounts on the index finger.

1. If using the WT41N0 wearable terminal, remove the connector cap.
2. Connect the RS5000 interface cable to the wearable terminal interface connector. If connecting to a wrist mounted wearable terminal, connect to the interface connector closest to the wrist.

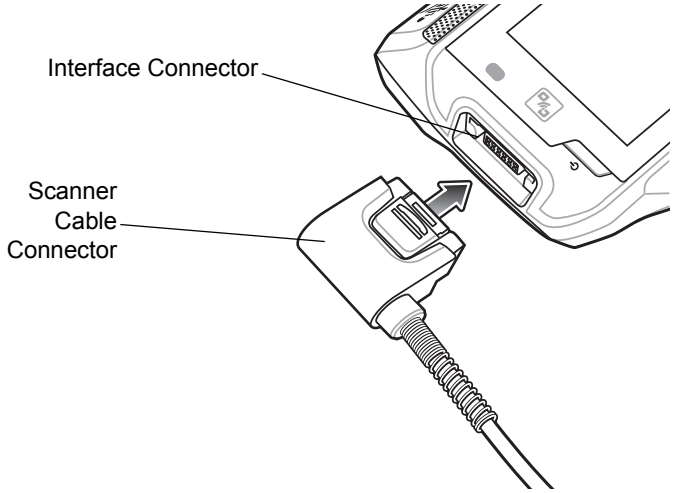

Figure 5 *Connect RS5000 to WT6000 Wearable Terminal*

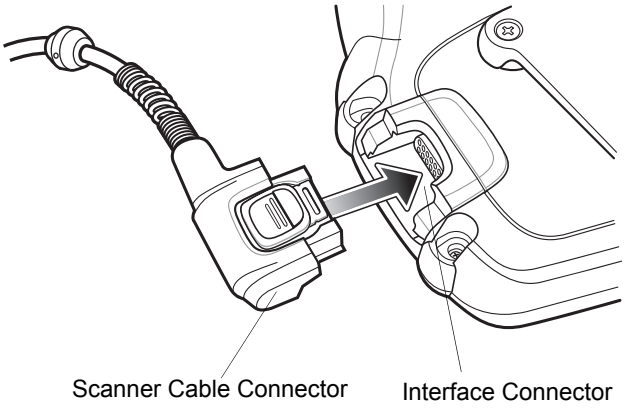

Figure 6 *Connect RS5000 to WT41N0 Wearable Terminal*

3. If using the extended cable configuration, route the scanner cable up to the shoulder and down to the hand that the scanner mounts on. Attach two cable clips to clothing and secure cable to cable clip.

