TOUCH COMPUTER

TC101

Product Reference Guide

MN-005616-01EN Rev A

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Contents

About this Guide

This guide provides information about setting up and using the TC101 touch computer. Some screens shown in this guide may differ from the actual screens shown on the device.

This guide includes Android operating system (OS) 15 and above. Android 15 is the baseline, and updated OS releases are indicated in the content where applicable.

Mobility DNA Enterprise License

Powerful complimentary Mobility DNA tools are made available and ready to use, making it easier to stage, secure, and troubleshoot the TC101 devices; capture and send data to your applications right out of the box; restrict access to features and applications; and more. The Mobility DNA Enterprise License delivers premium voice capabilities over Wi-Fi and unlocks powerful tools and utilities that take workforce productivity and device management simplicity to a new level.

VoLTE delivers superior voice quality over cellular networks, while Zebra's advanced VoWiFi technology, included with the Mobility DNA Enterprise License, delivers superior voice quality over all of your WiFi voice applications. For example, Push-to-Talk Express for basic walkie-talkie style communications, the Workforce Connect PTT Pro subscription service for walkie-talkie-style communications over cellular and WiFi networks, and Workforce Connect Voice to turn the devices into fully-featured PBX handsets.

Licensed Features

Licensed features are only available on this device with the purchase of a Mobility DNA Enterprise License. A single license unlocks all premium features on the device. Some apps may require a download from techdocs.zebra.com/licensing. Please contact your administrator or go to zebra.com for more information.

NOTE: Android Multi-User Mode is not supported by the Mobility DNA Enterprise License. Entering Multi-User Mode on a device with an active Mobility DNA Enterprise License may cause undefined behavior.

Core OS, Apps, and mDNA

Core OS, apps, and mDNA features that require the purchase of a Mobility DNA Enterprise License.

- PowerPrecision Console
- Zebra Volume Control
- Secure NFC through EMDK

- Firmware Over the Air (FOTA)
- Device Tracker
- Enterprise Keyboard
- Device Central
- NG SimulScan through EMDK and DataWedge

Fusion

Fusion features that require the purchase of a Mobility DNA Enterprise License.

- Power Management (WMM U-APSD)
- EAP Methods (LEAP)
- PEAP Phase 2: GTC Dynamic Password
- Fast Roam (CCKM)
- CCXv4 (compliant, but not certified)
- Band Preference
- Subnet Roam
- Fusion Logger
- Fusion Status
- Wireless Analyzer
- Channel mask
- AutoTimeConfig
- WLANPowerSave (WMM-PS)
- EnableRestrictedSettingsUI
- SubNetRoam
- PasswordProtectEncryption
- CallAdmissionControl
- Gratuitous ARP
- Profile configuration (Dynamic GTC)
- Profile configuration (LEAP)

Connectivity

Connectivity features that require the purchase of a Mobility DNA Enterprise License.

- Bluetooth Silent Pairing, Trusted and Single Pairing
- Bluetooth NFC Tap and Pair
- Bluetooth CSPs
- Disable future pairing with remote Bluetooth devices.
- Do not allow the device to be visible to other devices over Bluetooth.

- Allow Silent Pairing
- SmartLeash (Quality monitoring feature)
- Clear All PDL (Paired Device List)
- The BtInsights v2.0
- BT Vanisher
- RSSI Filter-based BLE Scan
- Profile Enable/Disable

Request Licenses

Customers, partners, and distributors require a Mobility DNA Enterprise License. Please request an evaluation or trial license through your account manager.

Notational Conventions

The following notational conventions make the content of this document easy to navigate.

- **Bold** text is used to highlight the following:
  - Dialog box, window, and screen names
  - Dropdown list and list box names
  - Checkbox and radio button names
  - Icons on a screen
  - Key names on a keypad
  - Button names on a screen
- Bullets (•) indicate:
  - Action items
  - List of alternatives
  - Lists of required steps that are not necessarily sequential
- Sequential lists (for example, those that describe step-by-step procedures) appear as numbered lists.

Icon Conventions

The documentation set is designed to give the reader more visual clues. The following visual indicators are used throughout the documentation set.

NOTE: The text here indicates information that is supplemental for you to know and that is not required to complete a task.

IMPORTANT: The text here indicates information that is important for you to know.

CAUTION: If the precaution is not heeded, you could receive a minor or moderate injury.

WARNING: If danger is not avoided, you CAN be seriously injured or killed.

DANGER: If danger is not avoided, you WILL be seriously injured or killed.

Service Information

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

When contacting support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software/firmware type and version number

Zebra responds to calls by email, telephone, or fax within the time limits set forth in support agreements.

If your problem cannot be solved by Zebra Customer Support, you may need to return your equipment for servicing and will be given specific directions. Zebra is 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.

If you purchased your Zebra business product from a Zebra business partner, contact that business partner for support.

Determining Software Versions

Before contacting Customer Support, determine the current software version on your device.

1. Swipe down from the Status bar with two fingers to open the Quick Access panel, and then touch ⚙.
2. Touch **About phone**.
3. Scroll to view the following information:
    - Device name
    - Phone number (WWAN only)
    - Battery information
    - Phone information (WWAN only)
    - Emergency information
    - SW components
    - Legal information
    - Model & hardware
    - Model
    - EID (WWAN only)
    - SIM status (WWAN only)
    - Android version
        - Android security patch level

- Android security patch version
- Google Play system update
- Baseband version
- Kernel version
- Android Security Update

- IP address
- Wi-Fi MAC address
- Device Wi-Fi MAC address
- Bluetooth address
- Up time
- Build Fingerprint
- Build number

4. To determine the device International Mobile Equipment Identity (IMEI) information (WWAN only), touch **About phone** > **IMEI**.
   - IMEI - Displays the IMEI number for the device.
   - IMEI SV - Displays the IMEI software version (SV) number for the device

Determining Serial Number

Before contacting Customer Support, determine the serial number of your device.

1. Swipe down from the Status bar with two fingers to open the Quick Access panel, and then touch ⚙.
2. Touch **About phone**.
3. Touch **Model**.

Getting Started

This section provides information to get the device up and running for the first time.

Unpacking the TC101

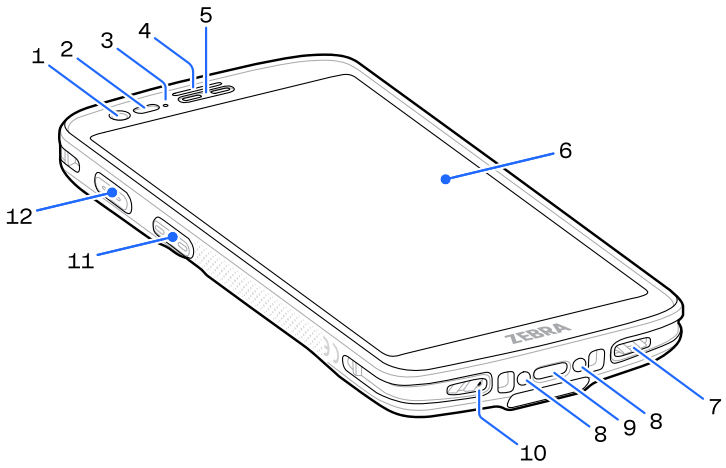
This section describes how to unpack the TC101.

1. Carefully remove all protective material from the device and save the shipping container for later storage and shipping.
2. Verify that the following were received:
   - TC101 Touch Computer
   - PowerPrecision Lithium-ion battery
   - Regulatory Guide
3. Inspect the equipment for damage. If any equipment is missing or damaged, contact the Global Customer Support Center immediately.
4. Before using the device for the first time, remove the protective shipping film that covers the exit window, display, and camera window.

Features

This section lists the features of the TC101 touch computer.

Figure 1 Front View



NOTE: Go to Setting Wake-Up Sources for key mapping details.

Table 1 Front View Features

Number	Item	Description
1	Front Camera	Takes photos and videos.
2	Proximity/Light Sensor	Determines proximity and ambient light for controlling display backlight intensity.
3	Charging/Notification LED	Indicates battery charging status while charging and application-generated notifications.
4	Scan LED	Indicates data capture status.
5	Speaker/Receiver	Provides audio playback in handset and speakerphone mode.
6	Touch Screen	Displays information needed to operate the device.
7	Speaker	Provides audio output for video and music playback. Provides audio in speakerphone mode.
8	Cradle Charging Contacts	Provides device charging via cradles and accessories.
9	USB-C Port	Provides charging (primarily) and data communication with peripherals.
10	Microphone	Used for communications in Handset mode.
11	Scanner Button	Initiates barcode scanning (programmable).
12	Programmable Button	Initiates a Push-to-Talk (PTT) call (programmable).

Figure 2 Rear View

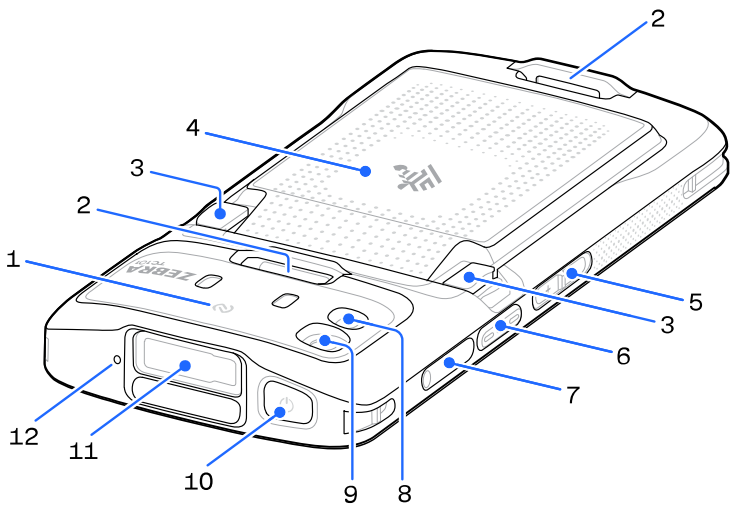


Table 2 Rear View Features

Number	Item	Description
1	NFC Antenna	Provides communication with other NFC-enabled devices.
2	Accessory Attachment Point	Provides a point for attaching optional accessories.
3	Battery Release Latches	Releases battery latches.
4	Battery	Provides power to the device.
5	Volume Up/Down Button	Increases and decreases audio volume (programmable).
6	Scanner Button	Initiates barcode scanning (programmable).
7	Card Holder	Holds a SIM card (WWAN) and an SD card.
8	Camera Flash	Provides illumination for the camera and operates as a flashlight.
9	Rear Camera	Takes photos and videos.
10	Power Button	Turns the display on and off. Press and hold to power off, restart, or lock the device.
11	Scanner Exit Window	Provides data capture using the imager.
12	Microphone	Used for communications in Speakerphone mode.

Setting Up the Device

This section describes setting up the TC101.

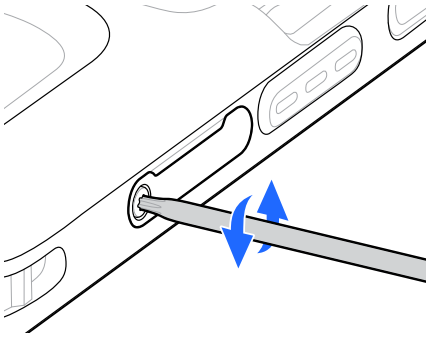
1. Install a micro Secure Digital (SD) card. (Optional)
2. Install two SIM cards or one SIM card and a micro Secure Digital (SD) card (WWAN only).
3. Install the battery.
4. Install the hand strap. (Optional)
5. Charge the device.
6. Power on the device.

Installing the microSD Card

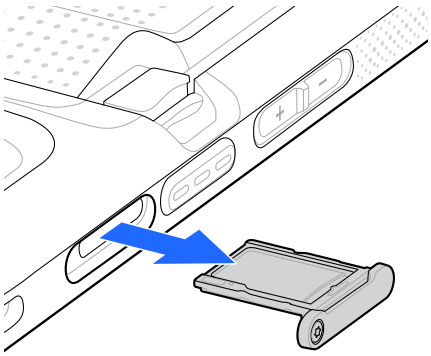
This section describes the steps to install a microSD card in your TC101.

CAUTION: 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.

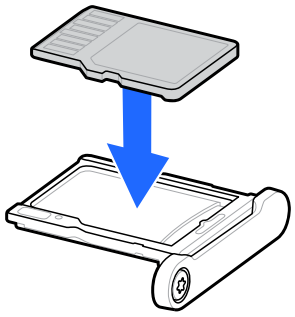
1. Power off the device.
2. Using a T5 Torx screwdriver, unscrew the Torx 5 screw to remove the card holder.



3. Pull the card holder out of the device.

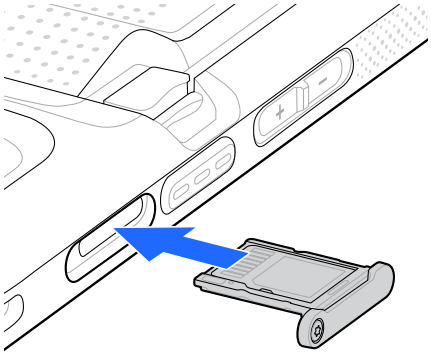


4. Place the microSD card into the card holder with the contacts facing up.

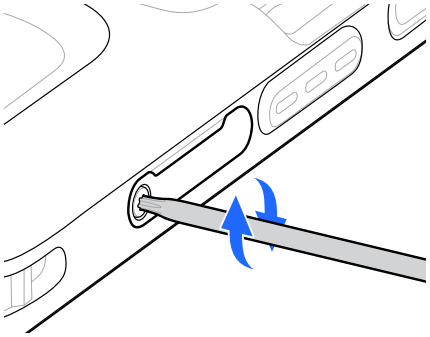


NOTE: Press the card down into the cardholder and ensure that it seats properly.

5. Insert the card holder back into the device.



6. Using a T5 Torx screwdriver, tighten the T5 Torx screw to a torque of 0.63 ± 0.08 kgf-cm (0.55 ± 0.07 lbf.in).



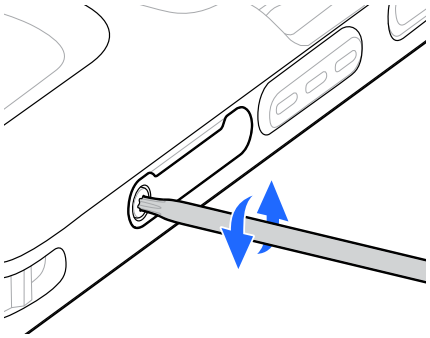
Installing the SIM Card

This section describes the steps to install a SIM card in your TC101.

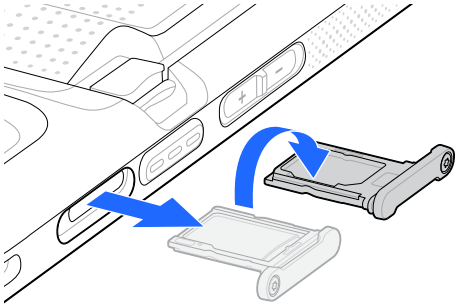
NOTE: WWAN only.

CAUTION: For proper electrostatic discharge (ESD) precautions to avoid damaging the SIM card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring that the user is properly grounded.

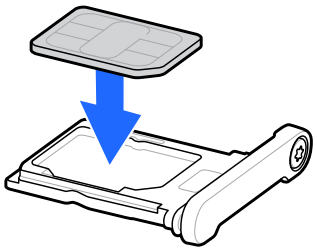
1. Power off the device.
2. Using a T5 Torx screwdriver, unscrew the Torx 5 screw to remove the card holder.



3. Pull the card holder out of the device, and flip it over.

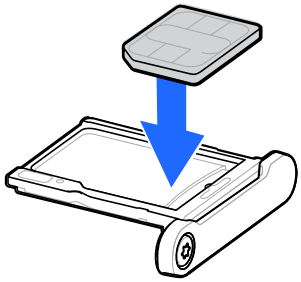


4. Place the SIM card into the card holder with the contacts facing up.



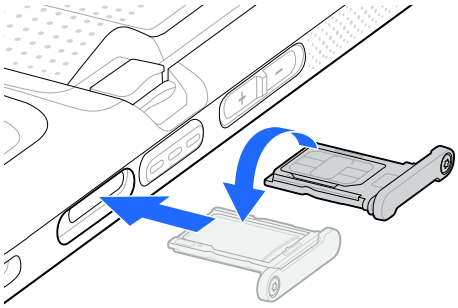
NOTE: Press the card down into the cardholder and ensure that it seats properly.

5. If you are using two SIM cards, flip the card holder over, and insert the second SIM card into the microSD card slot.

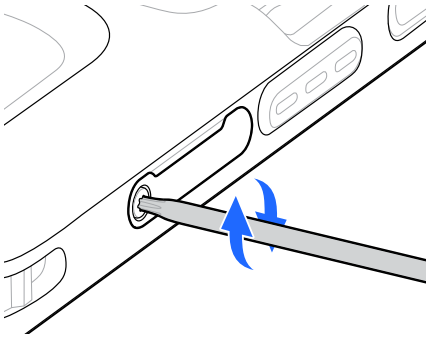


NOTE: Press the card down into the cardholder and ensure that it seats properly.

6. Flip over the card holder, and insert it back into the device.



7. Using a T5 Torx screwdriver, tighten the T5 Torx screw to a torque of 0.63 ± 0.08 kgf-cm (0.55 ± 0.07 lbf.in).

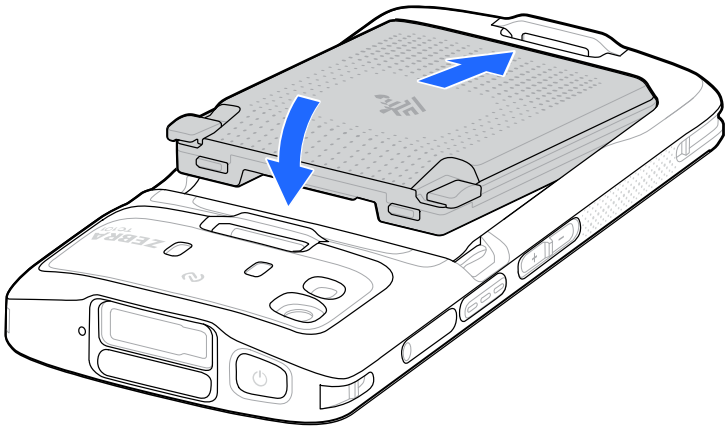


Installing the Battery

This section describes how to install the TC101 battery.

NOTE: User modification of the device, particularly in the battery well, such as labels, asset tags, engravings, and stickers, may compromise the intended performance of the device or accessories. Performance levels such as sealing (Ingress Protection (IP)), impact performance (drop and tumble), functionality, and temperature resistance could be affected. DO NOT put any labels, asset tags, engravings, or stickers in the battery well.

1. Insert the battery, bottom first, into the battery compartment in the back of the device.



2. Press the battery down into the device until the release latches click into place.

Main Battery Charging

Before using the device for the first time, charge the main battery until the green Charging/Notification light-emitting diode (LED) remains lit. Use a cable or a cradle with the appropriate power supply to charge the device.

The following batteries are available:

- Standard 3,800 mAh PowerPrecision LI-ON Battery - part number: BTRY-TC2L-2XMAXX-01
- Extended 5,200 mAh PowerPrecision LI-ON Battery - part number: BTRY-TC2L-3XMAXX-01

  The device's Charging/Notification LED indicates the battery charging status in the device. The standard battery charges from fully depleted to 90% in under three hours. Charging details are as follows:

  - **Standard Battery:** Reaches 90% charge in approximately 3 hours.
  - **Extended Battery:** Reaches 90% charge in approximately 4 hours.

NOTE: Charge batteries at room temperature with the device in Sleep mode.

Table 3 Charging/Notification 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.
Slow Blinking Amber (1 blink every four seconds)	Device is charging.

Table 3 Charging/Notification LED Charging Indicators (Continued)

State	Indication
Slow Blinking Red (1 blink every four seconds)	Device is charging, but the battery is at the end of its useful life.
Solid Green	Charging complete.
Solid Red	Device is either charging or fully charged, but the battery is at end of useful life.
Fast Blinking Amber (two blinks/second)	Charging error, for example: • Temperature is too low or too high. • Charging has gone on too long without completion (typically eight hours).
Fast Blinking Red (two blinks/second)	Charging error but the battery is at the end of its useful life, for example: • Temperature is too low or too high. • Charging has gone on too long without completion (typically eight hours).

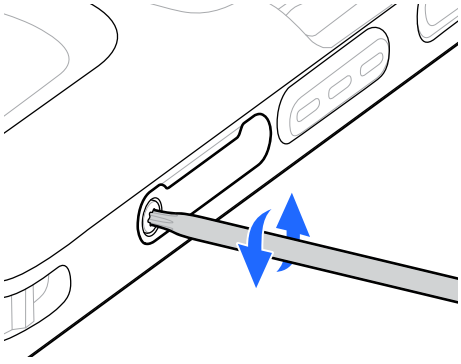
Replacing the SIM Card

This section describes the steps to replace a SIM card in your TC101 device.

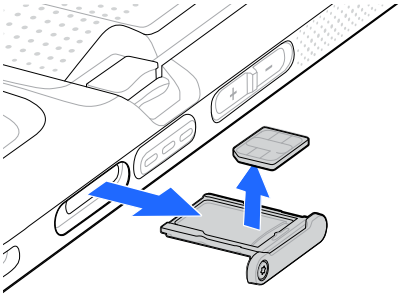
NOTE: WWAN only.

CAUTION—ESD: Follow proper electrostatic discharge (ESD) precautions to prevent damage to the SIM card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring the operator is properly grounded.

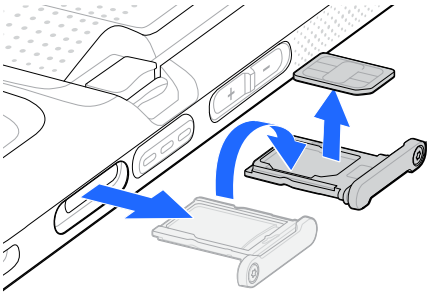
1. Power off the device.
2. Using a T5 Torx screwdriver, unscrew the Torx 5 screw to remove the card holder.



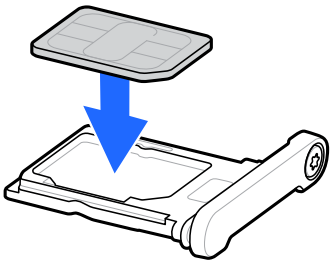
3. Pull the card holder out of the device, if an existing second SIM card is installed in the microSD card slot, remove it.



4. Flip over the card holder, and remove the existing first SIM card.

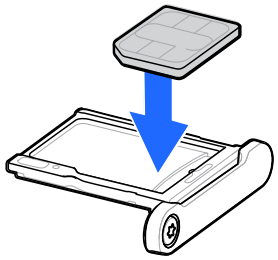


5. Place the replacement SIM card into the card holder with the contacts facing up.



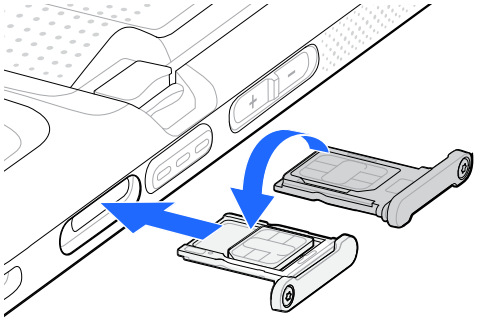
NOTE: Press the card down into the cardholder and ensure that it seats properly.

6. If you are using two SIM cards, flip the card holder over, and insert the replacement second SIM card into the microSD card slot.

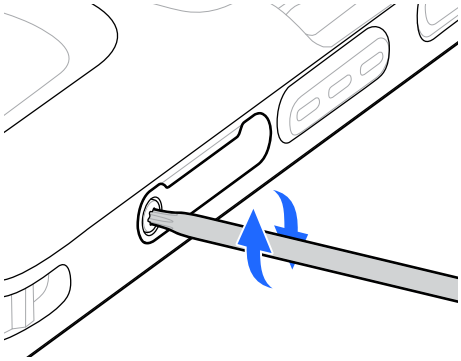


NOTE: Press the card down into the cardholder and ensure that it seats properly.

