TC8300

Touch Computer

User Guide
for Android ™ 8.1.0 Oreo

ZEBRA

MN-003402-01 Rev A

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Revision History

Changes to the original guide are listed below:

Change	Date	Description
-01 Rev A	04/2019	Initial release.

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About This Guide

Introduction

This guide provides information about using the device and accessories.

NOTE: Screens and windows pictured in this guide are samples and can differ from actual screens.

Configurations

The TC8300 includes standard, condensation resistant, and premium configurations.

Table 1 Configurations

Configuration	Radios			Data Capture								Memory		OS	Sensors				Apps	Vibration	
	802.11 a/b/g/n/ac	Bluetooth 5.0	NFC	SE965 Laser Engine	SE4750-MR Imager	SE4750-DP Imager	SE4750-DPA Imager	SE4770-SR Imager	SE4850 Imager	13 MP Camera	4" WVGA Color	4G RAM/32 GB Flash	8G RAM/128 GB Flash	AndroidGMS V8.1.0	Accelerometer	Proximity Sensor	Gyroscope	Magnet	ATTE	Touchscreen	Scan
Base																					
TC83B0-A005A510NA	x	x		x							x	x		x	x		x		x	x	
TC83B0-2005A510NA	x	x			x						x	x		x	x		x		x	x	
TC83B0-3005A510NA	x	x							x		x	x		x	x		x		x	x	
TC83B0-6005A510NA	x	x						x			x	x		x	x		x		x	x	
TC83B0-A005A510RW	x	x		x							x	x		x	x		x		x	x	
TC83B0-2005A510RW	x	x			x						x	x		x	x		x		x	x	
TC83B0-3005A510RW	x	x							x		x	x		x	x		x		x	x	
TC83B0-6005A510RW	x	x						x			x	x		x	x		x		x	x	
TC83B0-2005A510CN	x	x			x						x	x		x	x		x		x	x	
TC83B0-3005A510CN	x	x							x		x	x		x	x		x		x	x	
TC83B0-6005A510CN	x	x						x			x	x		x	x		x		x	x	
TC83B0-2005A510IN	x	x			x						x	x		x	x		x		x	x	
TC83B0-3005A510IN	x	x							x		x	x		x	x		x		x	x	
TC83B0-6005A510IN	x	x						x			x	x		x	x		x		x	x	
Condensation Resistant																					
TC83B0-2005A61CNA	x	x			x						x	x		x	x		x		x	x	x
TC83B0-3005A61CNA	x	x							x		x	x		x	x		x		x	x	x
TC83B0-6005A61CNA	x	x						x			x	x		x	x		x		x	x	x
TC83B0-2005A61CRW	x	x			x						x	x		x	x		x		x	x	x

Table 1 Configurations

Configuration	Radios			Data Capture								Memory		OS	Sensors				Apps	Vibration	
	802.11 a/b/g/n/ac	Bluetooth 5.0	NFC	SE965 Laser Engine	SE4750-MR Imager	SE4750-DP Imager	SE4750-DPA Imager	SE4770-SR Imager	SE4850 Imager	13 MP Camera	4" WVGA Color	4G RAM/32 GB Flash	8G RAM/128 GB Flash	AndroidGMS V8.1.0	Accelerometer	Proximity Sensor	Gyroscope	Magnet	ATTE	Touchscreen	Scan
TC83B0-3005A61CRW	x	x							x		x	x		x	x		x		x	x	x
TC83B0-6005A61CRW	x	x						x			x	x		x	x		x		x	x	x
TC83B0-2005A61CCN	x	x			x						x	x		x	x		x		x	x	x
TC83B0-3005A61CCN	x	x							x		x	x		x	x		x		x	x	x
TC83B0-2005A61CIN	x	x			x						x	x		x	x		x		x	x	x
TC83B0-3005A61CIN	x	x							x		x	x		x	x		x		x	x	x
Package 1																					
TC83BH-2205A710NA	x	x	x		x					x	x	x		x	x	x	x	x	x	x	x
TC83BH-3205A710NA	x	x	x						x	x	x	x		x	x	x	x	x	x	x	x
TC83BH-6205A710NA	x	x	x					x		x	x	x		x	x	x	x	x	x	x	x
TC83BH-2205A710RW	x	x	x		x					x	x	x		x	x	x	x	x	x	x	x
TC83BH-3205A710RW	x	x	x						x	x	x	x		x	x	x	x	x	x	x	x
TC83BH-6205A710RW	x	x	x					x		x	x	x		x	x	x	x	x	x	x	x
TC83BH-2205A710CN	x	x	x		x					x	x	x		x	x	x	x	x	x	x	x
TC83BH-3205A710CN	x	x	x						x	x	x	x		x	x	x	x	x	x	x	x
TC83BH-2205A710IN	x	x	x		x					x	x	x		x	x	x	x	x	x	x	x
TC83BH-3205A710IN	x	x	x						x	x	x	x		x	x	x	x	x	x	x	x
Package 2 High Memory																					
TC83BH-2206A710NA	x	x	x		x					x	x		x	x	x	x	x	x	x	x	x
TC83BH-3206A710NA	x	x	x						x	x	x		x	x	x	x	x	x	x	x	x
TC83BH-6206A710NA	x	x	x					x		x	x		x	x	x	x	x	x	x	x	x
TC83BH-6206A710RW	x	x	x					x		x	x		x	x	x	x	x	x	x	x	x
TC83BH-2206A710RW	x	x	x		x					x	x		x	x	x	x	x	x	x	x	x
TC83BH-3206A710RW	x	x	x						x	x	x		x	x	x	x	x	x	x	x	x
DPM																					
TC83B0-4005A610NA	x	x				x					x	x		x	x		x		x	x	x
TC83B0-4005A610RW	x	x				x					x	x		x	x		x		x	x	x
TC83B0-4005A610CN	x	x				x					x	x		x	x		x		x	x	x
TC83B0-5005A610NA	x	x					x				x	x		x	x		x		x	x	x
TC83B0-5005A610RW	x	x					x				x	x		x	x		x		x	x	x
TC83B0-5005A610CN	x	x					x				x	x		x	x		x		x	x	x
TAA																					
TC83B0-2005A510FT-KT	x	x			x						x	x		x	x		x		x	x	x
TC83B0-3005A510FT-KT	x	x							x		x	x		x	x		x		x	x	x
TC83B0-6005A510FT-KT	x	x						x			x	x		x	x		x		x	x	x

Software Versions

To determine the current software versions:

1. Swipe down from the Status bar to open the Quick Settings bar.
2. Touch ⚙ > **System**.

3. Touch **About phone**.
4. Scroll to view the following information:
   - **Status**
   - **Battery information**
   - **SW components**
   - **Legal information**
   - **Model**
   - **Android version**
   - **Android security patch level**
   - **Kernel version**
   - **Build Fingerprint**
   - **Build number.**

To determine the device serial number, touch **About phone** > **Status**.

- **Serial number**

Chapter Descriptions

Topics covered in this guide are as follows:

- Getting Started, describes the features and basic operation of the device, lists the accessories for the device and explains how to install and charge the batteries and start the device for the first time.
- Using the Device, provides instructions for connecting the device to a host computer and using the OS desktop of the device.
- Applications, provides information on various applications pre-installed on the device.
- Data Capture, provides information for capturing bar code data.
- Wireless, provides information on the various wireless options.
- Accessories, Accessories, provides information for using the accessories with the device.
- Maintenance and Troubleshooting, includes instructions on cleaning and storing the device, and provides troubleshooting solutions for potential problems during device operation.
- Specifications, includes a table listing the technical specifications for the device and accessories.

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
  - Check box and radio button names
  - Icons on a screen
  - Key names on a keypad
  - Button names on a screen.

- Bullets (•) indicate:
  - Action items
  - Lists 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.

Related Documents and Software

The following documents provide more information about the device.

- TC8300 Quick Start Guide, p/n MN-003365-xx
- TC8300 Regulatory Guide, p/n MN-003364-xx
- TC8300 Integrator Guide for Android 8.1, p/n MN-003403-xx
- TC8300 Accessory Regulatory Guide, p/n MN002282Axx
- Desk Mount Installation Guide, p/n MN002413Axx
- Rack/Wall Mount Installation Guide, p/n MN002412Axx

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

Service Information

If you have a problem with your equipment, contact Customer Support for your region. Contact information is available at: www.zebra.com/support.

When contacting support, please have the following information available:

- Serial number of the unit (found on manufacturing label)
- Model number or product name (found on manufacturing label)
- Software type and version number

Customer Support responds to calls by email or telephone within the time limits set forth in support agreements.

If the problem cannot be solved by Customer Support, you may need to return the equipment for servicing and will be given specific directions. We are not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. Remove the microSD card from the device before shipping for service.

If the device was purchased from a business partner, contact that business partner for support.

Provide Documentation Feedback

If you have comments, questions, or suggestions about this guide, send an email to EVM-Techdocs@zebra.com.

Getting Started

Introduction

This chapter describes the features of the device and explains how to install and charge the battery and how to reset the device.

Unpacking

Carefully remove all protective material from the device and save the shipping container for later storage and shipping.

Verify that box contains all the equipment listed below:

- TC8300
- Battery
- Regulatory Guide.

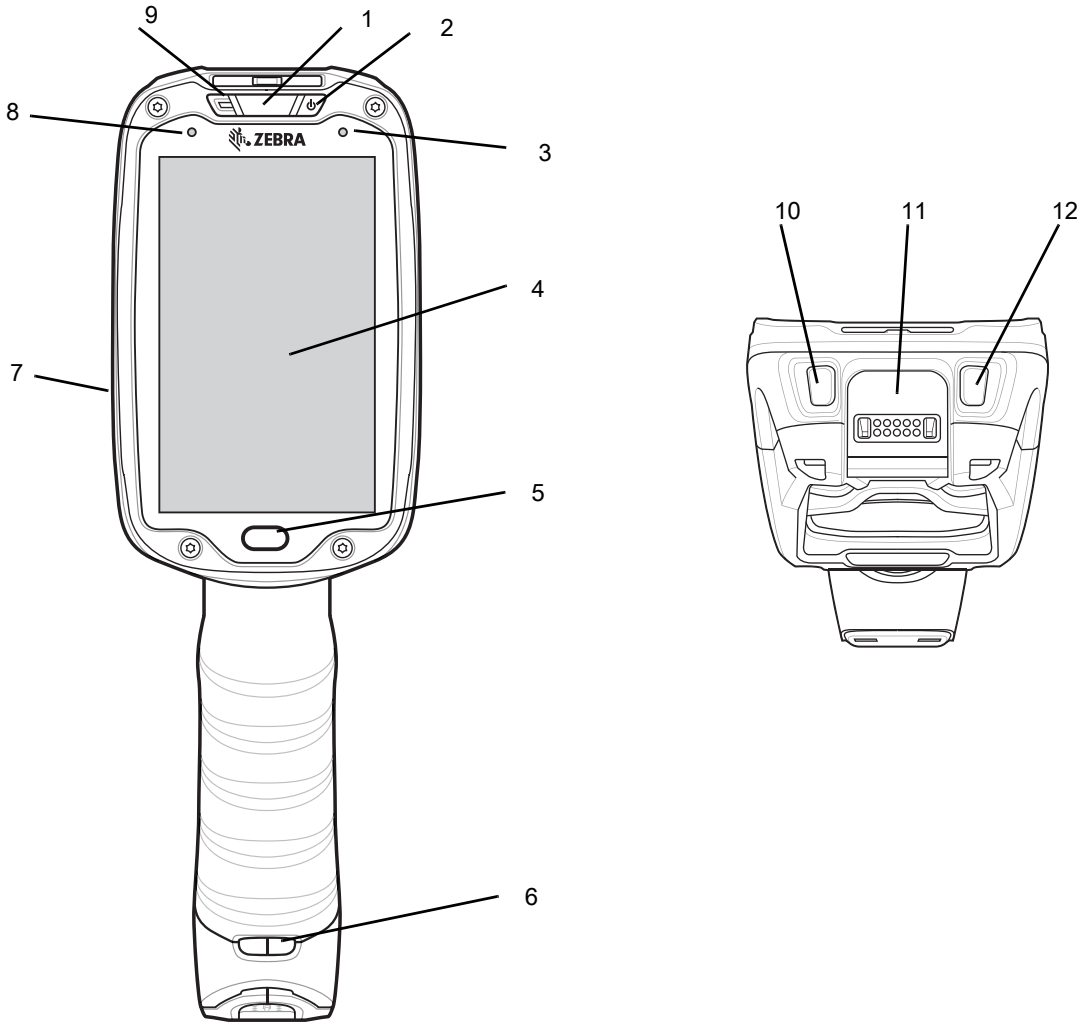
Inspect the equipment for damage. If you are missing any equipment or if you find any damaged equipment, contact Support immediately. See Service Information on page 14 for contact information.

Removing the Screen Protective Film

A screen protection film is applied to the device's screen to protect the screen during shipping. To remove the screen protector, carefully lift the thin film off the display.

Features

Figure 1 Front View

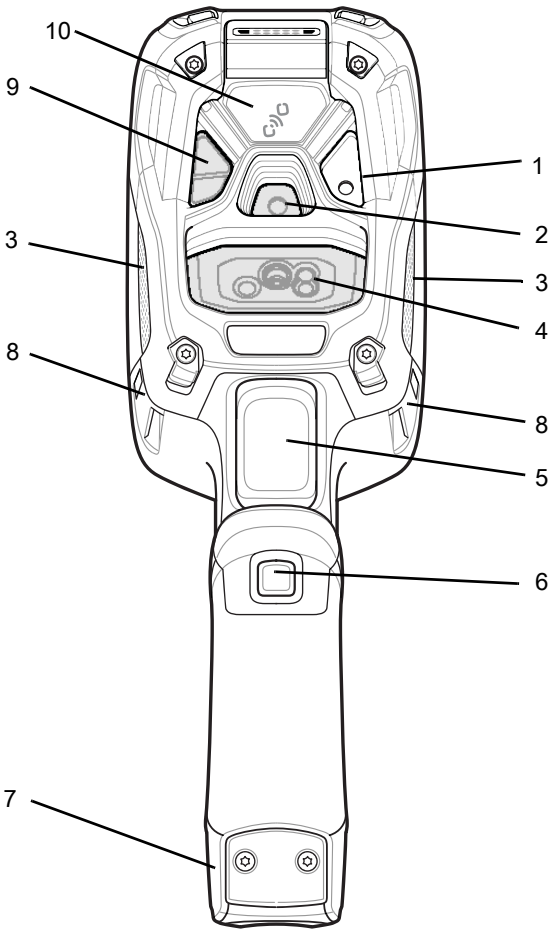


Front View Descriptions

Table 2 *Front View Descriptions*

Number	Item	Function
1	Charging/Scan LED	Indicates battery charging status while charging, good decode indication during data capture and application generated notifications.
2	Power Button	Turns the display on and off. Press and hold to reset the device and power off.
3	Blue Indication LED	User programmable LED.
4	Display	Displays all information needed to operate the device.
5	Programmable Button	Press to select items.
6	Hand Strap Mounting Point	Use for installing the optional hand strap.
7	Speakers	Provides audio output for video and music playback.
8	Ambient Light Sensor	Determines ambient light for controlling display backlight intensity.
9	Microphone	Use for communication in Headset mode.
10	Volume Up Button	Increases audio volume (programmable).
11	Interface Connector	Provides USB host and client communication, audio and device charging via cables and accessories.
12	Volume Down Button	Decreases audio volume (programmable).

Figure 2 Back View



Back View Descriptions

Table 3 *Back View Descriptions*

Number	Item	Function
1	Camera Flash	Provides illumination for the camera (optional).
2	Camera	Takes photos and videos (optional).
3	Speaker	Provides audio output.
4	Scanner	Provides data capture using the imager or laser scanner.
5	Trigger	Initiates data capture (programmable).
6	Programmable Button (Secondary Trigger)	Initiates Push-To-Talk communication (programmable).
7	Battery Pack	Provides power to the device.
8	Hand Strap Mounting Point	Use for installing the optional hand strap.
9	Proximity Sensor	Triggers hands-free, triggerless scanning.
10	NFC tag	Tap-to-Pair using NFC (Near Field Communication) - (optional).

Setup

Perform these procedures to start using the device for the first time.

1. Install a microSD card (optional)
2. Install the battery
3. Charge the device
4. Power on the device.

Installing the microSD Card

The microSD card slot provides secondary non-volatile storage. The slot is located under the back bezel of the unit. Refer to the documentation provided with the card for more information, and follow the manufacturer's recommendations for use.

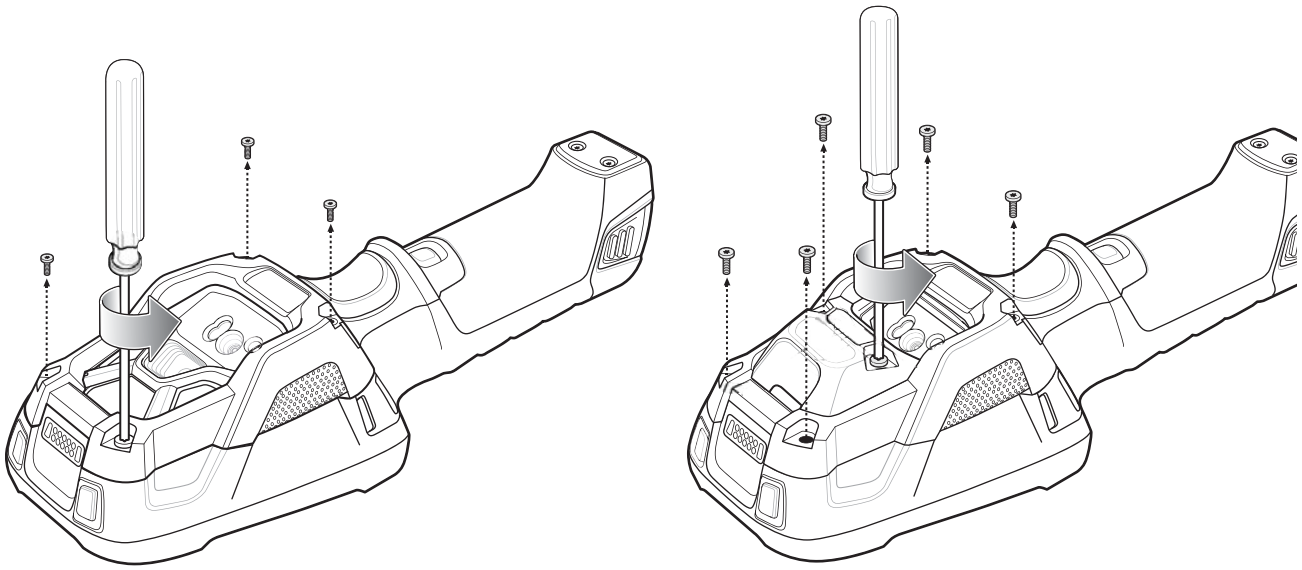
WARNING: Follow proper electrostatic discharge (ESD) precautions to avoid damaging the microSD card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring that the operator is properly grounded.

NOTE: The Condensation Resistant configuration has six screws securing the back bezel.

When installing a microSD card on Condensation Resistant configurations, replace the Back Bezel with desiccant pack. Refer to the TC8300 Integrator Guide. Once the Rear Bezel is removed, the desiccant pack absorbs ambient moisture and can lessen the life of the desiccant pack.

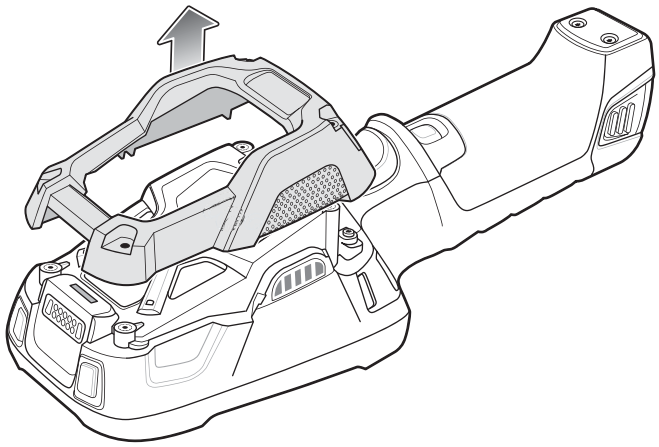
1. Remove the Torx T8 screws holding the back bezel in place.

Figure 3 Remove Screws



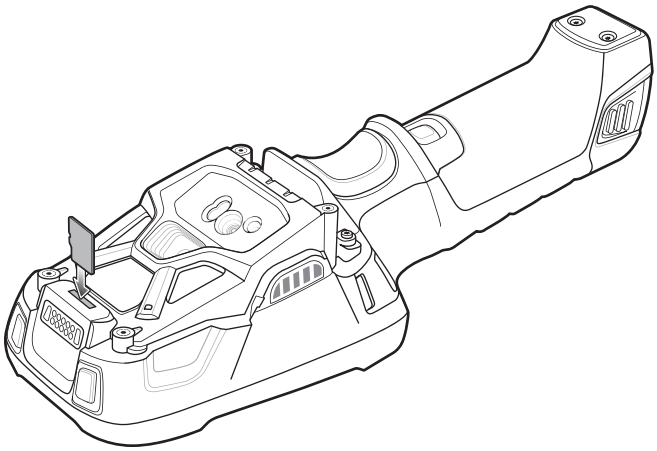
2. Lift the bezel to expose the SD slot.

Figure 4 Remove Bezel



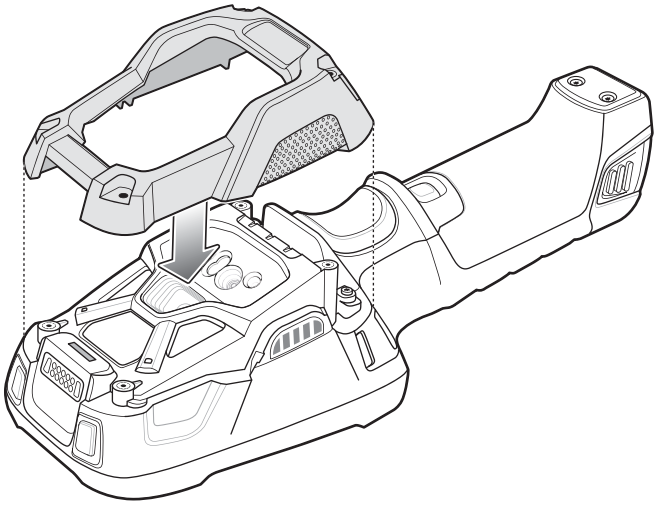
3. Insert the microSD card into the slot with contacts facing the bottom of the device.

Figure 5 Insert microSD Card



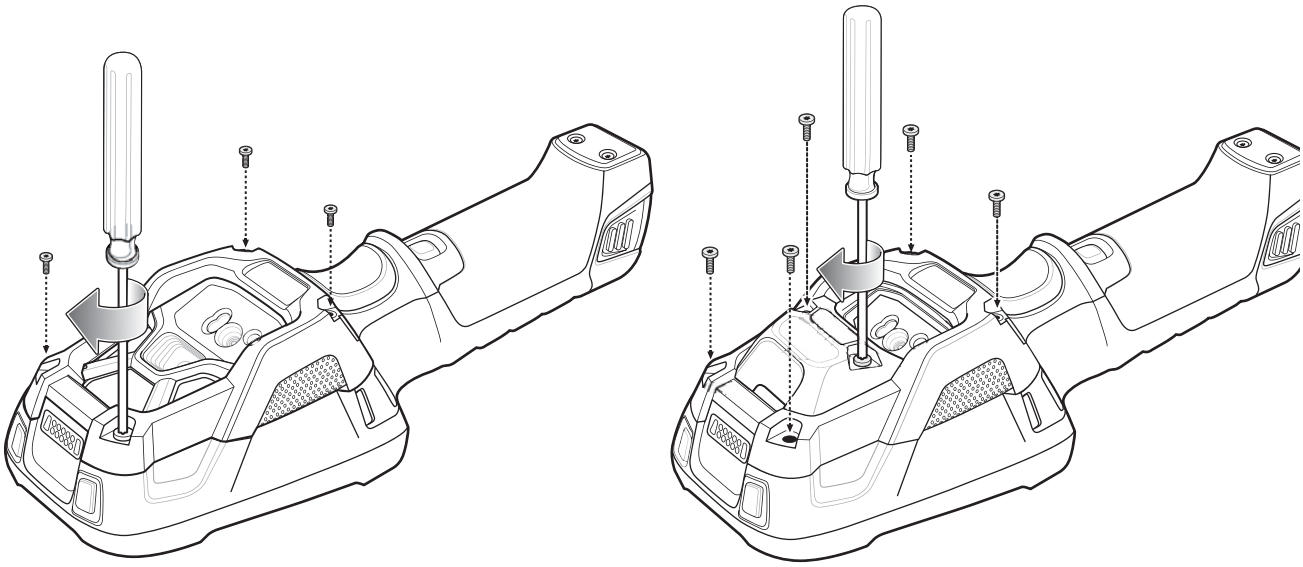
4. Align the bezel onto the device.

Figure 6 Align Bezel



5. Tighten the four screws using T8 hex screwdriver.
6. Torque screws to 4.5 kg-cm.

Figure 7 Secure Bezel



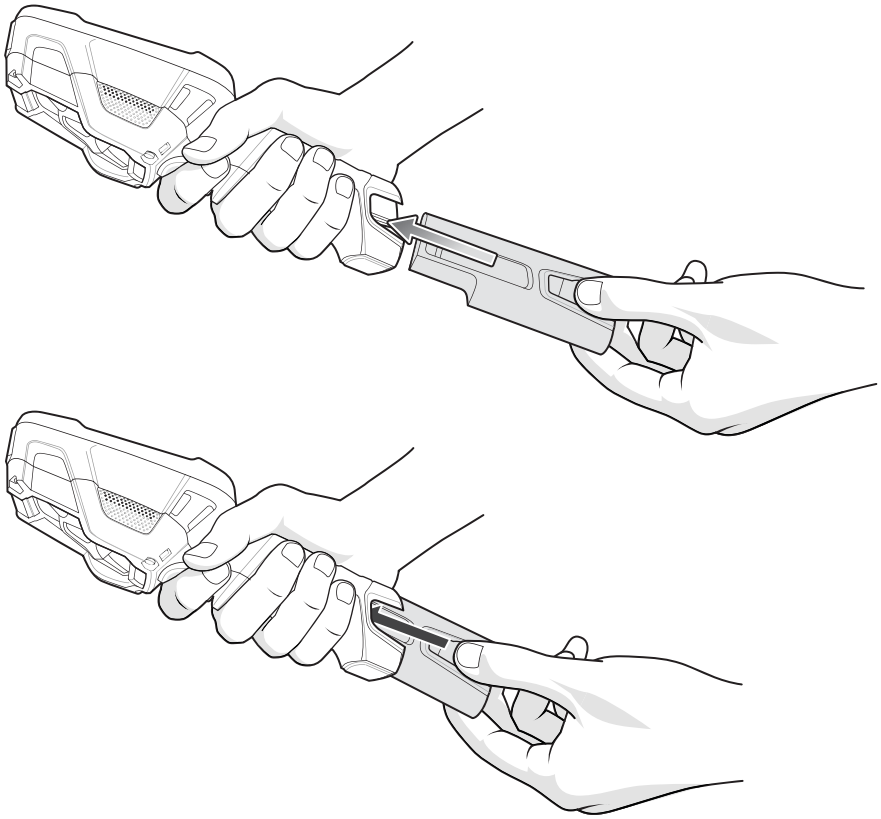
Installing the Battery

To install the battery:

NOTE: The battery is keyed to ensure that the battery is inserted properly. The notch in the battery must face the back of the device.

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

Figure 8 Battery Installation



3. Press the battery into the handle until it snaps into place.

Charging the Battery

Before using the device for the first time, charge the battery using a cable or a cradle with the appropriate power supply. For information about the accessories available for the device, see Accessories.

The device is equipped with a supercapacitor (supercap) which automatically charges from the fully-charged main battery. The supercap requires approximately 10 minutes to fully charge. The supercap retains random access memory (RAM) data in memory and WLAN connection for at least 30 seconds when the main battery is removed during Hot Swap. After 30 seconds, the WLAN connection is dropped and the RAM data is retained for 20 minutes.

- 4-Slot Battery Charger
- 2-Slot USB Charge Cradle
- 5-Slot Charge Only Cradle
- 5-Slot Ethernet Cradle
- 5-Slot Charge Only Cradle with 4-Slot Battery Charger
- 5-Slot Ethernet Cradle with 4-Slot Battery Charger.

The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature.

The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The device or accessory always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C

(+98 °F)) the device or accessory may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The device or accessory indicates when charging is disabled due to abnormal temperatures via its red blinking LED.

1. To charge the main battery, connect the charging accessory to the appropriate power source.
2. Insert the device into a cradle or attach to a cable. The device turns on and begins charging. The Charging/Scan LED lights amber while charging, then turns solid green when fully charged.

Table 4 *Charging/Scan LED Charging Indicators*

State	Indication
Off	Device is not charging. Device is not inserted correctly in the cradle or connected to a power source. Charger/cradle is not powered.
Solid Amber	Healthy battery is charging.
Solid Green	Healthy battery charging is complete.
Fast Blinking Red (2 blinks/second)	Charging error, e.g.: - Temperature is too low or too high. - Charging has gone on too long without completion (typically eight hours).
Solid Red	Unhealthy battery is charging or fully charged.

IMPORTANT: When trying to power on the device, a quick blink of the charging LED indicates that it does not have enough battery power to turn on. You will need to charge the battery or replace it.

Powering on the Device

The device starts automatically as soon as power is applied; either with a charged battery installed or when inserted into the cradle.