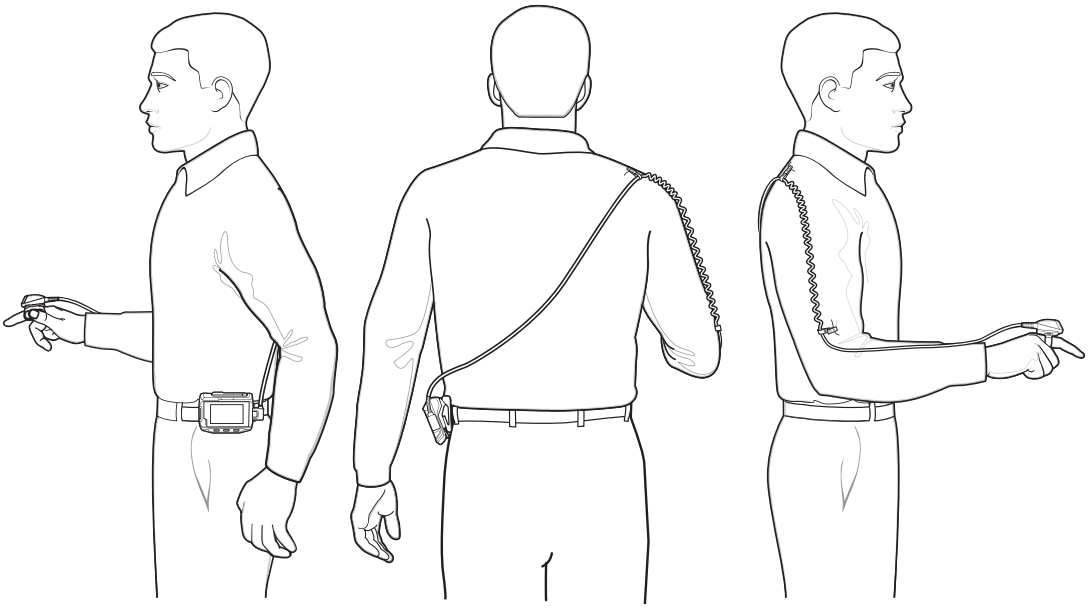

Figure 7 *Cable Clip Installation*

4. Rotate the trigger assembly to the correct position for the hand that the scanner mounts to.
5. Slide the RS5000 onto the index finger with the scan trigger next to the thumb.

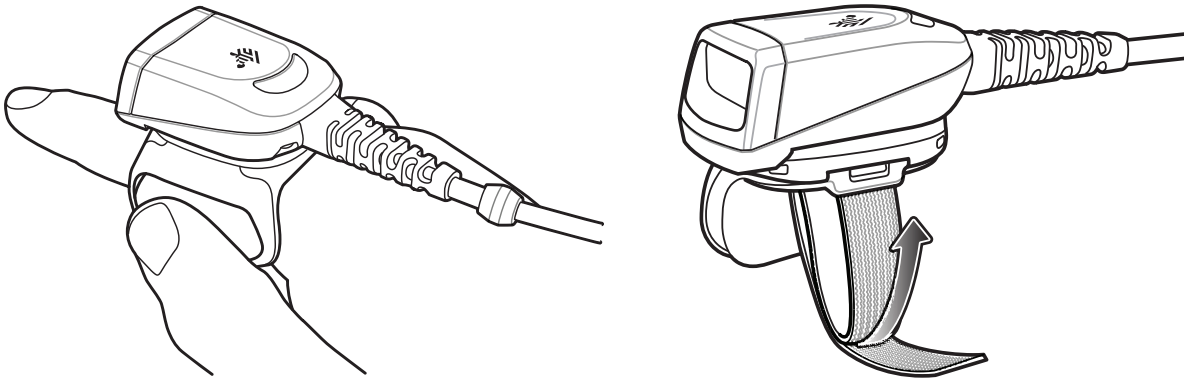

Figure 8 *Wearing the RS5000*

6. Tighten the finger strap.
7. If required, cut excess finger strap material.
8. For the WT41N0, attach the power buffer to the wrist mount using the hook and loop fasteners.