7. Flip over the card holder, and insert it back into the device.



8. Using a T5 Torx screwdriver, tighten the T5 Torx screw to a torque of 0.63 ± 0.08 kgf-cm (0.55 ± 0.07 lbf.in).



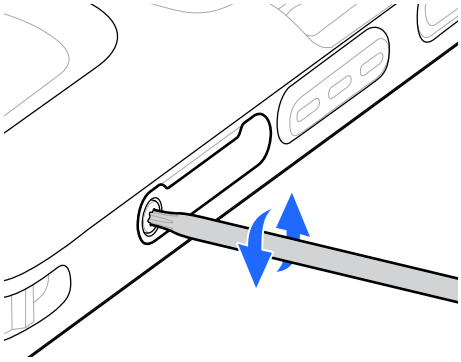
Replacing the microSD Card

This section describes the steps to replace a SIM card in your TC101 device.

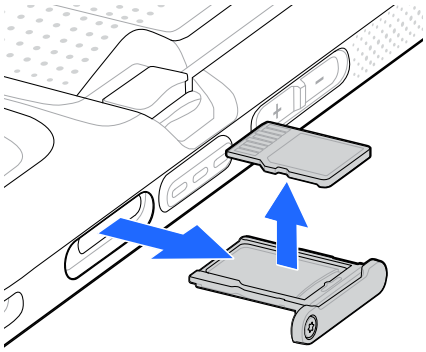
CAUTION—ESD: Follow proper electrostatic discharge (ESD) precautions to prevent damage to the SIM card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring the operator is properly grounded.

1. Power off the device.

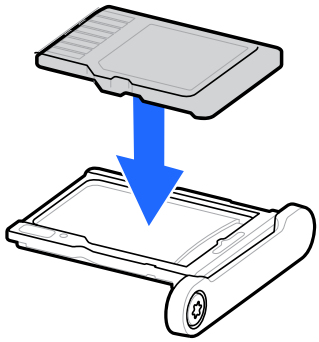
2. Using a T5 Torx screwdriver, unscrew the Torx 5 screw to remove the card holder.



3. Pull the card holder out of the device, then remove the existing microSD card.

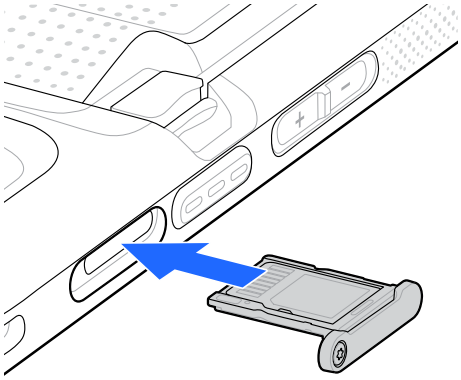


4. Place the replacement microSD card into the card holder with the contacts facing up.

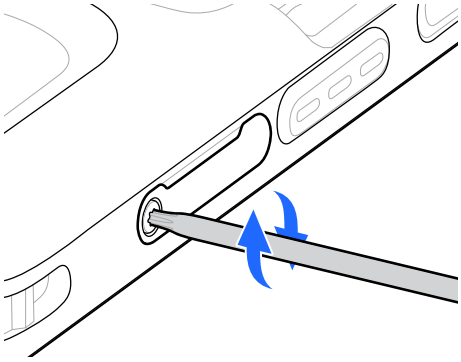


NOTE: Press the card down into the cardholder and ensure that it seats properly.

5. Insert the card holder back into the device.



6. Using a T5 Torx screwdriver, tighten the T5 Torx screw to a torque of 0.63 ± 0.08 kgf-cm (0.55 ± 0.07 lbf.in).



Replacing the Battery

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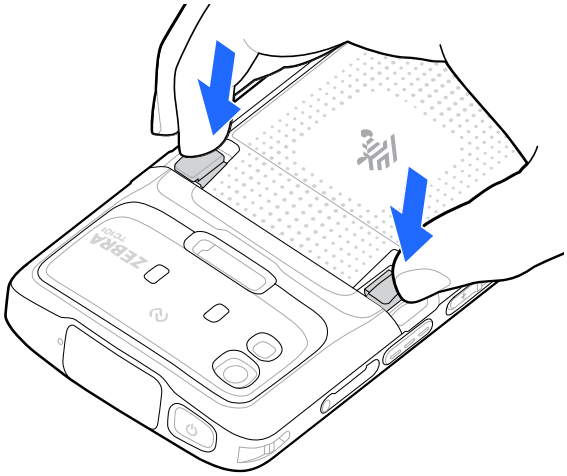
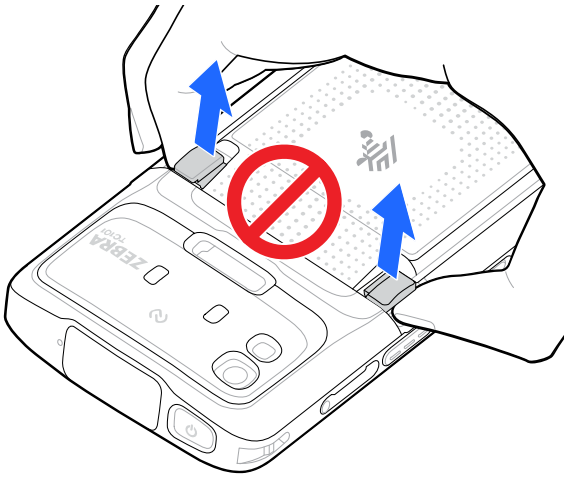
CAUTION: Do not add or remove the microSD card during battery replacement.

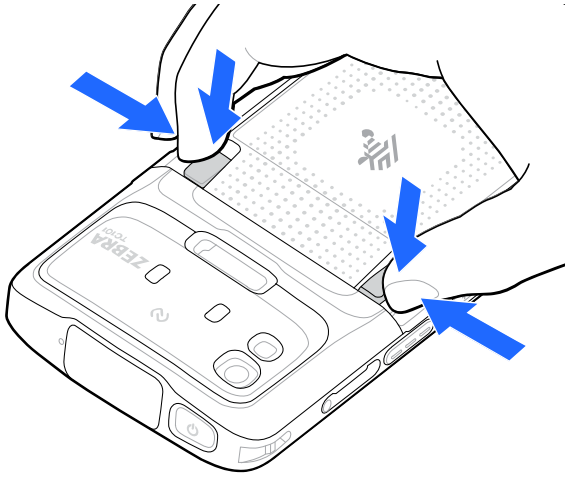
1. Power off the device.
2. If the hand strap is attached, remove the hand strap.
3. Push both battery latches inward.



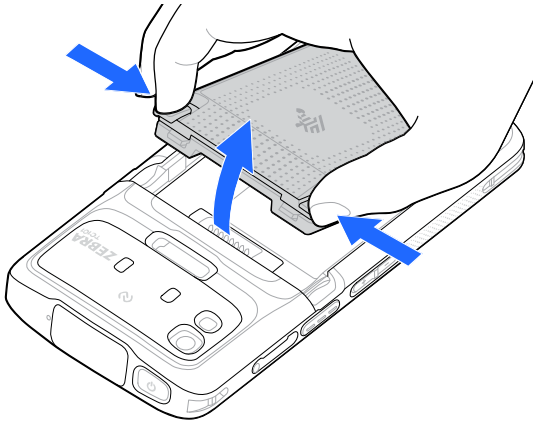
NOTE: Do not attempt to insert fingers under the latches when pulling on the battery. Damage to the latches may occur.



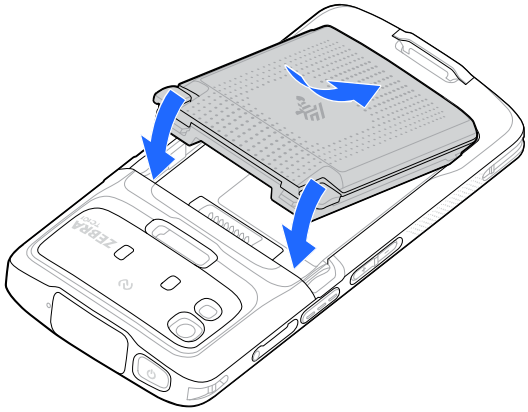
4. While pressing the latches down, press the two latches in toward the center of the device. The latches must be pressed in completely to release the battery.



5. While gripping the battery latches, lift the depleted battery out of the device.



6. Insert the new battery, bottom first, into the battery compartment in the back of the device.



7. Press the new battery down into the device until the release latches click into place.
8. Replace the hand strap if required.

Using the Device

This section provides essential operational instructions to interacting with, managing, and configuring the TC101 model's core features.

Home Screen

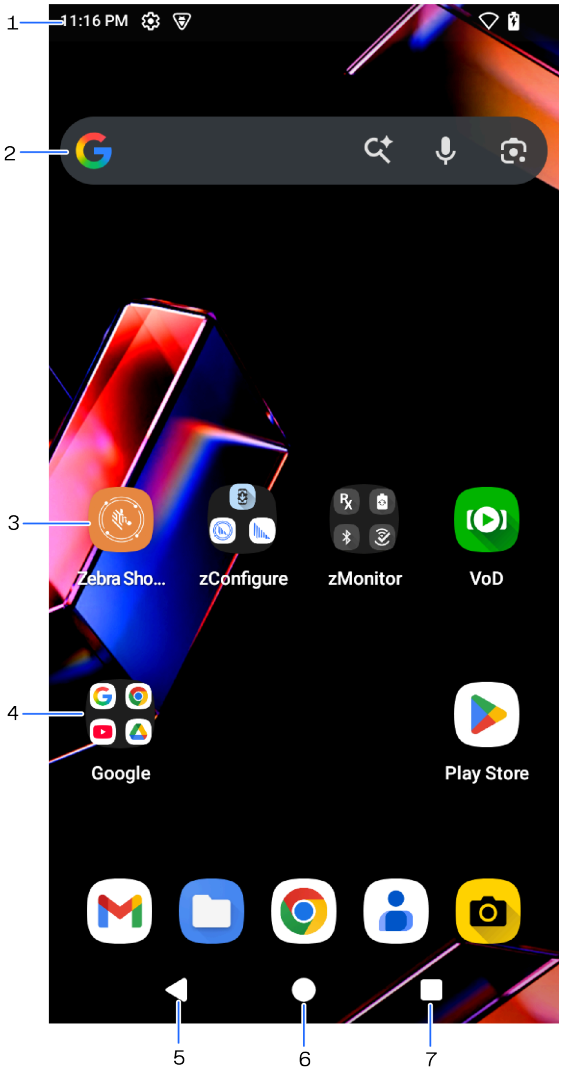
Turn on the device to display the Home screen. Depending on how your system administrator configured your device, your Home screen may appear differently than the graphics in this section.

After the device goes into Sleep mode, the Home screen displays with the lock icon. Touch the screen and swipe up to unlock. The Home screen provides four additional screens to place widgets and shortcuts. Touch and hold on an icon, and then move it for the option to place the icon on one of the other screens. Swipe the Home screen left or right to view the additional screens.

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

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

Figure 3 Home Screen



1	Status bar	Displays the time, status icons (right side), and notification icons (left side).
2	Widgets	Launches stand-alone apps that run on the Home screen.
3	Shortcut icons	Opens apps installed on the device.
4	Folder	Contains apps.
5	Back	Displays the previous screen.
6	Home	Displays the home screen.
7	Recent	Displays recently used applications.

Setting Home Screen Rotation

By default, the Home screen rotation is disabled.

NOTE: Auto-rotate must be enabled in the Quick Access panel or in Settings before the Home Screen Rotation setting can be used.

1. Touch and hold anywhere on the Home screen until the options display.
2. Touch **Home settings**.
3. Touch the **Allow Home screen rotation** switch.
4. Touch **Home**.
5. Rotate the device.

Status Bar

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

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

Figure 4 Notifications and Status Icons

1	Notification icons
2	Status icons

Status Icons

Status icons display system information for the device.

Table 4 Status icons

Icon	Description
	Alarm is active.
	Main battery is fully charged.
	Main battery is partially drained.
	Main battery charge is low.

Table 4 Status icons (Continued)

Icon	Description
	Main battery charge is very low.
	Main battery is charging.
	All sounds, except media and alarms, are muted. Vibrate mode is active.
	All sounds except media and alarms are muted.
	All sounds except media and alarms are muted.
	Do Not Disturb mode active.
	Airplane Mode is active. All radios are turned off.
	Bluetooth is on.
	Connected to a Bluetooth device.
	Connected to a Wi-Fi network. Indicates the Wi-Fi version number.
	Not connected to a Wi-Fi network or no Wi-Fi signal.
	Connected to an Ethernet network.
	Speakerphone enabled.
	Portable Wi-Fi hotspot is active (WWAN only).
	Indicates that a BT headset is connected to the device.
4G LTE	Connected to a 4G LTE/LTE-CA network (WWAN only).[a]
3G	Connected to a WCDMA network (WWAN only).[a]

Table 4 Status icons (Continued)

Icon	Description
E	Connected to an EDGE network (WWAN only).[a]
R	Roaming from a network (WWAN only).
	No SIM card installed (WWAN only).

Notification Icons

Notification icons indicate app events and messages.

Table 5 Notification Icons

Icon	Description
	The main battery is low.
	More notifications are available for viewing.
	Data is synching.
	Indicates an upcoming event. AOSP devices only.
	Indicates an upcoming event. GMS devices only.
	An Open Wi-Fi network is available. The device is not connected to it.
	Audio is playing.
	A problem with sign-in or sync has occurred.
	The device is uploading data.
	Animated: the device is downloading data. Static: the download is complete.
	The device is connected to or disconnected from a virtual private network (VPN).

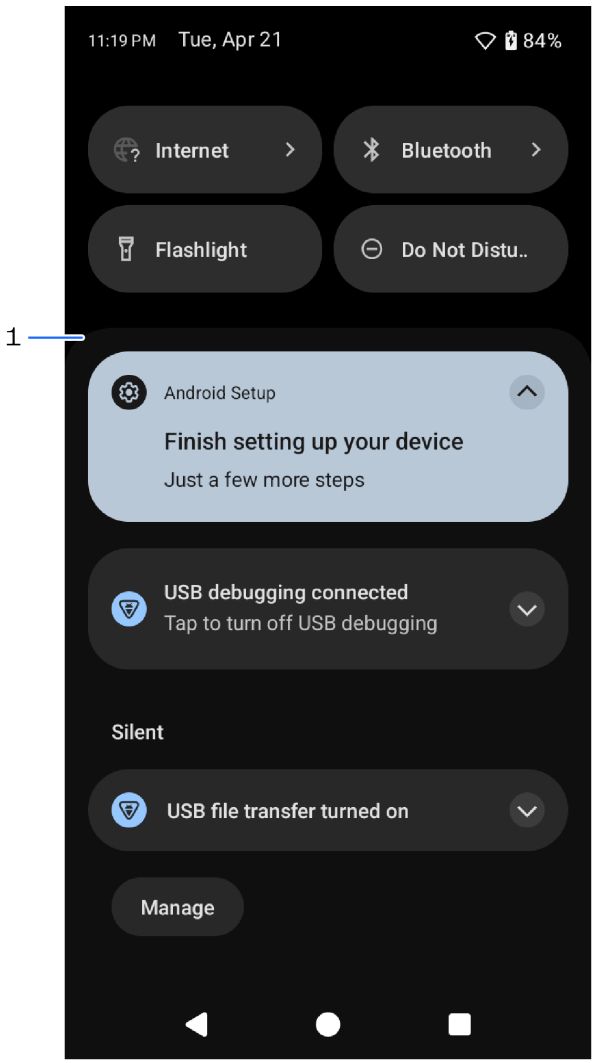
Table 5 Notification Icons (Continued)

Icon	Description
	Preparing internal storage by checking it for errors.
	Call is in progress (WWAN only).
	The mailbox contains one or more voice message (WWAN only).
	A call is on hold (WWAN only).
	A call was missed (WWAN only).
	PTT Express Voice client status.
	The RxLogger app is running.
	A Bluetooth scanner is connected to the device.
	A ring scanner 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.

Figure 5 Notifications Panel



1	Notifications Panel

- To view a list of all notifications, open the Notification panel by dragging the Status bar down from the top of the screen.
- To respond to a notification, open the Notification panel and then touch a notification. The Notification panel closes, and the corresponding app opens.
- To manage recent or frequently used notifications, open the Notification panel and then touch **Manage notifications**.
- Touch the toggle switch next to an app to turn off all notifications, or touch an app for more notification options.

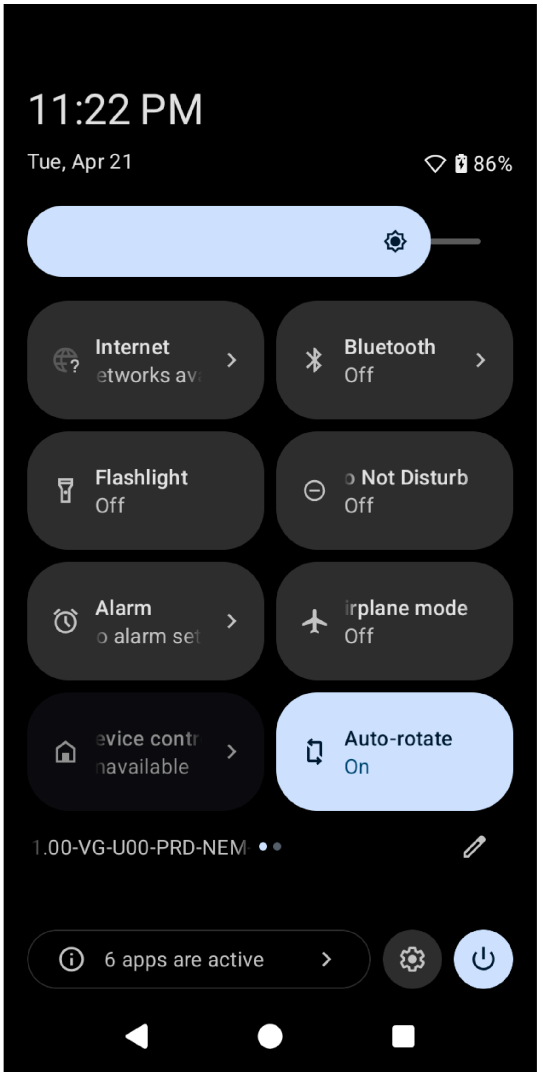
- To clear all notifications, open the Notification panel and then touch **Clear all**. All event-based notifications are removed. Ongoing notifications remain on the list.
- To close the Notification panel, swipe the Notification panel up.

Opening the Quick Access Panel

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

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

Figure 6 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.
- Swipe down from the Quick Settings bar if the Notification panel is open.

Quick Access Panel Icons

Quick Access panel icons indicate frequently used settings (for example, Airplane mode).

Table 6 Quick Access Panel Icons

Icon	Description
	Display brightness - Use the slider to decrease or increase the brightness of the screen.
	Internet/Wi-Fi network - Turn Wi-Fi on or off. To open Wi-Fi settings, touch the Wi-Fi network name.
	Battery saver - Turn Battery saver mode on or off. When Battery saver mode is on the performance of the device is reduced to preserve battery power (not applicable).
	Bluetooth settings - Turn Bluetooth on or off. To open Bluetooth settings, touch Bluetooth.
	Invert colors - Invert the display colors.
	Do not disturb - Control how and when to receive notifications.
	Mobile data - Enables or disables data transfer via the WAN. The device is still available for voice calls and texts. To open Mobile data settings, touch and hold (WWAN only).
	Airplane mode - Turn Airplane mode on or off. When Airplane mode is on the device does not connect to Wi-Fi or Bluetooth.
	Auto-rotate - Lock the device's orientation in portrait or landscape mode or set to automatically rotate.
	Flashlight - Turn the flashlight or camera flash on or off. When the flashlight is activated, it stays on unless it is turned off or the camera app is run.
	Location - Enable or disable locationing feature.
	Hotspot - Turn on to share the device's mobile data connection with other devices.
	Data saver - Turn on to prevent some apps from sending or receiving data in the background.
	Night light - Tint the screen amber to make it easier to look at the screen in dim light. Set Night Light to turn on automatically from sunset to sunrise, or at other times.

Table 6 Quick Access Panel Icons (Continued)

Icon	Description
	Screen cast - Share phone content on Chromecast or a television with Chromecast built-in. On the Cast screen, check the "enable wireless display" option, and then touch "cast screen" to display a list of devices. Touch a device in the list to begin casting.
	Dark theme - Toggles dark theme on and off. Dark themes reduce the luminance emitted by the screen, while meeting minimum color contrast ratios. It helps improve visual ergonomics by reducing eye strain, adjusting brightness to current lighting conditions, and facilitating screen use in dark environments, while conserving battery power.
	Focus mode - Turn on to pause distracting apps. To open Focus mode settings, touch and hold.
	Bedtime mode - Turn grayscale on and off. Grayscale turns the screen black and white, reducing phone distractions and improving battery life.
	Nearby share - Helps find and interact with services and devices close to the device.
	Screen record - Makes a video recording of everything that happens on the screen, with options to include audio and screen touches.
	NFC - Enable or disable NFC communication.
	Wallet - Opens Android wallet.
	Alarm - Opens the Alarm app.
	Scan QR code - Opens the camera app for QR code reading.
	Mic access - Enables device microphone.
	Camera access - Enables access to the camera app.
	Extra dim - Reduces screen brightness up to 50%.
	Color correction - Enable to help your device compensate for color blindness.
	Storage - Opens the Files app.

Table 6 Quick Access Panel Icons (Continued)

Icon	Description
	Live caption - Enables captions to appear for any media playing, regardless of the device's volume level.
	Calculator - Open the calculator app.

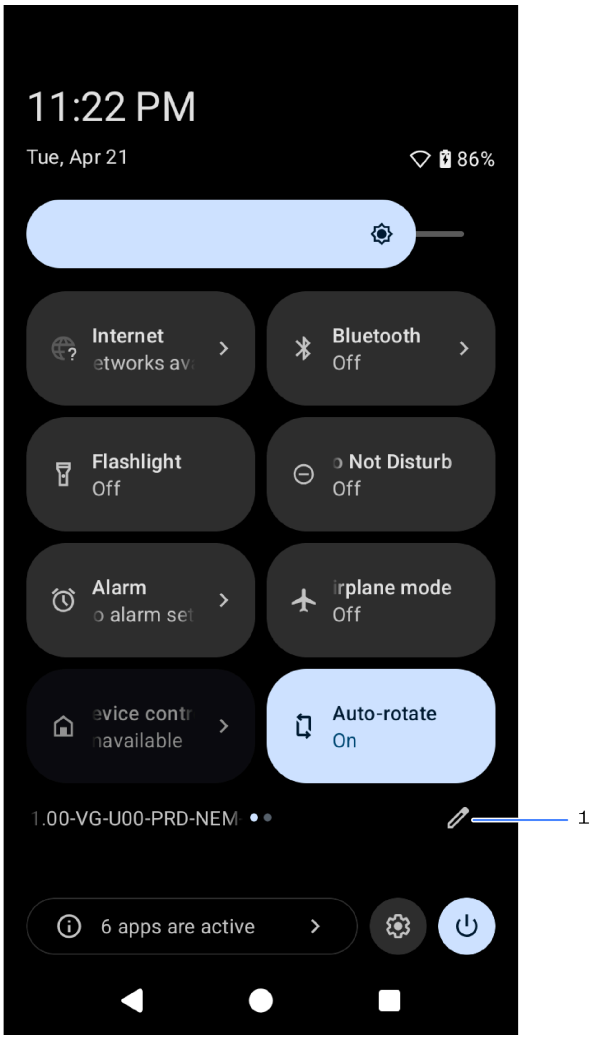
Editing the Quick Access Tiles

The first four setting tiles from the Quick Access panel become the Quick Access tiles on the Notification panel.

1. Open the Quick Access panel.
2. Swipe down to open the Quick Settings menu.

3. Touch (1) to edit, add, or remove settings tiles.

Figure 7 Quick Settings Menu



Battery Management

Observe the recommended battery optimization tips for the device.

- Set the screen to turn off after a short period of non-use (recommended: 15 seconds).
- Reduce screen brightness (recommended: 30-50%).
- Turn off all wireless radios when not in use.
- Turn off automatic syncing for Email, Calendar, Contacts, and other apps.
- Minimize the use of apps that keep the device from sleeping, for example, music and video apps.