If a charged battery is installed and the device is turned off, press the Power button to turn on.

When the device is powered on for the first time, it initializes its system. The splash screen appears for a short period of time.

Figure 9 Splash Screen

The splash screen is followed by the boot animation screen and then the **Home Screen**.

Figure 10 Home Screen

Google Account Setup

NOTE: The device has to be connected to the internet in order to set up a Google™ account.
A Google account is only required on devices with GMS software.

The first time the device starts, the Setup Wizard displays. Follow the on-screen instructions to set up a Google account, configure Google Pay ™ for purchasing items from the Google Play ™ store, to enter your personal information, and enable backup/restore features.

Zebra Visibility Services

The device captures and provides device analytics to a system administrator. The first time the device boots (or after a Factory reset), the **Zebra Services** agreement screen displays.

Figure 11 Zebra Services

Touch the **Device Data** switch to disable the device from sending analytics data.

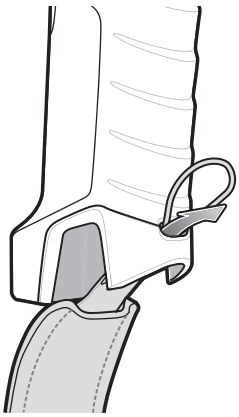
Installing the Hand Strap

To install the hand strap:

NOTE: Installation of the hand strap is optional. Skip this section if not installing the hand strap.

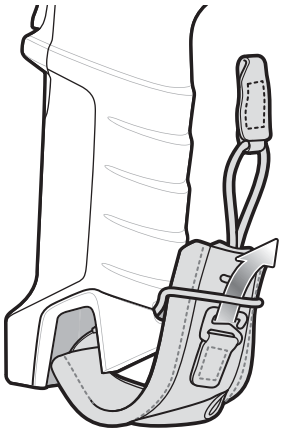
1. Remove battery if installed.
2. Thread the lanyard loop through the opening near the base of the handle.

Figure 12 Insert Loop through Handle Slot



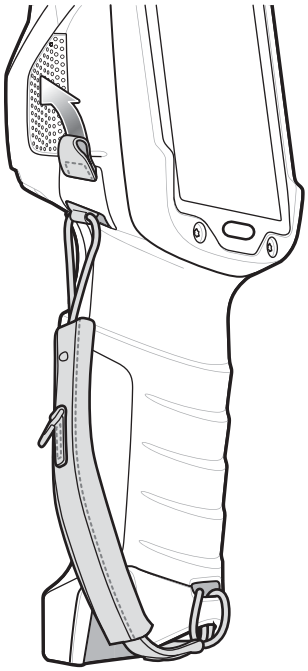
3. Insert the top end of the hand strap through the loop.

Figure 13 Thread Hand Strap Through Loop



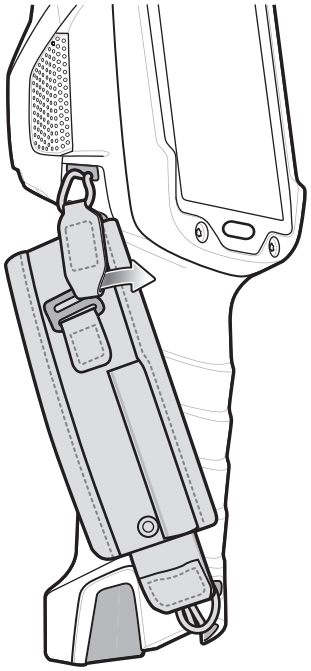
4. Thread the hand-strap through the lanyard.
5. Pull the hand strap through the loop.
6. Thread the lanyard through the slot on the left or right side of the unit, depending on your preference.

Figure 14 Thread Tab Through Side Slot



7. Slide the tab onto the clip.

Figure 15 Slide Tab onto Clip



Hot Swap Mode

The device provides a Hot Swap mode where the user can replace the battery without powering off the device. When the user removes the battery, the display turns off and the device enters a low power state while in Hot Swap mode. In Hot Swap mode, the device retains RAM data for approximately 5 minutes. Replace the battery within 5 minutes to preserve memory persistence. If the user does not install a charged battery within 5 minutes, data in RAM will be lost. During Hot Swap mode, Wi-Fi and Bluetooth remain connected for 30 seconds. If the battery is not inserted within 30 seconds, Wi-Fi is disabled and then re-enabled when the device comes out of Hot Swap mode and Bluetooth is reset when the device comes out of Hot Swap mode.

IMPORTANT: The supercap requires time to recharge after performing a Hot Swap or after the main battery is fully depleted. Hot Swap mode will not retain data unless the supercap is fully charged.

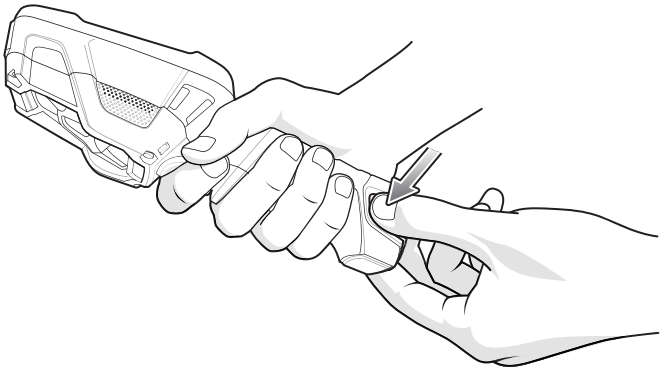
Replacing the Battery

To remove the battery:

CAUTION: Do not press the trigger while removing the battery.

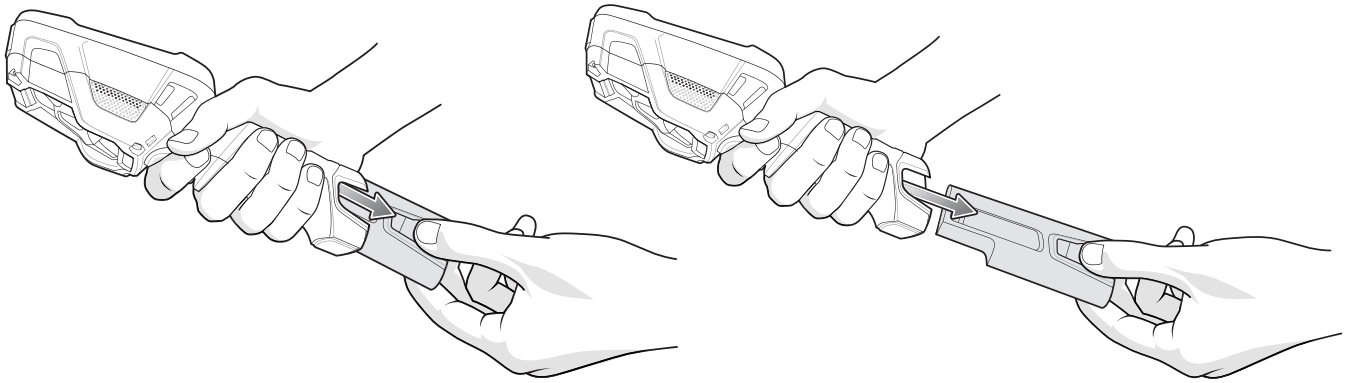
1. Press the two battery release latches in.

Figure 16 Battery Removal



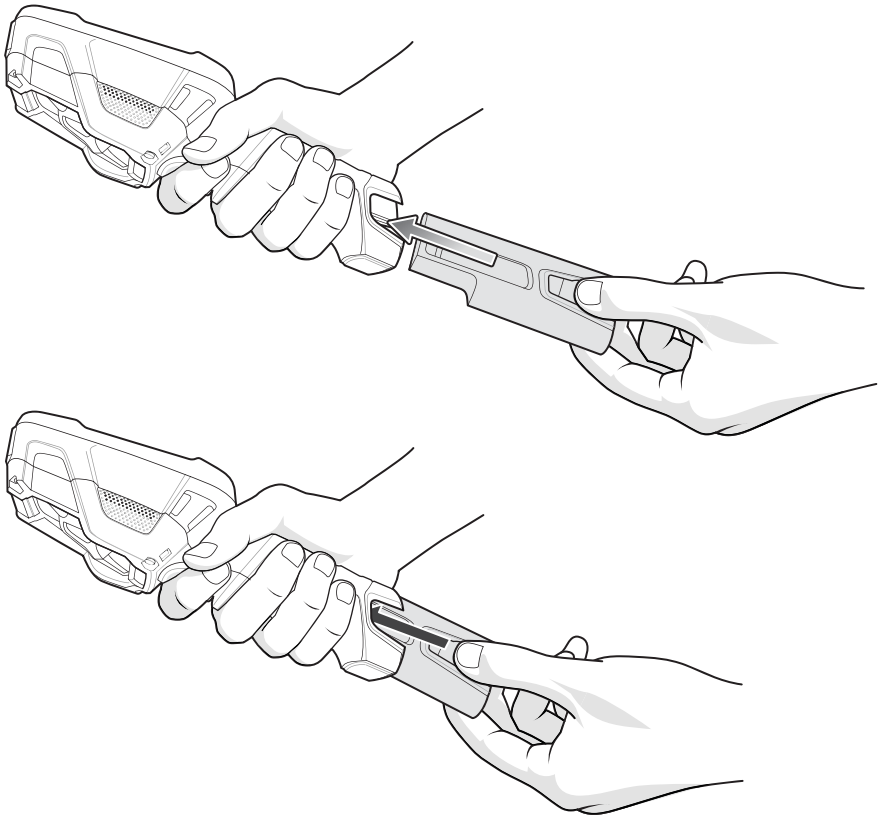
2. Pull the battery out of the device. The Charging/Scan LED lights red.

Figure 17 Battery Removal



3. Align the replacement battery with the notch facing the back of the device.
4. Slide the battery into the handle of the device.

Figure 18 Battery Installation



5. Press the battery into the handle until it snaps into place.

Battery Management

NOTE: Prior to checking the battery charge level, remove the device from any AC power source (cradle or cable).

To check the charge status of the main battery, open **Settings** and touch **System > About phone > Battery Information**.

Battery present status indicates if the battery is present and **Battery level** lists the battery charge (as a percentage of fully charged). The battery percentage can also be viewed next to the battery icon in the quick access panel. Swipe down with two fingers from the status bar to open the quick access panel.

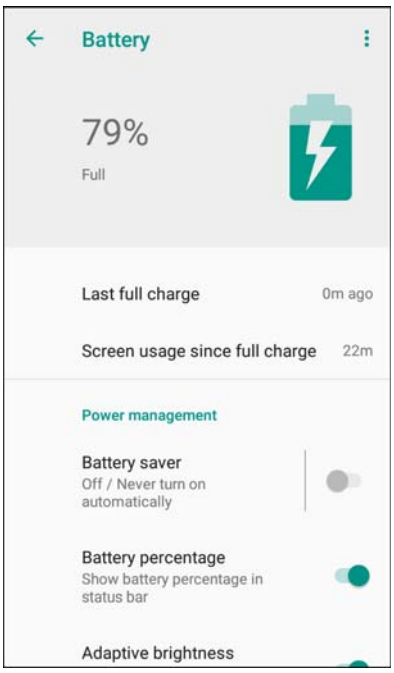
Monitoring Battery Usage

The **Battery** screen provides battery charge details, power management options, and a list of apps that consume the most battery power.

Use the power management options to extend battery life, or touch an app to display details about its power consumption. Different apps display different information. Some apps include buttons that open screens with settings to adjust power use. Use the **DISABLE** or **FORCE CLOSE** buttons to turn off apps that consume too much power.

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Battery**.

Figure 19 Battery Screen



Low Battery Notification

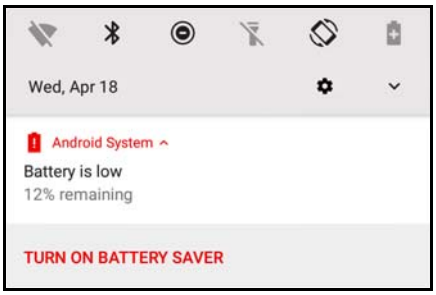
When the battery charge level drops below 15%, the device displays a notice to connect the device to power. The user should charge the battery using one of the charging accessories.

When the battery charge drops below 10%, the device displays a notice to connect the device to power. The user must charge the battery using one of the charging accessories.

When the battery charge drops below 6%, the device turns off. The user must charge the battery using one of the charging accessories.

NOTE: Under conditions of heavy load (scanning quickly and often, RF communication, etc.) the device may turn off earlier than 6% charge remaining.

Figure 20 Low Battery Notification



Battery Optimization

Observe the following battery saving tips:

- Set the screen to turn off after a short period of non-use.
- Reduce screen brightness.
- Turn off all wireless radios when not in use.
- Turn off automatic syncing for Email, Calendar, Contacts, and other apps.
- Minimize use of apps that keep the device from suspending, for example, music and video apps.

Turning Off the Radios

To turn off all the radios:

1. Swipe down from the Status bar to open the Quick Settings panel.
2. Touch **Airplane mode**. The airplane icon appears in the Status bar indicating that all the radios are off.

Setting the Date and Time

The date and time is automatically synchronized using an NITZ server when the device is connected to a wireless network. You are only required to set the time zone or set the date and time when not connected to a wireless network or if the wireless LAN does not support Network Time Protocol (NTP).

To set the date and time:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch .
2. Touch **System** > **Date & time**.
3. Touch **Automatic date & time** to disable automatic date and time synchronization.
4. Touch **Automatic time zone** to disable automatic time zone synchronization.

5. Touch **Set date**.
6. In the calendar, set today's date.
7. Touch **OK**.
8. Touch **Set time**.
9. Touch the green circle, drag to the current hour and then release.
10. Touch the green circle, drag to the current minute and then release.
11. Touch **AM** or **PM**.
12. Touch **OK**.
13. Touch **Select time zone**.
14. Select the current time zone from the list.
15. Touch **Use 24-hour format**.
16. Touch ◯.

Display Settings

Use Display settings to change the screen brightness, enable night light, change the background image, enable screen rotation, set sleep time, and change font size.

Setting the Screen Brightness

To manually set the screen brightness using the touchscreen:

1. Swipe down with two fingers from the Status bar to open the Quick Access panel.
2. Slide the icon to adjust the screen brightness level.

Figure 21 Brightness Slider

To let the device automatically adjust the screen brightness using the built-in light sensor:

1. Swipe down from the status bar to open the quick settings bar and then touch ⚙.
2. Touch **Display**.
3. If disabled, touch **Adaptive brightness** to automatically adjust the brightness.
   By default, **Adaptive brightness** is enabled. Toggle the switch to disable.
4. Touch ◯.

Setting Screen Timeout

To set the screen sleep time:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Display** > **Advanced** > **Sleep**.
3. Select one of the sleep values.
   - **15 seconds**
   - **30 seconds**
   - **1 minute** (default)
   - **2 minutes**
   - **5 minutes**
   - **10 minutes**
   - **30 minutes**
4. Touch ◯.

Setting Screen Rotation

By default, screen rotation is enabled.

To disable screen rotation:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Display** > **Advanced**.
3. Touch **Auto-rotate screen**.

NOTE: To change the Home screen rotation, see Setting Home Screen Rotation.

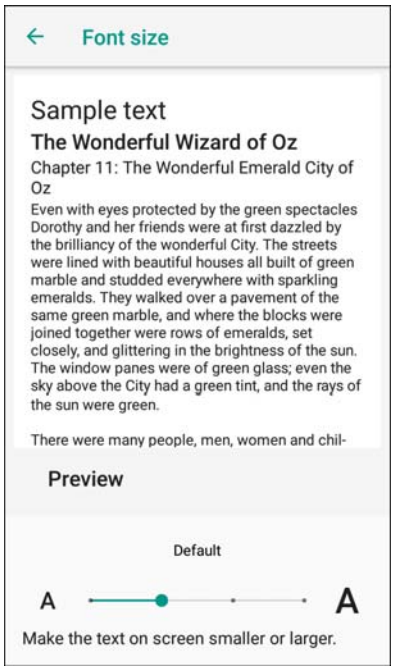
4. Touch ◯.

Setting Font Size

To set the size of the font in system apps:

1. Swipe down from the Status bar to open the Quick Settings panel and then touch ⚙.
2. Touch **Display** > **Advanced**.
3. Touch **Font size**.

Figure 22 Font Settings



4. Select one of the font size values.
   - Small
   - Default
   - Large
   - Largest.
5. Touch ◯.

Setting Display Size

By default, display size is set to default.

To change the display size:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Display** > **Advanced**.
3. Touch **Display size**.
4. Touch - and + to change the display size.
5. Touch ◯.

Ambient Display

The Ambient display setting wakes the screen when notifications are received.

To disable ambient display:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Display** > **Advanced**.
3. Touch **Ambient display**.
4. In the **When to show** section, enable or disable an option using the switch.
5. Touch ◯.

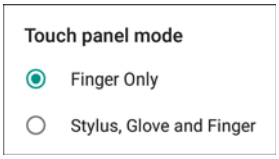
Touch Panel Mode

The device display is able to detect touches using a finger, a conductive-tip stylus, or gloved finger.

NOTE: A glove can be made of medical latex, leather, cotton, or wool.
For optimal performance use a Zebra certified stylus.

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Display** > **Advanced**.
3. Touch **Touch panel mode**.

Figure 23 Touch Panel Mode Dialog Box



4. Select:
   a. **Finger Only** to use a finger on the screen.
   b. Stylus, Glove and Finger to use a stylus, gloved finger, or a finger on the screen.

   When the user changes the touch panel mode, it will take several seconds for the new configuration to be loaded.
5. Touch ◯.

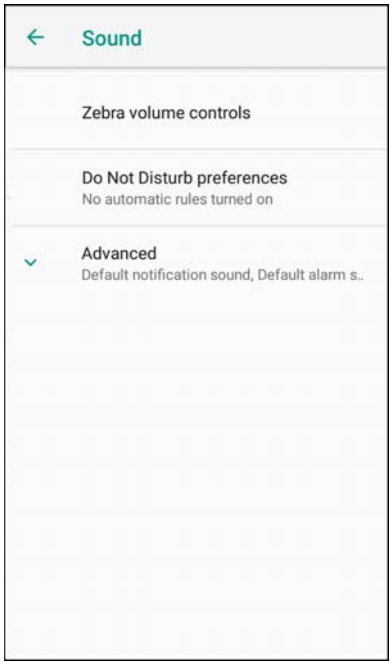
General Sound Setting

Use the **Sound** settings to configure media and alarm volumes.

To access sound settings:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch .
2. Touch **Sound**.
3. Touch an option to set sounds.

Figure 24 Sound Screen



- **Zebra volume controls**
  - **Ring volume** - Controls the ringtone volume.
  - **Media volume** - Controls the music, games, and media volume.
  - **Alarm volume** - Controls the alarm clock volume.
  - **Notifications volume** - Controls the notification volume.
  - **Scanner volume** - Controls the scanner volume.
  - **Volume presets**
    - - Mutes the ring, notifications, and scanner so that the device does not make sounds or vibrate.
    - - All sounds except media and alarms are silenced and vibrate mode is active.
    - - Enables all sounds at the user defined levels.
- **Do Not Disturb preferences** - Mutes some or all sounds and vibrations.
  - **Priority only allows** - Use to set the priorities for the following:
    - **Reminders** - Switch on or off.
    - **Events** - Switch on or off.
    - **Alarms** - This is always enabled.
    - **Messages** - Choose to allow messages from anyone, starred contacts, any contact, or none. To star contacts, use the Contacts app.
  - **Block visual disturbances**

        - **Block when screen is on** - This option prevents notifications from displaying over the screen (peeking) while you are actively using the device.
        - **Block when screen is off** - This option prevents notifications from turning on the screen or pulsing the LED light when a new notification is received while you are not using the device.
    - **Automatic rules** - Choose when to automatically silence the device. Touch a default rule, such as Weekend or Weeknight, or create your own rule. To create your own rule, tap **Add more** and then **Time rule**.
- **Advanced** - Touch to display advanced sound options.
    - **Default notification sound** - Touch to select a sound to play for all system notifications.
    - **Default alarm sound** - Touch to select a sound to play for alarms.
    - **Other sounds and vibrations**
        - **Screen locking sounds** - Play a sound when locking and unlocking the screen (default – enabled).
        - **Charging sounds** - Not applicable.
        - **Touch sounds** - Play a sound when making screen selections (default –).
        - **Vibrate on tap** - Vibrate the device when making screen selections (default – disabled).

Wake-Up Sources

By default, the device wakes from suspend mode when the user presses the power button. The device can be configured to wake when the user presses the PTT button or the Scan button.

1. Swipe up from the bottom of the Home screen and touch **Settings > Wake-Up Sources**.
2. Touch a checkbox. A check appears in the checkbox.
3. Touch ◯.

Using the Device

Introduction

This chapter describes the screens, status and notification icons, and controls on the device, and provides basic instructions for using the device.

Google Mobile Services

NOTE: This section applies to Google Mobile Services (GMS) devices only.

Devices with GMS contain apps and services that provide additional functionality.

GMS includes:

- Apps - GMS adds a variety of Google apps and associated widgets including Chrome, Gmail, Drive, and Maps.
- Services:
  - Speech to Text - Allows for free format speech to text in many languages for both connected and disconnected network. Launch by touching the microphone icon on the keyboard.
  - TalkBack Service - Provides spoken feedback on various parts of the user interface. To enable, go to **Settings** > **Accessibility**.
  - Network Location Provider - Adds a location provider which uses mobile network tower information and Wi-Fi access point information to provide a location without using GPS. To enable, go to **Settings** > **Security & location** > **Location**.
  - Widevine DRM - Enables Digital Rights Management (DRM) so that protected streaming video content can be played. Enable DRM Info from the Google Play ™ store.
  - Google Cloud Messaging - Allows the device to receive data from the server and other devices on the same connection.
  - Backup and Restore - Allows the users settings and apps to be backed up to a Google server and subsequently restored from that server after a factory reset.
- Google Accounts - Create and use a Google account to synchronize mail, files, music, photos, contacts and calendar events.

Home Screen

Turn on the device to display the Home screen. Depending on the configuration, the Home screen may appear different. Contact your system administrator for more information.

After a suspend or screen time-out, the Home screen displays with the lock slider. Touch the screen and slide up to unlock. For screen locking information, see Un-Locking the Screen.

The Home screen provides additional screens for placement of widgets and shortcuts. Swipe the screen left or right to view the additional screens.

NOTE:

By default, non-GMS devices do not have the same icons on the Home screen as GMS. Icons are shown below for example only.

Home screen icons can be configured by the user and may look different than shown.

The Home screen consists of the following:

Table 5 Home Screen Items

Item	Description
1 — Status Bar	Displays the time, status icons (right side), and notification icons (left side). For more information see Notification Icons and Managing Notifications.
2 — Folders	Contains multiple application icons.
3 — Menu Icon	Displays running applications.
4 — Home Icon	Displays the Home screen.
5 — All Apps Icon	Opens the APPS window.
6 — Back Icon	Displays the previous screen.
7 — Shortcut Icons	Opens applications installed on the device. See App Shortcuts and Widgets for more information.

Status Bar

The Status bar displays the time, notification icons (left side), and status icons (right side).

NOTE: Some Status icons may not appear in the Status bar if there are too many icons to display.

Figure 25 Notification and Status Icons

If there are more notifications than can fit in the Status bar, two dots display indicating that more notifications exist. Swipe down from the Status bar to open the Notification panel and view all notifications and status.

Status Icons

Table 6 Status Icons

Icon	Description
	Alarm is active.
	Main battery is fully charged.
	Main battery is partially drained.
	Main battery charge is low.
	Main battery charge is very low.
	Main battery is charging.
	All sounds, except media and alarms, are silenced and vibrate mode is active.
	Do Not Disturb mode active.
	Airplane Mode is active. All radios are turned off.
	Bluetooth is on.
	The device is connected to a Bluetooth device.
	Connected to a Wi-Fi network.
	Not connected to a Wi-Fi network or no Wi-Fi signal.
	Connected to an Ethernet network.
	Speakerphone enabled.

Notification Icons

Table 7 Notification Icons

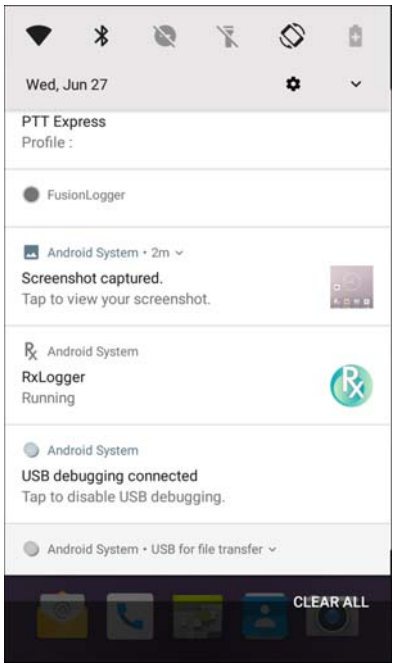
Icon	Description
	Main battery is low.
	More notifications are available for viewing.
	Data is syncing.
	Indicates an upcoming event. GMS devices only.
	Open Wi-Fi network is available.
	Song is playing.
	Problem with sign-in or sync has occurred.
	Device is uploading data.
	Device is downloading data when animated and download is complete when static.
	Device is connected via USB cable.
	Device is connected to or disconnected from virtual private network (VPN).
	Preparing internal storage by checking it for errors.
	USB debugging is enabled on the device.
	Indicates that RxLogger app is running.
	Indicates the RS6000 is connected to the device.
	Indicates the RS6000 is connected to the device in HID mode.

Managing Notifications

Notification icons report the arrival of new messages, calendar events, alarms, and ongoing events. When a notification occurs, an icon appears in the Status bar with a brief description. See Notification Icons for a list of possible notification icons and their description. Open the Notification panel to view a list of all the notifications.

To open the Notification panel, drag the Status bar down from the top of the screen.

Figure 26 Notification Panel



To respond to a notification, open the Notification panel and then touch a notification. The Notification panel closes and the corresponding app opens.

To clear all notifications, open the Notification panel and then touch **CLEAR ALL**. All event-based notifications are removed. Ongoing notifications remain in the list.

To close the Notification panel, swipe the Notification panel up.

Setting App Notifications

To set notification settings for a specific app:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Apps & notifications** > **Notifications** > **App notifications.**
3. Select an app.
4. Select an available option:
   - **On** / **Off** - Select to turn all notifications from this app **On** (default) or **Off**.
   - **Allow notification dot** - Do not allow this app to add a notification dot to the app icon.
   - **Allow interruptions** - Do not allow notifications from this app to make sound, vibrate, or pop notifications on the screen.
   - **Override Do Not Disturb** - Allow these notifications to interrupt when Do Not Disturb is set to Priority Only.
   - **Categories** - Do not allow specific types of notifications from this app.
   - **Additional settings in the app** - Open the app settings.

NOTE: To change the notification settings for an app, slide the notification slightly left or right and touch ⚙.

Viewing Notification Settings for All Apps

To view the notification settings for all apps:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Apps & Notifications**.
3. Scroll down to **Notifications** to view how many apps have notifications turned off.
4. To set or view notifications settings for a specific app, see Setting App Notifications.

Controlling Lock Screen Notifications

To control whether notifications can be seen when the device is locked:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Apps & notifications > Notifications**.
3. Touch **On the lock screen** and select one of the following:
   - **Show all notification content** (default)
   - **Don't show notifications at all**.

Blink Light

The Notification LED lights blue when an app, such as email and VoIP, generates a programmable notification or to indicate when the device is connected to a Bluetooth device. By default, LED notifications are enabled.

To change the notification setting:

1. Swipe down from the Status bar to open the Quick Settings bar and then touch ⚙.
2. Touch **Apps & notifications > Notifications**.
3. Touch **Blink light** to toggle the notification on or off.

Quick Access Panel

Use the Quick Access panel to access frequently used settings (for example, Airplane mode).

Figure 27 Quick Settings Bar

To see the full Quick Access panel:

- If the device is locked, swipe down once.
- If the device is unlocked, swipe down once with two fingers, or twice with one finger.
- If the Quick Settings bar is open, touch the Down arrow.

Figure 28 Quick Access Panel

NOTE: Not all icons are pictured. Icons may vary.

To change a setting, touch the icon:

App Shortcuts and Widgets

App shortcuts placed on the Home screen allow quick and easy access to apps. Widgets are self-contained apps placed on the Home screen to access frequently used features.

Adding an App Shortcut to the Home Screen

To add an app shortcut to the Home screen:

1. Go to the desired Home screen.
2. Swipe up from the bottom of the screen.
3. Scroll through the list to find the app icon.
4. Touch and hold the icon until the Home screen appears.
5. Position the icon on the screen and then release.

Adding a Widget to the Home Screen

To add a widget to the Home screen:

1. Go to the desired Home screen.
2. Touch and hold until the menu appears.
3. Touch **WIDGETS**.
4. Scroll through the list to find the widget.
5. Touch and hold the widget until the Home screen appears.
6. Position the widget on the screen and then release.

Moving Items on the Home Screen

To move app shortcuts or widgets on the Home screen:

1. Touch and hold the item until it floats on the screen.
2. Drag the item to a new location. Pause at the edge of the screen to drag the item onto an adjacent Home screen.
3. Lift finger to place the item on the Home screen.

Removing an App Shortcut or Widget from the Home Screen

To remove an app shortcut or widget from the Home screen:

1. Go to the desired Home screen.
2. Touch and hold the app shortcut or widget icon until it floats on the screen.
3. Drag the icon to **X Remove** at the top of the screen and then release.

Folders

Use **Folders** to organize similar applications together. Tap the folder to open and display items in the folder.