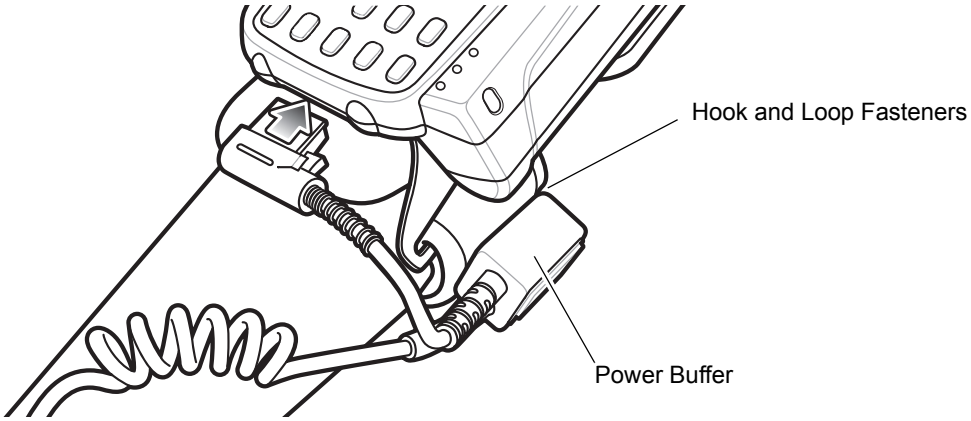

Figure 9 *Attaching Power Buffer*

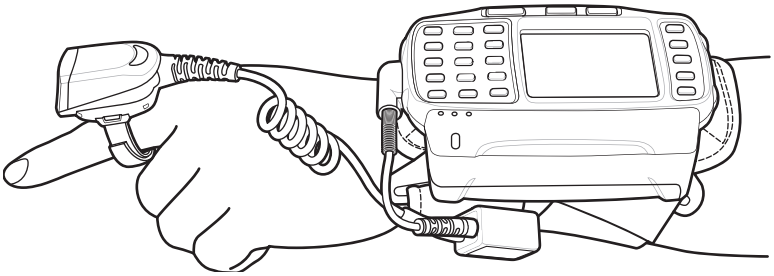

Figure 10 *Wearing the RS5000*

9. Warm boot the wearable terminal.

RS5000 Firmware Update

Periodically Zebra provides firmware updates for the RS5000 scanner. To update the firmware on the RS5000, the RS5000 must be connected to the WT6000.

Viewing the Firmware Version

To view the current firmware version for the RS5000:

1. Connect the RS5000 to the WT6000 wearable. See *Installation on page 5*.
2. From the WT6000, touch > .

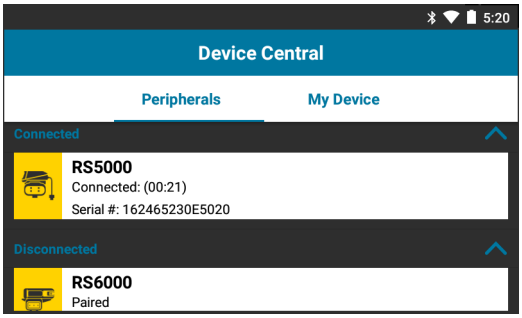

Figure 11 *Device Central Screen*

3. On the **Peripherals** tab, touch the RS5000 peripheral information to open the **Device Details** screen.
4. Scroll down to view the **Firmware Version**.

Updating the RS5000 Firmware

Update the RS5000 firmware using a WT6000 wearable terminal with the **Device Central** app:

1. Download the firmware update package from the Zebra Support website.
   a. Go to http://www.zebra.com/support.
   b. Save the file to a location on a host computer.
2. Copy the firmware update file to the WT6000 wearable terminal in the folder `/sdcard/Android/data/com.symbol.devicecentral/files/`.

   For information on saving files to the WT6000, refer to the *WT6000 Integrator Guide*.
3. Connect the RS5000 to the WT6000 wearable. See *Installation on page 5*.
4. From the WT6000, touch > .

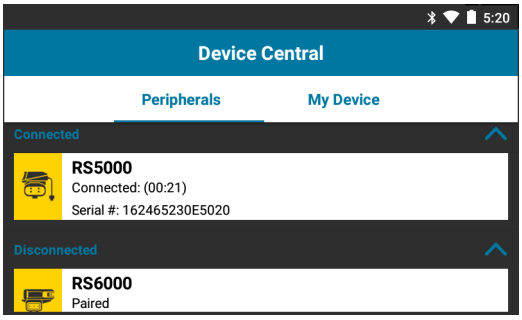

Figure 12 *Device Central Screen*

5. On the **Peripherals** tab, touch the RS5000 peripheral information to open the **Device Details** screen.
6. Scroll to the bottom of the **Device Details** screen.

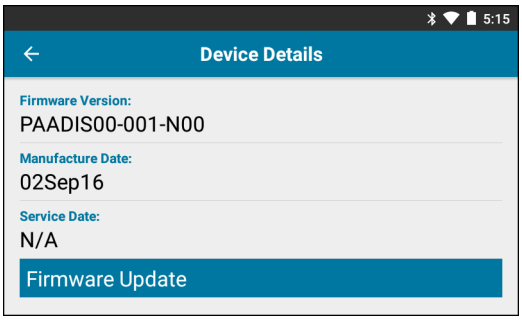

Figure 13 *Device Details Screen*

7. Touch **Firmware Update**.

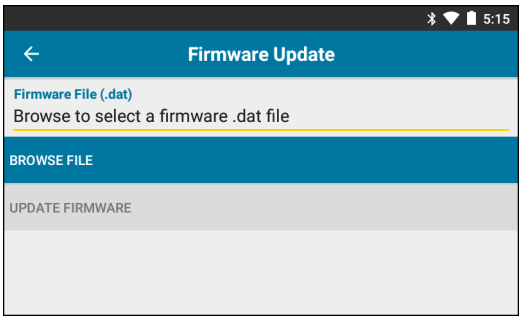

Figure 14 *Firmware Update Screen*

8. Touch **Browse File** and select the RS5000 firmware upgrade file.
9. Touch **Update Firmware**.
10. Touch **Yes** to confirm the firmware update.