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

Battery status indicates that the battery is discharging and Battery level lists the battery charge (as a percentage of fully charged).

Low Battery Notification

When the battery charge level drops below the charge level in the table below, the device displays a notice to connect the device to power. Charge the battery using one of the charging accessories.

Table 7 Low Battery Notification

Charge Level Drops Below	Action
15%	You should charge the battery soon.
10%	You must charge the battery.
7%	The device turns off. You must charge the battery.

Turning Off the Radios

Enable Airplane Mode to disable all radio communications on your device. This single setting turns off Wi-Fi, cellular data, and Bluetooth simultaneously.

NOTE: In Airplane mode, the Wi-Fi and Bluetooth radios can be turned on, while the cellular radio remains turned off.

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

Checking Battery Status

Check the battery status through the Battery Information settings, the Battery Manager app, or the quick access panel.

- Open **Settings** and touch **About phone** > **Battery information**. Or swipe up from the bottom of the screen and touch to open the **Battery Manager** app.
- Under **Advanced Info**:
  - **Battery present status** indicates if the main battery is present.
  - **Battery level** lists the main battery charge (as a percentage of fully charged).
- Under **Backup Battery Info**:
  - **Wear level** indicates the overall health status of the backup battery.
  - **Backup Battery level** lists the backup battery charge (as a percentage of fully charged). If this value is 1% or less for a long period of time, then the backup battery may need servicing.
- Swipe down with two fingers from the status bar to open the quick access panel. The **battery percentage** displays next to the battery icon.

Monitoring Battery Usage

The Battery screen provides battery charge details and power management options to extend battery life.

Different apps display different information. Some apps include buttons that open screens with settings to adjust power use. To turn off apps that consume too much power, touch the square (recent app) button at the bottom of the home screen. Swipe left or right to view recent applications. Swipe up on an application to close it .

To general battery information:

- Go to **Settings**.
- Touch **Battery**.

To display battery information and power management options for a specific app:

- Go to **Settings**.
- Touch **Apps** > **See all apps**.
- Select an app.
- Touch **App Battery Usage**. The power management options display. Use **DISABLE** or **FORCE STOP** to turn off apps that consume too much power.

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 - Detects ambient light and adjusts the screen brightness.
- Digital Compass (WWAN only)- The digital compass or magnetometer provides simple orientation in relation to the Earth's magnetic field. As a result, the device always knows which way is North, so it can auto-rotate digital maps depending on the physical orientation of the device.

In order to take advantage of these sensors, applications use API commands. Refer to the Google Android Sensor APIs for more information. For information on the Zebra Android EMDK, go to: techdocs.zebra.com.

Waking the Device

The device goes into Sleep mode when you press **Power** or after a period of inactivity (set in the Display settings window).

1. To wake the device from Sleep mode, press **Power** or the configured wake-up sources.

   The Lock screen displays.
2. Swipe the screen up to unlock.
   - If the screen option is set to Swipe, the Home screen displays.
   - If either the PIN or Password screen unlock feature is enabled, a prompt displays. Enter the PIN or password to unlock the device and move to the Home screen.

- If the Pattern screen unlock feature is enabled, the Pattern screen displays. Swipe the correct pattern between the dots to unlock the device and move to the Home screen.

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

USB Communication

Connect the device to a host computer to transfer files between the device and the host computer.

When connecting the device to a host computer, follow the host computer's instructions for connecting and disconnecting USB devices to avoid damaging or corrupting files.

Transferring Files

Use the Transfer files option to copy files between the device and the host computer.

NOTE: It is recommended to install a microSD card in the device for storing files due to limited internal storage.

1. Connect the device to a host computer using a USB accessory.
2. On the device, pull down the Notification panel and touch **Charging this device via USB**.

   By default, **No data transfer** is selected.
3. Touch **File Transfer**.

   NOTE: After changing the setting to **File Transfer**, and then disconnecting the USB cable, the setting reverts back to **No data transfer**. If the USB cable is reconnected, select **File Transfer** again.
4. Touch **File Transfer**.
5. On the host computer, open **File Explorer**.
6. Locate the **device** as a portable device.
7. Open the **Internal storage** folder.
8. Open the SD card or the Internal storage folder.
9. Copy files to and from the device or delete files as required.

Transferring Photos

Use PTP to copy photos from the device to the host computer.

It is recommended to install a microSD card in the device for storing photos due to limited internal storage.

1. Connect the device to a host computer using a USB accessory.
2. On the device, pull down the Notification panel and touch **Charging this device via USB**.
3. Touch **PTP**.
4. Touch **Transfer photos PTP**.
5. On the host computer, open a file explorer application.
6. Open the **Internal storage** folder.

7. Open the SD card or the Internal storage folder.
8. Copy or delete photos as required.

Disconnecting from the Host Computer

This section describes how to disconnect a USB device from the host computer.

CAUTION: Carefully follow the host computer's instructions to disconnect USB devices correctly to avoid losing information.

NOTE: Carefully follow the host computer's instructions to unmount the microSD card and disconnect USB devices correctly to avoid losing information.

1. On the host computer, unmount the device.
2. Remove the device from the USB accessory.

Settings

This section provides a comprehensive guide to configuring device behavior, system preferences, and security protocols. It serves as the central reference for administrators and users to tailor the mobile computer to specific operational needs.

Accessing Settings

There are multiple ways to access settings on a device.

- Swipe down with two fingers from the top of the Home screen to open the Quick Access panel and touch ⚙.
- Double-swipe down from the top of the Home screen to open the Quick Access panel and touch ⚙.
- Swipe up from the bottom of the Home screen to open APPS and touch **Settings**.

Display Settings

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

Setting the Screen Brightness Automatically

Automatically adjust the screen brightness using the built-in light sensor.

To set the screen brightness automatically:

1. Go to **Settings**.
2. Touch **Display**.
3. If disabled, touch **Adaptive brightness** to adjust the brightness automatically.

   By default, **Adaptive brightness** is enabled. Toggle the switch to disable.

Setting Night Light

The Night Light setting tints the screen amber, making the screen easier to look at in low light.

1. Go to **Settings**.
2. Touch **Display** > **Night Light**.

3. Touch **Schedule**.

NOTE: By default, Night Light is disabled. Touch **TURN ON NOW** to enable.

4. Select one of the schedule values:
   - **None** (default)
   - **Turns on the custom time**
   - **Turns on from sunset to sunrise**.
5. Adjust the tint using the Intensity slider.

Setting Screen Rotation

By default, screen rotation is enabled.

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

1. Go to **Settings**.
2. Touch **Display** > **Auto-rotate screen**.
3. Touch Home.

Setting Lock Screen Notifications

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

1. Go to **Settings**.
2. Touch **Display** > **Lock screen**.
3. In the **When to show** section, enable or disable an option using the switch.

Setting Display and Text Size

Set the text size (font) in system apps and for the display.

As you adjust the sizes, the **Preview** section displays the changes made.

1. Go to **Settings**.
2. Touch **Display** > **Display size and text**.
   - In **Font size**, touch **+** or **-** to change the size of the text.
   - In **Display size**, touch **+** or **-** to change the size of the display.
   - Turn on the **Bold text** switch to improve text visibility.
   - Turn on the **High contrast text** switch to change the text color to black or white, which maximizes the contrast with the background.

Notification LED Brightness Level

1. Go to **Settings**.
2. Touch **Display** > **Notification LED brightness Level**.

3. Use the slider to set the brightness level (default: 15).

Touch Panel Mode

The device display is able to detect touches using a finger or a thin gloved finger.

NOTE: On the TC101 model, users are not permitted to change or adjust the Touch Panel Mode.

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

Setting the Date and Time

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

1. Go to **Settings**.
2. Touch **System** > **Date & time**.
3. Touch **Set time automatically** to disable automatic date and time synchronization.
4. Touch **Set time zone automatically** to disable automatic time-zone synchronization.
5. Touch **Date** to select the date in the calendar.
6. Touch **OK**.
7. Touch **Time**.
   a) Touch the circle, drag to the current hour, and then release.
   b) Touch the circle, drag to the current minute, and then release.
   c) Touch **AM** or **PM**.
8. Touch **OK**.
9. Touch **Time zone** to select the current time zone from the list.
10. Touch **Update Interval** to select an interval to synchronize the system time from the network.
11. In **TIME FORMAT**, choose either **Use locale default** or **Use 24-hour format**.

General Sound Setting

Press the volume buttons on the device to display on-screen volume controls.

Use the Sound settings to configure media and alarm volumes.

1. Go to **Settings**.
2. Touch **Sound**.
3. Touch an option to set sounds.

Sound Options

Use the **Sound & vibration** screen to set various sound and vibration settings.

- **Media volume** - Controls the music, games, and media volume.
- **Call volume** - Controls the volume during a call.
- **Ring & notification volume** - Controls the ringtone and notification volume.
- **Alarm volume** - Controls the alarm clock volume.
- **Do Not Disturb** - Mutes some or all sounds and vibrations.
- **Phone ringtone** - Select a sound to play when the phone rings.
- **Live caption** - Enable the device to detect speech and automatically display captions.
- **Media** - Enable media playback options.
- **Vibration & haptics** - Enables various vibration and haptic feedback.
- **Shortcut to prevent ringing** - Turn on the switch to make the device vibrate when a call is received (default — disabled).
- **Default notification sound** - Select a sound to play for all system notifications.
- **Default alarm sound** - Select a sound to play for alarms.
- **Dial pad tones** - Play a sound when pressing keys on dial pad (default - disabled).
- **Screen locking sounds** - Play a sound when locking and unlocking the screen (default — enabled).
- **Charging sounds and vibration** - Play a sound and vibrate when power is applied to the device (default - enabled).
- **Touch sounds** - Play a sound when making screen selections (default — enabled).
- **Always show icon when in vibrate mode** - Toggle the display of the vibrate icon when in vibrate mode.

Setting Wake-Up Sources

By default, the device wakes from Sleep mode when the user presses **Power**. The device can be configured to wake when the user presses **PTT** or **Scan** on the left side of the device handle.

1. Go to **Settings**.
2. Touch **Wake-Up Sources**.
   - **LEFT_TRIGGER_2** - PTT button.
   - **REAR_BUTTON** - Programmable button on the back of the device.
   - **RIGHT_TRIGGER_1** - Right scan button.
   - **SCAN** - Left scan button.
3. Touch a checkbox.

   A check displays in the checkbox.
4. Touch **Home**.

Remapping a Button

Buttons on the device can be programmed to perform different functions or as shortcuts to installed apps. For a list of key names and descriptions, go to techdocs.zebra.com/keymappingmgr/.

NOTE: Zebra does not recommend remapping the scan button.

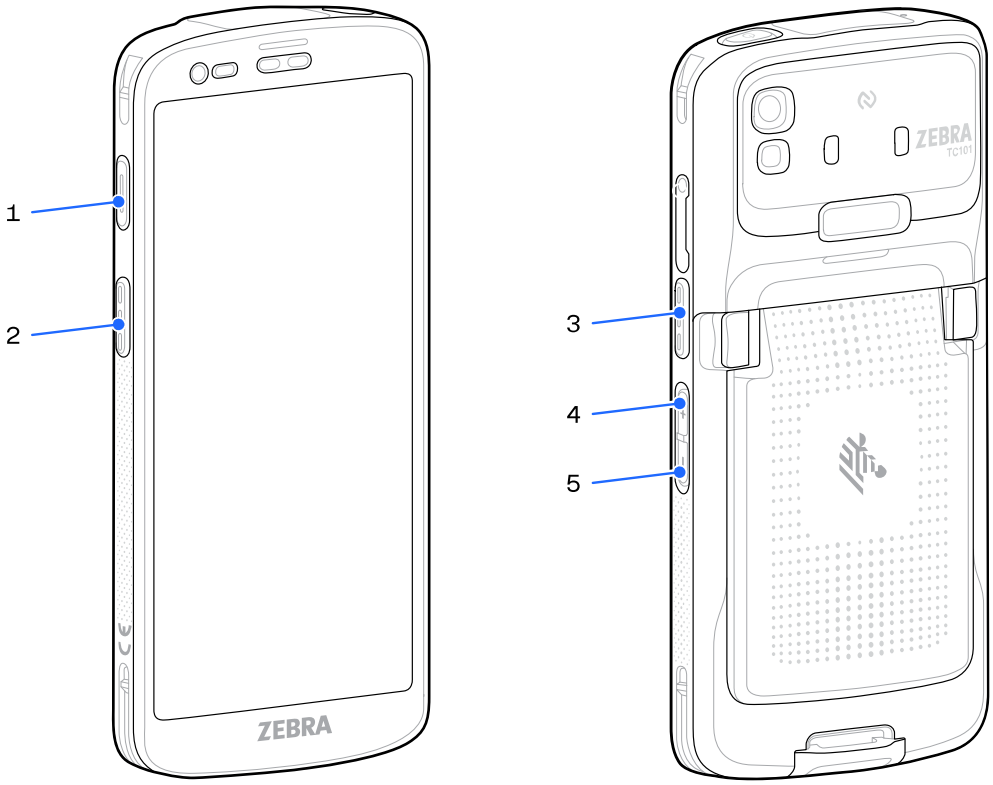
1. Go to **Settings**.
2. Touch **Key Programmer**. A list of programmable buttons displays.
3. Select the button to remap.
4. Touch the **SHORTCUT**, the **KEYS and BUTTONS**, or the **TRIGGER** tabs that list the available functions, applications, and triggers.
5. Touch a function or application shortcut to map to the button.

NOTE: If you select an application shortcut, the application icon appears next to the button on the Key Programmer screen.

Remappable Buttons

List of remappable device buttons.

Figure 8 Button Positions



Item	Setting	Description
1	LEFT_TRIGGER_2	PTT button
2	SCAN	Left scan button.
3	RIGHT_TRIGGER_1	Right scan button
4	VOLUMEUP	Volume up button
5	VOLUMEDOWN	Volume down button

Keyboards

The device provides multiple keyboard options.

- Android Keyboard - AOSP devices only
- Gboard - GMS devices only
- Enterprise Keyboard - Only available with Mobility DNA Enterprise License.

NOTE: By default, the Enterprise and Virtual Keyboards are disabled. The Enterprise Keyboard is available for download from the Zebra Support Site.

Enabling Keyboards

1. Go to **Settings**.
2. Touch **System** > **Languages & input** > **On-screen keyboard** > **Manage on-screen keyboards**.
3. Touch a keyboard to enable.

Switching Between Keyboards

To switch between keyboards, touch in a text box to display the current keyboard.

NOTE: By default, the Gboard is enabled. All other virtual keyboards are disabled.

- On the Gboard keyboard, touch and hold (GMS devices only).
- On the Android keyboard, touch, and hold (AOSP devices only).
- On the Enterprise keyboard, touch . Only available with Mobility DNA Enterprise License. Not pre-installed on the device. Contact Zebra Support for more information.

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**.

Edit 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

This section describes how to input numbers, symbols, and special characters using the keyboard.

1. Enter numbers and symbols.
   - Touch and hold one of the top-row keys until a menu displays 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.
2. 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.

Enterprise Keyboard

The Enterprise Keyboard contains multiple keyboard types.

NOTE: Only available with Mobility DNA Enterprise License.

- Numeric
- Alpha
- Special characters
- Data capture

Numeric Tab

The numeric keyboard is labeled **123**. The keys displayed vary on the app being used. For example, an arrow displays in **Contacts**, however **Done** displays in **Email** account setup.

Alpha Tab

The alpha keyboard is labeled using the language code. For English, the alpha keyboard is labeled **EN**.

Additional Character Tab

The additional characters keyboard is labeled **#*/**.

- Touch ☺ to enter emoji icons in a text message.
- Touch **ABC** to return to the Symbols keyboard.

Scan Tab

The Scan tab provides an easy data capture feature for scanning barcodes.

Language Usage

Use the **Language & input** settings to change the device's language, including words added to the dictionary.

Changing the Language Setting

1. Go to **Settings**.
2. Touch **System** > **Languages & input**.
3. Touch **Languages**.

   A list of available languages displays.
4. If the desired language is not listed, touch **Add a language** and select a language from the list.
5. Touch and hold ☰ to the right of the desired language, then drag it to the top of the list.

   The operating system text changes to the selected language.

Adding Words to the Dictionary

1. Go to **Settings**.
2. Touch **System** > **Languages & input** > **Personal dictionary**.

   If prompted, select the language where this word or phrase is stored.
3. Touch **+** to add a new word or phrase to the dictionary.
4. Enter the word or phrase.
5. In the **Shortcut** text box, enter a shortcut for the word or phrase.

Notifications

Device notification settings allow you to configure how notifications occur on the device, and app notification settings allow you to configure how notifications for a specific app occur.

To view device notification settings, touch **Settings** > **Apps & notifications** > **Notifications**.

To view app notifications, touch **Settings** > **Apps & notifications** > **App info**, and then select an app.

Enabling Blink Light

The Notification LED lights are 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.

1. Go to **Settings**.
2. Touch **Notifications**.
3. Touch **Blink light** to toggle the notification on or off.

Applications

The APPS screen displays icons for all installed apps. Go to Application Deployment for information on installing and uninstalling apps. For information on standard Android apps, refer to the Google Play Store (https://play.google.com/store/apps).

Installed Applications

Aside from the common Google apps, the Zebra-specific apps that are installed on the device are described in this section.

Table 8 Apps

Item	Description
	**Battery Manager** - Display battery information, including charge level, status, health and wear level.
	**Bluetooth Pairing Utility** - Use to pair a Zebra Bluetooth scanner with the device by scanning a barcode.
	**Camera** - Take photos or record videos.
	**DataWedge** - Enables data capture using the imager.
	**DWDemo** - Provides a way to demonstrate the data capture features using the imager.
	**License Manager** - Use to manage software licenses on the device.
	**RxLogger** - Use to diagnose device and app issues.

Table 8 Apps (Continued)

Item	Description
	**StageNow** - Allows the device to stage a device for initial use by initiating the deployment of settings, firmware, and software.
	**Wireless Analyzer** - A diagnostic intelligent app. Use to diagnose the surrounding area and display network stats, such as coverage hole detection or AP in the vicinity. Refer to the Wireless Analyzer Administrator Guide for Android. Only available with Mobility DNA Enterprise License.
	**Zebra Bluetooth Settings** - Use to configure Bluetooth logging.
	**Zebra Data Services** - Use to enable or disable Zebra Data Services. Some options are set by the system administrator.

Accessing Apps

Access all apps installed on the device using the APPS window.

1. On the Home screen, swipe up from the bottom of the screen.
2. Slide the **APPS** window up or down to view more app icons.
3. Touch an icon to open the app.

Switching Between Recent Apps

1. Touch **Recent**.

   A window appears on the screen with icons of recently used apps.
2. Slide the apps displayed up and down to view all recently used apps.
3. Swipe left or right to remove the app from the list and force close the app.
4. Touch an icon to open an app or touch **Back** to return to the current screen.

Battery Manager

The Battery Manager provides detailed information about the battery.

Opening Battery Manager

This section describes the method for opening the Battery Manager app.

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

Battery Manager Information

The Battery Manager displays detailed information about battery charging, health, and status.

Table 9 Battery Icons

Battery Icon	Description
	Battery charge level is between 85% and 100%.
	Battery charge level is between 19% and 84%.
	Battery charge level is between 0% and 18%.

- **Level** - The current battery charge level as a percentage. Displays -% when the level is unknown.
- **Wear** - The health of the battery in graphical form. When the wear level exceeds 80%, the bar color changes to red.
- **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.
- **Charge Status**
  - **Not charging** - The device is not connected to AC power.
  - **Not charging** - The device is not charging.
  - **Charging-AC** - The device is connected to AC power and charging or is fast charging via USB.
  - **Charging-USB** - The device is connected to a host computer with a USB cable and charging.
  - **Discharging** - The battery is discharging.
  - **Full** - The battery is fully charged.
  - **Unknown** - The battery status 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.
- **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 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.
  - **Battery usage number** - The health of the battery as a result of charging and discharging. A high number indicates low battery health.
  - **Usage decommission threshold** - When the Battery usage number is greater than or equal to the Usage decommission threshold, the battery is past its useful life and should be replaced.
  - **Battery error status** - The error status of the battery.
  - **App version** - The application version number.

Camera

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

NOTE: The device saves photos and videos on the microSD card, if installed and the storage path is changed manually. By default, or if a microSD card is not installed, the device saves photos and videos on internal storage.

On camera only devices without an internal scan engine, the back camera is used for barcode scanning.

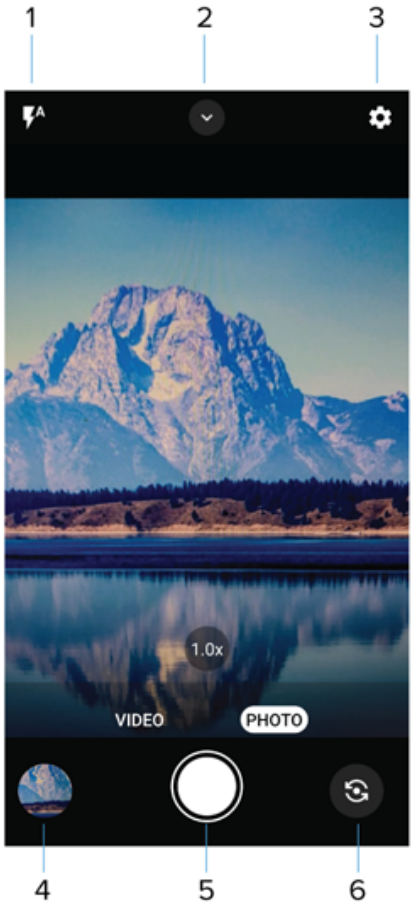
When the front camera is used by an app, such as for indoor locationing, the back camera becomes disabled and cannot be used for barcode scanning.

Taking Photos

This section provides information for taking photos using the integrated digital camera.

NOTE: See Camera Settings for camera settings descriptions.

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



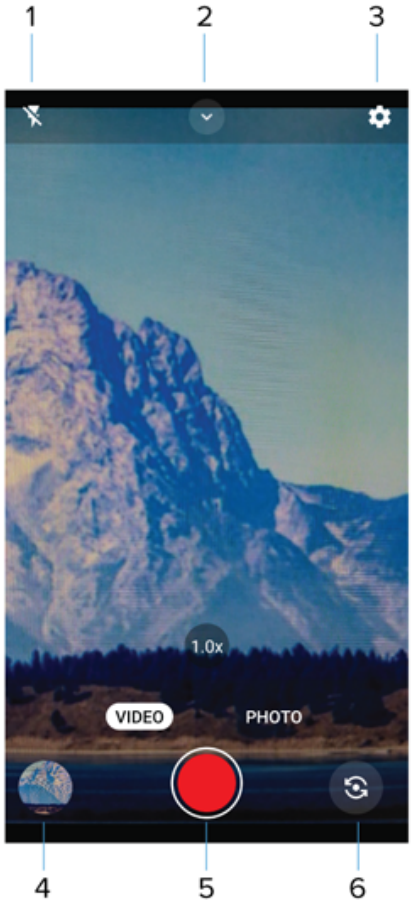
1	Flash options
2	Quick settings
3	Advanced settings
4	Gallery
5	Shutter button
6	Camera switch

2. If necessary, touch the **PHOTO**
3. To switch between the rear camera and front camera, touch .
4. Frame the subject on the screen.
5. To zoom in or out, press two fingers on the display and pinch or expand your fingers. The zoom controls appear on the screen.
6. Touch an area on the screen to focus. The focus circle appears. The two bars turn green when in focus.
7. Touch .

Recording Videos

This section provides information for recording videos using the integrated digital camera.

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



1	Flash options
2	Quick settings
3	Advanced settings
4	Gallery
5	Shutter button
6	Camera switch

2. Touch **VIDEO**.
3. To switch between the rear camera and front camera (if available), touch .
4. Point the camera and frame the scene.
5. To zoom in or out, press two fingers on the display and pinch or expand your fingers. The zoom controls appear on the screen.
6. Touch to start recording.

The video time remaining appears in the top of the screen.

7. Touch ⊙ to end the recording.

Camera Settings

In the Camera app, camera settings appear on the screen. Touch ⚙ to display the camera setting options.