Creating a Folder

There must be at least two app icons on the Home screen.

To create a folder:

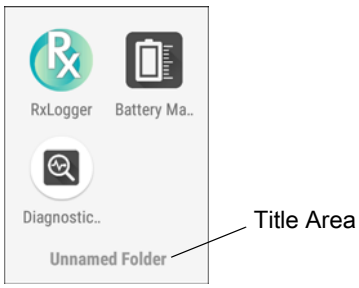
1. Go to the desired Home screen.
2. Touch and hold one app icon.
3. Drag the icon and stack on top of another icon.
4. Lift and release.

Naming Folders

To name a folder:

1. Touch the folder.

Figure 29 Open Folder



2. Touch the title area and enter a folder name using the keyboard.

3. Touch on the keyboard.
4. Touch anywhere on the Home screen to close the folder. The folder name appears under the folder.

Removing a Folder

To remove a folder:

1. Touch and hold the folder icon until it enlarges.
2. Drag the folder to **X Remove** and release.

Home Screen Wallpaper

To change the Home screen wallpaper:

1. Touch and hold the screen until the menu appears.
2. Touch **WALLPAPERS**.
3. Touch **Photos** or **Gallery** to select a photo or select one of the pre-installed wallpapers.
4. Touch **Set wallpaper**.

Using the Touchscreen

Use the multi-tap sensitive screen to operate the device.

- Tap - Tap to:
  - Select items on the screen.
  - Type letters and symbols using the on-screen keyboard.
  - Press on-screen buttons.
- Tap and Hold - Tap and hold:
  - An item on the Home screen to move it to a new location or to the trash.
  - An item in Apps to create a shortcut on the Home screen.
  - The Home screen to open a menu for customizing the Home screen.
  - An empty area on the Home screen until the menu appears.
- Drag - Tap and hold an item for a moment and then move finger on the screen until reaching the new position.
- Swipe - Move finger up and down or left and right on the screen to:
  - Unlock the screen.
  - View additional Home screens.
  - View additional app icons in the Launcher window.
  - View more information on an app’s screen.
- Double-tap - Tap twice on a web page, map, or other screen to zoom in and out.
- Pinch - In some apps, zoom in and out by placing two fingers on the screen and pinching them together (to zoom out) or spreading them apart (to zoom in).

Using the Android and Gboard Keyboards

Use the Android or Gboard keyboards to enter text in a text field. To configure the keyboard settings, touch and hold **,** (comma) and then select **Android keyboard settings**.

Editing Text

Edit entered text and use menu commands to cut, copy, and paste text within or across apps. Some apps do not support editing some or all of the text they display; others may offer their own way to select text.

Entering Numbers, Symbols, and Special Characters

To enter numbers and symbols:

- Touch and hold one of the top-row keys until a menu appears then select a number or special character.
- Touch the Shift key once for a single capital letter. Touch the Shift key twice to lock in uppercase. Touch the Shift key a third time to unlock Capslock.
- Touch **?123** to switch to the numbers and symbols keyboard.
- Touch the **=\<** key on the numbers and symbols keyboard to view additional symbols.

To enter special characters, touch and hold a number or symbol key to open a menu of additional symbols. A larger version of the key displays briefly over the keyboard.

Apps

The **APPS** screen displays icons for all installed apps. The table below lists the apps installed on the device. Refer to the device Integrator Guide for Android Version 8.1 for information on installing and uninstalling apps.

Table 8 Apps

Icon	Description
	Battery Manager - Displays battery information, including charge level, status, health and wear level.
	Bluetooth Pairing Utility – Use to pair with the device by scanning a barcode.
	Calculator - Provides the basic and scientific arithmetic functions.
	Calendar - Use to manage events and appointments. GMS/GMS-Restricted only.
	Camera - Take photos or record videos. For more information see Camera.
	Chrome - Use to access the Internet or intranet. GMS/GMS-Restricted only.

Table 8 Apps (Continued)

Icon	Description
	Clock - Use to schedule alarms for appointments or as a wake-up.
	Contacts - Use to manage contact information. See Contacts for more information.
	DataWedge - Enables data capture using the imager.
	Device Central - Use to display detailed information about the device and connected peripherals. See Device Central for more information.
	Diagnostic Tool - Use to diagnose the device.
	Drive - Upload photos, videos, documents, and other files to personal storage site. GMS/GMS-Restricted only.
	Duo - A one-to-one video calling app (WWAN only). GMS/GMS-Restricted only.
	DWDemo - Provides a way to demonstrate the data capture features using the imager. See DataWedge Demonstration for more information.
	Files - Organize and manage files on the device. See Files for more information.
	Gmail - Use to send and receive email using a Google email account. GMS/GMS-Restricted only.
	Google - Launches Google ™ search app. GMS/GMS-Restricted only.
	Hangouts - Use to communicate with friends using text messages and photos. GMS/GMS-Restricted only.
	Keep- Use to create, edit, and share notes. GMS/GMS-Restricted only.
	License Manager - Use to manage software licenses on the device.

Table 8 Apps (Continued)

Icon	Description
	Maps - Use to see your location on a map (with public transit, traffic, or satellite overlays). Search for any business or place of interest. Provides turn-by-turn navigation with voice guidance, traffic-avoidance, and alternate routes, for drivers, cyclists, walkers, and users of public transportation. GMS/GMS-Restricted only.
	Phone - Use to dial a phone number when used with some Voice over IP (VoIP) clients (VoIP telephony ready only).
	Photos - Use to sync photos with Google account. For more information, see Photo Settings. GMS/GMS-Restricted only.
	Play Movies & TV - View movies and video on your device. GMS/GMS-Restricted only.
	Play Music - Use to listen to music. GMS/GMS-Restricted only.
	Play Store - Download music, movies, books, and Android apps and games from the Google Play Store. GMS/GMS-Restricted only.
	PTT Express - Use to launch PTT Express client for VoIP communication.
	RxLogger - Use to diagnose device and app issues. See the device Integrator Guide for Android Version 8.1 for more information.
	RxLogger Utility - Use to view, backup, and archive RxLogger data.
	Settings - Use to configure the device.
	Sound Recorder - Use to record audio.
	StageNow - Allows the device to stage a device for initial use by initiating the deployment of settings, firmware, and software.
	Velocity - Opens the Ivanti (formerly Wavelink) terminal emulation app.

Table 8 Apps (Continued)

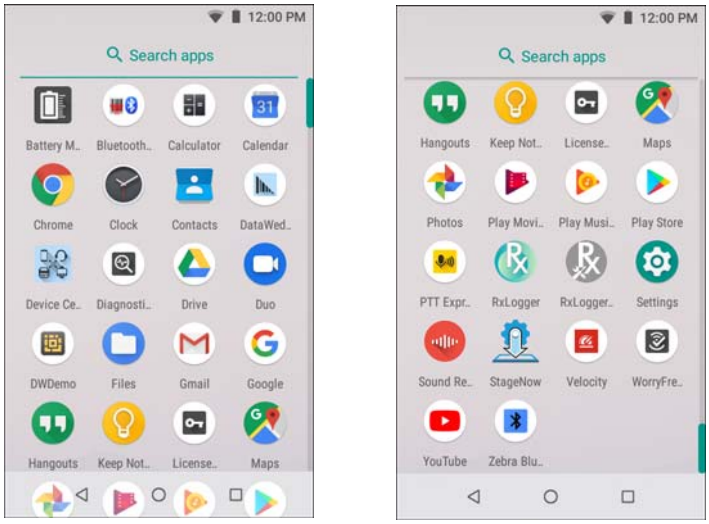
Icon	Description
	Worry Free Wifi Analyzer - A diagnostic intelligent app. Use to diagnose surrounding area and display network stats, such as coverage hole detection, or AP in vicinity. Refer to the Worry Free Wi-Fi Analyzer Administrator Guide for Android.
	YouTube - Use to view videos on the YouTube ™ web site. GMS/GMS-Restricted only.
	Zebra Bluetooth - Use to configure Bluetooth logging.

Accessing Apps

All apps installed on the device are accessed using the **APPS** window.

1. On the Home screen, swipe up from the bottom of the screen.

Figure 30 APPS Window Example



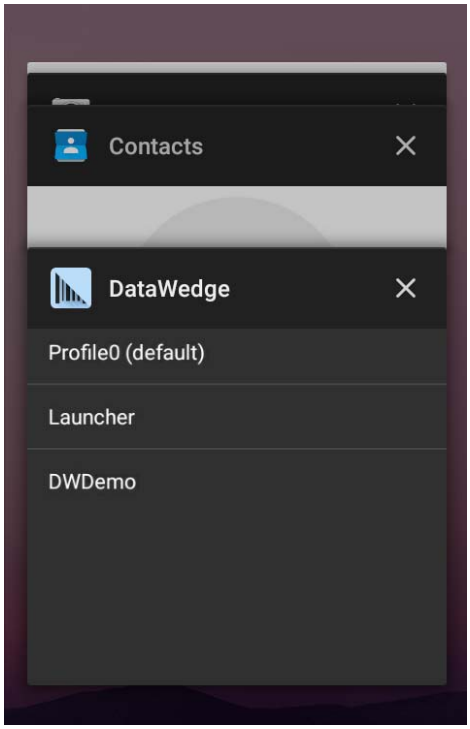
Slide the **APPS** window up or down to view more app icons. Touch an icon to open the app.

Switching Between Recent Apps

To switch between recent apps:

1. Touch ▢. A window appears on the screen with icons of recently used apps.

Figure 31 Recently Used Apps



2. Slide the apps displayed up and down to view all recently used apps.
3. Swipe left or right to remove app from the list and force close the app.
4. Touch an icon to open an app or touch ◁ to return to the current screen.

Un-Locking the Screen

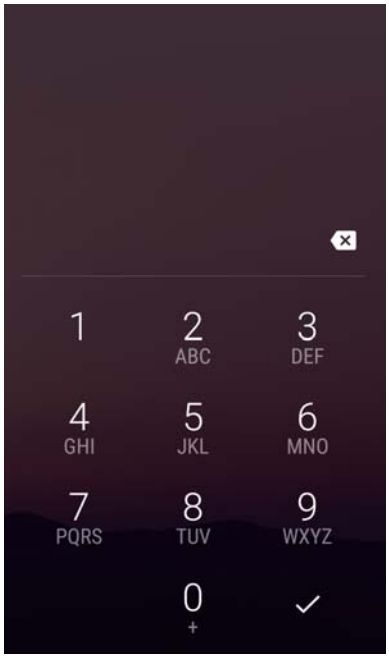
Use the Lock screen to protect access to data on the device. Some email accounts require locking the screen. Refer to the device Integrator Guide for information on setting up the locking feature.

When locked, a pattern, PIN, or password is required to unlock the device. Press the Power button to lock the screen. The device also locks after a pre-defined time-out.

Press and release the Power button to wake the device. The Lock screen displays. Swipe the screen up to unlock. If the Pattern screen unlock feature is enabled, the Pattern screen appears instead of the Lock screen. If the PIN or Password screen unlock feature is enabled, enter the PIN or password after unlocking the screen.

Figure 32 Lock Screen

Figure 33 PIN Screen



Suspend Mode

The device goes into suspend mode when you press the button or after a period of inactivity .

To wake the device from Suspend mode, press the button. The Lock screen displays. Swipe the screen up to unlock. If the Pattern screen unlock feature is enabled, the Pattern screen appears instead of the Lock screen. If the PIN or Password screen unlock feature is enabled, enter the PIN or password after unlocking the screen. See Un-Locking the Screen.

NOTE: If you enter the PIN, password, or pattern incorrectly five times, you must wait 30 seconds before trying again. If you forget the PIN, password, or pattern contact your system administrator.

Interactive Sensor Technology

The device contains sensors that monitor movement, orientation and ambient light:

- **Gyroscope** - Measures angular rotational velocity to detect rotation of the device.
- **Accelerometer** - Measures the linear acceleration of movement to detect the orientation of the device.
- **Light Sensor** - Used to detect ambient light and adjust the screen brightness.
- **Proximity Sensor** - Uses to detect presence of nearby objects without physical contact.

In order to take advantage of these sensors, applications use API commands. Refer to the Zebra Android EMDK for more information.

Resetting the Device

There are two reset functions:

- Soft reset
- Hard reset.

Performing a Soft Reset

Perform a soft reset if applications stop responding.

1. Press the power button until the menu appears.
2. Touch **Restart**.
3. The device reboots.

Performing a Hard Reset

CAUTION: Perform a hard reset only if the device stops responding.

To perform a hard reset, simultaneously press and hold the power button, trigger and PTT button for five seconds. When the device reboots, release the buttons and trigger.

Applications

Introduction

This chapter describes the apps installed on the device.

Battery Manager

The **Battery Manager** provides detailed information about the battery.

To open Battery Manager, swipe up from the bottom of the Home screen and touch .

Figure 34 Battery Manager Screen

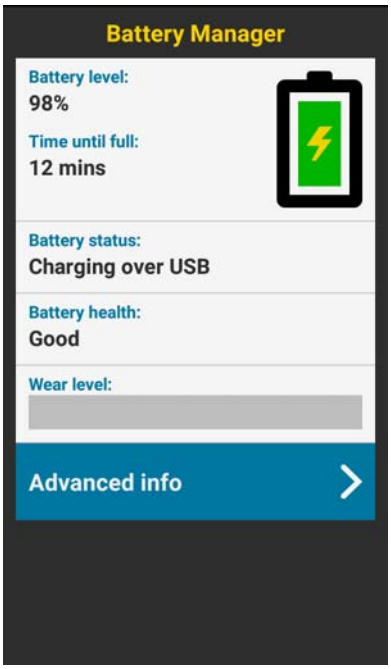


Table 9 Battery Icon Description

Battery Icon	Description
	Battery charge level.
	Battery charging.
	Battery charge level is below 20%.

- **Battery level** - The current battery charge level as a percentage. Displays **-%** when level is unknown.
- **Time until full** - The amount of time until the battery is fully charged.
- **Time since charging** - The amount of time since the device began charging.
- **Time until empty** - The amount of time until the battery is empty.
- **Battery status**
  - **Not charging** - The device is not charging.
  - **Charging over AC** - The device is connected to AC power and charging.
  - **Charging over USB** - The device is connected to a host computer with a USB cable and charging.
  - **Discharging** - That the battery is discharging.
  - **Full** - That the battery is fully charged.
  - **Unknown** - The battery status is unknown.
- **Battery health** - The health of the battery. If a critical error occurs, appears. Touch to view the error description.
  - **Decommission** - The battery is past its useful life and should be replaced. See system administrator.
  - **Good** - The battery is good.
  - **Charge error** - An error occurred while charging. See system administrator.
  - **Over Current** - An over-current condition occurred. See system administrator.
  - **Dead** - The battery has no charge. Replace the battery.
  - **Over Voltage** - An over-voltage condition occurred. See system administrator.
  - **Below Temperature** - The battery temperature is below the operating temperature. See system administrator.
  - **Failure Detected** - A failure has been detected in the battery. See system administrator.
  - **Unknown** - See system administrator.
- **Wear level** - The health of the battery in graphical form. When the wear level exceeds 80%, the bar color changes to red.

- **Advanced info** - Touch to view additional battery information.
  - **Battery present status** - Indicates that the battery is present.
  - **Battery level** - The battery charge level as a percentage of scale.
  - **Battery scale** - The battery scale level used to determine battery level (100).
  - **Battery voltage** - The current battery voltage in millivolts.
  - **Battery temperature** - The current battery temperature in degrees Centigrade.
  - **Battery technology** - The type of battery.
  - **Battery current** - The average current into or out of the battery over the last second in mAh.
  - **Battery manufacture date** - The date of manufacture.
  - **Battery serial number** - The battery serial number. The number matches the serial number printed on the battery label.
  - **Battery part number** - The battery part number.
  - **Battery rated capacity** - Lists the rated capacity of the backup battery in mAh.
  - **Battery decommission status** - Indicates if the battery is past its life span.
    - **Battery Good** - The battery is in good health.
    - **Decommissioned Battery** - The battery is past its useful life and should be replaced.
  - **Base cumulative charge** - Cumulative charge using Zebra charging equipment only.
  - **App version** - The application version number.

Camera

This section provides information for taking photos and recording videos using the integrated digital cameras.

Taking Photos

NOTE: See Photo Settings for camera setting descriptions.

1. Swipe up from the bottom of the Home screen and touch **Camera**.

Figure 35 Camera Mode

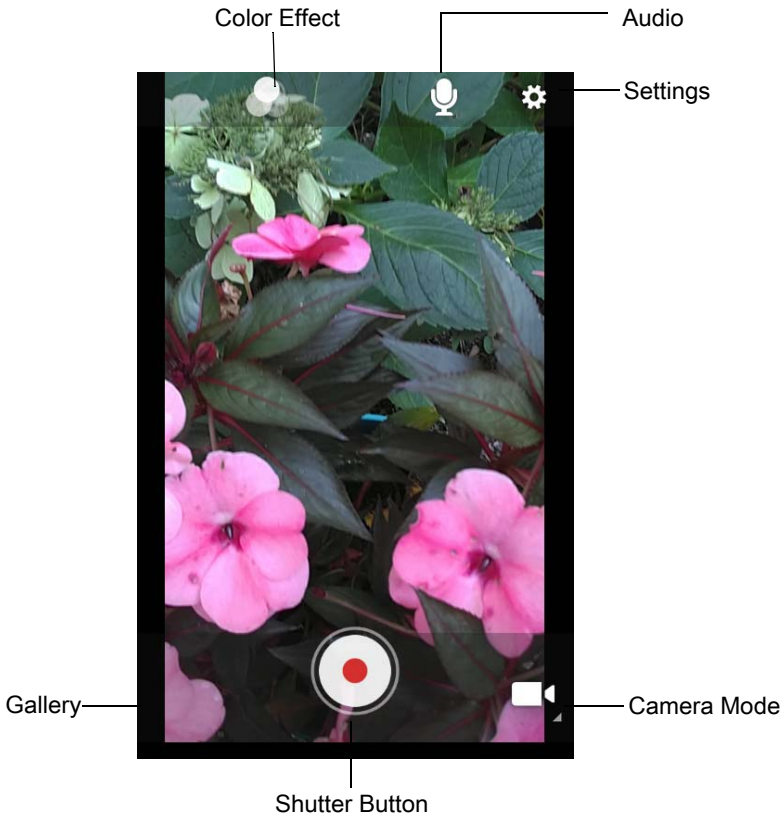
2. If necessary, touch the Camera Mode icon and touch .
3. Frame the subject on the screen.
4. To zoom in or out, press two fingers on the display and pinch or expand fingers. The zoom controls appear on the screen.
5. Touch an area on the screen to focus. The focus circle appears. The two bars turn green when in focus.

6. Touch .
   The camera takes a photo and a shutter sound plays.
   The photo momentarily displays as a thumbnail in the lower left corner.

Recording Videos

1. Swipe up from the bottom of the Home screen and touch **Camera**.
2. Touch the camera mode menu and touch .

Figure 36 Video Mode



3. Point the camera and frame the scene.
4. To zoom in or out, press two fingers on the display and pinch or expand fingers. The zoom controls appear on the screen.
5. Touch to start recording.
   The video time remaining appears in the top left of the screen.
6. Touch to the end recording.
   The video momentarily displays as a thumbnail in the lower left corner.

Photo Settings

In Photo mode, photo settings appear on screen. Touch ⚙ to display the photo settings options.

Rear Camera

- **Flash** - Select whether the camera relies on its light meter to decide whether a flash is necessary, or to turn it on or off for all shots.
  - **Off** - Disable flash.
  - **Auto** - Adjust flash automatically depending upon light meter (default).
  - **On** - Enable flash upon taking a photo.
- **Picture size** - The size (in pixels) of the photo to: **13M pixels** (default), **8M pixels**, **5M pixels**, **3M pixels**, **HD 1080**, **2M pixels**, **HD720**, **1M pixels**, **WVGA**, **VGA,** or **QVGA**.
- **Picture quality** - Set the picture quality setting to: **Low**, **Standard** (default) or **High**.
- **Countdown timer** - Select **Off** (default), **2 seconds**, **5 seconds** or **10 seconds**.
- **Storage** – Set the location to store the photo to: **Phone** or **SD Card**.
- **Face Detection** - Select to turn face detection **Off** (default) or **On**.
- **ISO** - Set camera sensitivity to light to: **Auto** (default), **ISO Auto (HJR)**, **ISO100**, **ISO200**, **ISO400**, **ISO800** or **ISO1600**.
- **Exposure** - Set the exposure settings to: **+2**, **+1**, **0**(default), **-1** or **-2**.
- **White balance** - Select how the camera adjusts colors in different kinds of light, to achieve the most natural-looking colors:
  - **Incandescent** - Adjust the white balance for incandescent lighting.
  - **Fluorescent** - Adjust the white balance for florescent lighting.
  - **Auto** - Adjust the white balance automatically (default).
  - **Daylight** - Adjust the white balance for daylight.
  - **Cloudy** - Adjust the white balance for a cloudy environment.
- **Chroma Flash** - Sets the camera to take two pictures, one with flash and one without flash. The two images are combined to produce a final image with the sharpness and clarity and bright color tones from a picture with the flash, coupled with the natural colors of a picture without a flash. Options: **Off** (default) or **On**.
- **Redeye reduction** - Helps eliminate redeye effect. Options: **Disabled** (default), or **Enable**.
- **ZSL** - Set the camera to immediately take a picture when the button is pressed (default – enabled).
- **Shutter Sound** - Select to play a shutter sound when taking a photo. Options: **Disable** (default) or **Enable**.
- **Anti Banding** - Allows the camera to avoid problems caused by artificial light sources that are not constant. These sources cycle (flicker) fast enough to go unnoticed to the human eye, appearing continuous. The camera's eye (its sensor) can still see this flicker. Options: **Auto** (default), **60 Hz**, **50 Hz**, or **Off**.

Video Settings

In Video mode, video settings appear on screen. Touch ⚙ to display the video settings options.

Rear Camera

- **Flash** - Select whether Rear-facing Camera relies on its light meter to decide whether a flash is necessary, or to turn it on or off for all shots.
  - **Off** - Disable flash (default).
  - **On** - Enable flash.
- **Video quality** - Set video quality to: **4k DCI**, **4k UHD**, **HD 1080p** (default), **HD 720p**, **SD 480p, VGA, CIF, or QVGA**.
- **Video duration** - Set to: **30 seconds (MMS)**, or **30 minutes** (default).
- **Storage** – Set the location to store the photo to: **Phone** (default) or **SD Card**.
- **White balance** - Select how the camera adjusts colors in different kinds of light, to achieve the most natural-looking colors.
  - **Incandescent** - Adjust the white balance for incandescent lighting.
  - **Fluorescent** - Adjust the white balance for florescent lighting.
  - **Auto** - Adjust the white balance automatically (default).
  - **Daylight** - Adjust the white balance for daylight.
  - **Cloudy** - Adjust the white balance for a cloudy environment.
- **Image Stabilization** - Set to reduce blurry videos due to device movement. Options: **On** or **Off** (default).

Contacts

Use the **Contacts** app to manage contacts.

From a Home or Apps screen, touch **Contacts** to open to the main list of contacts. Contacts are listed in alphabetical order. Swipe up or down to scroll through the list.

Adding a Contact

1. In the **Contacts** app, touch .
2. If there is more than one account with contacts, touch the one you want to use.
3. Type the contact's name and other information. Touch a field to start typing, and swipe down to view all categories.
4. To open a menu with preset labels, such as Home or Work for an email address, touch the label to the right of the item of contact information. Or, to create your own label, touch **Custom** in the menu.
5. Touch the check mark next to **Add New Contact**.

Editing Contacts

1. In the **Contacts** app, touch a contact name to edit.
2. Touch .
3. Edit the contact information.
4. Touch **SAVE**.

Deleting Contacts

1. In the **Contacts** app, touch a contact name to delete.
2. Touch .
3. Touch **Delete**.
4. Touch **DELETE** to confirm.

DataWedge Demonstration

NOTE: DataWedge is on the Home screen.To this feature, go to the DataWedge settings and .

Use **DataWedge Demonstration** to demonstrate data capture functionality.

Figure 37 DataWedge Demonstration Window

Table 10 DataWedge Demonstration Icons

	Icon	Description
Illumination		Imager illumination is on. Touch to turn illumination off.
		Imager illumination is off. Touch to turn illumination on.
		An RS507 or RS6000 Bluetooth imager is connected.
		An RS507 or RS6000 Bluetooth imager is not connected.
Scan Mode		Imager is in picklist mode. Touch to change to normal scan mode.
		Imager is in normal scan mode. Touch to change to picklist mode.
		Opens a menu to view the application information or to set the application DataWedge profile.

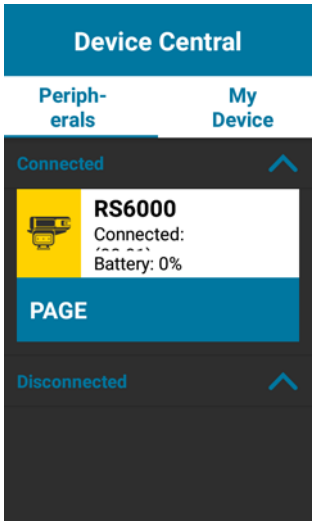
Device Central

Device Central displays detailed information about the device and connected peripherals and supports the following Zebra devices:

Device Central features include:

- Discovering and pairing with supported peripherals via Bluetooth or corded connection.
- Paging a connected RS6000 Ring Scanner.
- Displaying the connection status of peripherals.
- Displaying information for a connected peripheral in the notification bar.

Figure 38 Device Central Screen



1. Touch **Get Info** to read the cradle information.

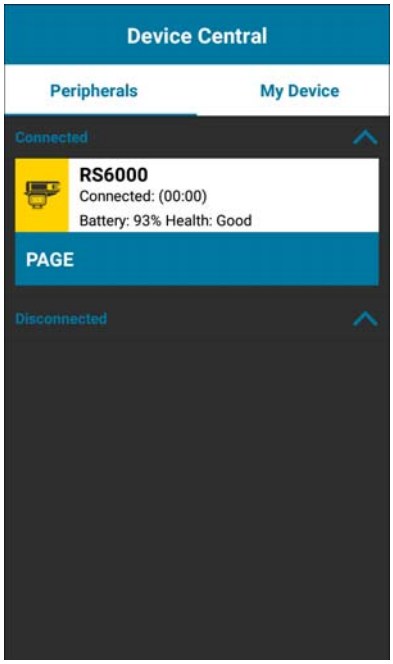
Device Central Tabs

- **Peripherals** Tab - displays all currently connected and previously connected peripherals. Connected peripherals display the length of time (in minutes) that they have been connected. When an RS6000 is connected the **Page** button displays. See Paging an RS6000 Ring Scanner.

Touch the peripheral information to display the **Device Details** screen.

  - **Device Details** - displays detailed device information for the selected peripheral.
- **My Device** Tab - displays information about the device and the current version of Device Central.
  - **Device Details** - displays the **Phone status** screen.
  - **Device Battery Details** - displays the **Battery** screen.

Figure 39 Peripherals Tab



Paging an RS6000 Ring Scanner

Use **Page** to easily locate the connected RS6000 Ring Scanner:

1. With the RS6000 Ring Scanner connected, swipe up from the bottom of the screen and touch .

NOTE: The RS6000 Ring Scanner must be within 10 m (32 ft) of the device.

2. Under the RS6000 peripheral information, touch **Page** to page the RS6000. The paged RS6000 beeps and vibrates.

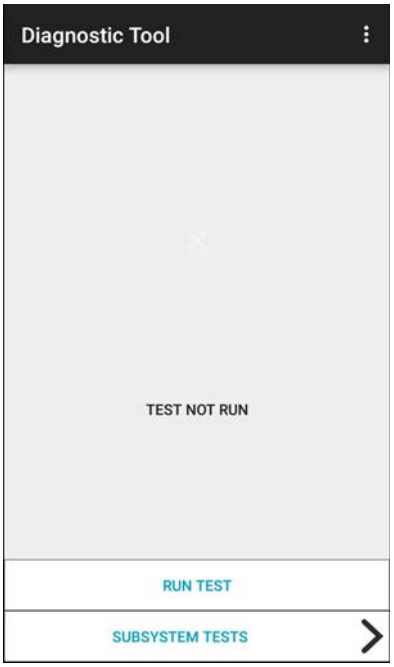
To stop paging, press the scan trigger of the RS6000. On a triggerless RS6000, reset the RS6000 to stop paging. Refer to the RS6000 User Guide.

Diagnostic Tool

The **Diagnostic Tool** is a utility that determines the health of the device. Use the Diagnostic Tool to troubleshoot the device.

1. Swipe up from the bottom of the Home screen and touch .

Figure 40 Diagnostic Tool



2. Touch **RUN TEST**. The app tests all enabled subsystems (by default, only the Battery and System tests). See Settings to enable subsystem tests.