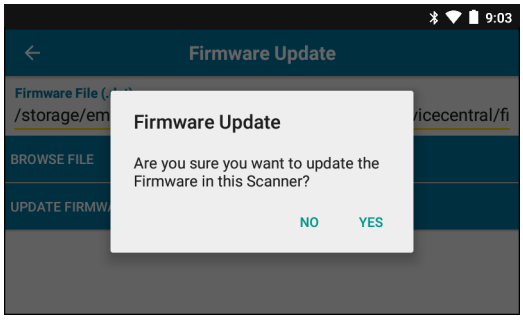

Figure 15 *Confirm Firmware Update*

CAUTION When the firmware update begins, do not unplug the ring scanner.

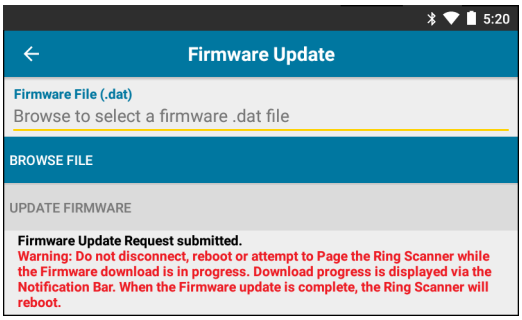

Figure 16 *Firmware Update Submitted*

11. Pull down the notification shade to view the firmware update progress.

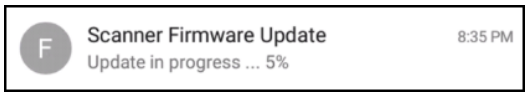

Figure 17 *Firmware Update Progress*

12. When the update is complete, disconnect the RS5000 and then reconnect the RS5000 to the WT6000 to reboot the scanner.

    Verify the new firmware version. See *Viewing the Firmware Version on page 9*.

Using the Scanner

NOTE Not to be used in condensing environments.

To scan bar codes:

1. Turn on the wearable terminal.
2. Launch a scanning application.

   If using the RS5000 with a WT41N0 wearable terminal, allow a minute or more for the RS5000 to charge.

NOTE When the RS5000 with power buffer is connected to a WT41N0, the RS5000 requires a minute or more to recharge after it is powered down for an extended period of time.

3. Press the scan trigger and aim the RS5000 at a bar code.
4. Ensure the bar code is within the area formed by the aiming pattern. The aiming dot is used for increased visibility in bright lighting conditions.

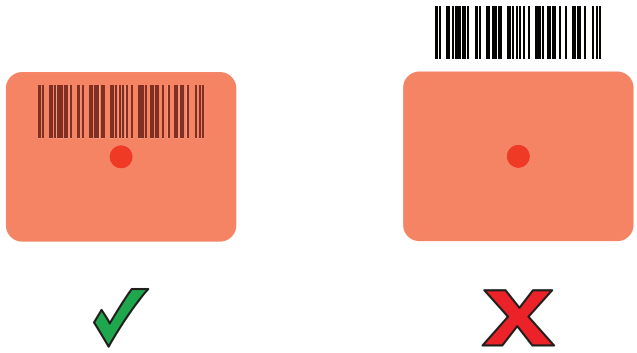

Figure 18 *Aiming Pattern*

Figure 19 *Pick List Mode with Multiple Bar Codes*

5. If the decode is successful the LED lights green. The terminal beeps if programed accordingly.

Scanning Tips

- For larger bar codes, hold the RS5000 farther away from the bar code.
- For bar codes with bars that are closer together, hold the RS5000 closer to the bar code.
- The optimal scanning distance varies with bar code density, but 10 to 25 cm (4 to 10 inches) generally works. Practice to determine what distances to work within.

- Do not position the RS5000 exactly perpendicular to the bar code being scanned. In this position, reflected light can bounce back into the exit window, and possibly prevent a successful decode.