- **General** - These settings apply to both the still camera and video camera.
  - **Camera Sounds** - Select to play a shutter sound when taking a photo. Options: Disable or Enable (default).
  - **Haptic Feedback** - Provides tactile responses when interacting with the camera.
  - **Location Tags** - Includes location information when pictures and videos are taken.
  - **Storage** - Set the location to store the photo to: Phone or SD Card.
  - **Dirty Lens Detection** - Notifies when the camera lens might be dirty. Options: Disable (default) or Enable.
  - **QR Code Mode** - Enable to scan QR Codes with the option to launch URL. Options: Disable (default) or Enable.
  - **Google Lens** - Select to enable Google-developed recognition technology that brings up relevant information related to identified objects within an image.
  - **Digital Level** - Display a level line to ensure the photo or video is level. Options: Disable (default) or Enable.
  - **Face Detection** - Select to turn the face detection On (default) or Off.
  - **Gestures** - View gestures and power user controls. Gestures include: Swipe Down, Swipe Up, Side Swipe, Tap, Tap + Hold, Double Tap, and Hold Zoom.
- **Still Camera** - These settings apply only to the still camera.
  - **Photo Grid** - Displays a 3 x 3 grid guide on the camera viewport. Options: Disabled (default), or Enable.
  - **Countdown timer** - Select Off (default), 3 seconds, or 10 seconds.
  - **Picture size** - The size (in pixels) of the photo: 13M pixels, 8M pixels, 5M pixels (front camera default), HD720, WVGA, VGA, or QVGA.
  - **Picture quality** - Set the picture quality setting to: Low, Standard, or High (default).
  - **Image Quality Analyzer** - Analyze the image quality for it's degree of sharpness.
  - **Privacy Blur - Face Blur** - Identify faces in a captured photo and automatically blur them.
  - **Picture Format** - All still images are saved in JPEG format.
  - **MFNR** - Sets multi-frame noise reduction to improve quality in low light conditions. Options: Enabled (default), or Disabled.
  - **AutoFocus Animation** - Select to enable or disable the camera focus ring in the camera preview. Options: Disable (default) or Enable.
- **Video Camera** - These settings apply only to the video camera.
  - **Video quality** - Set video quality to: HD 1080p (default), HD 720p, SD 480p, VGA, CIF, or QVGA.

- **Video duration** - Set to: 30 seconds (MMS), 10 minutes (default), 30 minutes, or no limit.
- **Noise Reduction** - Off, Fast, or High Quality (default).
- **HEVC Encoder** - Save video recordings using high-efficiency video codec (HEVC/h265) for smaller file size. Options: Disabled (default), or Enable.
- **Audio Encoder** - Set the audio encoder to: AMRNB, or AAC (default).
- **Video Rotation** - Set the rotation of the video to: 0 (default), 90, 180, or 270.

- **System**
  - **Restore defaults** - Select to restore all settings to the default values.
  - **About** - Displays the software version of the camera app.

DataWedge

DataWedge is a utility that adds advanced barcode scanning capability to any application without writing code. It runs in the background and handles the interface to built-in barcode scanners. DataWedge converts the captured barcode data to keystrokes and sends it to the target application as if it were typed on the keypad.

DataWedge allows any app on the device to get data from input sources such as a barcode scanner, MSR, RFID, voice, or serial port and manipulate the data based on options or rules.

Configure DataWedge to:

- Provide data capture services from any app.
- Use a particular scanner, reader, or other peripheral devices.
- Properly format and transmit data to a specific app.

To configure DataWedge, go to techdocs.zebra.com/datawedge/.

DWDemo Icons

This table lists the icons available on the DWDemo app.

Table 10 DWDemo Icons

Category	Icon	Description
Illumination		Imager illumination is on. Touch to turn illumination off.
Illumination		Imager illumination is off. Touch to turn illumination on.
Data capture		The data capture function is through the internal imager.
Data capture		The data capture function is through the rear camera.
Data capture		A Bluetooth scanner is connected.

Table 10 DWDemo Icons (Continued)

Category	Icon	Description
Data capture		A Bluetooth scanner is not connected.
Scan mode		Imager is in picklist mode. Touch to change to normal scan mode.
Scan mode		Imager is in normal scan mode. Touch to change to picklist mode.
Menu		Opens a menu to view the application information or to set the application DataWedge profile.

Selecting a Scanner

See the Data Capture section for more information.

1. To select a scanner, touch ⋮ > **Settings** > **Scanner Selection**.
2. Press the programmable button or touch the yellow scan button to capture data.

   The data displays in the text field below the yellow button.
3. Press the scanner trigger button or touch the on-screen yellow scan button to capture data.

   The data displays in the text field below the yellow button.

RxLogger

RxLogger is a comprehensive diagnostic tool that provides application and system metrics, and diagnoses device and application issues.

RxLogger logs the following information: CPU load, memory load, memory snapshots, battery consumption, power states, wireless logging, cellular logging, TCP dumps, Bluetooth logging, Bugreport, logcat, TCP dump, ANR, Tombstone dumps, pre-configured instant logging, and so on. All generated logs and files are saved onto flash storage on the device (internal or external).

RxLogger Configuration

RxLogger is built with an extensible plug-in architecture and comes packaged with a number of plug-ins already built-in. For information on configuring RxLogger, go to techdocs.zebra.com/rxlogger/.

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

Configuration File

All RxLogger settings are stored in a file on the device, permitting remote configuration and mass deployment of setting files using an enterprise mobile management (EMM) system.

The config.json configuration file is located on the microSD card 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 JSON file on the device. There is no need to stop and restart the RxLogger service because the file change is automatically detected.

IMPORTANT: The RxLogger configuration file is human-readable; however, it should not be edited by hand as doing so can lead to unpredictable behavior. Zebra recommends modifying RxLogger settings only through the RxLogger UI.

- File name: `config.json`
- Location: `/<internal_storage>/RxLogger`
- With external SD Card: `/storage/sdcard1/RxLogger`
- With no external SD Card: `/storage/sdcard0/RxLogger` When a new settings file is pushed to the device, RxLogger restarts all affected modules and applies the new settings immediately.

Copy the file from the device to a host computer using a USB connection. Edit the configuration file through the RxLogger UI and then replace the JSON file on the device. There is no need to stop and restart the RxLogger service because the file change is automatically detected.

Enabling Logging

This section describes the method for enabling logging.

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

Disabling Logging

This section describes the method for disabling logging.

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

Extracting Log Files

This section describes the method for extracting log files.

1. Connect the device to a host computer using a 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.

Backing Up Data

RxLogger Utility allows the user to make a zip file of the RxLogger folder in the device, which by default contains all the RxLogger logs stored in the device.

- To save the backup data, touch ⋮ > **BackupNow**.

RxLogger Utility

RxLogger Utility is a data monitoring application for viewing logs in the device while RxLogger is running. Logs and RxLogger Utility features are accessed using Main Chat Head.

Initiating the Main Chat Head

This section describes the method for initiating the main chat head.

1. Open **RxLogger**.
2. Touch ⋮ > **Toggle Chat Head**.

   The Main Chat Head icon displays on the screen.
3. Touch and drag the Main Chat Head icon to move it around the screen.

Removing the Main Chat Head

This section describes the method for removing the main chat head.

1. Touch and drag the icon.

   A circle with an X displays.
2. Move the icon over the circle and then release.

Viewing Logs

1. Touch the Main Chat Head icon.

   The RxLogger Utility screen displays.
2. Touch a log to open it.

   Open many logs with each displaying a new Sub Chat Head.
3. If necessary, scroll left or right to view additional Sub Chat Head icons.
4. Touch a Sub Chat Head to display the log contents.

Removing a Sub Chat Head Icon

This section describes the method for removing the sub chat chat head.

- To remove a Sub Chat Head icon, press and hold the icon until it disappears.

Backing Up In Overlay View

RxLogger Utility allows the user to make a zip file of the RxLogger folder in the device, which by default contains all the RxLogger logs stored in the device.

The Backup icon is always available in Overlay View.

1. Touch  .

   The Backup dialog box displays.

2. Touch **Yes** to create the backup.

Data Capture

This section provides information for capturing barcode data using various scanning options.

NOTE: The device is intended to support the simultaneous operation of both integrated and connected scanners, as well as multiple connected scanners (both wired and wireless).

The device supports data capture using:

- Integrated SE4100 imager
- Integrated SR500 imager
- Integrated SR560 imager
- Integrated Imager
- Integrated camera
- Bluetooth ring scanners
  - RS507/RS507X
  - RS6000
  - RS6100
- Bluetooth scanners
  - DS8178
  - LI3678
- Wired Scanners
  - DS3608
  - LI3608

Imaging

The device with an integrated 2D imager has the following features:

- Omnidirectional reading of a variety of barcode symbologies, including the most popular linear, postal, PDF417, Digimarc, 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 cross-hair and dot aiming for easy point-and-shoot operation.

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

Digital Camera

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

NOTE: The integrated camera is intended for light-duty barcode scanning. For heavy-duty scanning, 100 or more scans per day, use the 2D imager.

- Omnidirectional reading of a variety of barcode 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 barcode from many in the field of view.

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

On camera only devices without an internal scan engine, the back camera is used for barcode scanning.

Operational Modes

The device with an integrated imager supports three modes of operation.

Activate each mode by pressing **Scan**.

- Decode mode — The device attempts to locate and decode enabled barcodes within its field of view. The imager remains in this mode as long as you hold the scan button, or until it decodes a barcode.

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

- Picklist mode — Selectively decode a barcode when more than one barcode is in the device's field of view by moving the aiming crosshair or dot over the required barcode. Use this feature for pick lists containing multiple barcodes and manufacturing or transport labels containing more than one barcode type (either 1D or 2D).

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

- MultiBarcode Mode — In this mode, the device attempts to locate and decode a specific number of unique barcodes within its field of view. The device remains in this mode as long as you hold the scan button, or until it decodes all the barcodes.
  - The device attempts to scan the programmed number of unique barcodes (from 2 through 100). This may be a fixed amount, meaning it scans X unique barcodes, or can be set as a range to scan a different number of unique barcodes each session.
  - If there are duplicate barcodes (same symbology type and data), only one of the duplicate barcodes is decoded and the remainder are ignored. If the label has two duplicate barcodes plus another two different barcodes, a maximum of three barcodes will be decoded from that label; one will be ignored as a duplicate.

- Barcodes can be of multiple symbology types and still be acquired together. For example, if the specified quantity for a MultiBarcode Mode scan is four, two barcodes can be symbology type Code 128 and the other two can be symbology type Code 39.
- If the specified number of unique barcodes is not initially in view of the device, the device will not decode any data until the device is moved to capture the additional barcode(s) or time out occurs. If the device field of view contains a number of barcodes greater than the specified quantity, the device randomly decodes barcode(s) until the specified number of unique barcodes is reached. For example, if the count is set to two and eight barcodes are in the field of view, the device decodes the first two unique barcodes it sees, returning the data in random order.
- MultiBarcode Mode does not support concatenated barcodes.

Scanning Considerations

Typically, scanning is a simple matter of aim, scan, and decode, with a few quick trial efforts to master it.

However, consider the following to optimize scanning performance:

- Range — Scanners decode optimally over a particular working range — minimum and maximum distances from the barcode. This range varies according to barcode density and scanning device optics. Scan within range for 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 barcodes being scanned.
- Angle — Scanning angle is important for quick decodes. When the illumination/flash reflects directly back into the imager, the specular reflection can blind/saturate the imager. To avoid this, scan the barcode so that the beam does not bounce directly back. 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.
- Hold the device farther away for larger symbols.
- Move the device closer for symbols with bars that are close together.

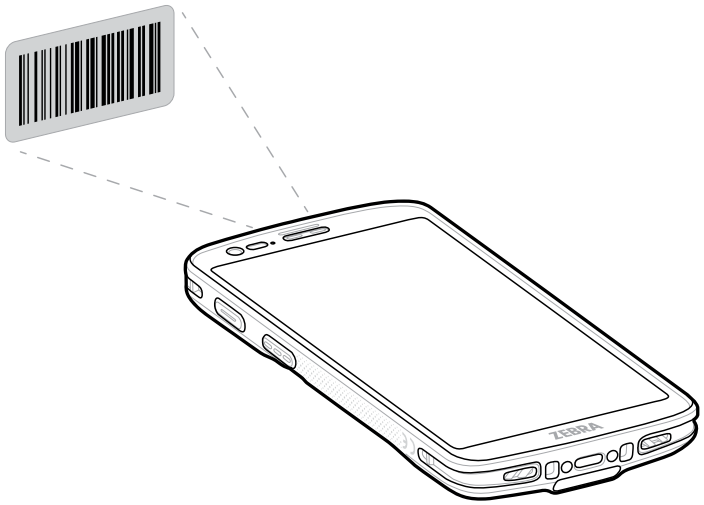
NOTE: Scanning procedures depend on the app and device configuration. An app may use different scanning procedures from the one listed above.

Scanning with the Device

To read a barcode, a scan-enabled application is required. The device contains the DataWedge application, which allows you to enable the imager, decode the barcode data, and display the barcode content.

NOTE: The SE4100 imager displays the green dot LED aimer, while the SR500 imager displays a yellow dot LED aimer, and the SR560 imager display a red dot laser aimer.

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 exit window of the device at a barcode.



3. Press and hold the scan button.

   The device projects the aiming pattern.

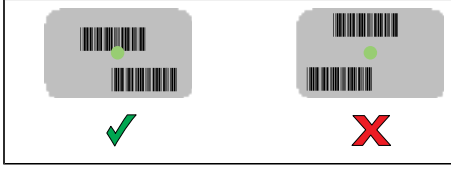
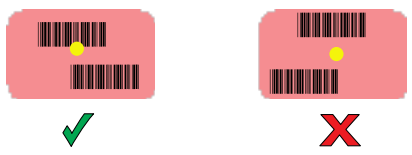
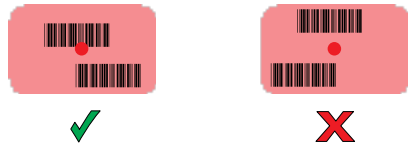
   NOTE: When the device is in Pick List Mode, the device does not decode the barcode until the center of the aimer touches the barcode.

4. Ensure the barcode is within the area formed by the aiming pattern. The aiming dot is used for increased visibility in bright lighting conditions.

Table 11 Aiming Patterns

SE4100	SR500	SR560
		

Table 12 Pick List Mode with Multiple Barcodes in Aiming Patterns

SE4100	SR500	SR560
		

By default, the scanner emits a beep to indicate that the QR code is successfully decoded.

NOTE: The data capture for the SE4100 imager has a green LED aimer, the SR500 imager has a yellow LED aimer, and the SR560 imager has a red laser aimer.

5. Release the scan button.

NOTE: Imager decoding usually occurs instantaneously. The device repeats the steps required to take a digital picture (image) of a poor or difficult barcode as long as the scan button remains pressed.

The barcode content data displays in the text field.

Scanning with the Camera

Use the internal camera to capture barcode data.

NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows you to enable the scanner to decode barcode data and display the barcode content.

NOTE: The integrated camera is intended for light-duty barcode scanning. For heavy-duty scanning, 100 or more scans per day, use the 2D imager.

When capturing barcode data in poor lighting, turn on Illumination mode in the DataWedge application.

To scan with the internal camera:

1. Point the camera window at a barcode.

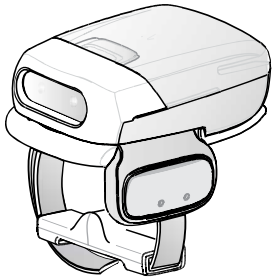
   NOTE: When Picklist mode is enabled, move the device until the barcode is centered under the red target on the screen.

2. Launch a scanning application.
3. Press and hold the scan button. By default, a preview window displays on the screen.
4. Move the device until the barcode is visible on the screen.
5. The Decode LED lights green, a beep sounds and the device vibrates, by default, to indicate the barcode is decoded successfully.
6. The captured data displays in the text field.
7. Release the scan button.

Scanning with the RS507/RS507X Hands-Free Imager

Use the RS507/RS507X Hands-Free Imager to capture barcode data.

Figure 9 RS507/RS507X Hands-Free Imager

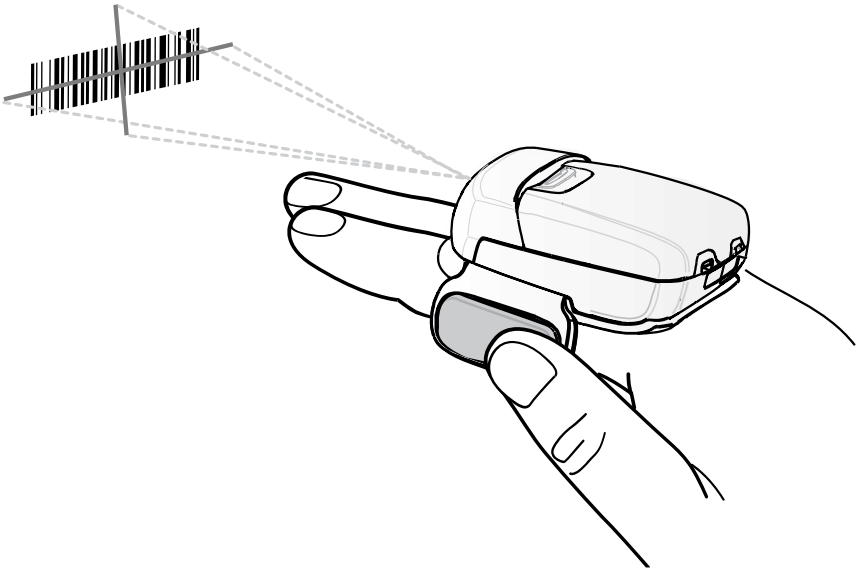


Refer to the RS507/RS507X Hands-free Imager Product Reference Guide for more information.

NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows you to enable the scanner to decode barcode data and display the barcode content.

To scan with the RS507/RS507x:

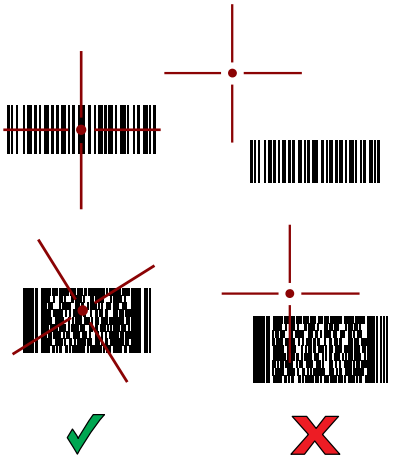
1. Pair the RS507/RS507X with the device.
2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
3. Point the RS507/RS507X at a barcode.



4. Press and hold the trigger.

   The red laser aiming pattern turns on to assist in aiming. Ensure the barcode is within the area formed by the cross-hairs in the aiming pattern. The aiming dot increases visibility in bright lighting conditions.

Figure 10 RS507/RS507X Aiming Pattern



When the RS507/RS507X is in Pick List mode, the RS507/RS507X does not decode the barcode until the center of the crosshair touches the barcode.

Figure 11 RS507/RS507X Pick List Mode with Multiple Barcodes in Aiming Pattern

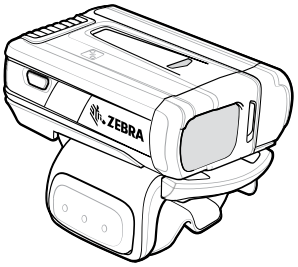
The RS507/RS507X LEDs light green and a beep sounds to indicate the barcode was decoded successfully.

The captured data appears in the text field.

Scanning with the RS6000 Bluetooth Ring Scanner

Use the RS6000 Bluetooth Ring Scanner to capture barcode data.

Figure 12 RS6000 Bluetooth Ring Scanner

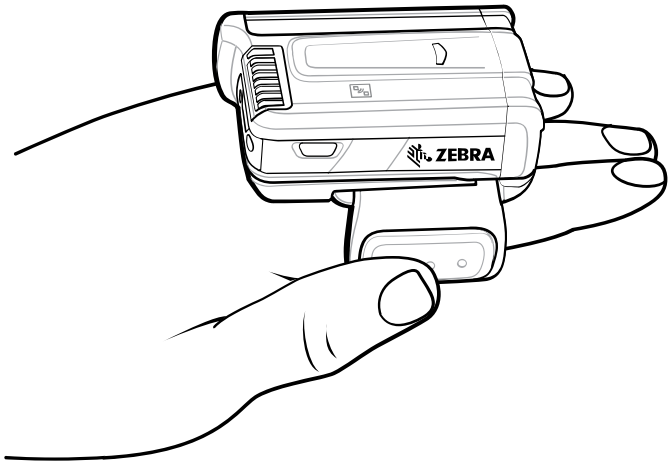


Refer to the RS6000 Bluetooth Ring Scanner Product Reference Guide for more information.

NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that enables you to use the scanner to decode barcode data and display the barcode content.

To scan with the RS6000:

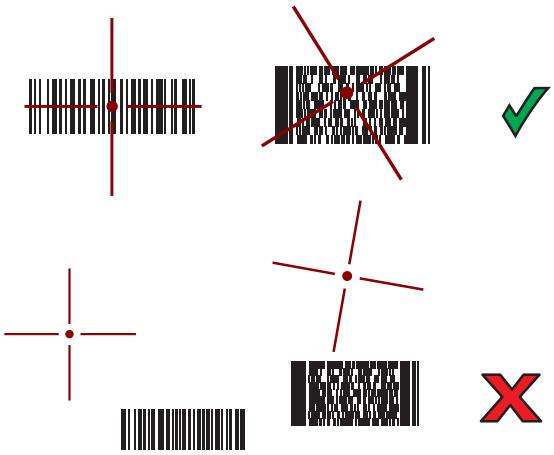
1. Pair the RS6000 with the device.
2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
3. Point the RS6000 at a barcode.



4. Press and hold the trigger.

   The red laser aiming pattern turns on to assist in aiming. Ensure the barcode is within the area formed by the cross-hairs in the aiming pattern. The aiming dot increases visibility in bright lighting conditions.

Figure 13 RS6000 Aiming Pattern



When the RS6000 is in Pick List mode, the RS6000 does not decode the barcode until the center of the crosshair touches the barcode.

Figure 14 RS6000 Pick List Mode with Multiple Barcodes in Aiming Pattern

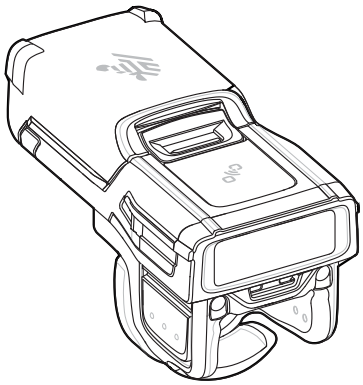
The RS6000 LEDs light green and a beep sounds to indicate the barcode was decoded successfully.

The captured data appears in the text field.

Scanning with the RS6100 Bluetooth Ring Scanner

Use the RS6100 Bluetooth Ring Scanner to capture barcode data.

Figure 15 RS6100 Bluetooth Ring Scanner



Refer to the RS6100 Bluetooth Ring Scanner Product Reference Guide for more information.

NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows the user to enable the scanner to decode barcode data and display the barcode content.

To scan with the RS6100:

1. Pair the RS6100 with the device.
2. Ensure that an app is open on the device and that a text field is in focus (text cursor in text field).
3. Point the RS6100 at a barcode.
4. Press and hold the trigger.

   The green laser aiming pattern turns on to assist in aiming. Ensure the barcode is within the area formed by the cross-hairs in the aiming pattern. The aiming dot increases visibility in bright lighting conditions.

   Figure 16 RS6100 Aiming Pattern

When the RS6100 is in Pick List mode, the RS6100 does not decode the barcode until the center of the crosshair touches the barcode.

Figure 17 RS6000 Pick List Mode with Multiple Barcodes in Aiming Pattern

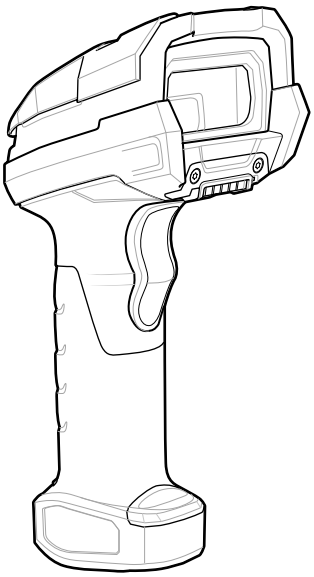
The RS6100 LEDs light green and a beep sounds to indicate the barcode was decoded successfully.