Figure 41 Test Passed Screen

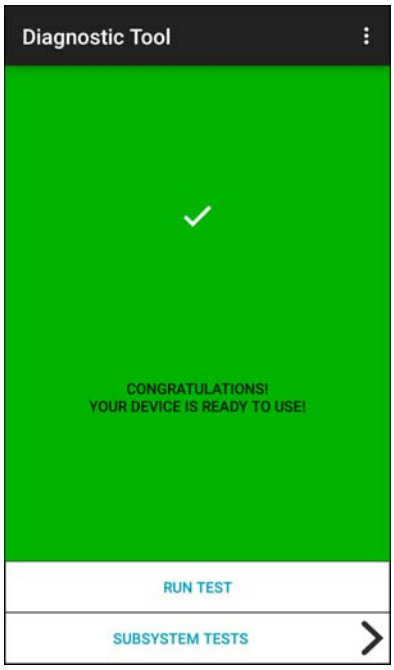
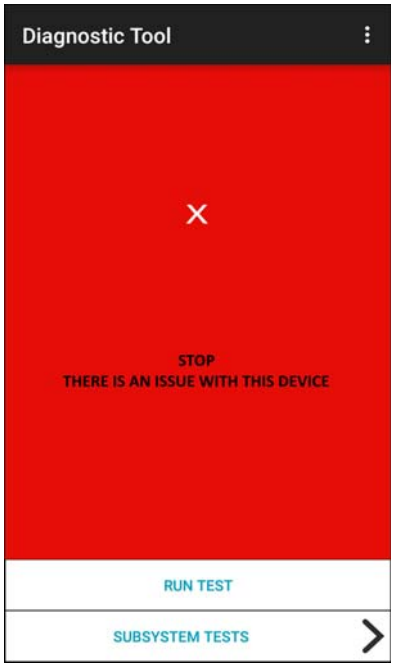
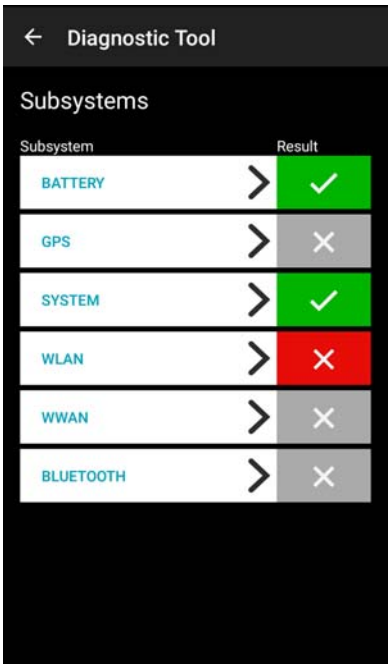


Figure 42 Test Failed Screen



3. To view each subsystem test, touch **Subsystem Tests**.

Figure 43 Subsystem Screen

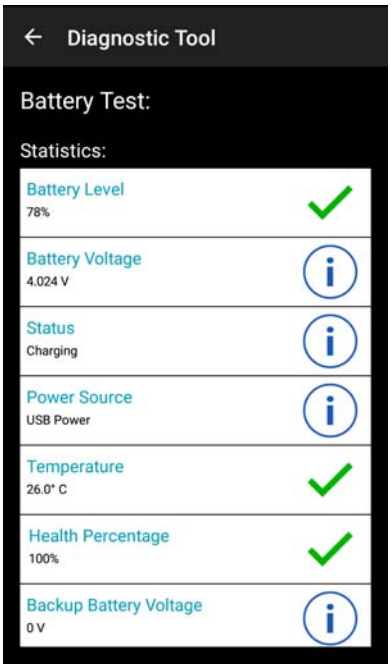


4. Touch one of the subsystems to view details.

Table 11 Subsystem Test Result Indicators

Status Icon	Description
	Test passed.
	Test failed.
	Test not supported or not enabled.

Figure 44 Battery Subsystem Details



Settings

By default only the Battery and System tests are enabled. To enable other tests:

1. Touch ⋮ > **Settings**.
2. Touch to the left of the test name. A green box with a checkmark appears.
3. Touch **SAVE**.
4. Touch **Yes** to confirm.
5. Touch ◁.

Battery Test Information

The Battery Test obtains the following information:

- **Battery Level** - Current battery charge level
- **Battery Voltage** - Current battery voltage
- **Status** - Whether the battery is charging (on AC power) or discharging (on battery power)
- **Power Source** - Whether the device is receiving power from the battery or from an external source
- **Temperature** - Current battery temperature
- **Health Percentage** - Indicates the ratio of present capacity to design capacity at a discharge rate of design capacity.
- **Backup Battery Voltage** - Backup battery voltage.
- **Manufacture Date** - Manufacture date of the battery.

System Test Information

Use the System Test to determine if the CPU or memory loads are too high, there are too many processes running on the device, or storage on the device is almost full.

The System Test obtains the following information:

- **CPU Load** - Amount of CPU being used
- **Free Physical Memory** - Amount of RAM available
- **Free Storage** - Amount of internal Flash memory available
- **Process Count** - Number of processes currently running.

WLAN Test Information

If the WiFi radio is not present or disabled, skip this test. This test determines if the device's WLAN configuration is correct or whether there is any connection with an access point or network.

The WLAN test obtains the following information:

- **WLAN Enabled** - WLAN radio is enabled or disabled
- **WLAN Status** - Current status of association with the access point
- **ESSID** - Name of the wireless network
- **BSSID** - MAC address of the connected access point
- **MAC Address** - Device's MAC address
- **Signal** - Strength of the Wi-Fi signal (in dBm)
- **IP Address** - IP address of the device.

Bluetooth Test Information

The Bluetooth Test obtains the following information:

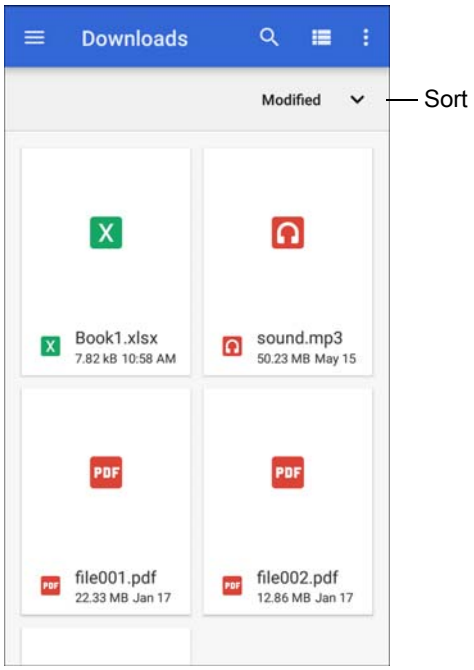
- **Enabled** - Whether the Bluetooth radio is enabled or disabled
- **Status** - Whether the device is paired to another Bluetooth device
- **Connectable/Discoverable** - Whether the device is discoverable or able to connect
- **Address** - Bluetooth radio MAC address
- **Name** - Bluetooth name for the device.

Files

Use the **Files** app to view and manage files on the device.

To open **Files**, swipe up from the bottom of the screen and touch .

Figure 45 Files Screen



- Touch and hold an item to open the File Operations menu. Select an option:
  - - Share the file with other devices.
  - - Delete the file.
  - - View additional options.
    - **Open with** - Select which app is used to open the file.
    - **Select all** - Select all folders and files.
    - **Copy to...** - Copy the file.
    - **Move to...** - Move the file or folder to a new location.
    - **Compress** - Compress the selected file(s) into a ZIP file.
    - **Rename** - Rename the file.
- Touch the Sort drop-down to sort files by name, type, size, or date.
- - View all file locations.
- - Search for a specific file on the device.
- / - Change the folder to display items as a list / grid.
- - Open the options menu.
  - **New Window** - Create a new Files window.
  - **New Folder** - Create a new folder.
  - **Select all** - Select all folders and files.
  - **Show/Hide internal storage** - Show or hide internal storage.

Gallery

NOTE: The device supports the following image formats: jpeg, gif, png and bmp.
The device supports the following video formats: H.263, H.264 and MPEG4 Simple Profile.

Available on device with AOSP only.

Use Gallery to:

- View photos
- Play videos
- Perform basic editing of photos
- Set photos as wallpaper
- Set photos as a contact photo
- Share photos and videos.

Gallery presents all photos and videos stored on the internal memory.

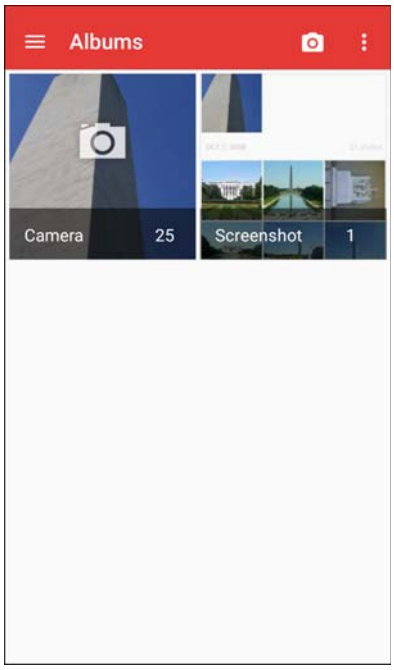
To open **Gallery**, swipe up from the bottom of the Home screen and touch **Gallery**, or in the camera app touch the thumbnail image at the bottom left.

By default, **Gallery** opens to the **Timeline** view.

Figure 46 Gallery - Timeline View

Touch ☰ > **Albums** to view photos sorted by albums or ☰ > **Videos** to view only videos.

Figure 47 Gallery — Albums View



- Touch an album to open it and view its contents. The photos and videos in the album are displayed in chronological order.
- Touch a photo or video in an album to view it.
- Touch ☰ > **Timeline** to return to the default **Gallery** screen.

Working with Albums

Albums are groups of images and videos in folders. Touch an album to open it. The photos and videos are listed in a chronologically ordered grid. The name of the album displays at the top of the screen.

Figure 48 Photos Inside an Album

Swipe up or down to scroll through the images.

Sharing an Album

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch and hold an album to highlight it.
3. Touch other albums as required.
4. Touch . The Share menu opens.
5. Touch the app to use to share the selected albums.
6. Follow the instructions within the selected app.

Getting Album Information

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch and hold an album to highlight it.
3. Touch .
4. Touch **Details**.

Deleting an Album

To delete an album and its contents:

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch and hold an album to highlight it.
3. Check other albums to delete.

4. Touch .
5. In the **Delete selected item?** menu, touch **OK** to delete the album.

Working with Photos

Use **Gallery** to view photos on the device and edit and share photos.

Viewing and Browsing Photos

To view a photo:

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.
3. Touch a photo.

Figure 49 Photo Example

4. Swipe left or right to view the next or previous photo in the album.
5. Turn the device to view the photo in upright (portrait) or sideways (landscape) orientation. The photo is displayed (but not saved) in the new orientation.
6. Touch the photo to view the controls.
7. Double-tap the screen to zoom in or pinch two fingers together or spread them apart to zoom in or out.
8. Drag the photo to view parts that are not in view.

Cropping a Photo

1. In **Gallery**, touch a photo to view the controls.

2. Touch > > . The cropping tool appears.
3. Use the cropping tool to select the portion of the photo to crop.
   - Drag from the inside of the cropping tool to move it.
   - Drag an edge of the cropping tool to resize it to any proportion.

Figure 50 Cropping Tool

4. Touch > **SAVE** to save a copy of the cropped photo. The original version is retained.

Setting a Photo as a Contact Icon

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.
3. Touch a photo to open it.
4. Touch .
5. Touch **Set picture as**.
6. Touch **Contact photo**.
7. In **Contacts**, touch a contact.
8. Touch the white box and crop the photo accordingly.
9. Touch **SAVE**.

Sharing a Photo

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.

3. Touch a photo to open it.
4. Touch .
5. Touch the app to use to share the selected photo.
6. Follow the instructions within the selected app.

Deleting a Photo

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.
3. Touch a photo to open it.
4. Touch .
5. Touch **OK** to delete the photo.

Working with Videos

Use **Gallery** to view and share videos.

Watching Videos

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.
3. Touch a video.
4. Touch to play.
5. Touch the screen to view the playback controls.

Sharing a Video

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.
3. Touch a video to open it.
4. Touch . The Share menu appears.
5. Touch the app to use to share the selected video.
6. Follow the instructions within the selected app.

Deleting a Video

1. Swipe up from the bottom of the Home screen and touch **Gallery**.
2. Touch an album to open it.
3. Touch a video to open it.
4. Touch .
5. Touch **OK**.

Photos

NOTE: The device supports the following image formats: jpeg, gif, png, and bmp.

The device supports the following video formats: H.263, H.264, and MPEG4 Simple Profile.

Available on device with GMS only.

Use **Photos** to:

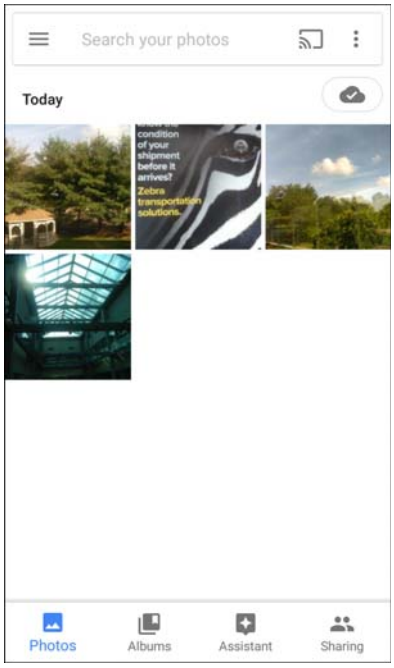
- View photos
- Play videos
- Perform basic editing of photos
- Set photos as wallpaper
- Set photos as a contact photo
- Share photos and videos.

Photos presents all photos and videos stored on the internal memory.

To open **Photos**, swipe up from the bottom of the Home screen and touch **Photos**.

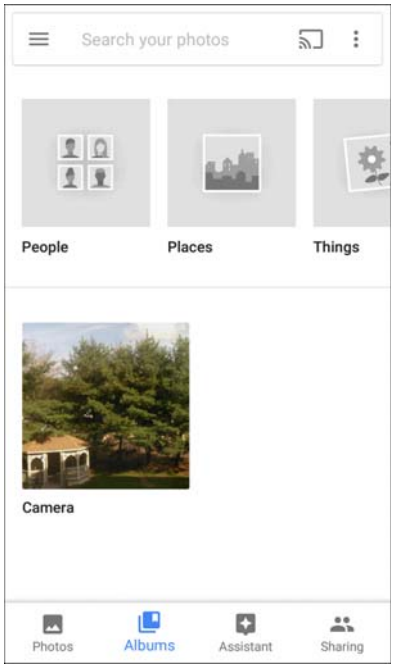
By default, **Photos** opens to the photos view.

Figure 51 Photos View



Touch **Albums** to view photos sorted by albums.

Figure 52 Albums View

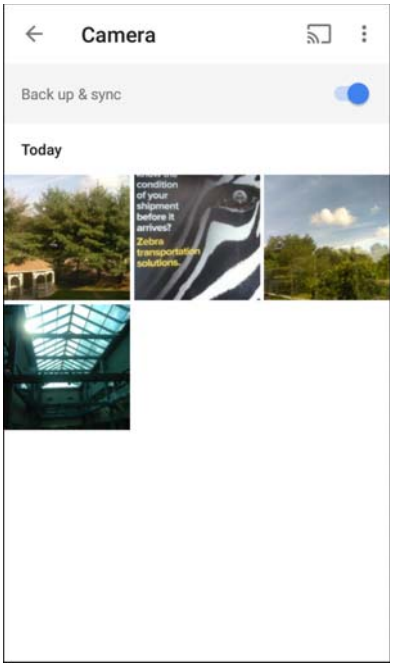


- Touch an album to view its contents. The photos and videos in the album appear in chronological order.
- Touch a photo or video in an album to view it.
- Touch ← to return to the main screen.

Working with Albums

Albums are groups of images and videos in folders. Touch an album to open it. The photos and videos are listed in a chronologically ordered grid. The name of the album displays at the top of the screen.

Figure 53 Photos Inside an Album



Swipe up to scroll through the images.

Sharing an Album

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch **Albums**.
3. Touch an album.
4. Touch ⋮ > **Select**.
5. Select all photos in the album.
6. Touch <. The Share menu opens.
7. Touch an app to share the selected albums.
8. Follow the instructions within the selected app.

Deleting an Album

To delete an album and its contents:

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch **Albums**.
3. Touch an album.
4. Touch ⋮ > **Select**.
5. Select all photos in the album.
6. Touch 🗑.

7. Touch **Move to trash** to delete the album.

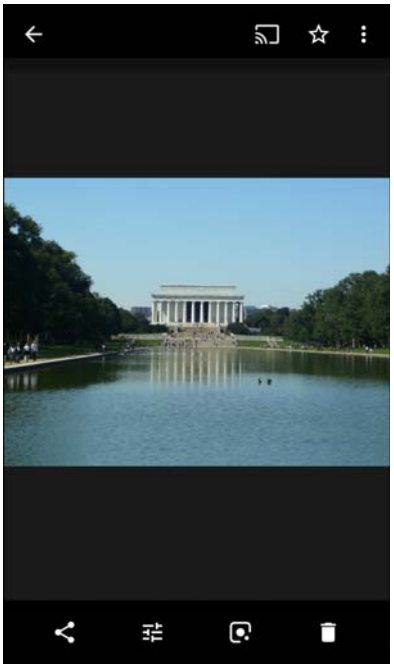
Working with Photos

Use **Photos** to view photos on the internal memory.

Viewing and Browsing Photos

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch a photo.

Figure 54 Photo Example



3. Swipe left or right to view the next or previous photo in the album.
4. Turn the device to view the photo in upright (portrait) or sideways (landscape) orientation. The photo is displayed (but not saved) in the new orientation.
5. Touch the photo to view the controls.
6. Double-tap the screen to zoom in, or pinch two fingers together or spread them apart to zoom in or out.
7. Drag the photo to view parts that are not in view.

Cropping a Photo

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch a photo to view the controls.
3. Touch > . The cropping tool appears.

Figure 55 Cropping Tool

4. Use the cropping tool to select the portion of the photo to crop.
   - Drag from the inside of the cropping area to move it.
   - Drag an edge of the cropping area to resize it to any proportion.
5. Touch **DONE.**
6. Touch **SAVE** to save a copy of the cropped photo. The original version is retained.

Setting a Photo as a Contact Icon

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch the photo to open it.
3. Touch ⋮ **> Use as**.
4. Touch **Contact photo**.
5. In the **Contacts** app, touch a contact.
6. Touch the white box and crop the photo accordingly.
7. Touch **Done**.

Sharing a Photo

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch an album to open it.
3. Touch a photo to open it.
4. Touch <.

5. Touch the app to use to share the selected photo.
6. Follow the instructions within the selected app.

Deleting a Photo

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch a photo to open it.
3. Touch .
4. Touch **MOVE TO TRASH**.

Working with Videos

Use **Photos** to view and share videos.

Watching a Video

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch a video to play.
3. Touch the screen to view the playback controls.

Sharing a Video

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch a video to open it.
3. Touch . The Share menu appears.
4. Touch the app to use to share the selected video.
5. Follow the instructions within the selected app.

Deleting a Video

1. Swipe up from the bottom of the Home screen and touch **Photos**.
2. Touch a video to open it.
3. Touch .
4. Touch **MOVE TO TRASH** to delete the video.

Print Station

Use the **Print Station** application to print labels and receipts directly to a Zebra ZPL printer via USB, Bluetooth or WLAN.

Features include:

- Discovering and pairing with Zebra printers via a Bluetooth, WLAN or USB connection.
- Retrieving and displaying a list of document templates stored on the device and on the printer.
- Using document templates to generate on-screen prompts allowing data entry at print time.
- Using the camera on the device to scan bar codes for data entry.
- Supports multiple Zebra printer models using the ZPL command language.

PTT Express Voice Client

NOTE: PTT Express Voice Client enables Push-To-Talk (PTT) communication between disparate enterprise devices. Leveraging existing Wireless Local Area Network (WLAN) infrastructure, PTT Express delivers simple PTT communication without requiring voice communication server.

- **Group Call**: Press and hold the PTT (Talk) button to start communicating with other voice client users.
- **Private Response**: Double-press the PTT button to respond to the originator of the last broadcast or to make a Private Response.

PTT Audible Indicators

The following tones provide helpful cues when using the voice client.

- **Talk Tone**: Double chirp. Plays when the Talk button is depressed. This is a prompt for you to start talking.
- **Access Tone**: Single beep. Plays when another user just finished a broadcast or response. You can now initiate a Group Broadcast or Private Response.
- **Busy Tone**: Continuous tone. Plays when the Talk button is depressed and another user is already communicating on the same talkgroup. Plays after the maximum allowed talk time is reached (60 seconds).
- **Network Tone**:
  - Three increasing pitch beeps. Plays when PTT Express acquires the WLAN connection and the service is enabled.
  - Three decreasing pitch beeps. Plays when PTT Express loses the WLAN connection or the service is disabled.

PTT Notification Icons

Notification icons indicate the current state of the PTT Express Voice client.

Table 12 PTT Express Icon Descriptions

Status Icon	Description
	The PTT Express Voice client is disabled.
	The PTT Express Voice client is enabled but not connected to a WLAN.
	The PTT Express Voice client is enabled, connected to a WLAN, and listening on the Talk Group indicated by the number next to the icon.
	The PTT Express Voice client is enabled, connected to a WLAN, and communicating on the Talk Group indicated by the number next to the icon.
	The PTT Express Voice client is enabled, connected to a WLAN, and in a private response.

Table 12 PTT Express Icon Descriptions (Continued)

Status Icon	Description
	The PTT Express Voice client is enabled and muted.
	The PTT Express Voice client is enabled but it is not able to communicate due to a VoIP telephony call in progress.

Enabling PTT Communication

1. Swipe up from the bottom of the Home screen and touch .
2. Slide the **Enable/Disable Switch** to the **ON** position. The button changes to **ON**.

Selecting a Talk Group

One of 32 Talk Groups can be selected by PTT Express users. However, only one talk group may be enabled at a time on the device. Touch one of the 32 Talk Groups. The selected Talk Group is highlighted.

PTT Communication

NOTE: This section describes the default PTT Express client configuration. Refer to the PTT Express V1.2 User Guide for detailed information on using the client.

Creating a Group Call

1. Start talking after hearing the talk tone.

NOTE: Holding the button for more than 60 seconds (default) drops the call, allowing others to make Group calls. Release the button when finished talking to allow others to make calls.

Responding with a Private Response

The Private Response can only be initiated once a Group Call has been established. The initial Private Response is made to the originator of the Group Call.

1. Wait for an access tone.
2. Within 10 seconds, double-press the PTT button, and listen for the talk tone.
3. If you hear a busy tone, release the button and wait a moment before making another attempt. Ensure that PTT Express and the WLAN are enabled.
4. Start talking after the talk tone plays.
5. Release the button when finished talking.

Disabling PTT Express Voice Client Communication

1. Swipe up from the bottom of the Home screen and touch .

2. Slide the **Enable/Disable Switch** to the **OFF** position. The button changes to **OFF**.
3. Touch ○.

RxLogger

RxLogger is a comprehensive diagnostic tool that provides app and system metrics. Create custom plug-ins that work seamlessly with this tool. RxLogger diagnoses device and application issues, and tracks information for: CPU load, memory load, memory snapshots, battery consumption, power states, wireless logging, TCP dumps, Bluetooth logging, GPS logging, logcat, ANR dumps, etc. All logs and files generated are saved in flash storage on the device (internal or external).

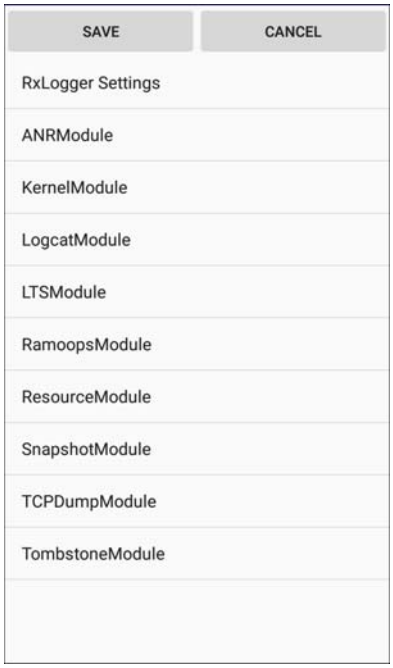
Figure 56 RxLogger

RxLogger Configuration

RxLogger is built with an extensible plug-in architecture and comes packaged with a number of plug-ins already built-in. The included plug-ins are described below.

To open the configuration screen, from the RxLogger home screen touch **Settings**.

Figure 57 RxLogger Configuration Screen



Configuration File

RxLogger configuration can be set using an XML file. The **`config.xml`** configuration file is located in the **`RxLogger\config`** folder. Copy the file from the device to a host computer using a USB connection. Edit the configuration file and then replace the XML file on the device. There is no need to stop and restart the RxLogger service since the file change is automatically detected.

Enabling Logging

To enable logging:

1. Swipe the screen up and select .
2. Touch **Start**.
3. Touch .

Disabling Logging

To disable logging:

1. Swipe the screen up and select .
2. Touch **Stop**.
3. Touch .

Extracting Log Files

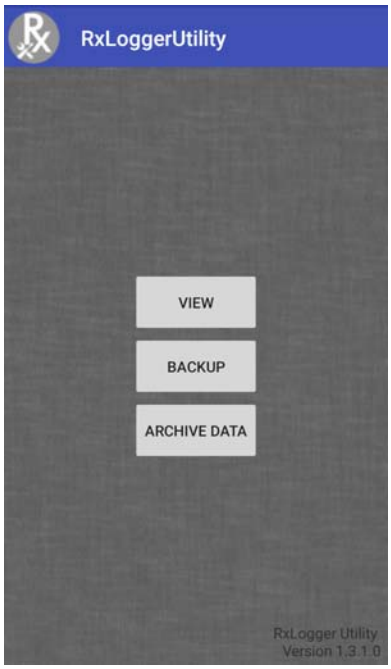
1. Connect the device to a host computer using an USB connection.
2. Using a file explorer, navigate to the **`RxLogger`** folder.
3. Copy the file from the device to the host computer.
4. Disconnect the device from the host computer.

RxLogger Utility

RxLogger Utility is a data monitoring application for viewing logs in the device while RxLogger is running. Access the logs and RxLogger Utility features in the App View or the Overlay View.

In the App View, view logs in the RxLogger Utility.

Figure 58 RxLogger Utility App View



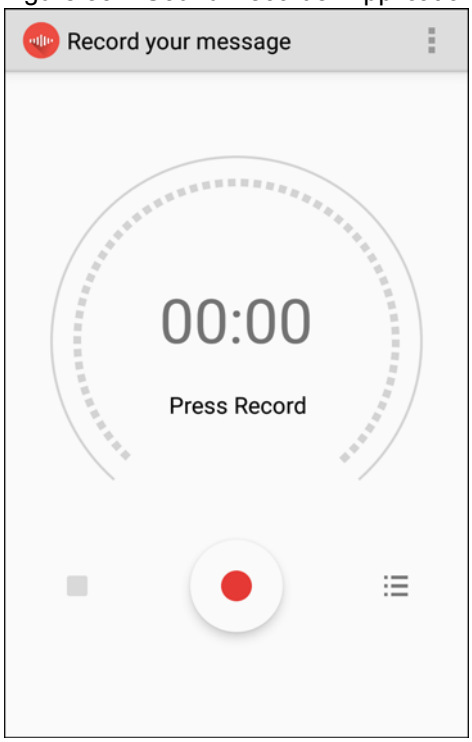
Refer to the device Integrator Guide for detailed information on the RxLogger Utility.

Sound Recorder

Use **Sound Recorder** to record audio messages.

Recordings are saved on the internal storage and are available in the Play Music application (GMS devices).

Figure 59 Sound Recorder Application



Velocity

Velocity transforms the traditional green screen telnet application into a modern smart device application. It accomplishes all of this without modifying the host application, offering workers a familiar experience optimized for today's touch screen mobile computers.

To open Velocity, swipe up from the Home screen and touch .

- Access the context menu for quick access to function or control keys.
- Access the Velocity menu for starting new sessions or switching between green and reformatted screens.

Refer to the Velocity user guide for more information. Goto http://download.wavelink.com/Files/Velocity-qsg-28042016.pdf

Scanner Setup in Velocity

Use the Velocity console to configure any of the supported SSI scanners.

Data Capture

Introduction

NOTE: Not available on all configurations

The device has the following data capture options:

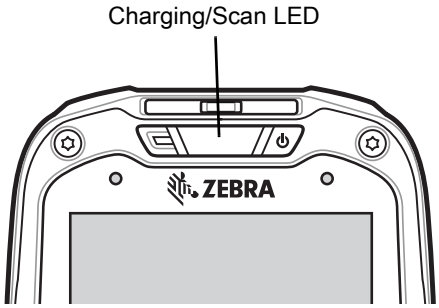
- integrated SE965 Standard Range Laser
- integrated SE4750-MR Mid-Range Imager
- integrated SE4850 Extended Range Imager
- integrated digital camera
- optional RS507 Hands-Free Imager.

NOTE: By default, the good decode beep is set to system volume (Notifications). The good decode beep can be set to another sound (Ringer, Music and Media or Alarms) and the volume can be independently controlled. See the DataWedge section in the TC8300 Integrator Guide for more information.

Status LED

The Charging/Scan LED indicates data capture status. The LED lights green when a bar code is successfully decoded.

Figure 60 Charging/Scan LED



Laser Scanning

The device with laser scanner has the following features:

- Reading of a variety of bar code symbologies, including the most popular linear, postal, and 1-D code types.

- Intuitive aiming for easy point-and-shoot operation.

Imaging

The device with an integrated imager has the following features:

- Omnidirectional (360°) reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- The ability to capture and download images to a host for a variety of imaging applications.
- Advanced intuitive laser aiming for easy point-and-shoot operation.

The imager uses digital camera technology to take a digital picture of a bar code, stores the resulting image in its memory, and executes state-of-the-art software decoding algorithms to extract the data from the image.

Operational Modes

The device with an integrated imager supports two modes of operation, listed below. Activate each mode pressing the Scan button.