Finger Strap Assembly Replacement

The finger strap assembly can be changed for each user or for replacement. To replace the finger strap assembly:

1. Press down on the finger strap assembly release tab.

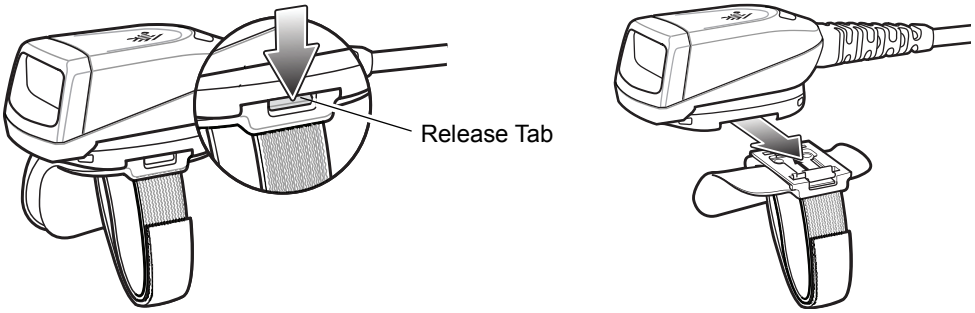

Figure 20 *Replacing Finger Strap Assembly*

2. Slide the finger strap assembly out of the trigger assembly.
3. Align a new finger strap assembly with the slot in the trigger assembly.
4. Push the finger strap assembly into the trigger assembly until the release tab clicks into place.
5. Insert your index finger through the finger strap. Tighten the strap and press the hook and pile together.
6. If required, cut excess finger strap material.

Replacing the Trigger Assembly

To replace the trigger assembly:

1. Remove the finger strap assembly.
2. Turn the RS5000 upside-down.
3. Remove the set screw with screwdriver.

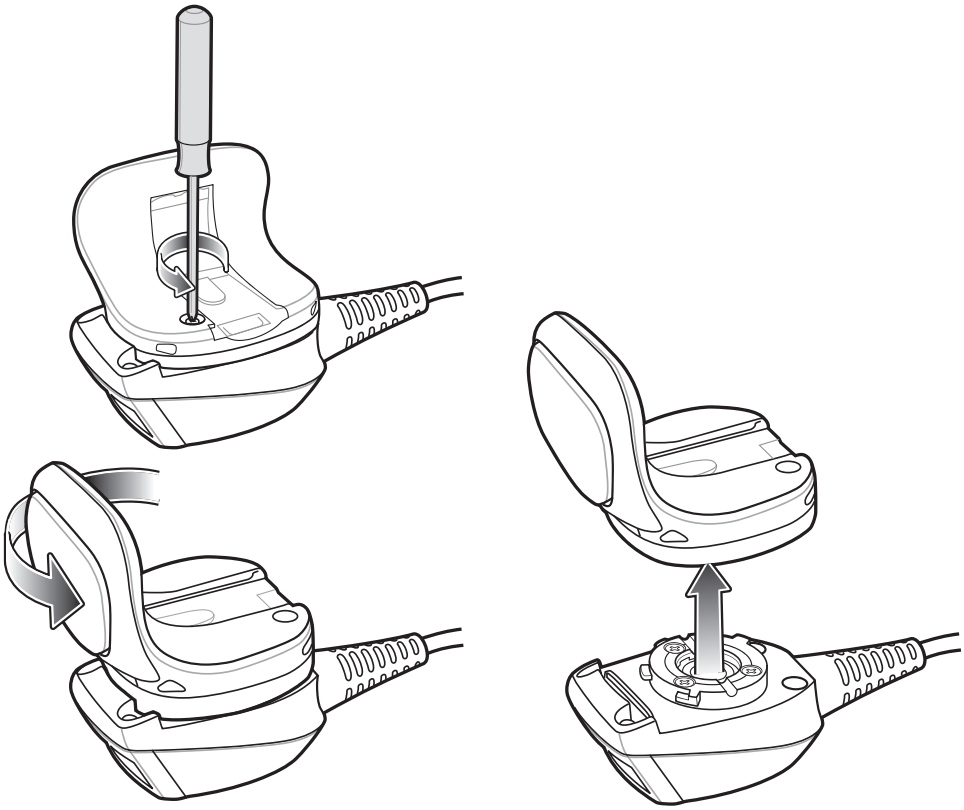

Figure 21 *Replacing Trigger Assembly*

4. Turn the trigger assembly counter-clockwise until the exit window and scan trigger align.
5. Lift the trigger assembly off the scan assembly.
6. Align replacement trigger assembly with scan assembly.
7. Rotate trigger assembly 1/4 turn clockwise.
8. Tighten the set screw with screwdriver.
9. Replace finger strap assembly.