The captured data appears in the text field.

Scanning with the LI3678 Linear Imager

Use the LI3678 linear imager to capture barcode data.

Figure 18 LI3678 Bluetooth Scanner

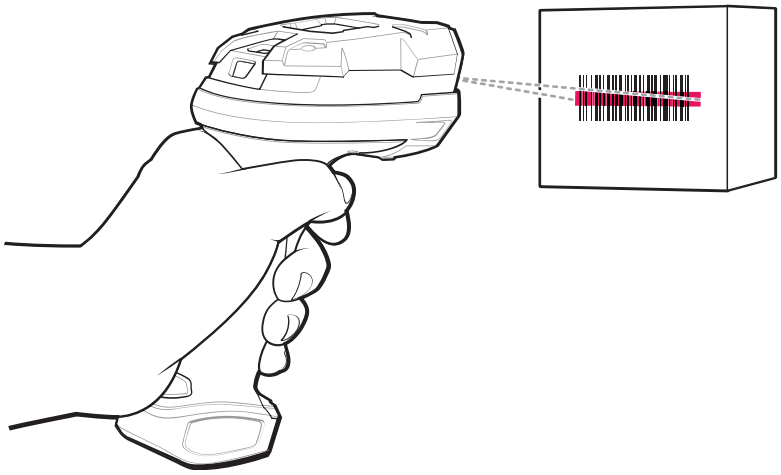


Refer to the LI3678 Product Reference Guide for more information.

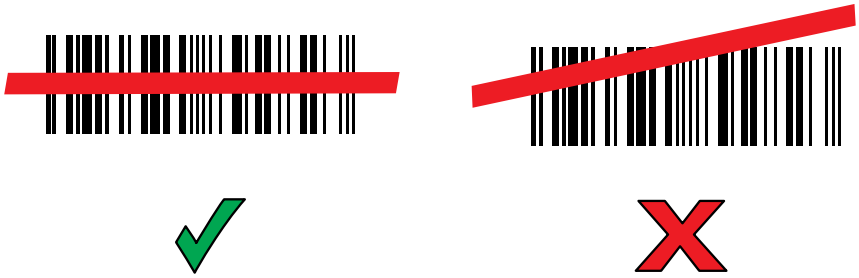
NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows you to enable the scanner to decode barcode data and display the barcode content.

To scan with the LI3678:

1. Pair the LI3678 with the device. See Pairing a Bluetooth Scanner for more information.
2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
3. Point the LI3678 at a barcode.
4. Press and hold the trigger.



5. Ensure the aiming pattern covers the barcode.



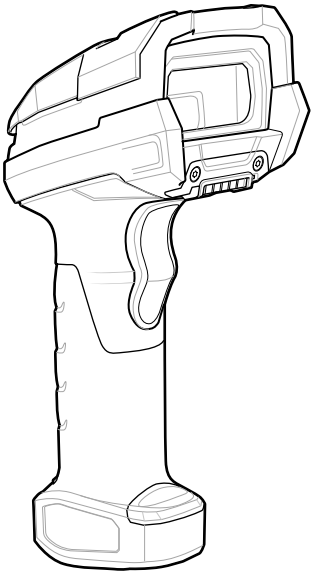
Upon successful decode, the scanner beeps and the LED displays a single green flash.

The captured data appears in the text field.

Scanning with the LI3608 Linear Scanner

Use the LI3608 linear imager to capture barcode data.

Figure 19 LI3608 Bluetooth Scanner

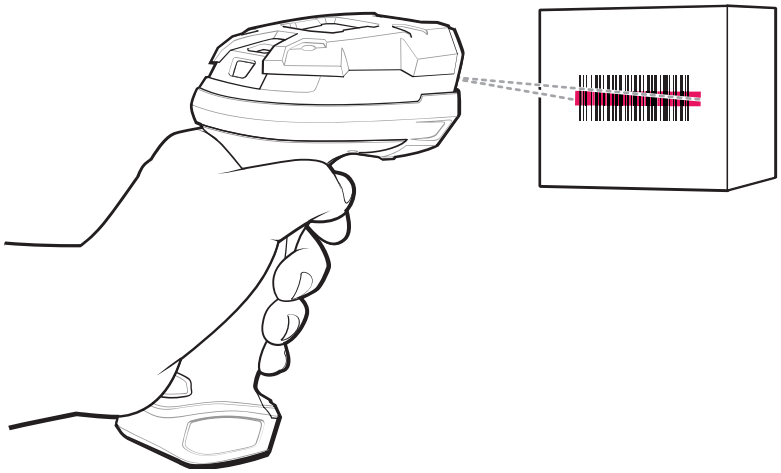


Refer to the LI3608 Product Reference Guide for more information.

NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows the user to enable the scanner to decode barcode data and display the barcode content.

To scan with the LI3608:

1. Connect the LI3608 to the device.
2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
3. Point the LI3608 at a barcode.
4. Press and hold the trigger.



5. Ensure the aiming pattern covers the barcode.

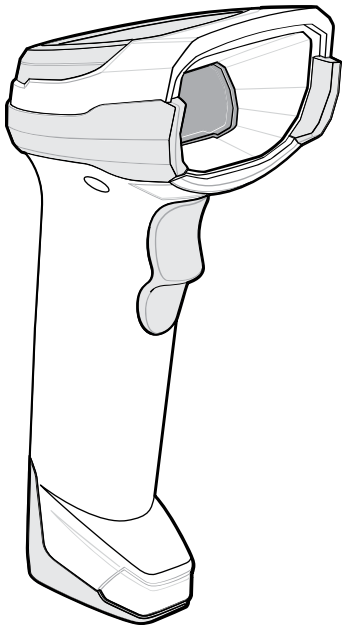
Upon successful decode, the scanner beeps and the LED displays a single green flash.

The captured data appears in the text field.

Scanning with the DS8178 Digital Scanner

Use the DS8178 Bluetooth Scanner to capture barcode data.

Figure 20 DS8178 Digital Scanner

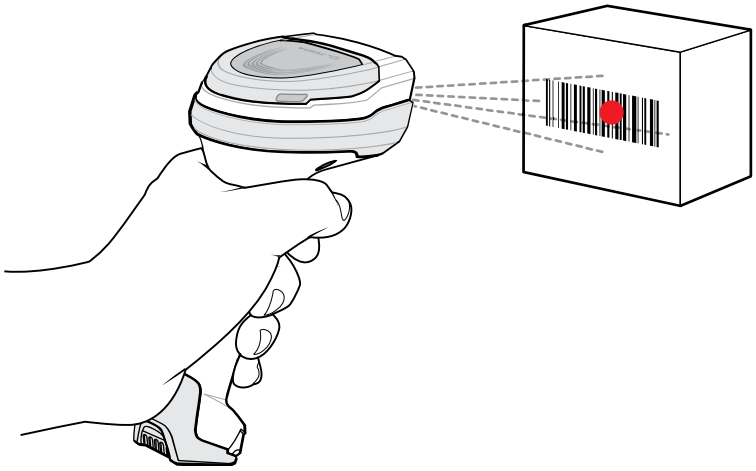


Refer to the DS8178 Digital Scanner Product Reference Guide for more information.

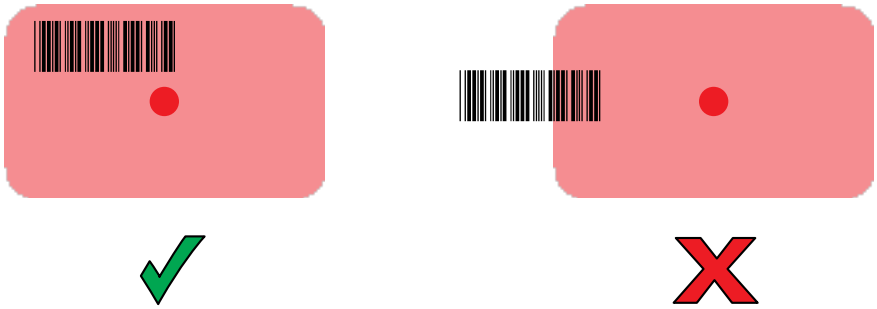
NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows you to enable the scanner to decode barcode data and display the barcode content.

To scan with the DS8178 scanner:

1. Pair the scanner with the device. See Pairing Bluetooth Scanners for more information.
2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
3. Point the scanner at a barcode.



4. Press and hold the trigger.
5. Ensure the barcode is within the area formed by the aiming pattern. The aiming dot increases visibility in bright lighting conditions.

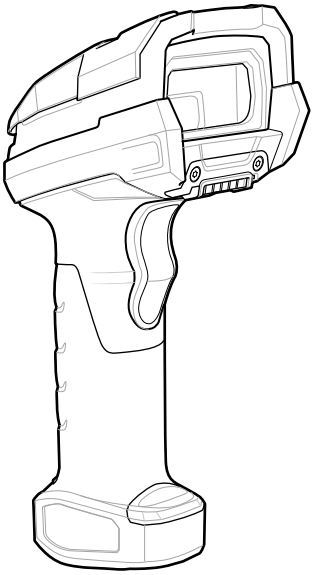


6. Upon successful decode, the scanner beeps and the LED flashes, and the scan line turns off. The captured data appears in the text field.

Scanning with the DS3608 USB Scanner

Use the DS3608 USB Scanner to capture barcode data.

Figure 21 DS3608 USB Scanner



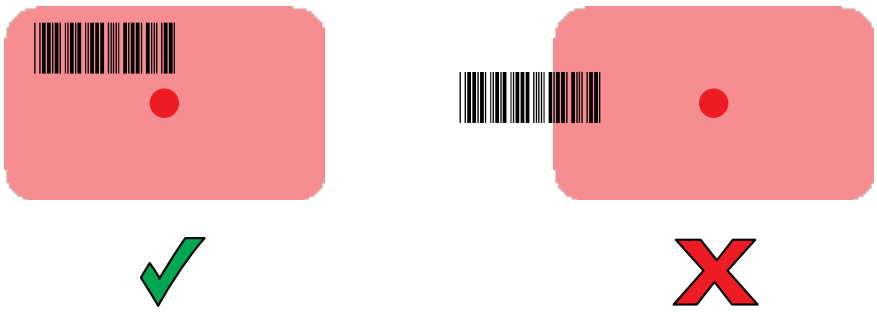
Refer to the DS3608 Product Reference Guide for more information.

NOTE: To read a barcode, a scan-enabled app is required. The device contains the DataWedge app that allows the user to enable the scanner to decode barcode data and display the barcode content.

To scan with the DS3608 scanner:

1. Connect the USB scanner to the device. See Connecting a USB Scanner for more information.
2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
3. Point the scanner at a barcode.
4. Press and hold the trigger.

   Ensure the barcode is within the area formed by the aiming pattern. The aiming dot increases visibility in bright lighting conditions.



   The captured data appears in the text field.

Pairing a Bluetooth Ring Scanner

Before using a Bluetooth Ring Scanner with the device, connect the device to the Ring Scanner.

To connect the Ring Scanner to the device, use one of the following methods:

- Near Field Communication (NFC)
- Simple Serial Interface (SSI)
- Bluetooth Human Interface Device (HID) Mode

Pairing in SSI Mode Using Near Field Communication

The device provides the ability to pair the RS5100/6100 or RS6000 Ring Scanner in SSI Mode using NFC.

NOTE: RS5100 or RS6000 Only.

1. Ensure that NFC is enabled on the device.
2. Align the NFC icon on the Ring Scanner with the NFC icon on the back of the device.

The Status LED blinks blue indicating that the Ring Scanner is attempting to establish a connection with the device. When a connection is established, the Status LED turns off and the Ring Scanner emits a single string of low/high beeps.

A notification appears on the device screen.

The icon appears in the Status bar.

Pairing in HID Mode Using Near Field Communication

The device provides the ability to pair the RS6000 Ring Scanner in HID Mode using NFC. The device provides the ability to pair the RS5100/RS6100 or RS6000 Ring Scanner in HID Mode using NFC.

NOTE: NFC is supported on the premium configurations of the device.

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

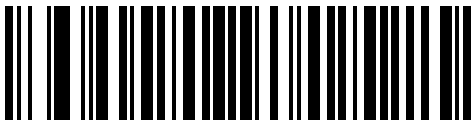
NOTE: RS5100/RS6100 or RS6000 Only.

1. Ensure that NFC is enabled on the device.
2. Ensure that Bluetooth is enabled on both devices.
3. Ensure that the Bluetooth device to discover is in discoverable mode.
4. Ensure that the two devices are within 10 meters (32.8 feet) of one another.
5. Place the Ring Scanner in Human Interface Device (HID) mode. If the Ring Scanner is already in HID mode, skip to step 6.
   a) Remove the battery from the Ring Scanner.
   b) Press and hold the Restore key.
   c) Install the battery onto the Ring Scanner.

d) Keep holding the Restore key for about five seconds until a chirp is heard and the Scan LEDs flash green.

e) Scan the barcode below to place the Ring Scanner in HID mode.

Figure 22 Bluetooth HID Barcode



6. Remove the battery from the Ring Scanner.
7. Re-install the battery into the Ring Scanner.
8. Align the NFC icon on the Ring Scanner with the NFC icon on the device.

The Status LED blinks blue indicating that the Ring Scanner is attempting to establish a connection with the device. When a connection is established, the Status LED turns off and the Ring Scanner emits a single string of low/high beeps.

A notification displays on the device screen.

The icon displays in the Status bar.

Pairing Using Simple Serial Interface (SSI)

Pair the Ring Scanner to the device using Simple Serial Interface.

1. Swipe up from the bottom of the Home screen and touch .
2. Using the Ring Scanner, scan the barcode on the screen.

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

   A notification displays on the Notification panel and the icon displays in the Status bar.

Pairing Using Bluetooth Human Interface Device

Pair the Bluetooth scanner to the device using HID.

To pair the scanner with the device using HID:

1. Remove the battery from the scanner.
2. Replace the battery.
3. After the scanner reboots, scan the barcode below to place the scanner in HID mode.

4. On the device, swipe down from the Status bar to open the Quick Access panel and then touch .
5. Touch **Bluetooth**.

6. Touch **Pair new device**. The device begins searching for discoverable Bluetooth devices in the area and displays them under **Available devices**.
7. Scroll through the list and select XXXXX xxxxxx, where XXXXX is the scanner and xxxxxx is the serial number.

   The device connects to the scanner, the scanner beeps once and **Connected** appears below the device name. The Bluetooth device is added to the **Paired devices** list and a trusted (paired) connection is established.

Pairing a Bluetooth Scanner

Before using a Bluetooth scanner with the device, connect the device to the Bluetooth scanner.

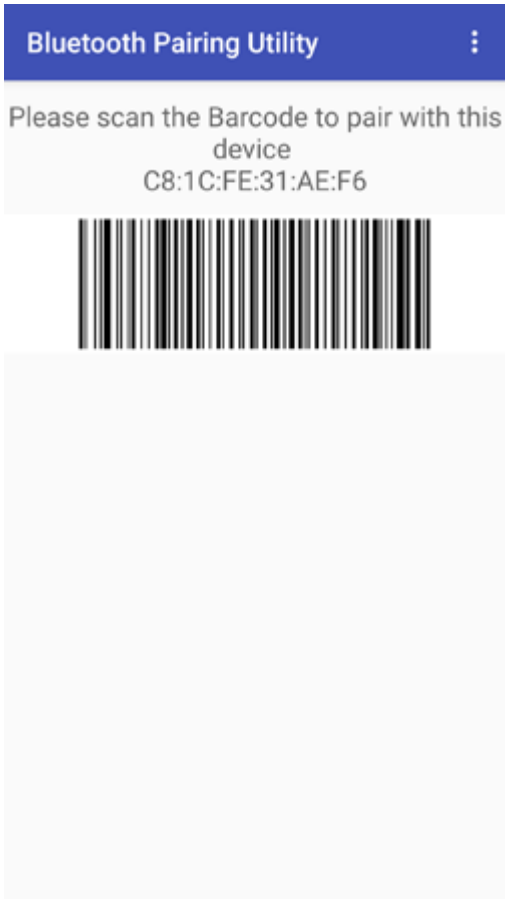
Connect the scanner to the device using one of the following methods:

- Simple Serial Interface (SSI) mode
- Bluetooth Human Interface Device (HID) mode

Pairing Using Simple Serial Interface

Pair the Bluetooth scanner to the device using Simple Serial Interface (SSI).

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



4. Using the Bluetooth scanner, scan the barcode on the screen.

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

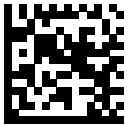
   A notification appears on the Notification panel and the icon appears in the Status bar.

Pairing Using Bluetooth Human Interface Device

Pair the Bluetooth scanner to the device using HID.

To pair the scanner with the device using HID:

1. Remove the battery from the scanner.
2. Replace the battery.
3. After the scanner reboots, scan the barcode below to place the scanner in HID mode.



4. On the device, swipe down from the Status bar to open the Quick Access panel and then touch .
5. Touch **Bluetooth**.

6. Touch **Pair new device**. The device begins searching for discoverable Bluetooth devices in the area and displays them under **Available devices**.
7. Scroll through the list and select XXXXX xxxxxx, where XXXXX is the scanner and xxxxxx is the serial number.

   The device connects to the scanner, the scanner beeps once and **Connected** appears below the device name. The Bluetooth device is added to the **Paired devices** list and a trusted (paired) connection is established.

DataWedge

DataWedge is a utility that adds advanced barcode scanning capability to any application without writing code. It runs in the background and handles the interface to built-in barcode scanners. DataWedge converts the captured barcode data to keystrokes and sends it to the target application as if it were typed on the keypad.

DataWedge allows any app on the device to get data from input sources such as a barcode scanner, MSR, RFID, voice, or serial port and manipulate the data based on options or rules.

Configure DataWedge to:

- Provide data capture services from any app.
- Use a particular scanner, reader, or other peripheral devices.
- Properly format and transmit data to a specific app.

To configure DataWedge, go to techdocs.zebra.com/datawedge/.

Enabling DataWedge

This procedure provides information on how to enable DataWedge on the device.

1. Swipe up from the bottom of the Home screen and touch .
2. Touch > **Settings**.
3. Touch the **DataWedge enabled** checkbox.

   A blue checkmark displays in the checkbox indicating that DataWedge is enabled.

Disabling DataWedge

This procedure provides information on how to disable DataWedge on the device.

1. Swipe up from the bottom of the Home screen and touch .
2. Touch .
3. Touch **Settings**.
4. Uncheck the **DataWedge enabled** checkbox.

Supported Decoders

This sections provides the supported decoders for each data capture option.

Camera Supported Decoders

This section lists the supported decoders for the internal camera.

Table 13 Camera-Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X
Canadian Postal	O	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	O
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	O	Trioptic 39	O
Code 128	X	GS1 QRCode	O	UK Postal	O
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O
Composite C	O	Korean 3 of 5	O	US4state	O
Discrete 2 of 5	O	MAIL MARK	X	US4state FICS	O
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	O	Maxicode	X	US Postnet	O
DotCode	X	MicroPDF	O		
EAN13	X	MicroQR	O		

Key: X = Enabled, O = Disabled, - = Not Supported

SR500 Internal Imager Supported Decoders

This section lists the supported decoders for the SR500 internal imager.

Table 14 SR500 Internal Imager-Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN13	X	MicroPDF	O

Table 14 SR500 Internal Imager-Supported Decoders (Continued)

Decoder	Default State	Decoder	Default State	Decoder	Default State
Aztec	X	EAN8	X	MicroQR	O
Canadian Postal	O	Finnish Postal 4S	O	MSI	O
Chinese 2 of 5	O	Grid Matrix	O	PDF417	X
Codabar	X	GS1 DataBar	X	QR Code	X
Code 11	O	GS1 DataBar Expanded	X	TLC 39	O
Code 128	X	GS1 DataBar Limited	O	Trioptic 39	O
Code 39	X	GS1 Datamatrix	O	UK Postal	O
Code 93	O	GS1 QRCode	O	UPCA	X
Composite AB	O	HAN XIN	O	UPCE0	X
Composite C	O	Interleaved 2 of 5	O	UPCE1	O
Datamatrix	X	Japanese Postal	O	US Currency	O
Decoder Signature	O	Korean 3 of 5	O	US Planet	O
Discrete 2 of 5	O	MAIL MARK	X	US Postnet	O
DotCode	O	Matrix 2 of 5	O	US4state	O
Dutch Postal	O	Maxicode	X	US4state FICS	O

Key: X = Enabled, O = Disabled, - = Not Supported

SR560 Internal Imager Supported Decoders

This section lists the supported decoders for the SR560 internal imager.

Table 15 SR560 Internal Imager-Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN13	X	MicroPDF	O
Aztec	X	EAN8	X	MicroQR	O
Canadian Postal	O	Finnish Postal 4S	O	MSI	O
Chinese 2 of 5	O	Grid Matrix	O	PDF417	X
Codabar	X	GS1 DataBar	X	QR Code	X
Code 11	O	GS1 DataBar Expanded	X	TLC 39	O

Table 15 SR560 Internal Imager-Supported Decoders (Continued)

Decoder	Default State	Decoder	Default State	Decoder	Default State
Code 128	X	GS1 DataBar Limited	O	Trioptic 39	O
Code 39	X	GS1 Datamatrix	O	UK Postal	O
Code 93	O	GS1 QRCode	O	UPCA	X
Composite AB	O	HAN XIN	O	UPCE0	X
Composite C	O	Interleaved 2 of 5	O	UPCE1	O
Datamatrix	X	Japanese Postal	O	US Currency	O
Decoder Signature	O	Korean 3 of 5	O	US Planet	O
Discrete 2 of 5	O	MAIL MARK	X	US Postnet	O
DotCode	O	Matrix 2 of 5	O	US4state	O
Dutch Postal	O	Maxicode	X	US4state FICS	O

Key: X = Enabled, O = Disabled, - = Not Supported

SE4100 Internal Imager Supported Decoders

This section lists the supported decoders for the internal SE4100 imager.

Table 16 Internal SE4100 Imager Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X
Canadian Postal	—	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	—
Codabar	X	GS1 DataBar Limited	X	TLC 39	O
Code 11	O	GS1 Datamatrix	O	Trioptic 39	O
Code 128	X	GS1 QRCode	—	UK Postal	O
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	X	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O

Table 16 Internal SE4100 Imager Supported Decoders (Continued)

Decoder	Default State	Decoder	Default State	Decoder	Default State
Composite C	O	Korean 3 of 5	O	US4state	—
Discrete 2 of 5	O	MAIL MARK	O	US4state FICS	—
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	—	Maxicode	O	US Postnet	O
DotCode	O	MicroPDF	O		
EAN13	X	MicroQR	X		

Key: X = Enabled, O = Disabled, - = Not Supported

RS507/RS507x Supported Decoders

This section lists the supported decoders for the RS507/RS507x Ring Scanner.

Table 17 RS507/RS507x Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X
Canadian Postal	-	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	O
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	-	Trioptic 39	O
Code 128	X	GS1 QRCode	-	UK Postal	O
Code 39	O	HAN XIN	-	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O
Composite C	O	Korean 3 of 5	O	US4state	O
Discrete 2 of 5	O	MAIL MARK	-	US4state FICS	O
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	O	Maxicode	X	US Postnet	O
DotCode	O	MicroPDF	O		
EAN13	X	MicroQR	O		

Key: X = Enabled, O = Disabled, - = Not Supported

RS6000 Supported Decoders

This section lists the supported decoders for the RS6000 Ring Scanner.

Table 18 RS6000-Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X
Canadian Postal	O	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	O
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	O	Trioptic 39	O
Code 128	X	GS1 QRCode	O	UK Postal	O
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O
Composite C	O	Korean 3 of 5	O	US4state	O
Discrete 2 of 5	O	MAIL MARK	X	US4state FICS	O
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	O	Maxicode	X	US Postnet	O
DotCode	O	MicroPDF	O		
EAN13	X	MicroQR	O		

Key: X = Enabled, O = Disabled, - = Not Supported

RS6100 Supported Decoders

Lists the supported decoders for the RS6100 Ring Scanner.