- **Decode Mode:** In this mode, the device attempts to locate and decode enabled bar codes within its field of view. The imager remains in this mode as long as you hold the scan button, or until it decodes a bar code.
- **Pick List Mode:** This mode allows the user to selectively decode a bar code when more than one bar code is in the device's field of view. To accomplish this, move the aiming crosshair or center dot over the required bar code to decode only this bar code. This feature is ideal for pick lists containing multiple bar codes and manufacturing or transport labels containing more than one bar code type (either 1D or 2D).

NOTE: To enable Pick List Mode, configure in DataWedge or set in an application using a API command.

Digital Camera

The device with an integrated camera based bar code scanning solution has the following features:

- Omnidirectional reading of a variety of bar code symbologies, including the most popular linear, postal, QR, PDF417, and 2D matrix code types.
- Cross-hair reticle for easy point-and-shoot operation.
- Picklist mode to decode a particular bar code from many in the field of view.

The solution uses the advanced camera technology to take a digital picture of a bar code, and executes state-of-the-art software decoding algorithms to extract the data from the image.

Scanning Considerations

Scanning consists of; aim, scan and decode. Scanning performance can be optimized by considering the range and the scanning angle:

- Range

  Any scanning device decodes well over a particular working range (minimum and maximum distances from the bar code). This range varies according to bar code density and scanning device optics.

  Scanning within range brings quick and constant decodes; scanning too close or too far away prevents decodes. Move the scanner closer and further away to find the right working range for the bar codes being scanned. However, the situation is complicated by the availability of various integrated scanning modules. The best way to specify the appropriate working range per bar code density is through a chart called a

decode zone for each scan module. A decode zone simply plots working range as a function of minimum element widths of bar code symbols.

- Angle

  The scan angle is important for optimizing decode performance. When laser beams reflect directly back into the scanner from the bar code, this specular reflection can “blind” the scanner.

  To avoid this, scan the bar code so that the beam does not bounce directly back. But do not scan at too sharp an angle; the scanner needs to collect scattered reflections from the scan to make a successful decode. Practice quickly shows what tolerances to work within.

NOTE: Contact the Zebra Support if chronic scanning difficulties develop. Decoding of properly printed bar codes should be quick and effortless.

Bar Code Capture with Laser Scanner

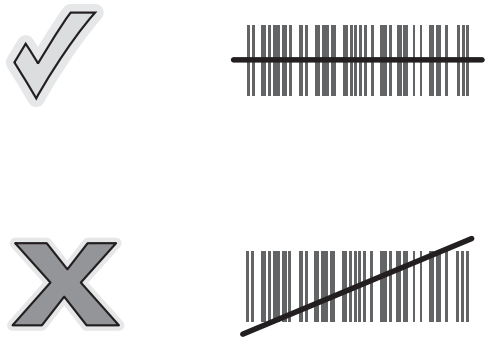
To read a bar code, a scan-enabled application is required. The device contains the **DataWedge** application that allows the user to enable the scanner to decode bar code data and display the bar code content. See DataWedge on page 8-105 for information on enabling **DataWedge**.

1. Launch a scanning application.
2. Point the exit window at a bar code.

Figure 61 Laser Scanning

3. Press the trigger button. Ensure the red scan beam covers the entire bar code. The Charging/Scan LED Indicators illuminate green and a beep sounds to indicate a successful decode.

Figure 62 Laser Aiming



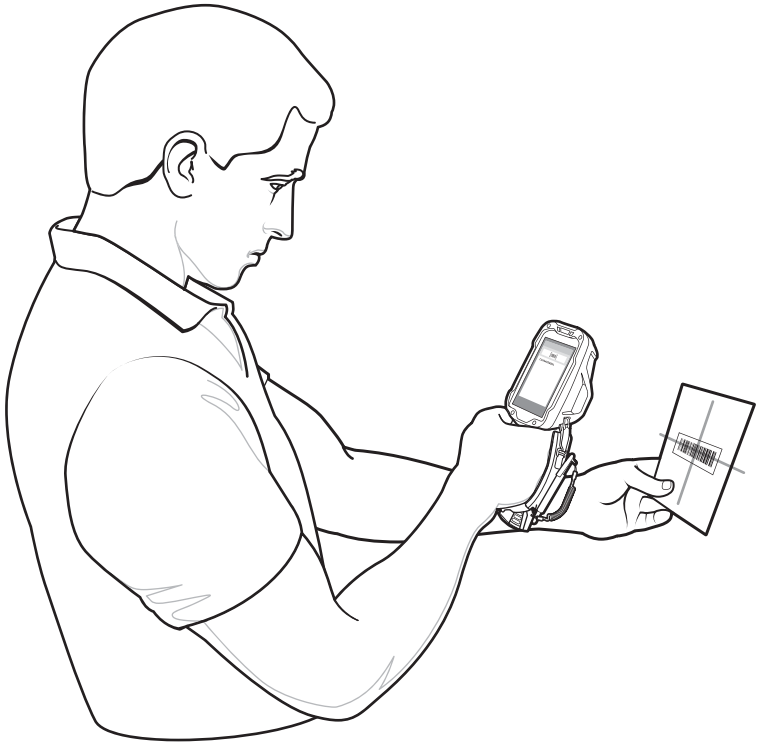
4. Release the trigger or scan button.

Bar Code Capture with Imager

To read a bar code, a scan-enabled application is required. The device contains the **DataWedge** application that allows the user to enable the scanner to decode bar code data and display the bar code content. See DataWedge on page 105 for more information on launching DataWedge.

1. Launch a scanning application.
2. Point the exit window at a bar code.
3. Press the trigger button.

Figure 63 Imager Scanning



4. Ensure the red scan beam covers the entire bar code. The Charging/Scan LED Indicators illuminate green and a beep sounds to indicate a successful decode.

Figure 64 Imager Aiming Pattern - Standard Range

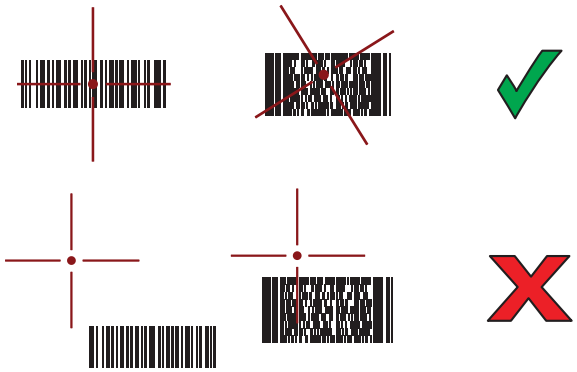


Figure 65 Imager Aiming Pattern - Extended Range

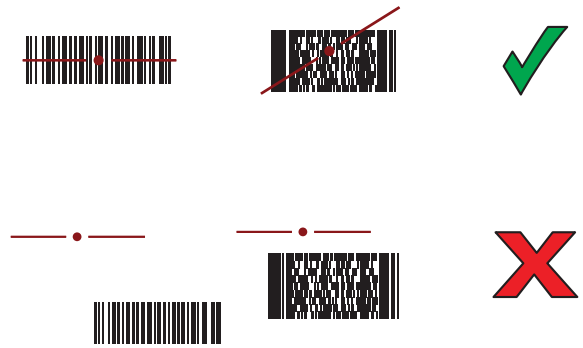


Figure 66 Imager Pick List Mode with Multiple Bar Codes - Standard Range

Figure 67 Imager Pick List Mode with Multiple Bar Codes - Extended Range

5. Release the trigger.

Bar Code Capture with Camera

To read a bar code, a scan-enabled application is required. The device contains the **DataWedge** application that allows the user to enable the scanner to decode bar code data and display the bar code content. See DataWedge on page 8-105 for more information on launching DataWedge.

1. Launch a scanning application.
2. Point the camera window at a bar code.
3. Press and hold the trigger. By default, a preview window appears on the screen.

Figure 68 Camera Scanning

NOTE: When Picklist mode is enabled, move the device until the bar code is centered under the red target on the screen.

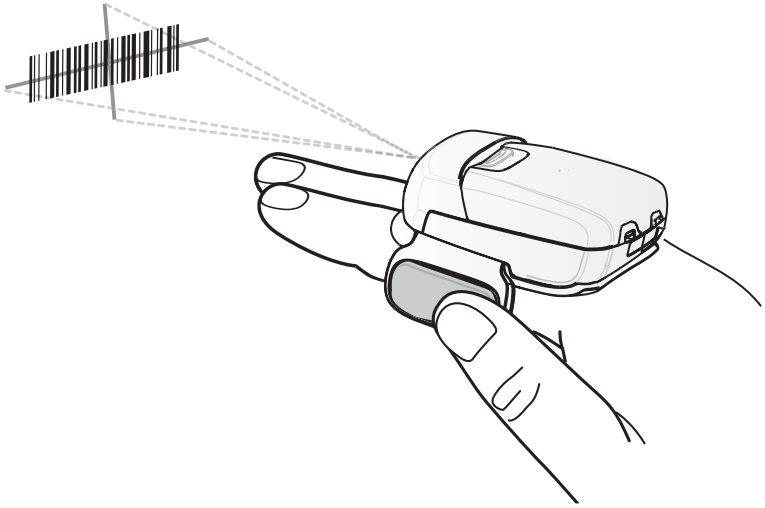
4. Move the device until the bar code is visible on the screen.
5. The Decode LED lights green, a beep sounds and the device vibrates, by default, to indicate the bar code was decoded successfully.
6. The captured data appears in the text field.
7. Release the trigger.

Bar Code Capture with RS507 Hands-Free Imager

Pair the RS507 with the device. See Pairing the RS507 Hands-Free Imager Using SSI on page 8-100 or Pairing the RS507 Hands-Free Imager Using Bluetooth HID on page 8-100 for more information.

1. Ensure that an application is open on the device and a text field is in focus (text cursor in text field).
2. Point the RS507 at a bar code.

Figure 69 Bar Code Scanning with RS507



3. Press and hold the trigger.

   The red laser aiming pattern turns on to assist in aiming. Ensure the bar code is within the area formed by the cross-hairs in the aiming pattern. The aiming dot is used for increased visibility in bright lighting conditions.

   The RS507 LEDs light green, a beep sounds to indicate the bar code was decoded successfully. Note that when the RS507 is in Pick List Mode, the RS507 does not decode the bar code until the center of the crosshair touches the bar code.

Figure 70 Aiming Pattern

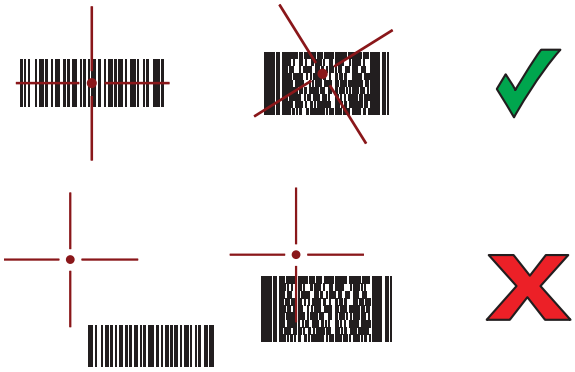


Figure 71 Pick List Mode with Multiple Bar Codes in Aiming Pattern

4. The captured data appears in the text field.

Pairing the RS507 Hands-Free Imager Using SSI

An RS507 Hands-free Imager can be used with the device to capture bar code data.

1. Ensure that the two devices are within 10 meters (32.8 feet) of one another.
2. Install the battery into the RS507.
3. Swipe up from the bottom of the Home screen and touch .

Figure 72 Bluetooth Pairing Utility

4. Using the RS507, scan the bar code on the screen.

   The RS507 emits a high/low/high/low beeps. The Scan LED flashes green indicating that the RS507 is attempting to establish connection with the device. When connection is established, the Scan LED turns off and the RS507 emits one string of low/high beeps.

5. On the device, touch .

Pairing the RS507 Hands-Free Imager Using Bluetooth HID

An RS507 Hands-free Imager can be used with the device to capture bar code data.

1. Ensure that Bluetooth is enabled on both devices.
2. Ensure that the Bluetooth device to discover is in discoverable mode.
3. Ensure that the two devices are within 10 meters (32.8 feet) of one another.
4. Place the RS507 in Human Interface Device (HID) mode. If the RS507 is already in HID mode, skip to step 5.
   a. Remove the battery from the RS507.
   b. Press and hold the Restore key.
   c. Install the battery onto the RS507.
   d. Keep holding the Restore key for about five seconds until a chirp is heard and the Scan LEDs flash green.
   e. Scan the bar code below to place the RS507 in HID mode.

Figure 73 RS507 Bluetooth HID Bar Code

5. Remove the battery from the RS507.
6. Re-install the battery into the RS507.
7. Swipe up from the bottom of the Home screen and touch **Settings > Connected devices > Bluetooth**.
8. Touch **SCAN FOR DEVICES**. The device begins searching for discoverable Bluetooth devices in the area and displays them under **AVAILABLE DEVICES**.
9. Scroll through the list and select RS507.

   The device connects to the RS507 and **Connected** appears below the device name. The Bluetooth device is added to the **Bluetooth devices** list and a trusted (“paired”) connection is established.

Hands Free Scanning

NOTE: The Hands Free Scanning is only available on devices with the imager engine.

Hands Free Scanning allows the user to capture bar code data when a bar code is placed within the view of the device without pressing the trigger. Hands Free Scanning is enabled using the **Hands Free Scanning** settings or when the device is placed in the Presentation Holster or the Desk Stand. Hands Free Scanning is set to disabled by default.

Figure 74 Scanning in Presentation Holster

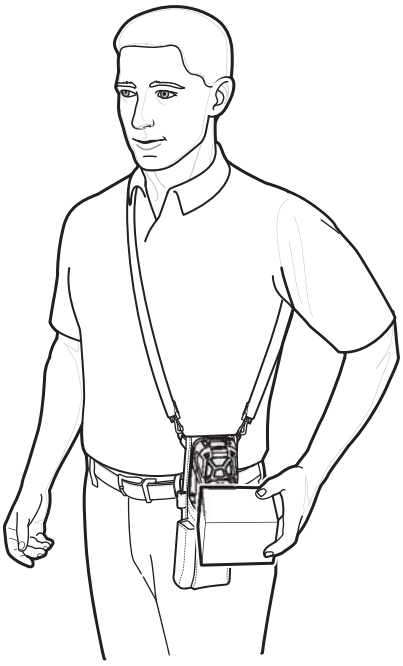


Figure 75 Scanning in Desk Stand

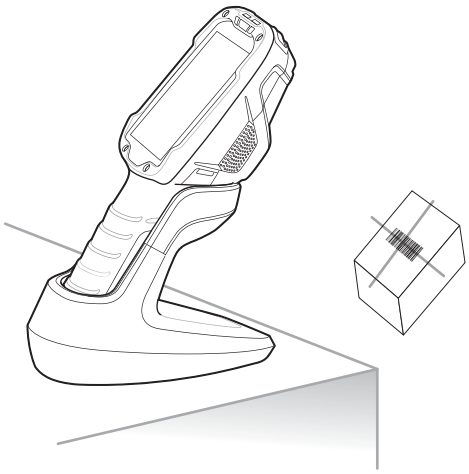
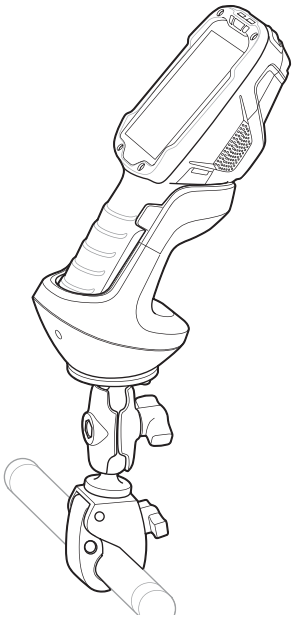


Figure 76 Scanning in Cart Mount

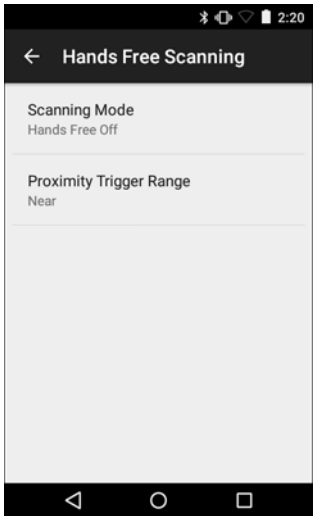


Settings

Use the **Hands Free Scanning** setting to configure scanning mode and the proximity trigger sensitivity.

Swipe up from the bottom of the Home screen and touch **Settings** > **Hands Free Scanning**.

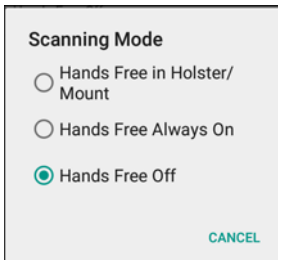
Figure 77 Hands Free Scanning Settings



Scanning Mode

Use the **Scanning Mode** settings to configure how the device functions while in hands-free scanning mode.

Figure 78 Scanning Mode Dialog Box

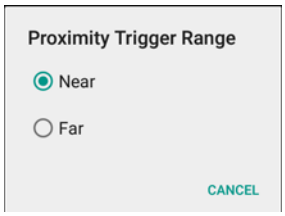


- **Hands Free in Holster/Mount** - Select to enable scanning when the device is in the Presentation Holster, Desk Stand or Cart Mount.
- **Hands Free Always On** - Select to place the device in hands free scanning mode.
- **Hands Free Off** - Select to disable hands free scanning mode (default).

Proximity Range

To configure the proximity sensor range sensitivity, touch **Proximity Trigger Range**.

Figure 79 Proximity Trigger Range Dialog Box

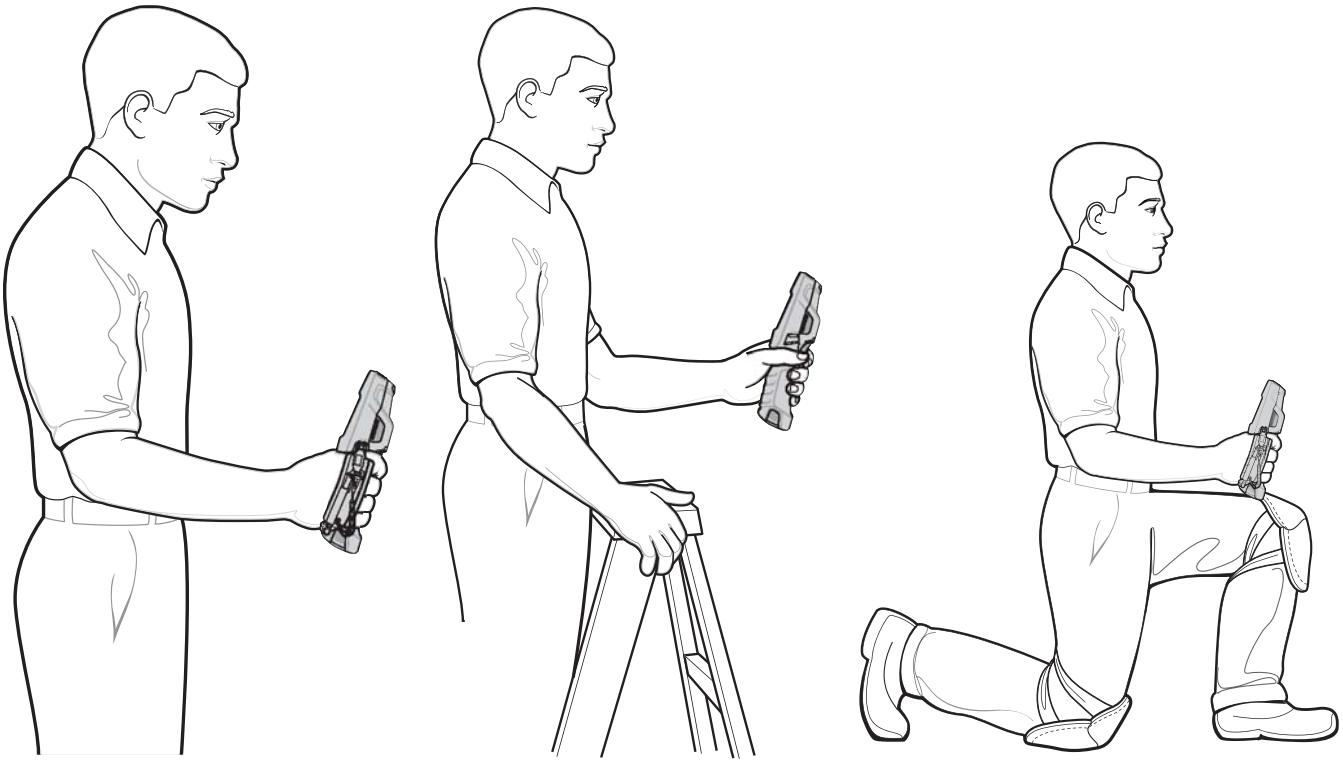


- **Near** - Proximity sensor detects and generates a trigger when the bar code is within 0 to 20 cm (nominal) (default).
- **Far** - Proximity sensor detects and generates a trigger when the bar code is within 0 to 60 cm (nominal).

Ergonomic Recommendations

Proper Scanning

Figure 80 Proper Scanning Position



Avoid

Figure 81 Do Not Bend Wrist Excessively

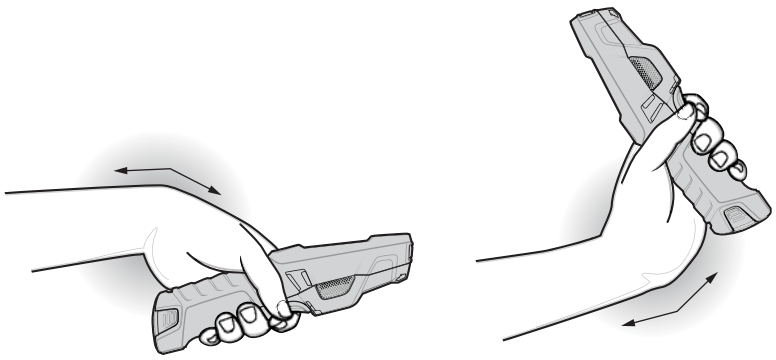
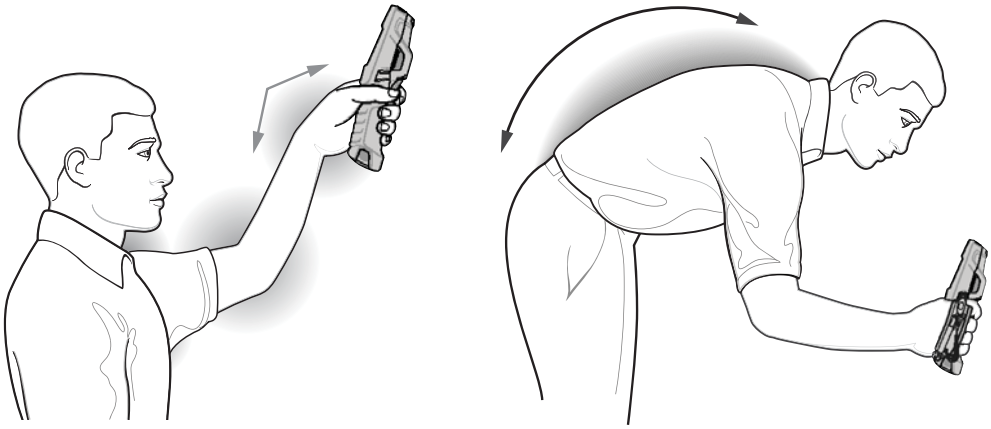


Figure 82 Reaching and Bending



DataWedge

NOTE: DataWedge is enabled by default. Refer to the TC8300 Integrator Guide for DataWedge configuration.

Enable DataWedge

To enable DataWedge:

1. Swipe up from the bottom of the Home screen and touch > .
2. Touch **Settings**.
3. Touch the **DataWedge enabled** checkbox. A blue checkmark appears in the checkbox indicating that DataWedge is enabled.
4. Touch .

Disable DataWedge

To disable DataWedge:

1. Swipe up from the bottom of the Home screen and touch > .
2. Touch **Settings**.
3. Touch the **DataWedge enabled** checkbox. The blue checkmark disappears from the checkbox indicating that DataWedge is disabled.
4. Touch .

Wireless

Introduction

This section provides information on the wireless features:

- Wireless Local Area Network (WLAN)
- Bluetooth

Wireless Local Area Networks

Wireless local area networks (WLANs) allow the device to communicate wirelessly inside a building. Before using the device on a WLAN, the facility must be set up with the required hardware to run the WLAN (sometimes known as infrastructure). The infrastructure and the device must both be properly configured to enable this communication.

Refer to the documentation provided with the infrastructure (access points (APs), access ports, switches, Radius servers, etc.) for instructions on how to set up the infrastructure.

Once the infrastructure is set up to enforce the chosen WLAN security scheme, use the **Wireless & networks** settings configure the device to match the security scheme.

The device supports the following WLAN security options:

- Open
- Wireless Equivalent Privacy (WEP)
- Wi-Fi Protected Access (WPA)/WPA2 Personal (PSK)
- Extensible Authentication Protocol (EAP).

The **Status** bar displays icons that indicate Wi-Fi network availability and Wi-Fi status.

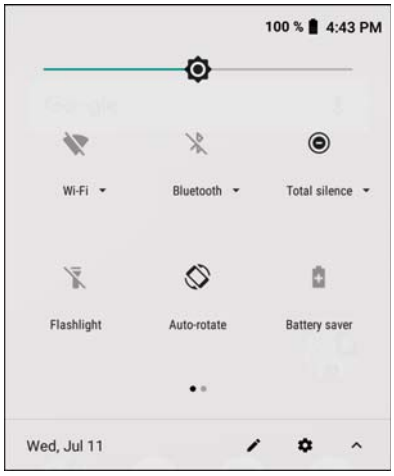
NOTE: To extend the life of the battery, turn off Wi-Fi when not in use.

Connecting to a Wi-Fi Network

To connect to a Wi-Fi network:

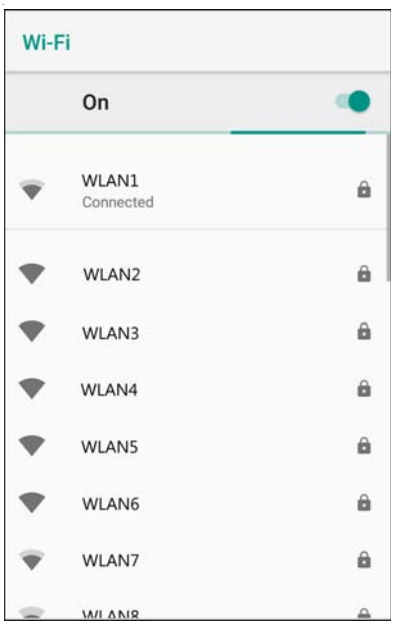
1. Swipe down from the Status bar to open the Quick Access panel.

Figure 83 Quick Access Panel



2. Touch **Wi-Fi** to open the **Wi-Fi** screen. The device searches for WLANs in the area and lists them.

Figure 84 Wi-Fi Screen



3. Scroll through the list and select the desired WLAN network.
4. For open networks, touch profile once or press and hold and then select **Connect to network** or for secure networks enter the required password or other credentials then touch **Connect**. See the system administrator for more information.

   The device obtains a network address and other required information from the network using the dynamic host configuration protocol (DHCP) protocol. To configure the device with a fixed internet protocol (IP) address, Refer to the device Integrator Guide for more information.
5. In the Wi-Fi setting field, **Connected** appears indicating that the device is connected to the WLAN.

Configuring a Secure Wi-Fi Network

To set up a Wi-Fi network:

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Network & Internet** > **Wi-Fi**.
3. Slide the switch to the **ON** position.
4. The device searches for WLANs in the area and lists them on the screen.
5. Scroll through the list and select the desired WLAN network.
6. Touch the desired network. If the network security is **Open**, the device automatically connects to the network. For all other network security a dialog box appears.

Figure 85 WLAN WEP Network Security Dialog Box

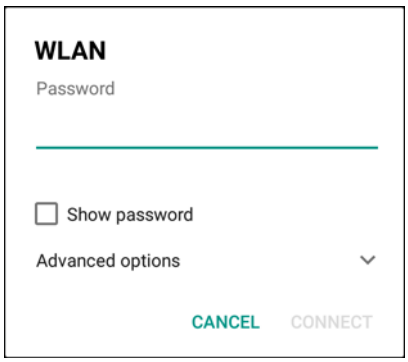
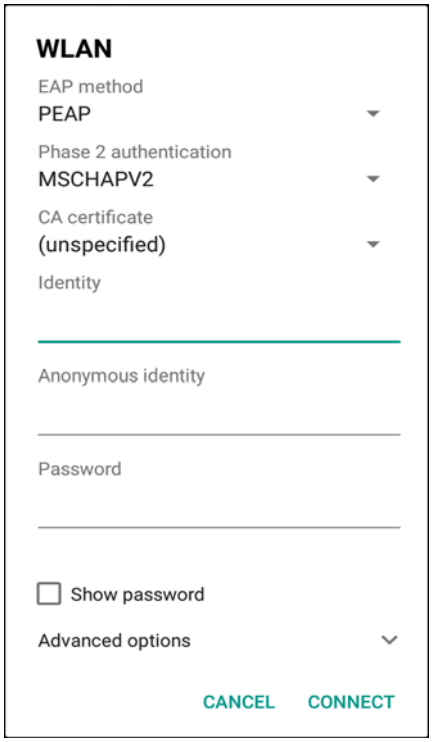


Figure 86 WLAN 802.11 EAP Network Security Dialog Box



7. If the network security is **WEP** or **WPA/WPS2 PSK**, enter the required password and then touch **Connect**.

8. If the network security is 802.1x EAP:
   - Touch the **EAP method** drop-down list and select **PEAP**, **TLS**, **TTLS,** or **LEAP**.
   - Touch the **Phase 2 authentication** drop-down list and select an authentication method.
   - If required, touch **CA certificate** and select a Certification Authority (CA) certificate. Note: Certificates are installed using the **Security** settings.
   - If required, touch **User certificate** and select a user certificate. Note: User certificates are installed using the Location & security settings.
   - If required, in the **Identity** text box, enter the username credentials.
   - If desired, in the **Anonymous identity** text box, enter an anonymous identity username.
   - If required, in the **Password** text box, enter the password for then given identity.