Cleaning

CAUTION 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.

WARNING! **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.**

Approved Cleanser Active Ingredients

100% of the active ingredients in any cleaner must consist of one or some combination of the following: isopropyl alcohol, bleach/sodium hypochlorite, hydrogen peroxide or mild dish soap.

Harmful Ingredients

The following chemicals are known to damage the plastics on the RS5000 and should not come in contact with the device: ammonia solutions, compounds of amines or ammonia; acetone; ketones; ethers; aromatic and chlorinated hydrocarbons; acqueous or alcoholic alkaline solutions; ethanolamine; toluene; trichloroethylene; benzene; carbolic acid and TB-lysoform.

Cleaning Instructions

Do not apply liquid directly to the RS5000. Dampen a soft cloth or use pre-moistened wipes. Do not wrap the device in the cloth or wipe, but gently wipe the unit. Be careful not to let liquid pool around the display window or other places. Allow the unit to air dry before use.

Special Cleaning Notes

Many vinyl gloves contain phthalate additives, which are often not recommended for medical use and are known to be harmful to the housing of the RS5000. The RS5000 should not be handled while wearing vinyl gloves containing phthalates, or before hands are washed to remove contaminant residue after gloves are removed. If products containing any of the harmful ingredients listed above are used prior to handling the RS5000, such as hand sanitizer that contain ethanolamine, hands must be completely dry before handling the RS5000 to prevent damage to the plastics.

Materials Required

- Alcohol wipes
- Lens tissue
- Cotton tipped applicators
- Isopropyl alcohol
- Can of compressed air with a tube.

Cleaning the RS5000

Housing

Using the alcohol wipes, wipe the housing.

Exit Window

Wipe the scanner exit window periodically with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.

Connector

1. Disconnect the RS5000 from the wearable terminal.
2. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
3. Rub the cotton portion of the cotton tipped applicator back-and-forth across the connector. Do not leave any cotton residue on the connector.
4. Repeat at least three times.
5. Use the cotton tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
6. Use a dry cotton tipped applicator and repeat steps 3 through 5.

CAUTION Do not point nozzle at yourself and others, ensure the nozzle or tube is away from your face.

7. Spray compressed air on the connector area by pointing the tube/nozzle about ½ inch away from the surface.
8. Inspect the area for any grease or dirt, repeat if required.

Cleaning Frequency

The cleaning frequency is up to the customer's discretion due to the varied environments in which the mobile devices are used. They may be cleaned as frequently as required. However when used in dirty environments it may be advisable to periodically clean the scanner exit window to ensure optimum scanning performance.

Troubleshooting

Table 1 *RS5000 Troubleshooting*

Symptom	Probable Cause	Action
The aiming dot does not display when pressing the trigger.	Interface cable is not secure.	Verify that the interface cable connection is connected properly.
	Power is not applied to RS5000.	Power for the RS5000 is provided by the wearable terminal. Verify that the wearable terminal has a charged battery installed.
	Scan enabled application on the wearable terminal is not running.	Launch scanning application on the wearable terminal.

Table 1 *RS5000 Troubleshooting*

Symptom	Probable Cause	Action
RS5000 does not decode a bar code.	Bar code is unreadable.	Verify that the bar code is not defective, i.e., smudged or broken.
	Exit window is dirty.	Clean exit window with a lens tissue. Tissues for eyeglasses work well. Do not use tissues coated with lotion.
	Symbology is not enabled.	See your system administrator.
Condensation appears on the inside or the outside of the exit window.	Using the ring scanner in a hot and humid environment after being in a freezer environment.	Wipe condensation from exit window with a soft cloth. For condensation on the inside, dedicate ring scanner to freezer or hot and humid environment. Do not pass between environments with the same ring scanner.
RS5000 does not connect to wearable computer.	Wrong configuration for wearable computer.	See system administrator to provide the correct RS5000 configuration.

Ergonomic Recommendations

CAUTION In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.

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