Table 19 RS6100 Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X

Table 19 RS6100 Supported Decoders (Continued)

Decoder	Default State	Decoder	Default State	Decoder	Default State
Canadian Postal	O	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	O
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	O	Trioptic 39	O
Code 128	X	GS1 QRCode	O	UK Postal	O
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O
Composite C	O	Korean 3 of 5	O	US4state	O
Discrete 2 of 5	O	MAIL MARK	X	US4state FICS	O
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	O	Maxicode	X	US Postnet	O
DotCode	O	MicroPDF	O		
EAN13	X	MicroQR	O		

Key: X = Enabled, O = Disabled, - = Not Supported

LI3608 Supported Decoders

Lists the supported decoders for the LI3608 scanner.

Table 20 LI3608 Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	—	EAN8	X	MSI	O
Aztec	—	Grid Matrix	O	PDF417	—
Canadian Postal	—	GS1 DataBar	X	QR Code	—
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	—
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	—	Trioptic 39	O

Table 20 LI3608 Supported Decoders (Continued)

Decoder	Default State	Decoder	Default State	Decoder	Default State
Code 128	X	GS1 QRCode	—	UK Postal	—
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	—	Japanese Postal	—	UPCE1	O
Composite C	—	Korean 3 of 5	O	US4state	—
Discrete 2 of 5	O	MAIL MARK	—	US4state FICS	—
Datamatrix	—	Matrix 2 of 5	O	US Planet	—
Dutch Postal	—	Maxicode	—	US Postnet	—
DotCode	O	MicroPDF	—		
EAN13	X	MicroQR	—		

Key: X = Enabled, O = Disabled, — = Not Supported

LI3678 Supported Decoders

This section lists the supported decoders for the LI3678 scanner.

Table 21 LI3678-Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	—	EAN8	X	MSI	O
Aztec	—	Grid Matrix	O	PDF417	—
Canadian Postal	—	GS1 DataBar	X	QR Code	—
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	—
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	—	Trioptic 39	O
Code 128	X	GS1 QRCode	—	UK Postal	—
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	—	Japanese Postal	—	UPCE1	O
Composite C	—	Korean 3 of 5	O	US4state	—

Table 21 LI3678-Supported Decoders (Continued)

Decoder	Default State	Decoder	Default State	Decoder	Default State
Discrete 2 of 5	O	MAIL MARK	—	US4state FICS	—
Datamatrix	—	Matrix 2 of 5	O	US Planet	—
Dutch Postal	—	Maxicode	—	US Postnet	—
DotCode	O	MicroPDF	—		
EAN13	X	MicroQR	—		

Key: X = Enabled, O = Disabled, — = Not Supported

DS8178 Supported Decoders

This section lists the supported decoders for the DS8178 Digital scanner.

Table 22 DS8178 Digital Scanner-Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X
Canadian Postal	—	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	—
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	O	Trioptic 39	O
Code 128	X	GS1 QRCode	O	UK Postal	O
Code 39	X	HAN XIN	—	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O
Composite C	O	Korean 3 of 5	O	US4state	O
Discrete 2 of 5	O	MAIL MARK	X	US4state FICS	O
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	O	Maxicode	X	US Postnet	O
DotCode	O	MicroPDF	O		
EAN13	X	MicroQR	O		

Key: X = Enabled, O = Disabled, — = Not Supported

DS3608 Supported Decoders

Lists the supported decoders for the DS3608 scanner.

Table 23 DS3608 Supported Decoders

Decoder	Default State	Decoder	Default State	Decoder	Default State
Australian Postal	O	EAN8	X	MSI	O
Aztec	X	Grid Matrix	O	PDF417	X
Canadian Postal	—	GS1 DataBar	X	QR Code	X
Chinese 2 of 5	O	GS1 DataBar Expanded	X	Decoder Signature	—
Codabar	X	GS1 DataBar Limited	O	TLC 39	O
Code 11	O	GS1 Datamatrix	O	Trioptic 39	O
Code 128	X	GS1 QRCode	O	UK Postal	O
Code 39	X	HAN XIN	O	UPCA	X
Code 93	O	Interleaved 2 of 5	O	UPCE0	X
Composite AB	O	Japanese Postal	O	UPCE1	O
Composite C	O	Korean 3 of 5	O	US4state	O
Discrete 2 of 5	O	MAIL MARK	X	US4state FICS	O
Datamatrix	X	Matrix 2 of 5	O	US Planet	O
Dutch Postal	O	Maxicode	X	US Postnet	O
DotCode	O	MicroPDF	O		
EAN13	X	MicroQR	O		

Key: X = Enabled, O = Disabled, — = Not Supported

Wireless

This section provides information on the wireless features of the device.

The following wireless features are available on the device:

- Wireless Wide Area Network (WWAN)
- Wireless Local Area Network (WLAN)
- Bluetooth
- Cast
- Near Field Communications (NFC)

Wireless Wide Area Networks

Use wireless wide area networks (WWANs) to access data over a cellular network.

NOTE: Applies to WWAN devices only.

This section provides information on:

- Sharing a data connection.
- Monitoring data usage.
- Changing cellular network settings.

Sharing the Mobile Data Connection

The **Hotspot & tethering** settings allow sharing the mobile data connection with a single computer via USB tethering or Bluetooth tethering.

Share the data connection with up to eight devices at once, by turning it into a portable Wi-Fi hotspot. While the device is sharing its data connection, an icon displays at the top of the screen and a corresponding message displays in the notification list.

Enabling USB Tethering

This section describes how to enable USB Tethering.

NOTE: USB tethering is not supported on computers running Mac OS. If the computer is running Windows or a recent version of Linux (such as Ubuntu), follow these instructions without any special preparation. If running a version of Windows that precedes Windows 7, or some other

operating system, you may need to prepare the computer to establish a network connection via USB.

1. Connect the device to a host computer with a USB cable.

   The notification **Charging this device via USB** appears in the Notifications panel.

2. Go to **Settings** > **Network & internet** > **Hotspot & tethering**.
3. Touch the **USB tethering** toggle to enable the feature.

The host computer is now sharing the device's data connection.

To stop sharing the data connection, touch the **USB tethering** switch again or disconnect the USB cable.

Enabling Bluetooth Tethering

Use Bluetooth tethering to share the data connection with a host computer.

Configure the host computer to obtain its network connection using Bluetooth. For more information, see the host computer's documentation.

1. Pair the device with the host computer.
2. Go to **Settings**.
3. Touch **Networking & Internet**.
4. Touch **Advanced**.
5. On Android 13, touch **Hotspot & tethering**.
6. Touch **Hotspot & tethering**.
7. Touch the **Bluetooth tethering** switch to enable.

The host computer is now sharing the device's data connection.

To stop sharing the data connection, touch the **Bluetooth tethering** switch again.

Enabling Wi-Fi Hotspot

After configuring the device as a Wi-Fi hotspot, turn on Wi-Fi hotspot to begin using it.

1. Go to **Settings** > **Network & internet** > **Hotspot & tethering**.
2. Touch the **Wi-fi hotspot** toggle to enable the feature.

Configuring the Wi-Fi Hotspot

Use Wi-Fi Hotspot to share the device's data connection with another computer.

1. Go to **Settings**.
2. Touch **Network & internet**.
3. Touch **Hotspot & tethering**.
4. Touch **Wi-Fi hotspot**.
5. Enable the **Use Wi-Fi hotspot** toggle switch to turn on Wi-Fi hotspot.
6. Touch **Hotspot** name, edit the name of the hotspot, and touch **OK**.

7. Touch **Security** and select a security method from the drop-down list.
   - **WPA3-Personal**
     a. Touch **Hotspot password**.
     b. Enter a password.
     c. Touch **OK**.
   - **WPA2/WPA3-Personal**
     a. Touch **Hotspot password**.
     b. Enter a password.
     c. Touch **OK**.
   - **WPA2-Personal**
     a. Touch **Hotspot password**.
     b. Enter a password.
     c. Touch **OK**.
   - **None** - If **None** is selected in the Security option, a password is not required.
8. Touch **Hotspot password** to set a password.
9. Enable the **Turn off hotspot automatically** toggle switch to turn off Wi-Fi hotspot automatically when no devices are connected.
10. Touch **Speed & compatibility**, and select a frequency **2.4 GHz Band**, **5.0 GHz Band**, or **6.0 GHz Band** for your hotspot.
11. Touch **Additional Settings** to configure Band selected, Channel selection, Maximum number of clients, and Hotspot connected clients.

Data Usage

Data usage refers to the amount of data uploaded or downloaded by the device during a given period. Depending on the wireless plan, you may be charged additional fees when your data usage exceeds your plan's limit.

Data usage settings allow you to:

- Enable Data Saver.
- Set the data usage warning level.
- Set a data usage limit.
- View or restrict data usage by app.
- Identify mobile hotspots and restrict background downloads that may result in extra charges.

Setting Data Usage Warning

Set a warning alert when the device has used a certain amount of mobile data.

1. Go to **Settings**.
2. Touch **Network & internet** > **SIMs** > **Select Sim** > **Data warning & limit**.
3. If necessary, touch **Set data warning** to enable it.

4. Touch **Data warning**.
5. Enter a number.

   To switch between megabytes (MB) and gigabytes (GB), touch the down arrow.
6. Touch **SET**.

When the data usage reaches the set level, a notification displays.

Setting Data Limit

This section describes the method for setting a data limit on your device.

1. Go to **Settings**.
2. Touch **Network & internet** > **SIMs** > **Select Sim** > **Data warning & limit**.
3. Touch **Set data limit**.
4. Touch **OK**.
5. Touch **Data limit**.
6. Enter a number.

   To switch between megabytes (MB) and gigabytes (GB), touch the down arrow.
7. Touch **Set**.

When the limit is reached, data automatically turns off and a notification displays.

Monitoring Data Usage

Data usage is how much data the device uploads or downloads using a cellular network. To make sure that you are not using too much data, check and change your data usage.

CAUTION: Your carrier's data usage accounting may differ. Usage in excess of your carrier plan's data limits can result in steep overage charges. The feature described here can help you track your usage, but it is not guaranteed to prevent additional charges.

1. Go to **Settings**.
2. Touch **Network & internet**.
3. Touch **Internet**.
4. Touch ⚙.

   The data usage graph displays.

Cellular Network Settings

Cellular network settings applies to WWAN devices only.

Data When Roaming

Roaming is disabled by default to prevent the device from transmitting data over other carriers' mobile networks when leaving an area that is covered by the carrier's networks. This is useful for controlling expenses if the service plan does not include data roaming.

Enabling Data on GSM Devices

1. Go to **Settings**.
2. Touch **Network & internet** > **SIMs** > **Automatically select network**.
3. Touch **Roaming**.

The switch moves to the on position.

Setting Preferred Network

Change the device network operating mode.

1. Go to **Settings**.
2. Touch **Network & internet** > **SIMs** > **Automatically select network**.
3. Touch **Automatically select network**.
4. Touch **Network**.
5. In the **Available network** list, select a carrier network.

Configuring the Access Point Name

To use the data on a network, configure the APN information.

NOTE: Many service provider Access Point Name (APN) data are pre-configured in the device. The APN information for all other service providers must be obtained from the wireless service provider.

1. Go to **Settings**.
2. Touch **Network & Internet** > **SIMs** > **Select SIM card** > **Access Point Names**.
3. Touch an APN name in the list to edit an existing APN or touch **+** to create a new APN.
4. Touch each APN setting and enter the appropriate data obtained from the wireless service provider.
5. When finished, touch ⋮ > **Save**.
6. Touch the radio button next to the APN name to start using it.

Locking the SIM Card

Locking the SIM card requires you to enter a PIN every time the device is turned on. If the correct PIN is not entered, only emergency calls can be made.

1. Go to **Settings**.

2. Touch **Security** > **More Security Settings** > **SIM Lock**.
3. Touch **Lock SIM card**.
4. Enter the PIN associated with the card.
5. Touch **OK**.
6. Reset the device.

Wireless Local Area Network

An overview of the wireless local area network (WLAN) security protocols supported by the device.

Wireless local area networks (WLANs) allow the device to communicate wirelessly. Before using the device on a WLAN, the facility's infrastructure (access points, switches, servers, etc.) must be set up and properly configured.

Once the infrastructure is configured, use the **Settings** > **Network & internet** menu on the device to configure it to match the network's security scheme.

The device supports the following WLAN security options:

- **None**

  An open network with no security.

- **Enhanced Open (OWE)**

  Provides unauthenticated encryption for open networks, protecting against passive sniffing.

- **WEP**

  Wireless Equivalent Privacy, an older and less secure protocol.

- **WPA/WPA2/WPA3-Personal**

  Secures the network using a pre-shared key (PSK), also known as a password. This is the most common method for home and small office networks.

- **WPA/WPA2/WPA3-Enterprise**

  Secures the network by requiring each user to authenticate with unique credentials, typically against a RADIUS server. This method uses the Extensible Authentication Protocol (EAP) and supports the following methods:

  - PEAP (Protected Extensible Authentication Protocol) - with MSCHAPV2 and GTC authentication.
  - TLS (Transport Layer Security)
  - TTLS (Tunneled Transport Layer Security) - with PAP, MSCHAP, MSCHAPV2, and GTC authentication.
  - LEAP (Lightweight Extensible Authentication Protocol)
  - AKA (Authentication and Key Agreement)
  - AKA' (Improved AKA)
  - SIM (Subscriber Identity Module)

  IMPORTANT: GTC authentication without a password (Dynamic GTC), used in some PEAP and TTLS configurations, may require a specific Mobility DNA Enterprise License.

Connecting to a Wi-Fi Network

Most of the device's functionality requires an internet connection. Connect to an available Wi-Fi network to use the device features.

1. Go to **Settings**.
2. Touch **Network & internet**.
3. Touch **Internet** to open the Internet screen.
4. Enable the **Wi-Fi** toggle switch.

   The device searches for WLANs in the area and lists them.
5. Scroll through the list and select the desired WLAN network.
6. For open networks, touch the profile once or press and hold and then select **Connect** 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). To configure the device with a fixed internet protocol (IP) address, go to Configuring the Device to Use a Static IP Address.
7. In the Wi-Fi setting field, **Connected** displays, indicating that the device is connected to the WLAN.

Removing a Wi-Fi Network

Remove a remembered or connected Wi-Fi network.

1. Go to **Settings**.
2. Touch **Network & Internet**.
3. Touch **Internet**.
4. Disable the **Wi-Fi** toggle switch.
5. Touch **Saved networks**.
6. Touch the name of the network.
7. Touch **Forget**.

WLAN Configuration

This section provides information on configuring Wi-Fi settings.

Configuring a Secure Wi-Fi Network

Add a Wi-Fi network on the device to connect to the internet.

1. Go to **Settings**.
2. Touch **Network & Internet**.
3. Touch **Internet**.
4. Slide the Wi-Fi switch to the **ON** position.

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 network security is **Open**, the device automatically connects to the network. For all other network security, a dialog box displays.
7. If network security is **WPA/WPA2-Personal, WPA3-Personal**, or **WEP**, enter the required password and then touch **Connect**.
8. If network security is **WPA/WPA2-Enterprise** or **WPA3-Enterprise**:
   a) Touch the **EAP method** drop-down list and select one of the following:
      - **PEAP**
      - **TLS**
      - **TTLS**
      - **PWD**
      - **SIM**
      - **AKA**
      - **AKA'**
      - **LEAP**
   b) Fill in the appropriate information. Options vary depending on the **EAP method** chosen.
      - When selecting **CA certificate**, Certification Authority (CA) certificates are installed using the **Security** settings.
      - When using the EAP methods PEAP, TLS, or TTLS, specify a domain.
      - Touch **Advanced options** to display additional network options.
9. If the network security is **WPA3-Enterprise 192-bit**:
   - Touch **CA certificate** and select a Certification Authority (CA) certificate.

     NOTE: Certificates are installed using the Security settings.
   - For WPA3-Enterprise 192-bit, specify a domain.
   - Touch **User certificate** and select a user certificate.

     NOTE: User certificates are installed using the Security settings.
   - In the **Identity** text box, enter the username credentials.

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

10. Touch **Connect**.

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. Go to **Settings**.
2. Touch **Network & Internet**.
3. Touch **Internet**.
4. Slide the Wi-Fi switch to the **On** position.
5. Scroll to the bottom of the list and select **Add network**.
6. In the **Network name** text box, enter the name of the Wi-Fi network.
7. In the **Security** drop-down list, set the type of security to:
   - **None**
   - **Enhanced Open**
   - **WEP**
   - **WPA/WPA2-Personal**
   - **WPA3-Personal**
   - **WPA/WPA2-Enterprise/WPA3-Enterprise**
   - **WPA3-Enterprise 192-bit**
8. If the network security is **None** or **Enhanced Open**, touch **Save**.
9. If the network security is **WEP**, **WPA3-Personal**, or **WPA/WPA2-Personal**, enter the required password and then touch **Save**.

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

10. If network security is **WPA/WPA2-Enterprise/WPA3-Enterprise**:
    a) Touch the **EAP method** drop-down list and select one of the following:
       - **PEAP**
       - **TLS**
       - **TTLS**
       - **PWD**
       - **SIM**
       - **AKA**
       - **AKA'**
    b) Fill in the appropriate information. Options vary depending on the **EAP method** chosen.
       - When selecting **CA certificate**, Certification Authority (CA) certificates are installed using the **Security** settings.
       - When using the EAP methods PEAP, TLS, or TTLS, specify a domain.

- Touch **Advanced options** to display additional network options.

11. If the network security is **WPA3-Enterprise 192-bit**:
    - Touch **CA certificate** and select a Certification Authority (CA) certificate.

      NOTE: Certificates are installed using the Security settings.
    - For WPA3-Enterprise 192-bit, specify a domain.
    - Touch **User certificate** and select a user certificate.

      NOTE: User certificates are installed using the Security settings.
    - In the **Identity** text box, enter the username credentials.
12. Touch **Save**. To connect to the saved network, touch and hold on the saved network and select **Connect to network**.

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.

1. Go to **Settings**.
2. Touch **Network & Internet**.
3. Touch **Internet**.
4. Slide the Wi-Fi switch to the **On** position.
5. In the network dialog box, select and touch a network.
6. If configuring the connected network, touch to edit the network details and then touch the down arrow to hide the keyboard.
7. Touch **Advanced options**.
8. Touch **Proxy** and select **Manual**.
9. In the **Proxy hostname** text box, enter the address of the proxy server.
10. In the **Proxy port** text box, enter the port number for the proxy server.
11. 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.
12. If configuring the connected network, touch **Save** otherwise, touch **Connect**.
13. Touch **Connect**.

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.

1. Go to **Settings**.
2. Touch **Network & Internet**.
3. Touch **Internet**.
4. Slide the Wi-Fi switch to the **On** position.
5. In the network dialog box, select and touch a network.
6. If configuring the connected network, touch to edit the network details and then touch the down arrow to hide the keyboard.
7. Touch **Advanced options**.
8. Touch **IP settings** and select **Static**.
9. In the **IP address** text box, enter an IP address for the device.
10. If required, in the **Gateway** text box, enter a gateway address for the device.
11. If required, in the **Network prefix length** text box, enter the prefix length.
12. If required, in the **DNS 1** text box, enter a Domain Name System (DNS) address.
13. If required, in the **DNS 2** text box, enter a DNS address.
14. If configuring the connected network, touch **Save** otherwise, touch **Connect**.

Wi-Fi Preferences

Use the Wi-Fi preferences to configure advanced Wi-Fi settings. From the Wi-Fi screen, scroll down and touch **Network preferences**.

- **Turn on Wi-Fi automatically** - When enabled, Wi-Fi automatically turns back on when near high-quality saved networks.
- **Notify for public networks** - When enabled, notifies when an open network is available.
- **Allow WEP networks** - When enabled, connects to WEP-secured networks.
- **Additional settings** - Touch to view additional Wi-Fi settings.
- **Install Certificates** - Touch to install certificates.
- **Wi-Fi Direct** - Displays a list of devices available for a direct Wi-Fi connection.

Additional Wi-Fi Settings

Use the Additional Settings to configure additional Wi-Fi settings.

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

- **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)
    - **2.4 GHz only**
    - **5 GHz only**
    - **6 GHz only**
    - **2.4 GHz and 5 GHz**
    - **2.4 GHz and 6 GHz**
    - **5 GHz and 6 GHz**
  - **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**.
  - **Available channels (6 GHz)** - Touch to display the **Available channels** menu. Select specific channels and touch **OK**.
- **Logging**
  - **Advanced Logging** - Touch to enable logging, enable Wi-Fi Verbose 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 version information. Touch the version to display addition version details.

Enabling Wi-Fi Direct

Wi-Fi Direct devices can connect to each other without having to go through an access point. Wi-Fi Direct devices establish their own ad-hoc network when required, letting you see which devices are available and choose which one to connect to.

1. Go to **Settings**.
2. Touch **Network & internet**.
3. Touch **Internet**.
4. Slide the **Wi-Fi** switch to the **On** position.
5. Scroll down to the bottom of the screen and touch **Network preferences** > **Wi-Fi Direct**. The device begins searching for another Wi-Fi Direct device.
6. Touch the name of the other device.
7. On the other device, select **Accept**.

Connected displays on the device. On both devices, in their respective Wi-Fi Direct screens, the other device name displays in the list.

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 needs. 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 you 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, the limited range and fast frequency hopping of the Bluetooth radios make 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.

Table 24 Bluetooth Profiles

Profile	Description
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.
Dial Up Networking (DUN)	Provides a standard to access the Internet and other dial-up services over Bluetooth.
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.
Generic Access Profile (GAP)	Use for device discovery and authentication.
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 1.6 (HFP 1.6)	Allows a mobile device to connect wirelessly to hands-free equipment, such as car kits or headsets. Its most significant upgrade is the introduction of **Wideband Audio** (also known as **HD Voice**), which drastically improves call clarity compared to older versions.
OBject EXchange (OBEX)	Facilitates the exchange of binary objects between devices.
Object Push Profile (OPP)	Allows the device to push and pull objects to and from a push server.

Table 24 Bluetooth Profiles (Continued)

Profile	Description
Out of Band (OOB) and Near Field Communication (NFC)	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.
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.
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.
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.
Symbol Serial Interface (SSI)	Allows for communication with Bluetooth Imager.

Bluetooth Power States

The Bluetooth radio is off by default.

- **Suspend** - When the device goes into Sleep mode, the Bluetooth radio stays on.
- **Airplane Mode** -
  - Android A10 OS version and previous versions - 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.
  - Android A11 OS version and versions onward - When the device is placed in Airplane Mode, the Bluetooth radio is not turned off when the device is connected to a Bluetooth headset or hearing device.
- **Airplane Mode** - When the device is placed in Airplane Mode, the Bluetooth radio is not turned off when the device is connected to a Bluetooth headset or hearing device.

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 optimal battery life, turn off radios when not in use.

Enabling Bluetooth

This section describes the method for enabling Bluetooth.

1. Swipe down from the Status bar to open the Notification panel.

2. Touch to turn Bluetooth on.

Disabling Bluetooth

This section describes the method for disabling Bluetooth.

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

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.

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 m (32.8 ft) of one another.
4. Swipe down from the Status bar to open the Quick Access panel.
5. Touch and hold **Bluetooth**.
6. Touch **Pair new device**. The device begins searching for discoverable Bluetooth devices in the area and displays them under **Available devices**.
7. Scroll through the list and select a device. The Bluetooth pairing request dialog box displays.
8. Touch **Pair** on both devices.
9. 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. Go to **Settings**.
2. Touch **Connected devices** > **Connection preferences** > **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**.

Connecting to a Bluetooth Device

Once paired, connect to a Bluetooth device.

1. Go to **Settings**.
2. Touch **Connected devices** > **Connection preferences** > **Bluetooth**.
3. In the list, touch the unconnected Bluetooth device.

   When connected, **Connected** displays below the device name.

Selecting Profiles on the Bluetooth Device

Some Bluetooth devices have multiple profiles.

1. Go to **Settings**.
2. Touch **Connected devices** > **Connection preferences** > **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.

Unpairing a Bluetooth Device

Unpairing a Bluetooth device erases all pairing information.

1. Go to **Settings**.
2. Touch **Connected devices** > **Connection preferences** > **Bluetooth**.
3. In the **Paired Devices** list, touch ⚙ next to the device name.
4. Touch **FORGET**.