NOTE: By default, the network Proxy is set to **None** and the IP settings is set to **DHCP**. See Configuring for a Proxy Server for setting connection to a proxy server and see Configuring the Device to Use a Static IP Address for setting the device to use a static IP address.

9. Touch **Connect**.
10. Touch ○.

Manually Adding a Wi-Fi Network

Manually add a Wi-Fi network if the network does not broadcast its name (SSID) or to add a Wi-Fi network when out of range.

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Network & Internet** > **Wi-Fi**.
3. Slide the Wi-Fi switch to the **On** position.
4. Scroll to the bottom of the list and select **Add network**.
5. In the **Network name** text box, enter the name of the Wi-Fi network.
6. In the **Security** drop-down list, set the type of security to:
   - **None**
   - **WEP**
   - **WPA/WPA2 PSK**
   - **802.1x EAP**.
7. If the network security is **None**, touch **Save**.
8. If the network security is **WEP** or **WPA/WPA2 PSK**, enter the required password and then touch **Save**.

9. If the network security is **802.1x EAP**:
   - Touch the **EAP method** drop-down list and select **PEAP**, **TLS**, **TTLS,** or **LEAP**.
   - Touch the **Phase 2 authentication** drop-down list and select an authentication method.
   - If required, touch **CA certificate** and select a Certification Authority (CA) certificate. Note: Certificates are installed using the **Security** settings.
   - If required, touch **User certificate** and select a user certificate. Note: User certificates are installed using the **Security** settings.
   - If required, in the **Identity** text box, enter the username credentials.
   - If desired, in the **Anonymous** identity text box, enter an anonymous identity username.
   - If required, in the **Password** text box, enter the password for the given identity.

NOTE: By default, the network Proxy is set to **None** and the IP settings is set to **DHCP**. See Configuring for a Proxy Server for setting connection to a proxy server and see Configuring the Device to Use a Static IP Address for setting the device to use a static IP address.

10. Touch **Save**. To connect to the saved network, touch and hold on the saved network and select **Connect to network**.
11. Touch ◯.

Configuring for a Proxy Server

A proxy server is a server that acts as an intermediary for requests from clients seeking resources from other servers. A client connects to the proxy server and requests some service, such as a file, connection, web page, or other resource, available from a different server. The proxy server evaluates the request according to its filtering rules. For example, it may filter traffic by IP address or protocol. If the request is validated by the filter, the proxy provides the resource by connecting to the relevant server and requesting the service on behalf of the client.

It is important for enterprise customers to be able to set up secure computing environments within their companies, making proxy configuration essential. Proxy configuration acts as a security barrier ensuring that the proxy server monitors all traffic between the Internet and the intranet. This is normally an integral part of security enforcement in corporate firewalls within intranets.

To configure the device for a proxy server:

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Network & Internet** > **Wi-Fi**.
3. Slide the Wi-Fi switch to the **On** position.
4. In the network dialog box, select and touch a network.
5. Touch **Advanced options**.
6. Touch **Proxy** and select **Manual**.

Figure 87 Proxy Settings

7. In the **Proxy hostname** text box, enter the address of the proxy server.
8. In the **Proxy port** text box, enter the port number for the proxy server.
9. In the **Bypass proxy for** text box, enter addresses for web sites that are not required to go through the proxy server. Use a comma “,” between addresses. Do not use spaces or carriage returns between addresses.
10. Touch **Connect**.
11. Touch ◯.

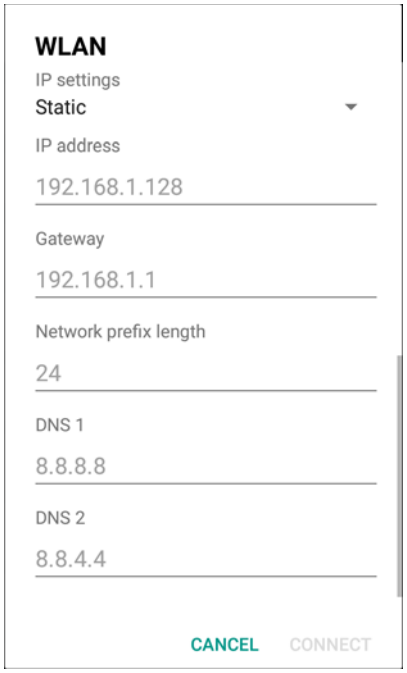
Configuring the Device to Use a Static IP Address

By default, the device is configured to use Dynamic Host Configuration Protocol (DHCP) to assign an Internet protocol (IP) address when connecting to a wireless network.

To configure the device to connect to a network using a static IP address:

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Network & Internet** > **Wi-Fi**.
3. Slide the Wi-Fi switch to the **On** position.
4. In the network dialog box, select and touch a network.
5. Touch **Advanced options**.
6. Touch **IP settings** and select **Static**.

Figure 88 Static IP Settings



7. In the **IP address** text box, enter an IP address for the device.
8. If required, in the **Gateway** text box, enter a gateway address for the device.
9. If required, in the **Network prefix length** text box, enter the prefix length.
10. If required, in the **DNS 1** text box, enter a Domain Name System (DNS) address.
11. If required, in the **DNS 2** text box, enter a DNS address.
12. Touch **Connect**.
13. Touch ○.

Advanced Wi-Fi Settings

NOTE: Advanced Wi-Fi settings are for the device, not for a specific wireless network.

Use the **Advanced** settings to configure additional Wi-Fi settings. To view the advanced settings, scroll to the bottom of the **Wi-Fi** screen and select **Wi-Fi preferences > Advanced**.

- **Install Certificates** – Touch to install certificates.
- **Wi-Fi Direct** - Displays a list of devices available for a direct Wi-Fi connection.
- **WPS Push Button** - Touch to connect to a network using Wi-Fi Protected Setup (WPS) push button method.
- **WPS Pin Entry** - Touch to connect to a network using Wi-Fi Protected Setup (WPS) pin entry method.

Additional Wi-Fi Settings

NOTE: Additional Wi-Fi settings are for the device, not for a specific wireless network.

Use the **Additional Settings** to configure additional Wi-Fi settings. To view the additional Wi-Fi settings, scroll to the bottom of the **Wi-Fi** screen and touch **Wi-Fi Preferences > Advanced > Additional settings.**

- **Regulatory**
  - **Country Selection** - Displays the acquired country code if 802.11d is enabled, else it displays the currently selected country code.
  - **Region code** - Displays the current region code.
- **Band and Channel Selection**
  - **Wi-Fi frequency band** - Set the frequency band to: **Auto** (default), **5 GHz only** or **2.4 GHz only**.
  - **Available channels (2.4 GHz)** - Touch to display the **Available channels** menu. Select specific channels and touch **OK**.
  - **Available channels (5 GHz)** - Touch to display the **Available channels** menu. Select specific channels and touch **OK**.
- **Logging**
  - **Advanced Logging** – Touch to enable advanced logging or change the log directory.
  - **Wireless logs** - Use to capture Wi-Fi log files.
    - **Fusion Logger** - Touch to open the **Fusion Logger** application. This application maintains a history of high level WLAN events which helps to understand the status of connectivity.
    - **Fusion Status** - Touch to display live status of WLAN state. Also provides information about the device and connected profile.
- **About**
  - **Version** - Displays the current Fusion information.

Removing a Wi-Fi Network

To remove a remembered or connected network:

1. Swipe down from the status bar to open the quick access panel and then touch ⚙.
2. Touch **Network & Internet > W-Fi**.
3. Scroll down to the bottom of the list and touch **Saved networks**.
4. Touch the name of the network.
5. In the dialog box, touch **FORGET**.
6. Touch ○.

Wi-Fi Advanced Features

Some additional Wi-Fi settings cannot be accessed from the User Interface. They can be configured by using Wi-Fi (CSP). Refer to EMDK documentation for the details on the Wi-Fi settings configuration using the Wi-Fi CSP.

- **Auto Time Config** - Using this feature, the device can sync up its time with Zebra WLAN infrastructure. This feature works only when the device is connected to Zebra WLAN infrastructure and the feature is enabled on the WLAN infrastructure side. Default: disabled.

- **PMKID Caching** - Allows the device to skip 802.1x authentication during roaming if it had previously connected to that AP with a full 802.1x authentication. Default: disabled. Note: disable OKC when enabling PMKID Caching.
- **Opportunistic Key Caching** - Use this feature to skip 802.1x authentication during roaming. The device will go for full 802.1x authentication for the first time it connects to the network. For subsequent roaming, the device skips 802.1x authentication. Default: enabled.
- **Cisco Centralized Key Management** - Allows the device to skip 802.1x and key-handshake phases during roaming. This feature is available only when the device is connected to a Cisco infrastructure that supports Cisco Centralized Key Management (CCKM). Default: enabled.
- **Fast Transition** - Fast Transition (FT) is the fast roaming standard, 802.11r. With this feature, the device can skip 802.1x and key-handshake phases during roam. Default: enabled.
- **Fast Transition Resource Information Container** - Allows the device to request TSPEC as part of reassociation frame exchange. This helps to avoid sending a separate resource request after roaming is completed. Default: enbled.
- **Power Save** - The device can be configured to work in different power save modes:
    i. **Active** - Keeps the WLAN radio always in active mode (i.e. power save mode disabled).
    ii. **Power save using WMM-PS** - This is the default power save mode. Device uses WMM-PS power save method if the AP is configured to use this. If the AP is not supporting WMM-PS, the device will use PS-Poll power save method.
    iii. **Power save using PS-Poll** - In this method, the device will use PS-Poll frames to retrieve buffered frames from the AP.
    iv. **Null Data Power Save** - In Null Data Power Save (NDP), the device will stay awake for 100 ms after the last frame is sent or received. The device will send a Null Data packet with power management bit cleared to retrieve buffered frames from the AP.
- **802.11k** - Using 802.11k, the device can discover neighbor APs and adds support for different types of radio resource measurements. Default: enabled.
- **Band Preference** - The device can be configured to prefer one band over another. Default: disabled.**Subnet Roaming** - When the device roams between different sub networks, if it detects that it is roaming to a different subnet, the device will request a fresh IP address. Default: disabled.

Bluetooth

Bluetooth devices can communicate without wires, using frequency-hopping spread spectrum (FHSS) radio frequency (RF) to transmit and receive data in the 2.4 GHz Industry Scientific and Medical (ISM) band (802.15.1). Bluetooth wireless technology is specifically designed for short-range (10 m (32.8 ft)) communication and low power consumption.

Devices with Bluetooth capabilities can exchange information (for example, files, appointments, and tasks) with other Bluetooth enabled devices such as printers, access points, and other mobile devices.

The device supports Bluetooth Low Energy. Bluetooth Low Energy is targeted at applications in the healthcare, fitness, security, and home entertainment industries. It provides reduced power consumption and cost while maintaining standard Bluetooth range.

Adaptive Frequency Hopping

Adaptive Frequency Hopping (AFH) is a method of avoiding fixed frequency interferers, and can be used with Bluetooth voice. All devices in the piconet (Bluetooth network) must be AFH-capable in order for AFH to work. There is no AFH when connecting and discovering devices. Avoid making Bluetooth connections and discoveries during critical 802.11b communications. AFH for Bluetooth consists of four main sections:

- Channel Classification - A method of detecting an interference on a channel-by-channel basis, or pre-defined channel mask.
- Link Management - Coordinates and distributes the AFH information to the rest of the Bluetooth network.
- Hop Sequence Modification - Avoids interference by selectively reducing the number of hopping channels.
- Channel Maintenance - A method for periodically re-evaluating the channels.

When AFH is enabled, the Bluetooth radio “hops around” (instead of through) the 802.11b high-rate channels. AFH coexistence allows enterprise devices to operate in any infrastructure.

The Bluetooth radio in this device operates as a Class 2 device power class. The maximum output power is 2.5 mW and the expected range is 10 m (32.8 ft). A definition of ranges based on power class is difficult to obtain due to power and device differences, and whether in open space or closed office space.

NOTE: It is not recommended to perform Bluetooth wireless technology inquiry when high rate 802.11b operation is required.

Security

The current Bluetooth specification defines security at the link level. Application-level security is not specified. This allows application developers to define security mechanisms tailored to their specific need. Link-level security occurs between devices, not users, while application-level security can be implemented on a per-user basis. The Bluetooth specification defines security algorithms and procedures required to authenticate devices, and if needed, encrypt the data flowing on the link between the devices. Device authentication is a mandatory feature of Bluetooth while link encryption is optional.

Pairing of Bluetooth devices is accomplished by creating an initialization key used to authenticate the devices and create a link key for them. Entering a common personal identification number (PIN) in the devices being paired generates the initialization key. The PIN is never sent over the air. By default, the Bluetooth stack responds with no key when a key is requested (it is up to user to respond to the key request event). Authentication of Bluetooth devices is based-upon a challenge-response transaction. Bluetooth allows for a PIN or passkey used to create other 128-bit keys used for security and encryption. The encryption key is derived from the link key used to authenticate the pairing devices. Also worthy of note is the limited range and fast frequency hopping of the Bluetooth radios that makes long-distance eavesdropping difficult.

Recommendations are:

- Perform pairing in a secure environment
- Keep PIN codes private and do not store the PIN codes in the device
- Implement application-level security.

Bluetooth Profiles

The device supports the Bluetooth services listed in the table below:

Table 13 Bluetooth Profiles

Profile	Description
Service Discovery Protocol (SDP)	Handles the search for known and specific services as well as general services.
Serial Port Profile (SPP)	Allows use of RFCOMM protocol to emulate serial cable connection between two Bluetooth peer devices. For example, connecting the device to a printer.
Object Push Profile (OPP)	Allows the device to push and pull objects to and from a push server.
Advanced Audio Distribution Profile (A2DP)	Allows the device to stream stereo-quality audio to a wireless headset or wireless stereo speakers.
Audio/Video Remote Control Profile (AVRCP)	Allows the device to control A/V equipment to which a user has access. It may be used in concert with A2DP.
Personal Area Network (PAN)	Allows the use of Bluetooth Network Encapsulation Protocol to provide L3 networking capabilities over a Bluetooth link. Only PANU role is supported.
Human Interface Device Profile (HID)	Allows Bluetooth keyboards, pointing devices, gaming devices and remote monitoring devices to connect to the device.
Headset Profile (HSP)	Allows a hands-free device, such as a Bluetooth headset, to place and receive calls on the device.
Hands-Free Profile (HFP)	Allows car hands-free kits to communicate with the device in the car.
Phone Book Access Profile (PBAP)	Allows exchange of Phone Book Objects between a car kit and a mobile device to allow the car kit to display the name of the incoming caller; allow the car kit to download the phone book so you can initiate a call from the car display.
Out of Band (OOB)	Allows exchange of information used in the pairing process. Pairing is completed using the Bluetooth radio, but requires information from the OOB mechanism. Using OOB with NFC enables pairing when devices simply get close, rather than requiring a lengthy discovery process.
Symbol Serial Interface (SSI)	Allows for communication with Bluetooth Imager.
Generic Attribute Profile (GATT)	Provides profile discovery and description services for Bluetooth Low Energy protocol. It defines how attributes are grouped together into sets to form services.
Dial Up Networking (DUN)	Provides a standard to access the Internet and other dial-up services over Bluetooth.
Generic Access Profile (GAP)	Use for device discovery and authentication.
OBject EXchange (OBEX)	Facilitates the exchange of binary objects between devices.

Bluetooth Power States

The Bluetooth radio is off by default:

- Suspend - When the device goes into suspend mode, the Bluetooth radio stays on.
- Airplane Mode - When the device is placed in Airplane Mode, the Bluetooth radio turns off. When Airplane mode is disabled, the Bluetooth radio returns to the prior state. When in Airplane Mode, the Bluetooth radio can be turned back on if desired.

Bluetooth Radio Power

Turn off the Bluetooth radio to save power or if entering an area with radio restrictions (for example, an airplane). When the radio is off, other Bluetooth devices cannot see or connect to the device. Turn on the Bluetooth radio to exchange information with other Bluetooth devices (within range). Communicate only with Bluetooth radios in close proximity.

NOTE: To achieve the best battery life, turn off radios when not in use.

Enabling Bluetooth

To enable Bluetooth:

1. Swipe down from the Status bar to open the Quick Access panel.
2. Touch to turn Bluetooth on.
3. Touch .

Disabling Bluetooth

To disable Bluetooth:

1. Swipe down from the Status bar to open the Quick Access panel.
2. Touch to turn Bluetooth off.
3. Touch .

Discovering Bluetooth Device(s)

The device can receive information from discovered devices without pairing. However, once paired, the device and a paired device exchange information automatically when the Bluetooth radio is on. To find Bluetooth devices in the area:

1. Ensure that Bluetooth is enabled on both devices.
2. Ensure that the Bluetooth device to discover is in discoverable mode.
3. Ensure that the two devices are within 10 meters (32.8 feet) of one another.
4. Swipe down from the Status bar to open the Quick Access panel.
5. Touch **Bluetooth**.
6. Touch **MORE SETTINGS**. The **Bluetooth** screen appears.
7. Touch **Pair new device**. The device begins searching for discoverable Bluetooth devices in the area and displays them under **Available devices**.
8. Scroll through the list and select a device. The Bluetooth pairing request dialog box appears.
9. Touch **Pair** on both devices.
10. The Bluetooth device is added to the **Paired devices** list and a trusted (“paired”) connection is established.

Changing the Bluetooth Name

By default, the device has a generic Bluetooth name that is visible to other devices when connected.

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Connected devices** > **Bluetooth**.
3. If Bluetooth is not on, move the switch to turn Bluetooth on.
4. Touch **Device name**.
5. Enter a name and touch **RENAME**.
6. Touch ◯.

Connecting to a Bluetooth Device

Once paired, connect to a Bluetooth device.

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Connected device** > **Bluetooth**.
3. In the list, touch the unconnected Bluetooth device.
   When connected, **Connected** appears below the device name.

Selecting Profiles on the Bluetooth Device

Some Bluetooth devices have multiple profiles. To select a profile:

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Connected Devices** > **Bluetooth**.
3. In the **Paired Devices** list, touch ⚙ next to the device name.
4. Turn on or off a profile to allow the device to use that profile.
5. Touch ◯.

Unpairing a Bluetooth Device

To unpair a Bluetooth device and erase all pairing information:

1. Swipe down from the Status bar to open the Quick Access panel and then touch ⚙.
2. Touch **Connected devices** > **Bluetooth**.
3. In the **Paired Devices** list, touch ⚙ next to the device name.
4. Touch **FORGET**.
5. Touch ◯.

Cast

Use **Cast** to mirror the device screen on a Miracast enabled wireless display.

1. Swipe down from the Status bar to open the Quick Settings bar and then touch .
2. Touch **Connected Devices**.
3. Touch **Cast**.
4. Touch > **Enable wireless display**. The device searches for nearby Miracast devices and lists them.
5. Touch a device to begin casting.
6. Touch .

Accessories

Accessories

Table 14 *Accessories*

Accessory	Part Number	Description
Cradles		
2-Slot USB Charge Cradle	CRD-TC8X-2SUCHG-01	Provides device and spare battery charging and USB communication with a host computer. Use with power supply, p/n PWR-BGA12V50W0WW and country specific grounded AC line cord.
5-Slot Charge Only Cradle	CRD-TC8X-5SCHG-01	Charges up to five devices. Use with power supply, p/n PWR-BGA12V108W0WW, DC line cord, p/n 50-16002-029R and country specific grounded AC line cord.
5-Slot Ethernet Cradle	CRD-TC8X-5SETH-01	Provides device charging and provides Ethernet communication for up to five devices. Use with power supply, p/n PWR-BGA12V108W0WW, DC line cord, p/n 50-16002-029R and country specific grounded AC line cord.
5-Slot Charge Only Cradle with Battery Charger	CRD-TC8X-5SC4BC-01	Charges up to four devices and four spare batteries. Use with power supply, p/n PWR-BGA12V108W0WW, DC line cord, p/n 50-16002-029R and country specific grounded AC line cord.
5-Slot Ethernet Cradle with Battery Charger	CRD-TC8X-5SE4BC-01	Provides device charging and provides Ethernet communication for up to four devices. Provides charging for four spare batteries. Use with power supply, p/n PWR-BGA12V108W0WW, DC line cord, p/n 50-16002-029R and country specific grounded AC line cord.
Batteries and Chargers		
Battery	BTRY-TC8X-67MA1-01 BTRY-TC8X-67MA1-10 BTRY-TC8X-70MA1-01 BTRY-TC8X-70MA1-01	Replacement battery (single pack). Replacement battery (10–pack). Replacement battery (single pack). Replacement battery (10–pack).

Table 14 *Accessories (Continued)*

Accessory	Part Number	Description
4-Slot Battery Charger	SAC-TC8X-4SCHG-01	Charges up to four spare batteries. Requires power supply, p/n PWR-BGA12V50W0WW and country specific grounded AC line cord.
USB and Charging Cable	CBL-TC8X-USBCHG-01	Provides USB communication and power to the device. Requires power supply PWR-BUA5V16W0WW and country specific un-grounded AC line cord.
Audio Accessories		
Quick Disconnect Audio Cable	CBL-TC8X-AUDQD-01	Snaps onto the device and provides audio to a wired headset with Quick Disconnect connector.
3.5 mm Audio Cable	CBL-TC8X-AUDBJ-01	Snaps onto the device and provides audio to a wired headset with 3.5 mm plug.
Mounting Brackets		
2-Slot Cradle Desktop Stand	BRKT-SCRD-SSDK-01	Use for mounting a 2-Slot cradle on a desk.
5-Slot Cradle Desktop Stand	BRKT-SCRD-MSDK-01	Use for mounting a 5-Slot cradle on a desk or rack.
Rack Mount Bracket	BRKT-SCRD-SMRK-01	Use for mounting a 5-Slot cradle or four 4-Slot Battery Chargers on a rack.
Desktop Stand	MNT-TC8X-DKPH-01	Un-powered desktop presentation stand. Allows to use the device on a flat surface (i.e. desktop) for hands-free scanning.
Cart Mount	MNT-TC8X-CMKT-01	Un-powered cart mount. Allows to use the device on carts with up to 2” diameter rail/bar and allows to use the device on hands-free scanning mode. Includes RAM Mount required for installation.
Forklift Mount	MNT-TC8X-FMKT-01	Un-powered forklift mount. Allows to install the device on a roll bar or square surface of a forklift and allows to use the device on landscape or portrait mode.
Carrying Solutions		
Hand Strap	SG-TC8X-HDSTP-01	Replacement hand strap.
Wrist Lanyard	50-12500-006	Optional lanyard for holding the device.
Quick Draw Soft Holster	SG-TC8X-QDHLST-01	Use to hold the device. Requires the Universal Belt.
Presentation Soft Holster	SG-TC8X-PMHLST-01	Use to hold the device and for hands-free scanning. Requires the Universal Shoulder Strap or Universal Belt.
Universal Belt	11-08062-02R	Use to hold the Quick Draw Soft Holster or the Presentation Soft Holster.
Universal Shoulder Strap	WA6010	Use to hold the Presentation Soft Holster.
Power Supplies		
Power Supply	PWR-BUA5V16W0WW	Provides power to the device using the USB and Charging Cable. Requires country specific un-grounded AC line cord.

Table 14 *Accessories (Continued)*

Accessory	Part Number	Description
Power Supply	PWR-BGA12V50W0WW	Provides power to the 2–Slot cradles and 4-Slot Spare Battery Charger. Requires country specific grounded AC line cord.
Power Supply	PWR-BGA12V108W0WW	Provides power to the 5-Slot Charge Only Cradle, 5-Slot Ethernet Cradle, 5-Slot Charge Only Cradle with Battery Charger and the 5-Slot Ethernet Cradle with Battery Charger. Requires DC Line Cord, p/n 50-16002–029R and country specific grounded AC line cord.
DC Y Cable	25-85993-01R	Provides power from the PWR-BGA12V108W0WW power supply to two 4-Slot Battery Chargers.
DC Line Cord	50-16002-029R	Provides power from the power supply to the 5-Slot Charge Only Cradle, 5-Slot Ethernet Cradle, 5-Slot Charge Only Cradle with Battery Charge and 5-Slot Ethernet Cradle with Battery Charger.
Miscellaneous		
Stylus	SG-TC7X-STYLUS-03	Stylus for use with the device (3-pack).
Screen Protectors	MISC-TC8X-SCRN-01	Provides additional protection for display (5-pack).
Replacement Condensation Resistant Back Housing	MISC-TC8X-DSCNT-01	Field replaceable desiccant cartridge for condensation resistant TC8300 models.

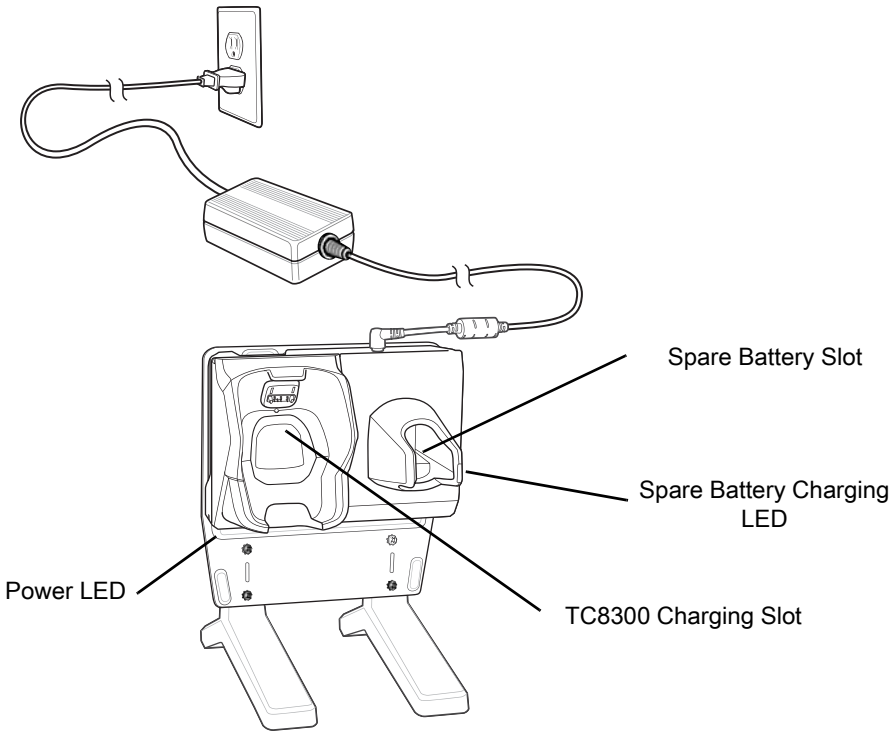
2-Slot Charge Only Cradle

NOTE: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146.

The 2-Slot Charge Only Cradle:

- provides 5 VDC (nominal) power for operating the device
- charges a spare battery.

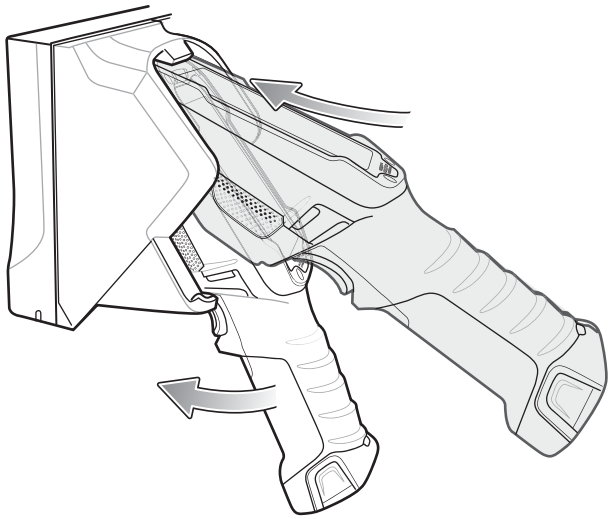
Figure 89 2-Slot Charge Only Cradle (shown on optional Desk Mount)



Charging the Device

1. Insert the device into the TC8300 charge well.

Figure 90 Insert Device into Cradle



2. Ensure the device is seated properly. The Charging/Scan LED blinks indicating charging.

Charging the Spare Battery

1. Insert a spare battery into the spare battery slot.

2. Ensure the battery is seated properly. The Spare Battery Charging LED blinks indicating charging.

Battery Charging

Main Battery Charging

The device Charging/Scan LED indicates the status of the battery charging in the device. See Table 4 on page 23. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Spare Battery Charging

The Spare Battery Charging LED indicates the status of the spare battery charging. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Table 15 *Spare Battery Charging LED Indicators*

State	Indication
Off	The battery is not charging. The battery is not inserted correctly in the cradle or connected to a power source. Cradle is not powered.
Solid Amber	Healthy battery is charging.
Solid Green	Healthy battery charging is complete.
Fast Blinking Red (2 blinks/second)	Charging error, e.g.: - Temperature is too low or too high. - Charging has gone on too long without completion (typically eight hours).
Solid Red	Unhealthy battery is charging or fully charged.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The device or cradle always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the device or cradle may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The device and cradle indicates when charging is disabled due to abnormal temperatures via its LED.

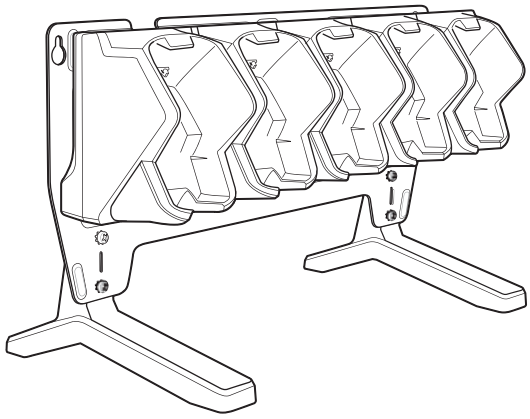
5-Slot Charge Only Cradle

NOTE: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146.

The 5-Slot Charge Only Cradle:

- Provides 5 VDC (nominal) power for operating the device.
- Simultaneously charges up to five devices.

Figure 91 5-Slot Charge Only Cradle (shown on optional Desk Mount)

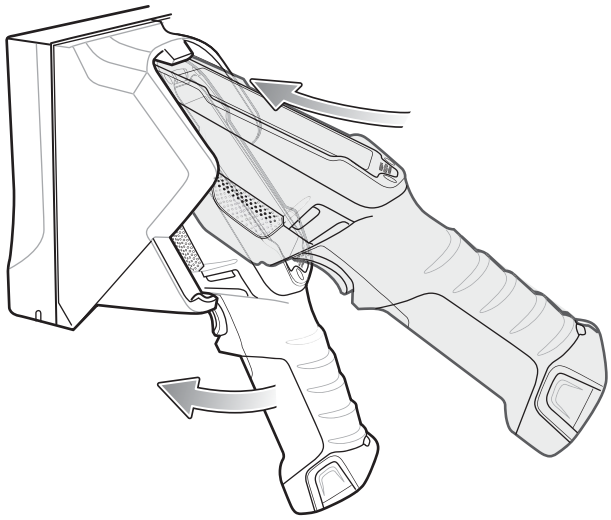


Charging the Device

To Charge the device:

1. Insert the device in a charge well to begin charging.

Figure 92 Insert Device into Cradle



2. Ensure that the device is properly seated in the charge well.

Battery Charging

Main Battery Charging

The device Charging/Scan LED indicates the status of the battery charging in the device. See Table 4 on page 23. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The battery charger always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the battery charger may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The battery charger indicates when charging is disabled due to abnormal temperatures via its LED.

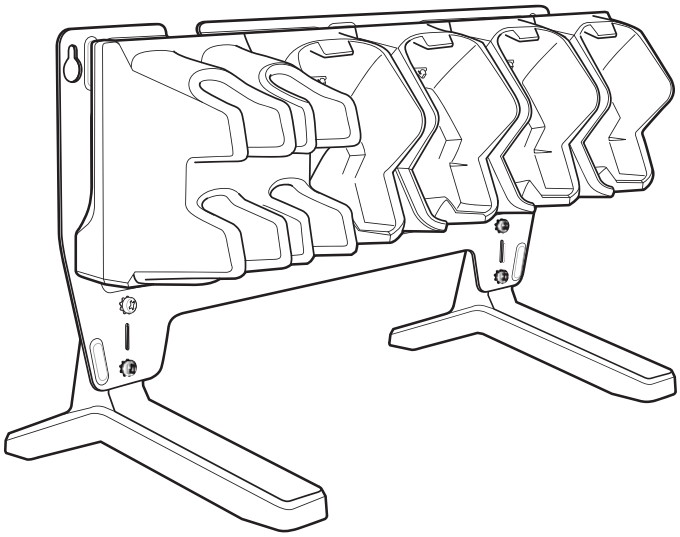
5-Slot Charge Only Cradle with Battery Charger

NOTE: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146.

The 5-Slot Charge Only Cradle with Battery Charger:

- Provides 5 VDC (nominal) power for operating the device.
- Simultaneously charges up to four devices.
- Simultaneously charges up to four spare batteries.

Figure 93 5-Slot Charge Only Cradle with Battery Charger (shown on optional Desk Mount)

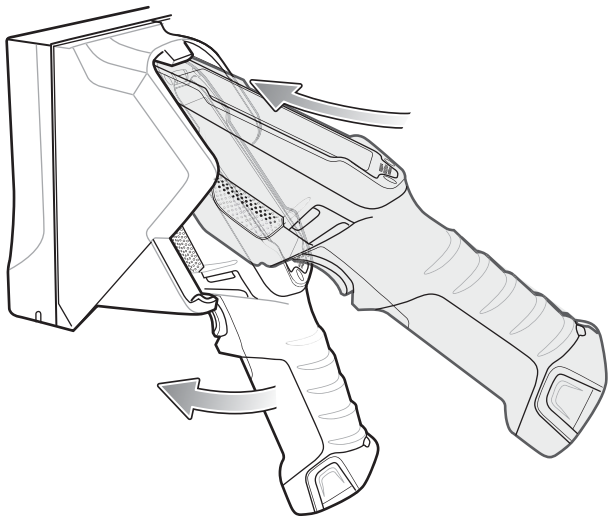


Charging the Device

To Charge the device:

1. Insert the device in a charge well to begin charging.

Figure 94 Insert Device into Cradle



2. Ensure that the device is properly seated in the charge well.

Charging the Spare Battery

1. Insert a spare battery into the spare battery slot.
2. Ensure the battery is seated properly. The Spare Battery Charging LED blinks indicating charging.

Battery Charging

Main Battery Charging

The device Charging/Scan LED indicates the status of the battery charging in the device. See Table 4 on page 23. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Spare Battery Charging

Each Battery Charging LED indicates the status of the battery charging in each slot. The table below describes the Battery Charging LED status. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Table 16 *Spare Battery Charging Indicators*

State	Indication
Off	Battery is not charging. It is not inserted correctly in the cradle or connected to a power source. Charge is not powered.
Solid Amber	Healthy battery is charging.

Table 16 *Spare Battery Charging Indicators*

State	Indication
Solid Green	Healthy battery charging is complete.
Fast Blinking Red (2 blinks/second)	Charging error, e.g.: - Temperature is too low or too high. - Charging has gone on too long without completion (typically eight hours).
Solid Red	Unhealthy battery is charging or fully charged.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The battery charger always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the battery charger may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The battery charger indicates when charging is disabled due to abnormal temperatures via its LED.

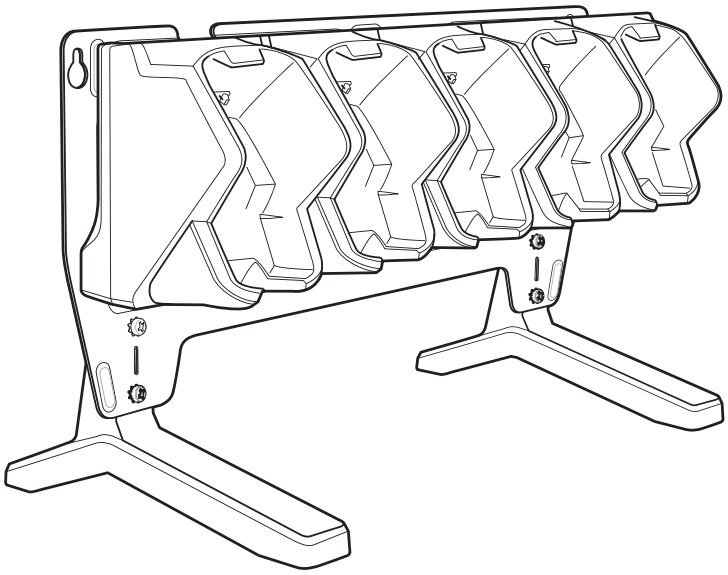
5-Slot Ethernet Cradle

Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146.

The 5-Slot Ethernet Cradle:

- Provides 5 VDC (nominal) power for operating the device.
- Connects up to five devices to an Ethernet network.
- Simultaneously charges up to five devices.

Figure 95 5-Slot Ethernet Cradle (shown on optional Desk Mount)

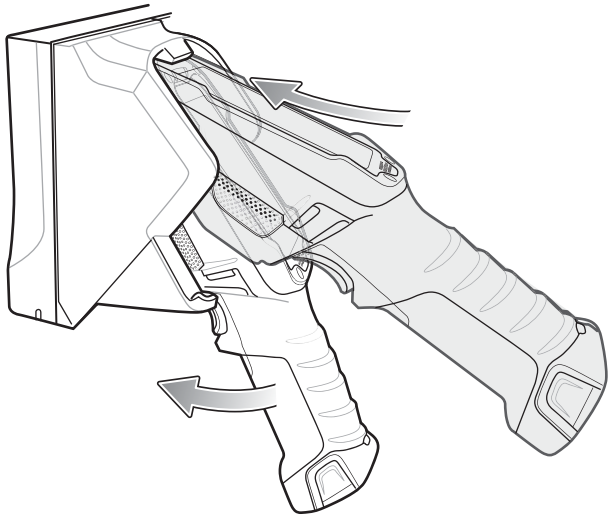


Charging the Device

To charge the device:

1. Insert the device in a charge well to begin charging.

Figure 96 Insert Device into Cradle



2. Ensure that the device is properly seated in the charge well.

Battery Charging

Main Battery Charging

The device Charging/Scan LED indicates the status of the battery charging in the device. See Table 4 on page 23. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The battery charger always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the battery charger may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The battery charger indicates when charging is disabled due to abnormal temperatures via its LED.

Establishing Ethernet Communication

NOTE: Refer to the TC8300 Integrator Guide for information on configuring the Ethernet settings.

1. Swipe down with two fingers from the status bar to open the quick access panel and then touch > **Network & Internet** > **Ethernet**.
2. Slide the Ethernet switch to the **ON** position.
3. Insert the device into a slot.
4. The icon appears in the Status bar.
5. Touch **Eth0** to view Ethernet connection details.

Ethernet LED Indicators

There are two green LEDs on the side of the cradle. These green LEDs light and blink to indicate the data transfer rate.

Table 17 *LED Data Rate Indicators*

Data Rate	1000 LED	100/10 LED
1 Gbps	On/Blink	Off
100 Mbps	Off	On/Blink
10 Mbps	Off	On/Blink

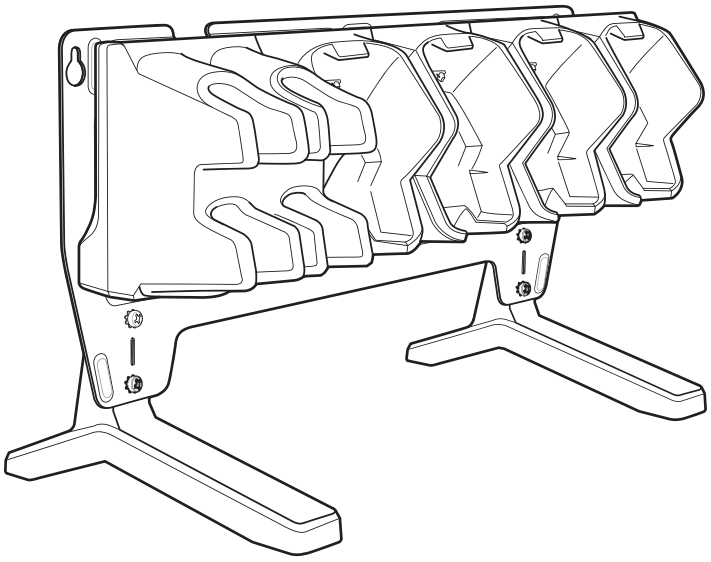
5-Slot Ethernet Cradle with Battery Charger

Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146.

The 5-Slot Ethernet Cradle:

- Provides 5 VDC (nominal) power for operating the device.
- Connects up to four devices to an Ethernet network.
- Simultaneously charges up to four devices.
- Simultaneously charges up to four spare batteries.

Figure 97 5-Slot Ethernet Cradle with Battery Charger (shown on optional Desk Mount)

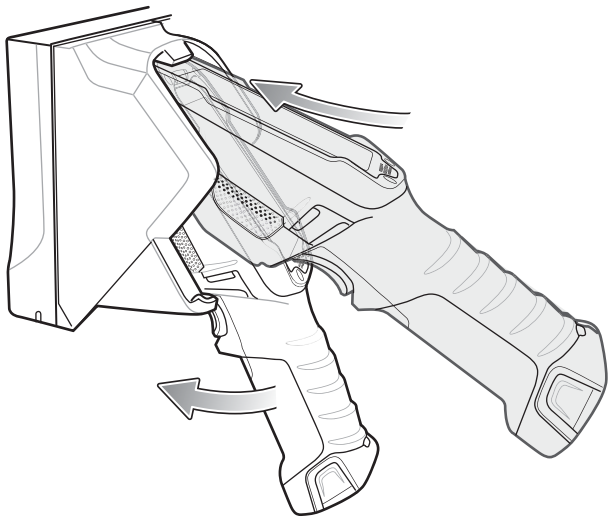


Charging the Devices

To charge the device:

1. Insert the device in a charge well to begin charging.

Figure 98 Insert Device into Cradle



2. Ensure that the device is properly seated in the charge well.

Charging the Spare Battery

1. Insert a spare battery into the spare battery slot.
2. Ensure the battery is seated properly. The Spare Battery Charging LED blinks indicating charging.

Battery Charging

Main Battery Charging

The device Charging/Scan LED indicates the status of the battery charging in the device. See Table 4 on page 23. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Spare Battery Charging

Each Battery Charging LED indicates the status of the battery charging in each slot. The table below describes the Battery Charging LED status. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Table 18 *Battery Charging Indicators*

State	Indication
Off	Battery is not charging. It is not inserted correctly in the cradle or connected to a power source. Charge is not powered.
Solid Amber	Healthy battery is charging.

Table 18 *Battery Charging Indicators (Continued)*

State	Indication
Solid Green	Healthy battery charging is complete.
Fast Blinking Red (2 blinks/second)	Charging error, e.g.: - Temperature is too low or too high. - Charging has gone on too long without completion (typically eight hours).
Solid Red	Unhealthy battery is charging or fully charged.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The battery charger always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the battery charger may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The battery charger indicates when charging is disabled due to abnormal temperatures via its LED.

Establishing Ethernet Communication

NOTE: Refer to the *TC8300 Integrator Guide* for information on configuring the Ethernet settings.

1. Swipe down with two fingers from the status bar to open the quick access panel and then touch > **Network & Internet** > **Ethernet**.
2. Slide the Ethernet switch to the **ON** position.
3. Insert the device into a slot.
4. The icon appears in the Status bar.
5. Touch **Eth0** to view Ethernet connection details.

Ethernet LED Indicators

There are two green LEDs on the side of the cradle. These green LEDs light and blink to indicate the data transfer rate.

Table 19 *LED Data Rate Indicators*

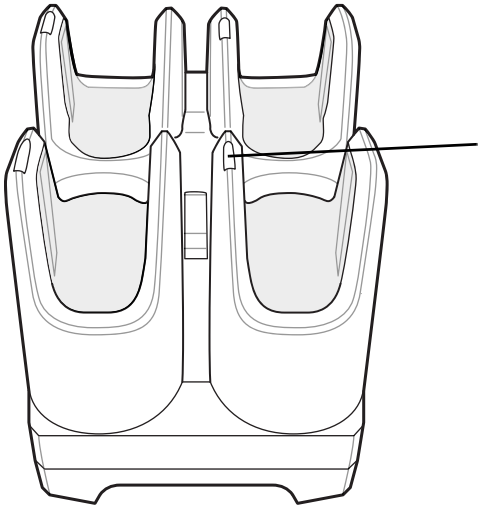
Data Rate	1000 LED	100/10 LED
1 Gbps	On/Blink	Off
100 Mbps	Off	On/Blink
10 Mbps	Off	On/Blink

4-Slot Battery Charger

Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146

The 4-Slot Battery Charger charges up to four device batteries.

Figure 99 4-Slot Battery Charger

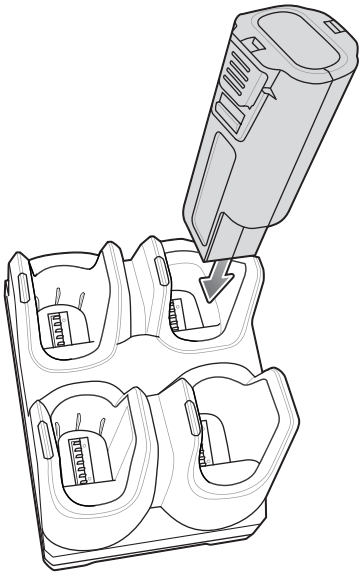


Battery Installation

To install the battery:

1. Insert the battery into a battery slot.
2. Gently press down on the battery until it snaps into place.

Figure 100 Insert Battery into Slot



Battery Removal

To remove the battery, press the two release latches on each side of the battery and lift the battery out of the battery slot.

Battery Charging

Spare Battery Charging

Each Battery Charging LED indicates the status of the battery charging in each slot. The table below describes the Battery Charging LED status. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Table 20 *Battery Charging Indicators*

State	Indication
Off	Battery is not charging. It is not inserted correctly in the cradle or connected to a power source. Charger is not powered.
Solid Amber	Healthy battery is charging.
Solid Green	Healthy battery charging is complete.
Fast Blinking Red (2 blinks/second)	Charging error, e.g.: - Temperature is too low or too high. - Charging has gone on too long without completion (typically eight hours).
Solid Red	Unhealthy battery is charging or fully charged.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The battery charger always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the battery charger may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The battery charger indicates when charging is disabled due to abnormal temperatures via its LED.

USB and Charging Cable

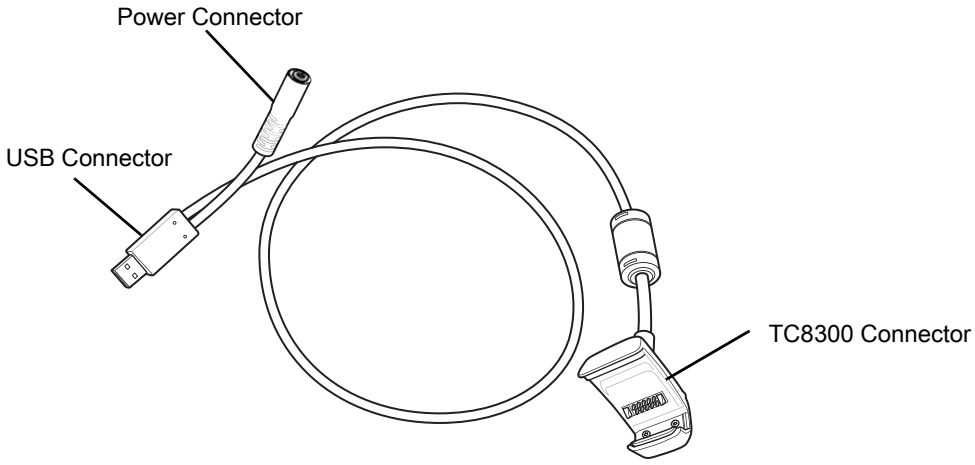
NOTE: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 146

The USB and Charging cable snaps onto the top of the device. When attached to the device, allows the user to perform the following functions:

- Transfer data to a host computer (transfer files to/from the device's internal eMMC or uSD card)
- OS upgrade
- Application development
- Transfer OS update to SD card for future upgrade
- Provide power for charging the device.

NOTE: This configuration is primarily used by IT admins or service personnel. The device will be connected directly to the user's PC/laptop in a service room, not in a warehouse environment. If the service room does not employ full ESD protection (adequate grounding), there is a possibility of an ESD event. In case of an ESD discharge, the performed action will be interrupted when the USB connectivity with the TC8300 remains. The user is then required to perform the action again.

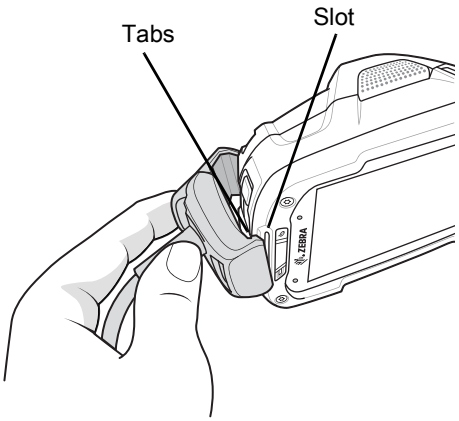
Figure 101 Snap-On USB Cable



Attaching the USB and Charging Cable

1. Align the tabs on the USB cable with the slots on the device.
2. Rotate the Adapter toward the back of the device until the adapter snaps onto the device.

Figure 102 Attach Cable to Device



3. Attach the USB connection to the host computer.

Removing the USB and Charging Cable

To remove the USB and Charging cable:

1. Press the release level toward the cable.
2. Rotate the adapter toward the front of the device and remove.

Battery Charging

To charge the device, attach the power cable to the Power Connection on the USB and Charging Cable.

Main Battery Charging

The device Charging/Scan LED indicates the status of the battery charging in the device. See Table 4 on page 23. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.

Charging Temperature

Charge batteries in temperatures from 0 °C to 40 °C (32 °F to 104 °F). The battery charger always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37 °C (+98 °F)) the battery charger may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The battery charger indicates when charging is disabled due to abnormal temperatures via its LED.

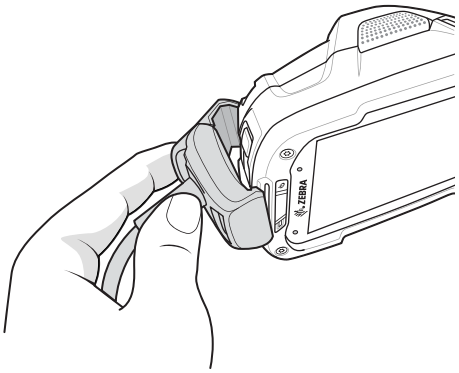
Quick Disconnect Audio Adapter

The Quick Disconnect Audio Adapter snaps onto the top of the device and removes easily when not in use. When attached to the device, the Quick Disconnect Audio Adapter allows a user to connect a wired headset to the device.

Attaching the Audio Adapter

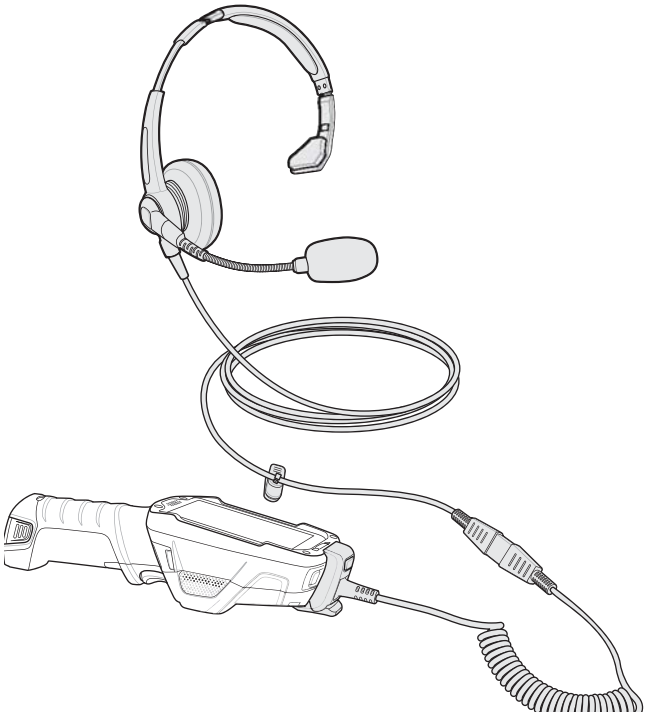
1. Align the tabs on the Audio Adapter with the slots on the device.
2. Rotate the Adapter toward the back of the device until the Adapter snaps onto the device.

Figure 103 Attach Cable to Device



Connecting the Adapter to a Headset

Figure 104 Quick Disconnect Audio Adapter Connection to Headset



Removing the Audio Adapter

To remove the Audio Adapter:

1. Press the release level toward the cable.
2. Rotate the adapter toward the front of the device and remove.

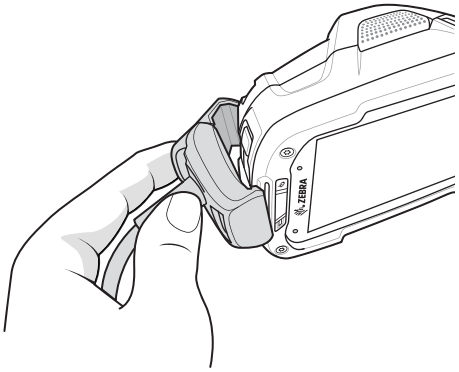
3.5 mm Audio Adapter

The 3.5 mm Audio Adapter snaps onto the top of the device and removes easily when not in use. When attached to the device, the Audio Adapter allows a user to connect a wired 3.5 mm headset to the device.

Attaching the Audio Adapter

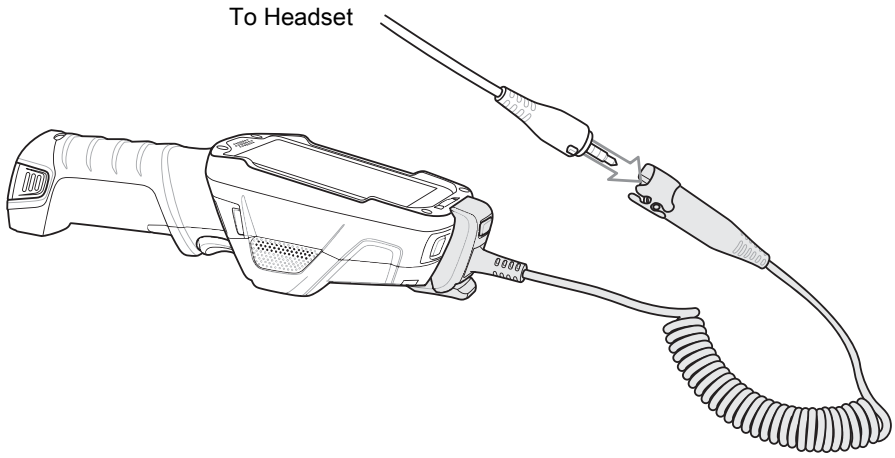
1. Align the tabs on the Audio Adapter with the slots on the device.
2. Rotate the Adapter toward the back of the device until the Adapter snaps onto the device.

Figure 105 Attach Cable to Device



Connecting the Adapter to a Headset

Figure 106 3.5 mm Audio Adapter Connection



Headset Recommendations

Table 21 *Headset Recommendations*

Headset	Adapter Cable	Voice-Directed Picking	PTT (half duplex)	Voice Calls (full duplex)
Speakerphone mode	N/A	Not Supported	Y	Not Supported
HS2100	QD Adapter Cable CBL-TC8X-AUDQD-01	Y	Y	Y

Table 21 *Headset Recommendations (Continued)*

Headset	Adapter Cable	Voice-Directed Picking	PTT (half duplex)	Voice Calls (full duplex)
HS2100 w/QD Cable	QD Adapter Cable CBL-TC8X-AUDQD-01	Y (Preferred)	Y	Y
HS2100 w/3.5 mm Cable	3.5 mm Adapter Cable CBL-TC8X-AUDBJ-01	Not Supported	Y	Y
Palm Garden Over the Ear Headset w/ MIC and PTT - 3.5 mm Cable HSDT-35MM-PTVP-01	3.5 mm Adapter Cable CBL-TC8X-AUDBJ-01	Not Supported	Y	Y

Removing the Audio Adapter

To remove the Audio Adapter:

1. Press the release level toward the cable.
2. Rotate the adapter toward the front of the device and remove.

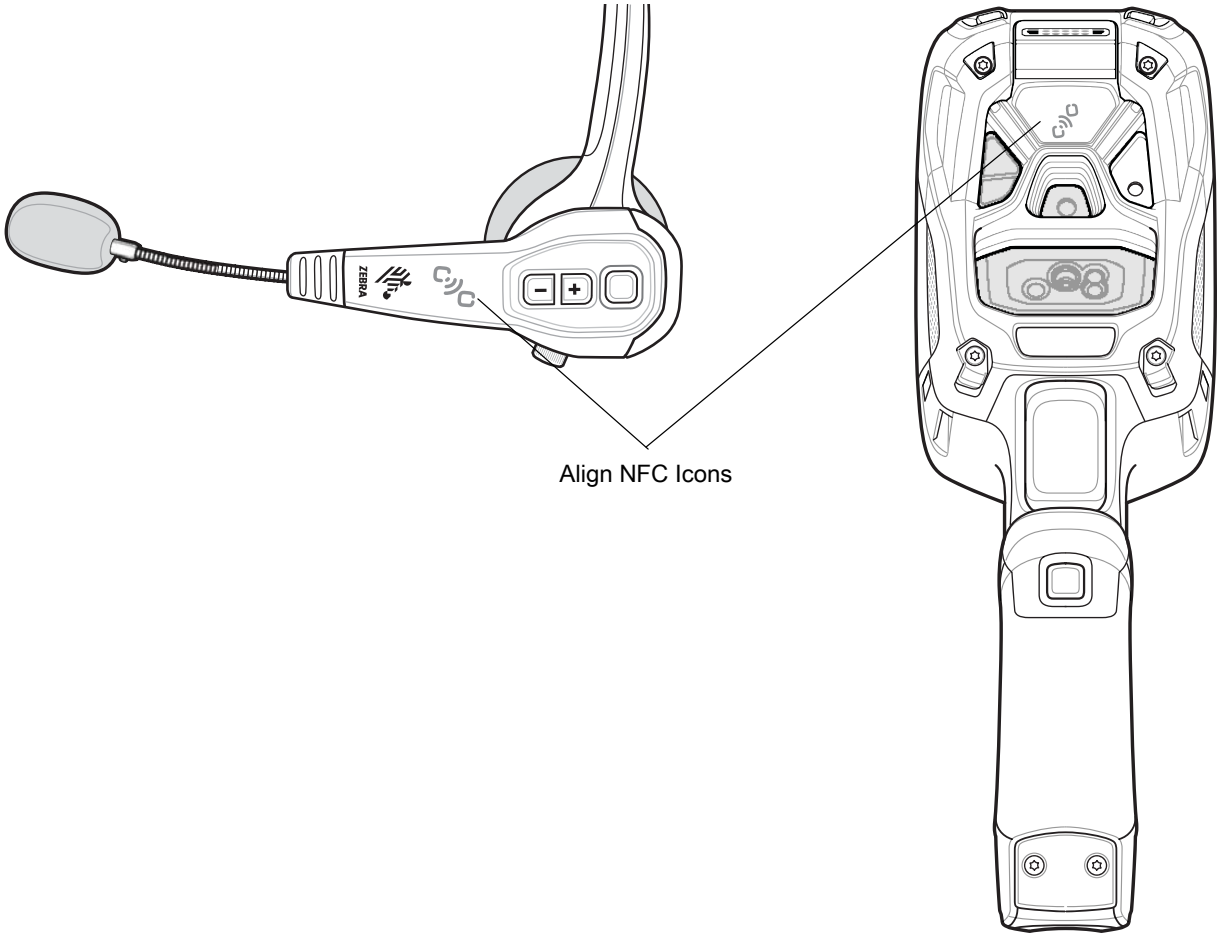
Pairing the HS3100 Bluetooth Headset to the Device

Pairing Using Near Field Communication

The device provides the ability to pair the HS3100 bluetooth headset using NFC.