Cast

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

1. Go to **Settings**.
2. Touch **Connected devices** > **Connection preferences** > **Cast**.
3. Touch ⋮ > **Enable wireless display**.

   The device searches for nearby Miracast devices and lists them.
4. Touch a device to begin casting.

Near Field Communications

NFC/HF RFID is a short-range wireless connectivity technology standard that enables a secure transaction between a reader and a contactless smart card.

The technology is based on ISO/IEC 14443 type A and B (proximity), ISO/IEC 15693 (vicinity), and FeliCa standards, using the HF 13.56 MHz unlicensed band.

NOTE: A Mobility DNA Enterprise License is required to pair and connect Zebra ring scanners.

The device supports the following operating modes:

The device supports the following operating modes:

- Read mode.

The device also supports ECP polling.

Using NFC, the device can:

- Read contactless cards, such as contactless tickets, ID cards, and ePassport.

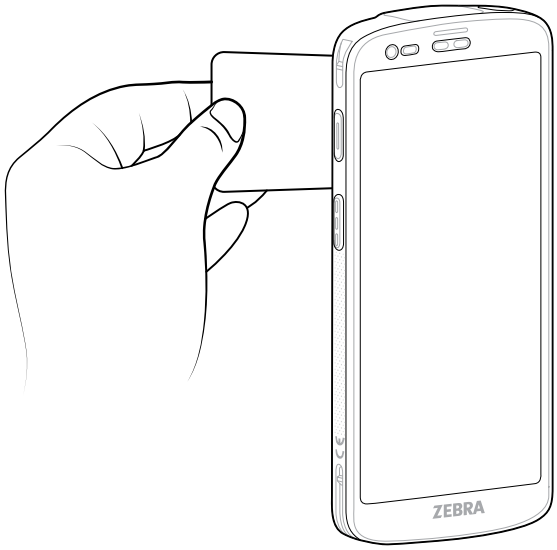
- Read and write information to contactless cards, such as SmartPosters and tickets, as well as devices with an NFC interface, such as vending machines.
- Read information from supported medical sensors.
- Pair with supported Bluetooth devices such as printers (for example, ZQ5x, ZD5x), ring scanners (for example, RS6000), and headsets (for example, HS3100).

The device's NFC antenna is positioned to read NFC cards from the top of the device while the device is being held.

Reading NFC Cards

Read contactless cards using NFC.

1. Launch an NFC-enabled application.
2. Press the NFC card against the back of the device.



3. Hold the card steadily until the transaction is complete (usually indicated by the application).

Enterprise NFC Settings

Improve NFC performance or increase battery life by selecting which NFC features to use on the device.

- **Card Detection Mode** - Select a card detection mode.
  - **Low** - Increases battery life by lowering the NFC detection speed.
  - **Hybrid** - Provides a balance between NFC detection speed and battery life (default).
  - **Standard** - Provides the best NFC detection speed, but reduces battery life (Mandatory setting for ECP Polling).
- **Supported Card Technology** - Select an option to detect only one NFC tag type, increasing battery life, but reducing detection speed.
  - **ISO 14443 Type A**
  - **ISO 14443 Type B**

    - **FeliCa**
    - **ISO15693**
- **NFC Debug Logging** - Use to enable or disable debug logging for NFC.
- **Other NFC settings available with Zebra administrator tools (CSP):**
    - **Communication speed for Type A and Type B cards and ISO 14443-4 cards** - Higher rate improves transaction speed.
    - **NDEF Support** - Improves card detection speed for non-NDEF cards.
    - **CPU Speed** - Boosts CPU speed during short NFC transactions, improves transaction speed.
    - **Card Emulation** - Enables workaround for Card Emulation interoperability issues.
    - **Reset to Factory Defaults** - Default settings are reset to factory defaults.

Calls

Make a phone call from the Phone app, the Contacts app, or other apps or widgets that display contact information.

NOTE: This section applies to WWAN devices only.

Emergency Calling

The service provider programs one or more emergency phone numbers, such as 911 or 999, that you can call at any time, even when the phone is locked, a SIM card is not inserted, or the phone is not activated. The service provider can program additional emergency numbers into the SIM card. However, the SIM card must be inserted into the device to use the numbers stored on it. Talk to the service provider for additional information.

NOTE: Emergency numbers vary by country. The phone's pre-programmed emergency number(s) may not work in all locations, and sometimes an emergency call cannot be placed due to network, environmental, or interference issues.

Audio Modes

The device offers three audio modes for use during phone calls.

- Handset Mode - Switch audio to the receiver at the top front of the device to use the device as a handset. This is the default mode.
- Speaker Mode - Use the device as a speakerphone.
- Headset Mode - Connect a Bluetooth or wired headset to automatically switch audio to the headset.

Bluetooth Headset

Use a Bluetooth headset for audio communication when using an audio-enabled app.

Set the volume appropriately before putting on the headset. When a Bluetooth headset is connected, the speakerphone is muted.

Adjusting Audio Volume

Use the volume buttons to adjust the phone volume.

- Ring and notification volumes when not in a call.
- Conversation volume during a call.

Making a Call Using the Dialer

Use the dialer tab to dial phone numbers.

1. On the Home screen touch .
2. Touch .
3. Touch the keys to enter the phone number.
4. Touch below the dialer to initiate the call.

Option	Description
	Send audio to the speakerphone.
	Mute the call.
	Display the dial pad.
	Place the call on hold (not available on all services).
	Create a conference call.
	Increase audio level.

5. Touch to end the call.

If using a Bluetooth headset, additional audio options are available. Touch the audio icon to open the audio menu.

Option	Description
	Audio is routed to the Bluetooth headset.
	Audio is routed to the speakerphone.
	Audio is routed to the earpiece.

Accessing Dialing Options

The dialer provides options to save the dialed number to contacts, send an SMS, or insert pauses and wait into the dial string.

- Enter at least one digit in the dialer, then touch .
  - **Add 2–sec pause** - Pause the dialing of the next number for two seconds. Multiple pauses are added sequentially.
  - **Add wait** - Wait for confirmation to send the rest of the digits.

Make a Call Using Contacts

There are two ways to make a call using contacts, using the Dialer or using the Contacts app.

Using the Dialer

Use the dialer tab to dial phone numbers.

1. On the Home screen touch .
2. Touch .
3. Touch the contact.
4. Touch to initiate the call.

Option	Description
	Send audio to the speakerphone.
	Mute the call.
	Display the dial pad.
	Place the call on hold (not available on all services).
	Create a conference call.
	Increase audio level.

5. Touch to end the call.

   If using a Bluetooth headset, additional audio options are available. Touch the audio icon to open the audio menu.

Option	Description
	Audio is routed to the Bluetooth headset.
	Audio is routed to the speakerphone.
	Audio is routed to the earpiece.

Using the Contacts App

This section describes the method for using the contacts app.

1. Touch .
2. Touch a contact name.
3. Touch to initiate the call.

Make a Call Using Call History

Call History is a list of all the calls placed, received, or missed. It provides a convenient way to redial a number, return a call, or add a number to Contacts.

Arrow icons beside a call indicate the type of call. Multiple arrows indicate multiple calls.

Table 25 Call Type Indicators

Icon	Description
	Missed incoming call
	Received incoming call
	Outgoing call

Using the Call History List

This section describes using the call history list to make a call.

1. On the Home screen touch .
2. Touch the tab.
3. Touch next to the contact to initiate the call.
4. Touch the contact to perform other functions.
5. Touch to end the call.

Making a Conference Call on GSM

Create a conference phone session with multiple people.

NOTE: Conference Calling and the number of conference calls allowed may not be available on all services. Please check with the service provider for Conference Calling availability.

1. On the Home screen touch .
2. Touch .
3. Touch the keys to enter the phone number.
4. Touch below the dialer to initiate the call.
5. When the call connects, touch .

   The first call is placed on hold.
6. Touch .
7. Touch the keys to enter the second phone number.
8. Touch below the dialer to initiate the call.

When the call connects, the first call is placed on hold and the second call is active.

9. Touch to create a conference call with three people.
10. Touch to add another call.

    The conference is placed on hold.
11. Touch .
12. Touch the keys to enter another phone number.
13. Touch below the dialer to initiate the call.
14. Touch icon to add the third call to the conference.
15. Touch **Manage conference call** to view all callers.

	Remove a caller from the conference.
	Speak privately with one party during a conference call.
	Include all parties again.

Making a Call Using a Bluetooth Headset

This section describes the method for making a call using a Bluetooth headset.

1. Pair the Bluetooth headset with the device.
2. Press the Call button on the Bluetooth headset.
3. Press the Call button on the Bluetooth headset to end the call.

Answering Calls

When receiving a phone call, the **Incoming Call** screen displays the caller ID and any additional information about the caller that is in the **Contacts** app.

NOTE: Not all options are available for all configurations.

To modify phone call settings, on the Home screen touch > > **Settings**.

- Touch **ANSWER** to answer the call or **DECLINE** to send the caller to voice mail.

  If the screen lock is enabled, the user can answer the call without unlocking the device.
- When a call arrives:
  - Touch and slide up to answer the call.
  - Touch and slide down to send the call to voice mail.
  - Touch to open a list of quick text responses. Touch one to send it to the caller immediately.

  When the calls ends, the device remains locked.

  If using a Bluetooth headset when a call arrives, touch the Call button on the Bluetooth headset to answer the call. To end the call press the headset Call button.

All incoming calls are recorded in the Phone app Call log tab. If you miss a call, you receive a notification. To silence the ringer before answering the call, press the volume down button on the side of device.

Call Settings

To modify phone call settings, on the Home screen touch > > **Settings**.

NOTE: Not all options are available for all configurations.

Assistive

- **Caller ID & spam**
  - **See caller and spam ID** - Enable to identify business and spam numbers.
  - **Filter spam calls** - Enable to prevent suspected spam calls from disturbing you.
  - **Verified calls** - Enable to see the caller ID and reason for incoming calls from businesses.

Assistive

- **Caller ID & spam**
  - **See caller and spam ID** - Enable to identify business and spam numbers.
    - **Filter spam calls** - Enable to prevent suspected spam calls from disturbing you.
    - **Verified calls** - Enable to see the caller ID and reason for incoming calls from businesses.

General

- **Accessibility**
  - **TTY mode** - Touch to set the TTY setting. Use an optional teletypewriter (TTY) with the device to send and receive calls. Plug the TTY into the device headset jack and set the device to operate in one of the TTY modes.

    NOTE: Use a TSB-121 compliant cable (provided by the TTY manufacturer) to connect the TTY to the device.

    Set the device volume to a middle level setting for proper operation. If you experience a high number of incorrect characters, adjust the volume as needed to minimize the error rate.

    For optimal performance, the device should be at least 30 cm (12 inches) from the TTY. Placing the device too close to the TTY may cause high error rates.

    - **TTY off** - TTY is off (default)
    - **TTY Full** - Transmit and receive TTY characters
    - **TTY HCO** - Transmit TTY characters, but receive by listening to earpiece
    - **TTY VCO** - Receive TTY characters, but transmit by speaking into microphone.
  - **Hearing aids** - Select to enable hearing air compatibility.
  - **RTT settings** - Configure Real-time text (RTT) settings.
    - **Real-time text (RTT) call** - Select to allow messaging during a call.

    - **Set RTT visibility** - Set to Visible during calls (default) or Always visible.
- **Assisted dialing** - Enable to predict and add a country code when calling while traveling abroad.
- **Default home country** - Automatically detected.
- **Blocked numbers** - Set to block calls and texts from certain phone numbers. Touch ADD A NUMBER to block a phone number.
- **Blocked numbers** - Set to block calls and texts from certain phone numbers.
    - **Unknown** - Block calls from unidentified callers.
    - **Add a number** - Block a specific phone number.
- **Calling accounts**
    - **Settings** - Touch a mobile provider to display options for that provider.
        - **Smart-Divert** - Set to enable call diversion (forwarding) with remote control which allows controlling the diversion functionality remotely.

          NOTE: Smart-Divert may not be available on all networks. Check with the service provider for availability.
    - **Make & receive calls** - Enable **Vibrating for outgoing call accepted** to enable vibrating mode when an outgoing call is accepted.
    - **SIP settings** - Touch a mobile provider to display options for that provider.
        - **SIP accounts** - Choose to receive Internet calls for accounts added to the device, view or change SIP accounts, or add an Internet calling account.
        - **Use SIP calling** - Set to **For all calls** or **Only for SIP calls** (default).
        - **Receive incoming calls** - Enable to allow incoming calls (default - disabled).
- **Display options**
    - **Sort by** - Set to **First name** or **Last name**.
    - **Name format** - Set to **First name first** or **Last name first**.
    - **Choose theme** - Set to **Light**, **Dark**, or **System default**.
- **Nearby places** - Enable to use your location to find nearby places matching a query, even if not in contacts.
    - **Personalized search results** - Enable to improve search results by including items in search history.
    - **Location permission is denied** - Enable to require location permission to conduct a nearby places search.
- **Quick responses** - Touch to edit quick responses to use instead of answering a call.
- **Sounds and vibration** - Touch to edit the general sound settings for the device.
- **Speed dial settings** - Set speed dial contact shortcuts.
- **Voicemail** - Configure voicemail settings.
    - **Notifications** - Configure voicemail notification settings.
        - **Show notifications** - Touch to receive sound and vibration notifications when a voicemail is received. Use toggle switches to enable or disable Pop on screen, Vibration, Blink light, Show notification dot, and Override Do Not Disturb.

- **Default** - Touch to receive sound and vibration notifications when a voicemail is received based on phone settings.
- **Silent** - Touch to silence sound and vibration notifications when a voicemail is received.
- **Pop on screen** - Enable to show notifications as a banner across the top of the screen when the device is unlocked.
- **Advanced** - Touch to display the following items.
  - **Sound** - Select a sound to play for notifications from this app.
  - **Vibration** - Allow notifications from this app to vibrate the device.
  - **Blink light** - Allow notifications from this app the light the Notification LED blue.
  - **Show notification dot** - Allow notifications from this app to add a notification dot to the app icon.
  - **Override Do Not Disturb** - Allow these notifications to interrupt when Do Not Disturb is enabled.
- **Advanced Settings**
  - **Service** - Set the service provider or other provider for voicemail service.
  - **Setup** - Select to update the phone number used to access voicemail.

Advanced

- **Caller ID announcement** - Set to **Always**, **Only when using a headset**, or **Never** to read the caller's name and number out loud for incoming calls.
- **Flip To Silence** - Enable to silence an incoming call by placing the phone face down on a flat surface.

Accessories

This section provides information on using the accessories for the device. The following table lists the accessories available for the device.

Accessory	Part Number	Description
ShareCradle		
1-Slot Charging ShareCradle for Device without Rugged Boot and Spare Battery	CRD-TC1A-1D1B	Provides device charging and charging for a spare battery. Requires USB-C cable (CBL-EC5X-USBC3A-01), and a country-specific 45W adapter (PWR-WUA5V45W1XX).
1-Slot Charging ShareCradle for Device with Rugged Boot and Spare Battery	CRD-TC1AB-1D1B	Provides device charging and charging for a spare battery. Requires USB-C cable (CBL-EC5X-USBC3A-01), and a country-specific 45W adapter (PWR-WUA5V45W1XX).
Batteries and Chargers		
Standard Capacity Battery	BTRY-TC2L-2XMAXX-01	TC101 Standard Capacity Battery with PowerPrecision Plus. Premium-grade battery cells with longer lifecycle.
Extended Capacity Battery	BTRY-TC2L-3XMAXX-01	TC101 Extended Capacity Battery with PowerPrecision Plus. Premium-grade battery cells with longer lifecycle.
4-Slot Battery Charger	SAC-TCVT-4B	Charges up to four battery packs. Requires USB-C cable (CBL-EC5X-USBC3A-01), and a country-specific 45W adapter (PWR-WUA5V45W1XX).
Charge and Communication Cables		
USB-C Communication and Charge Cable	CBL-EC5X-USBC3A-01	USB-C to USB-C Communications and Charging Cable, 1M Long, Support 3.0 speed and fast charge.
Audio Accessories		
Wired Headset	HDST-USBC-PTT1-01	PTT headset with USB-C connector; 1-piece solution. For Push-To-Talk (PTT) applications with volume and PTT buttons. Mono headset with a microphone.
Wired Headset	HDST-35MM-PTVP-02	PTT headset with VoIP telephony; 3.5 mm standard jack. For Push-To-Talk (PTT) applications with volume and PTT buttons. Mono headset with a microphone. Require adapter (ADP-USBC-35MM1-01).

Accessory	Part Number	Description
Miscellaneous		
Hand Strap	SG-TC2L-HSTRP1-01	TC101 Hand Strap. Attaches directly to the device.
Rugged Boot	SG-TCVT-BOOT-01	Increases drop specification of device to 6 feet to concrete.
Screen Protector	SG-TCVT-SCRNPT-01	TC101 Screen protector - Tempered glass. Includes alcohol wipes, cleaning cloth, and installation instructions.
Soft Holster	SG-TC2L-HLSTR1-01	TC101 Soft Holster. Vertical orientation with open bucket design to accommodate optional trigger handle and/or hand strap.
Power Supplies		
Power Supply (US)	PWR-WUA5V45W1US	USB Type-C power supply adaptor with a United States plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (EU)	PWR-WUA5V45W1EU	USB Type-C power supply adaptor with European Union plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (UK)	PWR-WUA5V45W1GB	USB Type-C power supply adaptor with a United Kingdom plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (Australia)	PWR-WUA5V45W1AU	USB Type-C power supply adaptor with Australia plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (China)	PWR-WUA5V45W1CN	USB Type-C power supply adaptor with China plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (Korea)	PWR-WUA5V45W1KR	USB Type-C power supply adaptor with Korea plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (India)	PWR-WUA5V45W1IN	USB Type-C power supply adaptor with India plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (Argentina)	PWR-WUA5V45W1AR	USB Type-C power supply adaptor with Argentina plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).
Power Supply (Brazil)	PWR-WUA5V45W1BR	USB Type-C power supply adaptor with Brazil plug. Sold separately. Used with USB-C Cable (CBL-EC5X-USBC3A-01).

Main Battery Charging

Before using the device for the first time, charge the main battery until the green Charging/Notification light-emitting diode (LED) remains lit. Use a cable or a cradle with the appropriate power supply to charge the device.

The following batteries are available:

- Standard 3,800 mAh PowerPrecision LI-ON Battery - part number: BTRY-TC2L-2XMAXX-01

- Extended 5,200 mAh PowerPrecision LI-ON Battery - part number: BTRY-TC2L-3XMAXX-01

  The device's Charging/Notification LED indicates the battery charging status in the device. The standard battery charges from fully depleted to 90% in under three hours. Charging details are as follows:

  - **Standard Battery:** Reaches 90% charge in approximately 3 hours.
  - **Extended Battery:** Reaches 90% charge in approximately 4 hours.

  NOTE: Charge batteries at room temperature with the device in Sleep mode.

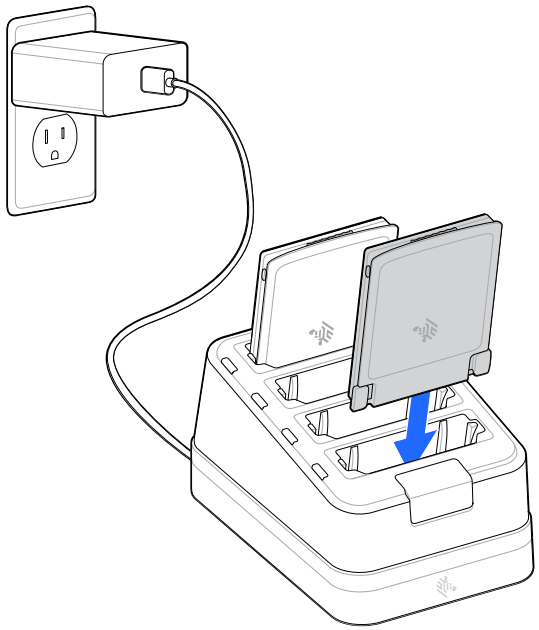
Table 26 Charging/Notification LED Charging Indicators

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.
Slow Blinking Amber (1 blink every four seconds)	Device is charging.
Slow Blinking Red (1 blink every four seconds)	Device is charging, but the battery is at the end of its useful life.
Solid Green	Charging complete.
Solid Red	Device is either charging or fully charged, but the battery is at end of useful life.
Fast Blinking Amber (two blinks/ second)	Charging error, for example: • Temperature is too low or too high. • Charging has gone on too long without completion (typically eight hours).
Fast Blinking Red (two blinks/second)	Charging error but the battery is at the end of its useful life, for example: • Temperature is too low or too high. • Charging has gone on too long without completion (typically eight hours).

Charging the Spare Battery

This section provides information on charging a spare battery. Use only Zebra charging accessories and batteries to achieve optimal charging results.

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



2. Ensure the battery is seated properly.

   The battery charges from fully depleted to 90% in approximately 4 hours. In many cases, the 90% charge provides enough for daily use. Depending on the usage profile, a full 100% charge may last approximately 14 hours.

Charging Temperature

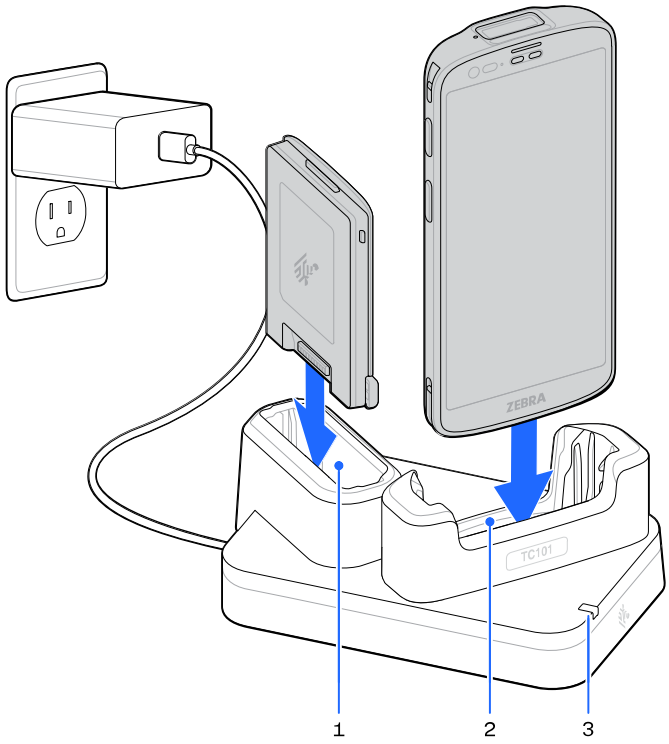
Charge batteries in temperatures from 5°C to 40°C (41°F to 104°F). The device or cradle always performs battery charging in a safe and intelligent manner. At higher temperatures (for example, approximately 37°C (98°F)), the device or cradle may, for short periods, alternately enable and disable battery charging to keep the battery at acceptable temperatures. The device and cradle indicate when charging is disabled due to abnormal temperatures via its LED.

1-Slot Charging ShareCradle for Device without Rugged Boot and Spare Battery

This section shows the 1-Slot Charging ShareCradle for Device without Rugged Boot and Spare Battery, which provides charging for a single device and a spare battery.

CAUTION: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 156.

Figure 23 1-Slot Charging ShareCradle for Device without Rugged Boot and Spare Battery

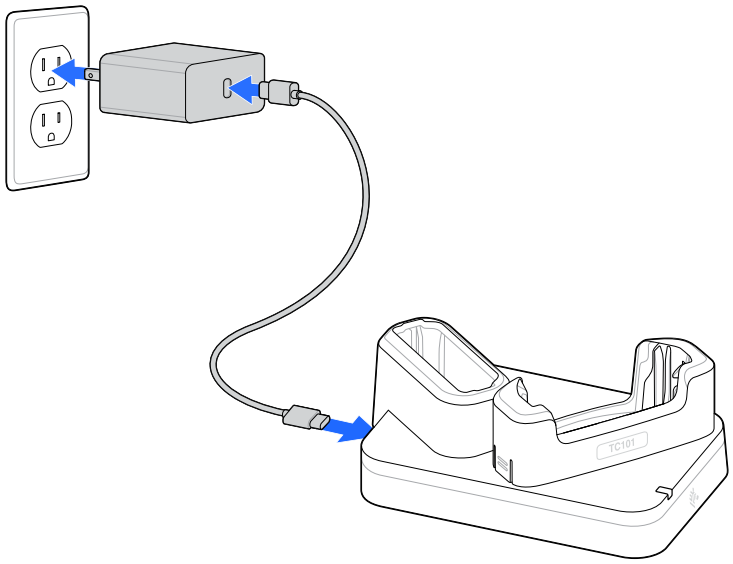


1	Spare Battery Slot
2	Device Slot
3	Spare Battery Charging LED

NOTE: Insert the device and battery properly in the slot to charge it.