1. Ensure that NFC is enabled on the device.
2. Align the NFC icon on the HS3100 headset with the NFC icon on the device. The headset LED turns solid blue and the device displays a **Pairing Zebra HS3100** notification along with a notification tone which is followed by a **Connecting Zebra HS3100** notification and the headset LED starts blinking blue.

Figure 107 Align NFC Icons



NOTE: On any subsequent NFC Tap-to-Pair, as long as the headset is in the Bluetooth device list, the device only displays a **Connecting Zebra HS3100** notification along with a notification tone.

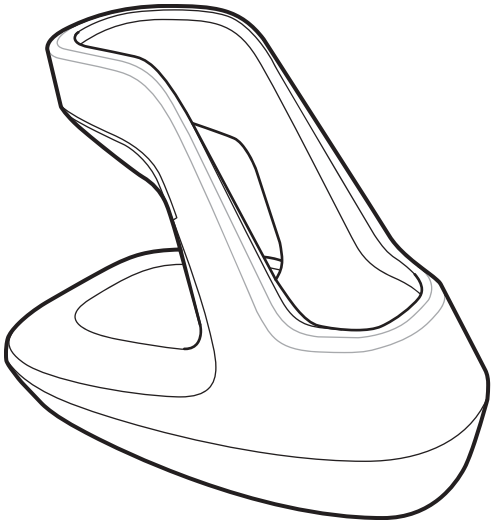
3. With the HS3100 and the device connected, perform an NFC Tap-to-Pair and the headset will turn off and a **Disconnecting HS3100 headset** notification displays on the device along with a notification tone.

NOTE: Not all Zebra devices support NFC readers and the Tap-to-Pair feature.

Desktop Stand

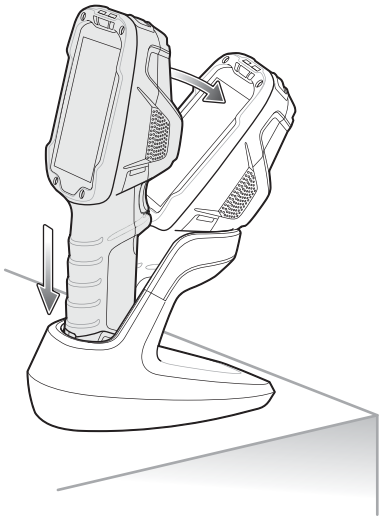
The Desk Stand allows the user to place the device in presentation mode for hands-free scanning.

Figure 108 Desktop Mount



Place the handle into the Desk Mount base and then rotate forward.

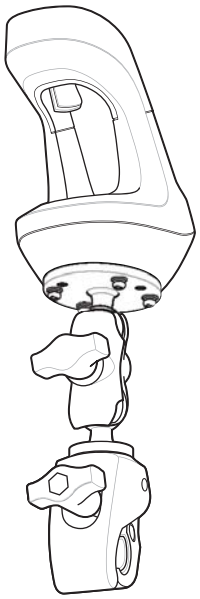
Figure 109 Insert Device into Desktop Mount



Cart Mount

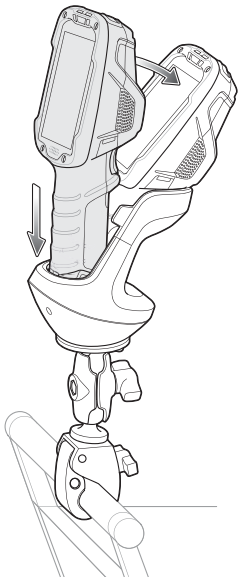
The Cart Mount allows the user to place the device in presentation mode for hands-free scanning while installed on a cart.

Figure 110 Cart Mount



Place the handle into the Cart Mount base and then rotate forward.

Figure 111 Insert Device into Cart Mount

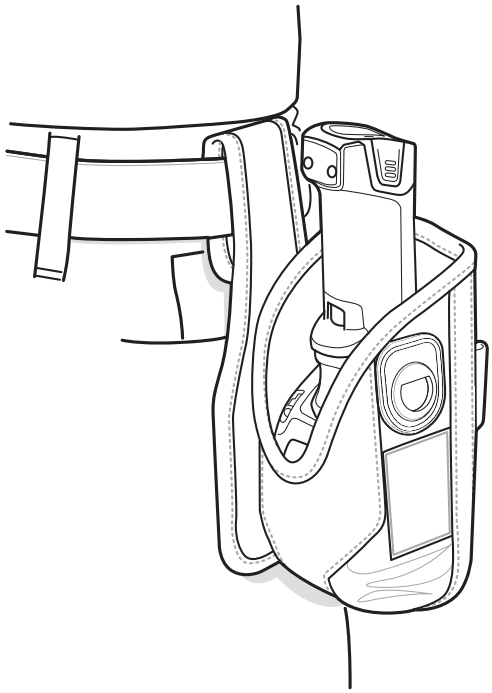


See the TC8300 Integrator Guide for assembly instructions.

Quick-Draw Soft Holster

Use the Quick-Draw Soft Holster to store the device when not in use. The holster attaches to a belt and is reversible for wearing on either side of the body.

Figure 112 Quick-Draw Soft Holster



Presentation Holster

Use the Presentation Holster for hands-free scanning. Attach to optional shoulder strap or optional belt.

Figure 113 Presentation Holster with Shoulder Strap

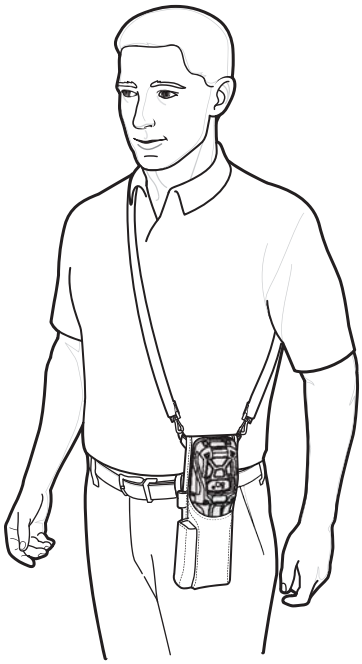


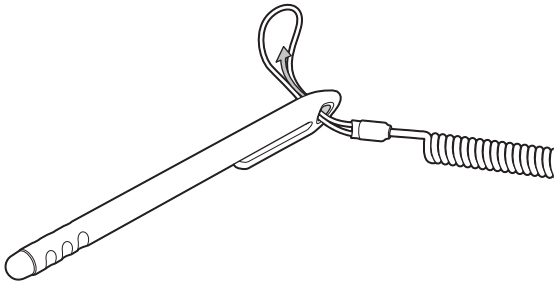
Figure 114 Presentation Holster on Belt

Stylus

To install the stylus onto the hand strap:

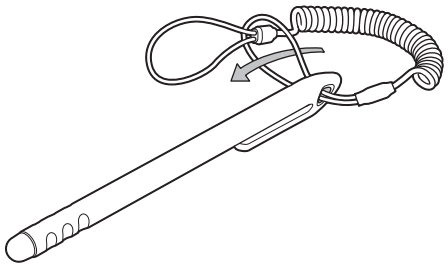
1. Thread the loop of the tether through the hole in the stylus.

Figure 115 Thread Loop through Stylus Hole



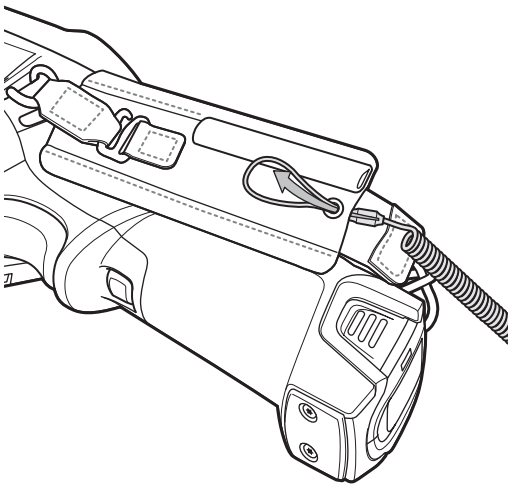
2. Thread the other end of the tether through the loop.

Figure 116 Thread Tether through Loop



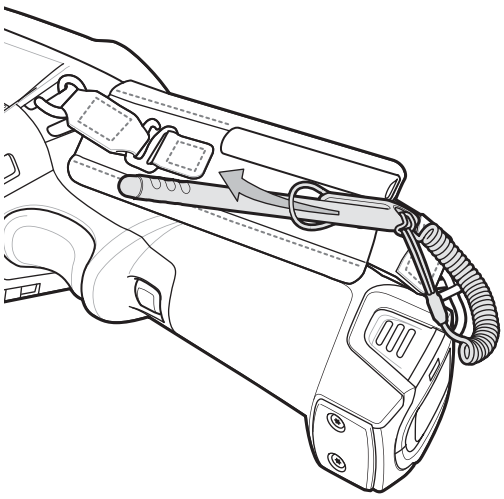
3. Insert the tether loop into the hand strap eyelet.

Figure 117 Feed Loop through Hand Strap Eyelet



4. Feed the stylus through the tether loop.

Figure 118 Feed Stylus Through Loop



5. Pull stylus through the loop and tighten.

Maintenance and Troubleshooting

Introduction

This chapter includes instructions on cleaning and storing the device, and provides troubleshooting solutions for potential problems during operation.

Maintaining the Device

For trouble-free service, observe the following tips when using the device:

- In order to avoid scratching the screen, use the supplied stylus or plastic-tipped pens intended for use with a touch-sensitive screen. Never use an actual pen or pencil or other sharp object on the surface of the device screen.
- The touch-sensitive screen of the device is glass. Do not drop the device or subject it to strong impact.
- Protect the device from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- Do not store the device in any location that is dusty, damp, or wet.
- Use a soft lens cloth to clean the device. If the surface of the device screen becomes soiled, clean it with a soft cloth moistened with an approved cleanser. For a list of approved cleansers, see Approved Cleanser Active Ingredients.
- Periodically replace the rechargeable battery to ensure maximum battery life and product performance. Battery life depends on individual usage patterns.

Battery Safety Guidelines

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non commercial environment.
- Follow battery usage, storage, and charging guidelines found in this guide.
- Improper battery use may result in a fire, explosion, or other hazard.
- To charge the mobile device battery, the battery and charger temperatures must be between +32ºF and +104ºF (0ºC and +40ºC)
- Do not use incompatible batteries and chargers, including non-Zebra batteries and chargers. Use of an incompatible battery or charger may present a risk of fire, explosion, leakage, or other hazard. If you have any questions about the compatibility of a battery or a charger, contact the Global Customer Support Center.
- For devices that utilize a USB port as a charging source, the device shall only be connected to products that bear the USB-IF logo or have completed the USB-IF compliance program.
- Do not disassemble or open, crush, bend or deform, puncture, or shred battery.

- Severe impact from dropping any battery-operated device on a hard surface could cause the battery to overheat.
- Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.
- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.
- Do not leave or store the equipment in or near areas that might get very hot, such as in a parked vehicle or near a radiator or other heat source. Do not place battery into a microwave oven or dryer.
- Battery usage by children should be supervised.
- Please follow local regulations to properly dispose of used re-chargeable batteries.
- Do not dispose of batteries in fire.
- In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with water for 15 minutes and seek medical advice.
- If you suspect damage to your equipment or battery, contact Customer Support to arrange for inspection.

Long Term Storage

When storing the device for a long period of time, it is recommended to remove the battery. When returning the device to everyday operation, install a fully charged battery.

Cleaning Instructions

CAUTION: Always wear eye protection.
Read warning label on alcohol product before using.
If you have to use any other solution for medical reasons please contact the Global Customer Support Center 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[1] **(see important note below)**, or mild dish soap.

- Use pre-moistened wipes and do not allow liquid cleaner to pool.

[1]When using sodium hypochlorite (bleach) based products always follow the manufacturer's recommended instructions: use gloves during application and remove the residue afterwards with a damp alcohol cloth or a cotton swab to avoid prolonged skin contact while handling the device.

Due to the powerful oxidizing nature of sodium hypochlorite the metal surfaces on the device are prone to oxidation (corrosion) when exposed to this chemical in the liquid form (including wipes). In the event that these type of disinfectants come in contact with metal on the device, prompt removal with an alcohol-dampened cloth or cotton swab after the cleaning step is critical.

Harmful Ingredients

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

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 device.

Device Cleaning Instructions

Do not apply liquid directly to the device. 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.

NOTE: For thorough cleaning, it is recommended to first remove all accessory attachments, such as hand straps or cradle cups, from the mobile device and to clean them separately.

Special Cleaning Notes

The device 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 device, such as hand sanitizer that contain ethanolamine, hands must be completely dry before handling the device to prevent damage to the device.

IMPORTANT: If the battery connectors are exposed to cleaning agents, thoroughly wipe off as much of the chemical as possible and clean with an alcohol wipe. It is also recommended to install the battery in the terminal prior to cleaning and disinfecting the device to help minimize buildup on the connectors.

When using cleaning/disinfectant agents on the device, it is important to follow the directions prescribed by the cleaning/disinfectant agent manufacturer.

Cleaning Materials Required

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

Cleaning Frequency

The cleaning frequency is at the customer’s discretion due to the varied environments in which the mobile devices are used and may be cleaned as frequently as required. When dirt is visible, it is recommended to clean the mobile device to avoid build up of particles which make the device more difficult to clean later on.

Cleaning the Device

Housing

Thoroughly wipe the housing, including all buttons and triggers, using an approved alcohol wipe.

Display

The display can be wiped down with an approved alcohol wipe, but care should be taken not to allow any pooling of liquid around the edges of the display. Immediately dry the display with a soft, non-abrasive cloth to prevent streaking.

Exit Window

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

Cleaning Battery Connectors

To clean the battery connectors:

1. Remove the main battery from the mobile computer.
2. Dip the cotton portion of the cotton-tipped applicator in isopropyl alcohol.
3. To remove any grease or dirt, rub the cotton portion of the cotton-tipped applicator back-and-forth across the connectors on the battery and terminal sides. Do not leave any cotton residue on the connectors.
4. Repeat at least three times.
5. Use a dry cotton-tipped applicator and repeat steps 3 and 4. Do not leave any cotton residue on the connectors.
6. Inspect the area for any grease or dirt and repeat the cleaning process if necessary.

CAUTION: After cleaning the battery connectors with bleach-based chemicals, follow the Battery Connector Cleaning instructions to remove bleach from the connectors.

Cleaning Cradle Connectors

To clean the connectors on a cradle:

1. Remove the DC power cable from the cradle.
2. Dip the cotton portion of the cotton-tipped applicator in isopropyl alcohol.
3. Rub the cotton portion of the cotton-tipped applicator along the pins of the connector. Slowly move the applicator back-and-forth from one side of the connector to the other. Do not leave any cotton residue on the connector.
4. All sides of the connector should also be rubbed with the cotton-tipped applicator.
5. Remove any lint left by the cotton-tipped applicator.
6. If grease and other dirt can be found on other areas of the cradle, use a lint-free cloth and alcohol to remove.
7. Allow at least 10 to 30 minutes (depending on ambient temperature and humidity) for the alcohol to air dry before applying power to cradle.

   If the temperature is low and humidity is high, longer drying time is required. Warm temperature and low humidity requires less drying time.

CAUTION: After cleaning the cradle connectors with bleach-based chemicals, follow the Cleaning Cradle Connectors in-

structions to remove bleach from the connectors.

Troubleshooting

TC8300

Table 22 *Troubleshooting the TC8300*

Problem	Cause	Solution
Device does not turn on.	Battery not charged.	Charge or replace the battery in the device.
	Battery not installed properly.	Ensure battery is installed properly. See Installing the Battery on page 21.
	System crash.	Perform a soft reset. If the device still does not turn on, perform a hard reset. See Resetting the Device on page 53.
Battery did not charge.	Battery failed.	Replace battery. If the device still does not operate, try a soft reset, then a hard reset. See Resetting the Device on page 53.
	Device removed from cradle before charging completed.	Insert the device into the cradle and begin charging. The 6,700 mAh battery charges from 0 - 90% in less than four hours at room temperature. The 7,000 mAh battery charges from 0 - 90% in less than five hours at room temperature.
	Ambient temperature of the cradle is too warm or too cold.	The ambient temperature must be between 0 °C and 40 °C (32 °F and 104 °F).
During data communication, no data was transmitted, or transmitted data was incomplete.	Device unplugged from host computer during communication.	Reconnect the programming cable to the host computer and re-transmit.
	Communication software was incorrectly installed or configured.	See system administrator.
Device turns itself off.	Device is inactive.	The device turns off after a period of inactivity. If the device is running on battery power, this period can be set to 15 seconds, 30 seconds, 1 minute, 2 minutes, 5 minutes, 10 minutes, or 30 minutes. Change the setting if you need a longer delay before the automatic shutoff feature activates.
	Battery is depleted.	Place the device in the cradle to re-charge the battery.
	Battery is not inserted properly.	Insert the battery properly (see Installing the Battery on page 21).
	The device's battery is low and it powers down to protect memory content.	Place the device in the cradle to re-charge the battery.

Table 22 *Troubleshooting the TC8300 (Continued)*

Problem	Cause	Solution
A message appears stating that the device memory is full.	Too many files stored on the device.	Delete unused memos and records. You can save these records on the host computer.
	Too many applications installed on the device.	If you have installed additional applications on the device, remove them to recover memory. See the TC8300 Integrator Guide.
The device does not accept scan input.	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between scanner exit window and bar code is incorrect.	Move the device closer or further from the bar code to the proper scanning range.
	Device is not programmed for the bar code.	Verify that the device can read the type of bar code being scanned (See Specifications). Ensure that the bar code parameters are set properly for the bar code being scanned.
	Device is not programmed to generate a beep.	Verify that a beep on a good decode is used. See the TC8300 Integrator Guide for more information.
During USB data communications, no data was transmitted, or transmitted data was incomplete.	Incorrect cable connection.	See Accessories.
	Communications software is not installed or configured properly.	See Accessories.

Specifications

Technical Specifications

The following tables summarize the device's intended operating environment and general technical hardware specifications.

Table 23 *Technical Specifications*

Item	Description
Physical and Environmental Characteristics	
Dimensions (H x L x W)	233 mm x 76 mm x 64 mm 9.17 in. x 2.99 in. x 2.52 in.
Weight	Base: 490 g (17.2 oz) Package 1: 500 g (17.6 oz)
Display	Color Transflective LCD, 4 in. diagonal, 480 x 800 pixels, 24 bits (16.7 million pixels), 400 Nits.
Touch Panel	Multi-Touch projected capacitive; fingertip (bare or gloved) input; conductive stylus supported (sold separately)); Corning® Gorilla® Glass
Backlight	Configurable LED backlight control
Battery	PowerPrecision+ rechargeable 4.2 VDC 6,700 mAh Lithium-Ion battery. PowerPrecision+ rechargeable 4.2 VDC 7,000 mAh Lithium-Ion battery.
Backup Power	Hot Swap battery backup
Expansion Slot	SDHC up to 32 GB (FAT32 format); SDXC compliant microSD up to 128 GB (exFAT format).
Expansion Port	USB, Serial for ISV developers (optional)
Notifications	Audible tone plus multi-color LEDs and vibration
Voice and Audio	Dual Speakers, Bluetooth wireless headset support
Performance Characteristics	
CPU	Qualcomm Snapdragon ™ 660 octa-core, 2.2 GHz
Operating System	Android-based AOSP and GMS V8.1 (Oreo) with Mobility Extensions (Mx), for true enterprise class operating system.

Table 23 *Technical Specifications (Continued)*

Item	Description
Memory	4 GB RAM: Base: 32 GB Flash (pSLC) Package 1: 32 GB Flash (pSLC) 8 GB RAM: Package 2: 128 GB Flash (pSLC)
Application Development	Zebra Android EMDK
User Environment	
Operating Temperature	-20° C to 50° C (-4° F to 122° F)
Storage Temperature	-40° C to 70° C (-40° F to 158° F)
Battery Charging Temperature	0° C to +40° C (32° F to 104° F) ambient temperature range.
Humidity	5% - 95% non-condensing
Drop Specification	Multiple 8 ft./2.4 m drop to concrete at room temperature per MIL-STD 810G; multiple 6 ft./1.8 m drop to concrete across full operating temperature range
Tumble	2,000 1 m (3.28 ft.) tumbles; meets and exceeds IEC tumble specifications
Sealing	IP65
Vibration	Sine 5-2000 Hz, 4 g peak, 1 hour per axis Random 20-2000 Hz, 6 g RMS or 0.04 g2/Hz, 1 hour per axis
ESD	± 20k VDC air discharge ± 10k VDC contact discharge ± 10k VDC indirect discharge
Wireless LAN Data Communications	
Radio	IEEE 802.11 a/b/g/n/ac/d/h/i/r/k/w; Wi-Fi ™ certified; IPv4, IPv6, 2x2 MU-MIMO.
Data Rates	5GHz: 802.11a/n/ac - up to 866.7 Mbps 2.4GHz: 802.11b/g/n - up to 300 Mbps
Operating Channels	Channel 1-13 (2412-2472 MHz): 1,2,3,4,5,6,7,8,9,10,11,12,13 Channel 36-165 (5180-5825 MHz): 36,40,44,48,52,56,60,64,100,104,108, 112,116,120,124,128,132,136,140,144,149,153,157,161,165 Channel Bandwidth: 20, 40, 80 MHz Actual operating channels/ frequencies and bandwidths depend on regulatory rules and certification agency.
Security and Encryption	WEP (40 or 104 bit); WPA/WPA2 Personal (TKIP, and AES); WPA/WPA2 Enterprise (TKIP and AES) - EAP-TTLS (PAP, MSCHAP, MSCHAPv2), EAP-TLS, PEAPv0-MSCHAPv2, PEAPv1-EAP-GTC and LEAP. EAP-PWD
Multimedia	Wi-Fi Multimedia ™ (WMM)
Certifications	WFA (802.11n, WMM-PS, 801.11ac, PMF)
Fast Roam	PMKID Caching, Cisco CCKM, 802.11r, OKC.
Wireless PAN Data Communications	
Bluetooth	Class 2, Bluetooth 5.0, Bluetooth Low Energy (BLE)
USB	USB 2.0 Client for service and maintenance.

Table 23 *Technical Specifications (Continued)*

Item	Description
Data Capture	
Laser Scanning	SE965 1D standard range scan engine.
Imager	SE4750-MR medium range next generation omnidirectional 1D/2D imaging engine. SE4850-ER extended range imager
Camera	13 MP Autofocus with flash, f/2.4 aperture (optional).
NFC	Multi-Protocol NFC (optional).
Zebra Interactive Sensor Technology (IST)	
Motion Sensor	3-axis accelerometer; 3-axis gyroscope (optional).
Light Sensor	Automatically adjusts display backlight.
Proximity	Sensor for auto hands-free scanning (optional).

Table 24 *Data Capture Supported Symbologies*

Item	Description
1D Bar Codes	Chinese 2 of 5, Codabar, Code 11, Code 128, Code 39, Code 93, Discrete 2 of 5, EAN-8, EAN-13, GS1 DataBar, GS1 DataBar 14, GS1 DataBar Expanded GS1, GS1 DataBar Limited, Interleaved 2 of 5, Korean 2 of 5, Matrix 2 of 5, MSI, TLC39, Trioptic 39, UPCA, UPCE, UPCE1
2D Bar Codes	Australian Postal, Aztec, Canadian Postal, Composite AB, Composite C, Data Matrix, Dutch Postal, HAN XIN, Japanese Postal, Mail Mark, Maxi Code, Micro PDF-417, microQR, PDF-417, QR Code, US Planet, UK Postal, US Postnet, USPS 4-state (US4CB), US4state FICS

SE965 Standard Range Laser Decode Zones

The table below lists the typical distances for selected bar code densities. The minimum element width (or "symbol density") is the width in mils of the narrowest element (bar or space) in the symbol.

Table 25 *SE965 Decode Distances*

Symbol Density/ Bar Code Type/ W-N Ratio	Bar Code Content/ Contrast[Note 1]	Typical Working Ranges	
		Near	Far
5.0 mil Code 128	1234 80% MRD	1.2 in 3.05 cm	7.7 in 19.56 cm
5.0 mil Code 39; 2.5:1	ABCDEFGH 80% MRD	1.2 in 3.05 cm	12.5 in 31.75 cm
7.5 mil Code 39; 2.5:1	ABCDEF 80% MRD	1.1 in 2.79 cm	18.5 in 46.99 cm
10 mil Code 128	1234 80% MRD	1.2 in[Note 3] 3.05 cm[Note 3]	19.0 in 48.26 cm
13 mil 100% UPC	12345678905 80% MRD	1.6 in 4.06 cm	27.0 in 68.58 cm
15 mil Code 128	1234 80% MRD	1.0 in[Note 3] 2.54 cm[Note 3]	29.5 in 74.93 cm
20 mil Code 39; 2.2:1	123 80% MRD	1.4 in[Note 3] 3.56 cm[Note 3]	52.0 in 132.08 cm
55 mil Code 39; 2.2:1	CD 80% MRD	3.4 in[Note 3] 8.64 cm[Note 3]	100.0 in 254.00 cm
100 mil Code 39; 3.0:1 reflective	123456 80% MRD	2 ft[Note 3] 60.96 cm[Note 3]	17 ft 518.16 cm

Notes:

1.Contrast measured as Mean Reflective Difference (MRD) at 650 nm.
2.Working range specifications at ambient temperature (23°C), photographic quality symbols. Pitch=10°, roll=0°, skew=0°, ambient light < 150 ft-candles using Symbol or equivalent decoder.
3.Dependent on width of bar code.
4.Distances measured from front edge of scan engine chassis.

SE4750-MR Decode Zones

The table below lists the typical distances for selected bar code densities.

Table 26 *SE4750-MR Decode Distances*

Symbology	Typical Working Range	
	Near	Far
5 mil Code 128	7.4 in. 18.8 cm	16.0 in. 40.6 cm
5 mil PDF417	8.1 in. 20.6 cm	13.1 in. 33.3 cm
7.5 mil Data Matrix	8.3 in. 21.1 cm	12.8 in. 32.5 cm
10 mil Data Matrix	7.0 in. 17.8 cm	17.0 in. 43.2 cm
13 mil UPCA	2.3* in. 5.8* cm	38.0 in. 96.5 cm
15 mil Code 128	4.0* in. 10.2* cm	40.0 in. 101.6 cm
20 mil Code 39	2.1* in. 5.3* cm	54.0 in. 137.2 cm
100 mil Code 39	11.0 in. 27.9 cm	172.0 in. 436.9 cm
160 mil Data Matrix	11.5 in. 29.2 cm	138.0 in. 350.5 cm

* Limited by width of bar code in field of view.
Note: Photographic quality bar code at 18° tilt pitch angle under 30 fcd ambient illumination.
Distances measured from front edge of scan engine chassis.

SE4850 Decode Zones

The table below lists the typical distances for selected bar code densities.

Table 27 *SE4850 Decode Distances*

Symbology	Typical Working Range @20 Ft-Cd Minimum	
	Near	Far
10 mil Code 39	3.0 in. * 7.6 cm *	85.0 in. 215.9 cm
13 100% UPC	3.5 in. 8.9 cm	90.0 in. 228.6 cm
15 mil Code 128	6.0 in. * 15.2 cm *	100.0 in. 254.0 cm
20 mil Code 39	4.0 in. * 10.2 cm *	172.0 in. 436.9 cm
40 mil Code 39	6.0 in. * 15.2 cm *	340.0 in. ** 863.6 cm **
55 mil Code 39	7.0* in. * 17.8* cm *	430.0 in. ** 1092.2 cm **
100 mil Code 39 (paper)	20.0* in. * 50.8* cm *	700.0 in. ** 1778.0 cm **
100 mil Code 128 (reflective)	30.0 in. * 76.2 cm *	700.0 in. 1778.0 cm
DataMatrix 10	5.0 in. 12.7 cm	45.0 in. 114.3 cm
DataMatrix 55	5.0 in. 12.7 cm	250.0 in. 635.0 cm
15 mil Code 128 (4 in. wide)	8.0 in. * 20.3 cm *	100.0 in. 254.0 cm

* Limited by width of bar code in field of view.
** Range is reduced under low ambient light level.

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