Setting Up the 1-Slot Charging ShareCradle for Device without Rugged Boot and Spare Battery

This section demonstrates how to set up the 1-Slot Charging ShareCradle for Device without Rugged Boot and Spare Battery.

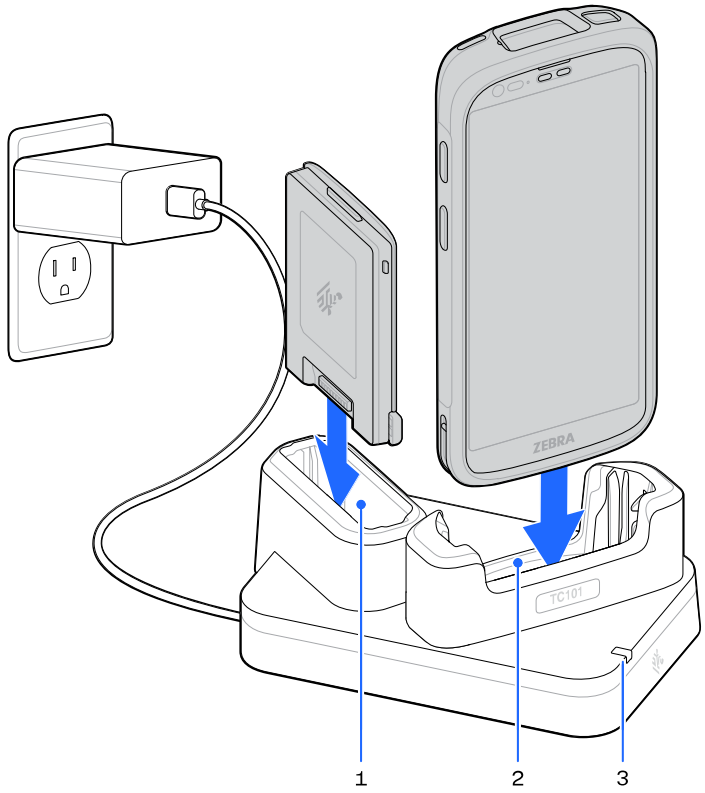


1-Slot Charging ShareCradle for Device with Rugged Boot and Spare Battery

This section shows the 1-Slot Charging ShareCradle for Device with Rugged Boot and Spare Battery, which provides charging for a single device equipped with a rugged boot and a spare battery.

CAUTION: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 156.

Figure 24 1-Slot Charging ShareCradle for Device with Rugged Boot and Spare Battery

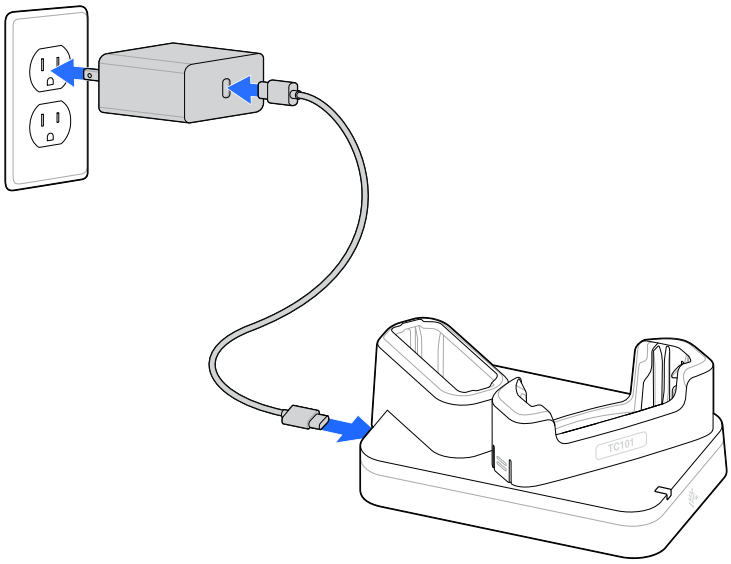


1	Spare Battery Slot
2	Device Slot
3	Spare Battery Charging LED

NOTE: Insert the device and battery properly in the slot to charge it.

Setting Up the 1-Slot Charging ShareCradle for Device with Rugged Boot and Spare Battery

This section demonstrates how to set up the 1-Slot Charging ShareCradle for 1-Slot Charging ShareCradle for Device with Rugged Boot and Spare Battery.

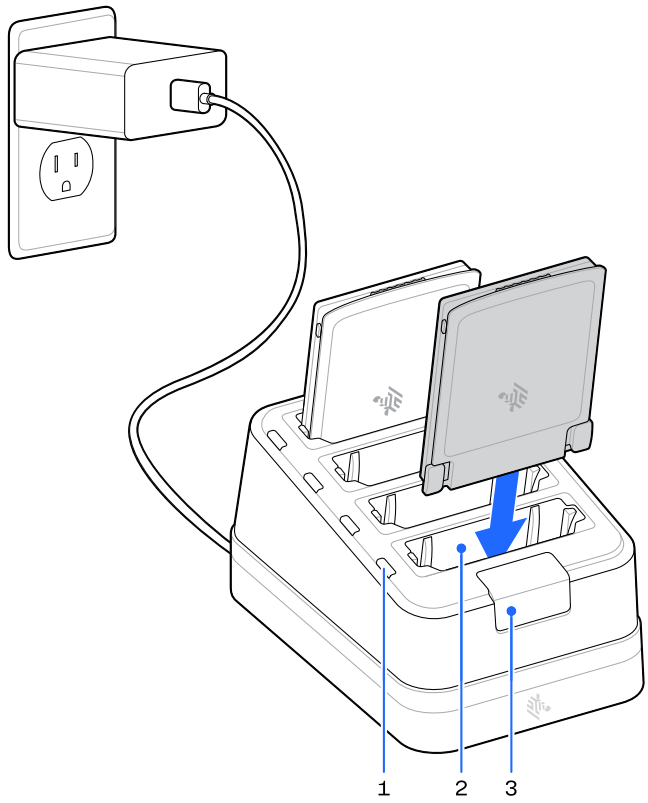


4-Slot Battery Charger

This section shows the 4-Slot Battery Charger, which provides charging for up to four device batteries, often in less than four hours, while preventing overcharging.

CAUTION: Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 156.

Figure 25 4-Slot Battery Charger

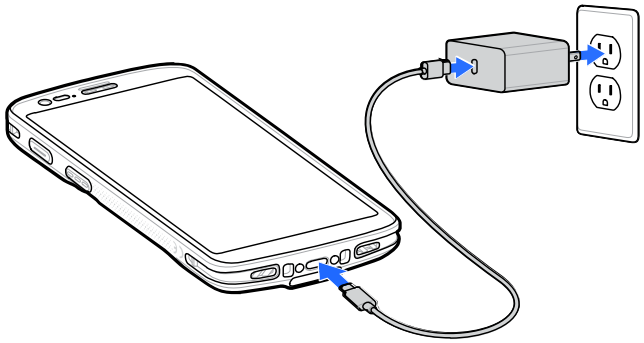


1	Battery Charging LED
2	Battery Slot
3	Firmware Update Port

NOTE: Insert the battery properly in the slot to charge it.

Charge/USB-C Cable

This section shows the Charge/USB-C Cable, which provides charging for the device's battery and facilitates data transfer between the device and a host computer.

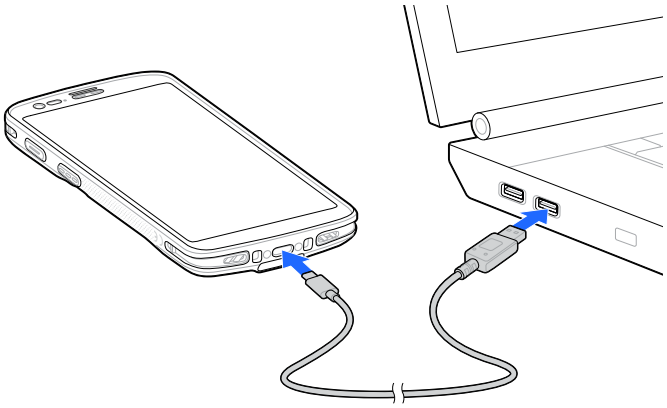


USB to a Host Computer

Establish a direct USB connection between the mobile computer and a host computer to facilitate file transfers, application development, and device management.

Use a direct USB connection to transfer files and data between the device and a host computer. This connection is essential for various tasks, including deploying applications using Android Debug Bridge (ADB), accessing the device's internal storage, and troubleshooting. The USB connection also simultaneously charges the device's main battery.

1. Connect the Charge/USB-C Cable to the device.
2. Connect the USB connector of the cable to a host computer.



Charging the Device

Use only Zebra charging accessories and batteries to achieve optimal charging results. Charge batteries at room temperature with the device in Sleep mode.

The device goes into Sleep mode when you press Power or after a period of inactivity.

A battery charges from fully depleted to 90% in approximately 3 hours. In many cases, a 90% charge provides enough charge for daily use. Depending on the usage profile, a full 100% charge may last for approximately 14 hours of use.

The device or accessory always performs battery charging in a safe and intelligent manner and indicates when charging is disabled due to abnormal temperatures via its LED, and a notification appears on the device display.

The ambient charging temperature is 5°C to 40°C (41°F to 104°F).

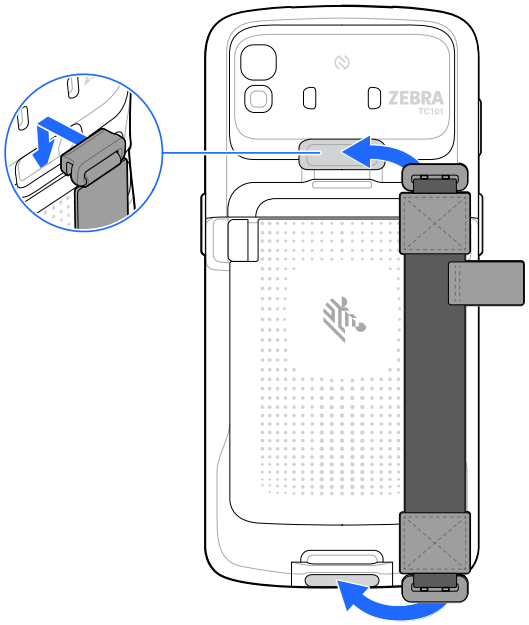
Hand Strap

Attach the Basic Hand Strap to the device for improved handling.

Attaching the Hand Strap

This section describes the method for attaching the hand strap.

Clip the hand strap onto the device's accessory attachment points.

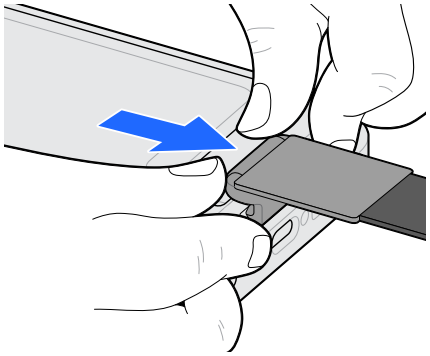


Removing the Hand Strap

This section describes the method for removing the hand strap.

1. Place your thumb on the top of the hand strap (below the top clip) and index finger underneath the top of the hand strap, and pull the top clip up and off the hand strap bar.

2. Remove the bottom clip by placing both thumbs on the clip and pushing down to unclip.



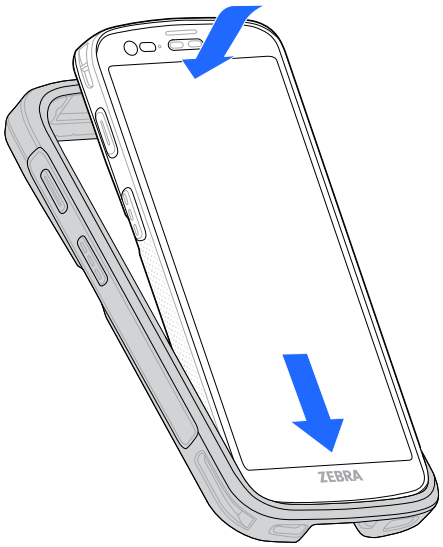
Rugged Boot

The Rugged Boot provides additional protection for the device.

Installing the Rugged Boot

This section describes the method for installing the rugged boot.

1. Insert the bottom of the device into the bottom of the boot.
2. Lift the top of the Rugged Boot over the top of the device.



3. Insert the bottom of the device with the rubber insert into the bottom of the plastic shell.
4. Push the top of the device with the rubber insert into the top of the plastic shell.

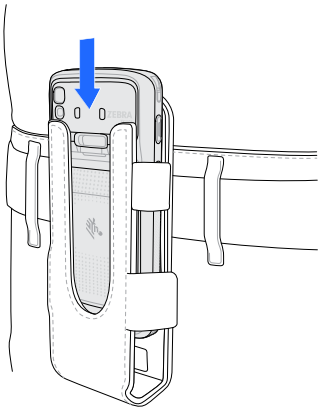
Soft Holster

Use the soft holster to securely hold the device on a belt for easy access. The holster has an adjustable belt for securing the device.

Adjusting the Holster

The holster has an adjustable belt that securely holds the device. Pull the belt tight to secure the device. Loosen the belt for a device with an extended battery.

- Insert the device into the holster with the device exit window facing up and the display against the body.

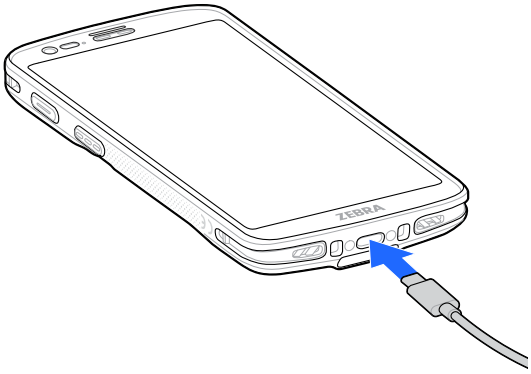


3.5 mm Audio Adapter

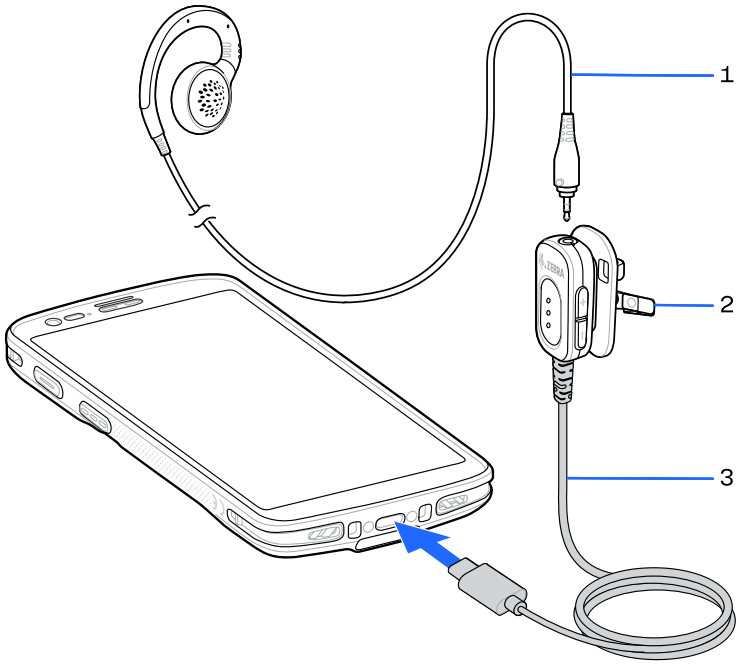
The 3.5 mm Audio Adapter connects a wired headset with a collared or standard non-collared 3.5 mm plug.

If using the 3.5 mm Audio Adapter with a mono headset (for example, HS2100), then audio only plays in the left channel. To combine the channels when playing audio, go to **Settings** > **Accessibility** and select **Mono audio**.

1. Connect the USB-C plug of the 3.5 mm Audio Adapter to the USB connector on the bottom of the device.



2. Connect the 3.5 mm connector plug of the headset into the 3.5 mm Audio Adapter.



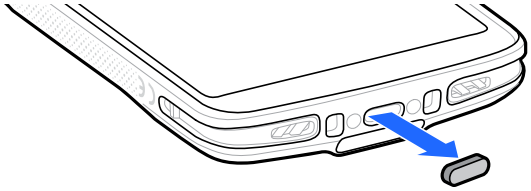
1	3.5 mm Wired Headset
2	Clip
3	3.5 mm Audio Adapter

3. Use the clip to secure the adapter to clothing.

Accessing the USB-C Connector

Remove this cover to access the USB-C connector.

1. Gently remove the USB-C cover using a small flathead screwdriver.



2. When finished using the USB-C connector, make sure to replace the USB-C cover to ensure proper device sealing.

Application Deployment

This section provides steps on device security, app development, and app management. It also provides instructions for installing apps and updating the device software.

NOTE: Ensure that the date is set correctly before installing certificates or when accessing secure websites.

Android Security

The device implements a set of security policies that determine whether an application is allowed to run and, if allowed, with what level of trust. To develop an application, you must know the security configuration of the device and how to sign an application with the appropriate certificate to allow the application to run (and to run with the needed level of trust).

NOTE: Ensure the date is set correctly before installing certificates or when accessing secure websites.

Secure Certificates

If the VPN or Wi-Fi networks rely on secure certificates, obtain the certificates and store them in the device's secure credential storage before configuring access to the VPN or Wi-Fi networks.

If downloading the certificates from a website, set a password for the credential storage. The device supports X.509 certificates saved in PKCS#12 key store files with a .p12 extension (if key store has a .pfx or other extension, change to .p12).

The device also installs any accompanying private key or certificate authority certificates contained in the key store.

Installing a Secure Certificate

If required by the VPN or Wi-Fi network, install a secure certificate on the device.

1. Copy the certificate from the host computer to the root of the microSD card or the device's internal memory.
2. Go to **Settings**.
3. Touch **Security** > **More security settings** > **Encryption & credentials**.
4. Touch **Install a certificate**.
5. Select the Credential type, **CA certificate**, **VPN and app user certificate**, or **Wi-Fi certificate**.

6. Navigate to the location of the certificate file.
7. Touch the filename of the certificate to install.
8. If prompted, enter the password for credential storage. If a password has not been set for the credential storage, enter a password for it twice, and then touch **OK**.
9. Touch **OK**.

The certificate can now be used when connecting to a secure network. The certificate is deleted from the microSD card or internal memory for security.

Configuring Credential Storage Settings

Configure credential storage from the device settings.

1. Go to **Settings**.
2. Touch **Security** > **Encryption & credentials**.
3. Select an option.
   - Touch **Trusted credentials** to display the trusted system and user credentials.
   - Touch **User credentials** to display user credentials.
   - Touch **Install a certificate** to install a secure certificate from the microSD card or internal storage.
   - Touch **Clear credentials** to delete all secure certificates and related credentials.

Android Development Tools

Development tools for Android include Android Studio, EMDK for Android, and StageNow.

Android Development Workstation

Android development tools are available at developer.android.com.

To start developing applications for the device, download Android Studio. Development can take place on a Microsoft® Windows®, Mac® OS X®, or Linux® operating system.

Applications are written in Java or Kotlin, but compiled and executed in the Dalvik virtual machine. After the Java code is compiled cleanly, the developer tools make sure the application is packaged properly, including the AndroidManifest.xml file.

Android Studio contains a full featured IDE as well as SDK components required to develop Android applications.

Enabling Developer Options

The **Developer options** screen sets development-related settings. By default, the Developer Options are hidden.

1. Go to **Settings**.
2. Touch **About phone**.
3. Scroll down to **Build number**.
4. Tap **Build number** seven times.

The message **You are now a developer!** appears.

5. Touch **Back**.
6. Touch **System** > **Developer Options**.
7. Slide the **USB debugging** switch to the on position.

EMDK for Android

EMDK for Android provides developers with tools to create business applications for enterprise mobile devices. It is designed for use with Google's Android Studio and includes Android class libraries such as Barcode, sample applications with source code, and the associated documentation.

EMDK for Android allows applications to take full advantage of the capabilities that Zebra devices have to offer. It embeds Profile Manager technology within Android Studio IDE, providing a GUI-based development tool designed specifically for Zebra devices. This allows fewer lines of code, resulting in reduced development time, effort, and errors.

For more information, go to techdocs.zebra.com/emdk-for-android/about/.

StageNow for Android

StageNow is Zebra's next-generation Android Staging Solution built on the MX platform. It allows quick and easy creation of device profiles and can deploy to devices simply by scanning a barcode or reading a tag.

The StageNow Staging Solution includes the following components:

- The StageNow Workstation tool installs on the staging workstation (host computer) and lets the administrator easily create staging profiles for configuring device components, and perform other staging actions such as checking the condition of a target device to determine suitability for software upgrades or other activities. The StageNow Workstation stores profiles and other created content for later use.
- The StageNow Client resides on the device and provides a user interface for the staging operator to initiate staging. The operator uses one or more of the desired staging methods (print and scan a barcode or read an NFC tag) to deliver staging material to the device.

For more information, go to techdocs.zebra.com/stagenow/.

GMS Restricted

GMS Restricted mode deactivates Google Mobile Services (GMS). All GMS apps are disabled on the device and communication with Google (analytics data collection and location services) is disabled.

Use StageNow to disable or enable GMS Restricted mode. After a device is in GMS Restricted mode, enable and disable individual GMS apps and services using StageNow. To ensure GMS Restricted mode persists after an Enterprise Reset, use the Persist Manager option in StageNow.

For more information, go to techdocs.zebra.com/gmsmgr/.

ADB USB Setup

To use the Android Debug Bridge (ADB), install the development SDK on the host computer then install the ADB and USB drivers.

Before installing the USB driver, make sure that the development SDK is installed on the host computer. Go to developer.android.com/sdk/index.html for details on setting up the development SDK.

The ADB and USB drivers for Windows and Linux are available on the Zebra Support Central website at zebra.com/support. Download the ADB and USB Driver Setup package. Follow the instructions with the package to install the ADB and USB drivers for Windows and Linux.

Enabling USB Debugging

By default, USB debugging is disabled.

1. Go to **Settings**.
2. Touch **About phone**.
3. Scroll down to **Build number**.
4. Tap **Build number** seven times.

   The message **You are now a developer!** displays.
5. Touch **Back**.
6. Touch **System** > **Developer options** .
7. Slide the **USB debugging** switch to the **ON** position.
8. Touch **OK**.
9. Connect the device to the host computer using the Rugged Charge/USB Cable.

   The **Allow USB debugging?** dialog box appears on the device.

   If the device and host computer are connected for the first time, the **Allow USB debugging?** dialog box with the **Always allow from this computer** check box displays. Select the check box, if required.
10. Touch **OK**.
11. On the host computer, navigate to the **platform-tools** folder and open a command prompt window.
12. Type `adb devices`.

    The following displays:

```
List of devices attached          XXXXXXXXXXXXXXX device
```

Where XXXXXXXXXXXXXXX is the device number.

NOTE: If device number does not appear, ensure that ADB drivers are installed properly.

Entering Android Recovery Manually

Many of the update methods discussed in this section require putting the device into Android Recovery mode. If you are unable to enter Android Recovery mode through adb commands, use the following steps to manually enter Android Recovery mode.

1. Press and hold the Power button until the menu displays.
2. Touch **Restart**.
3. Press and hold the PTT button until the device vibrates.

   The System Recovery screen displays.

Application Installation Methods

After an application is developed, install the application onto the device using one of the supported methods.

- USB connection
- Android Debug Bridge
- microSD Card
- Mobile device management (MDM) platforms that have application provisioning. Refer to the MDM software documentation for details.

Installing Applications Using the USB Connection

Use the USB connection to install applications onto the device.

CAUTION: When connecting the device to a host computer and mounting the microSD card, follow the host computer's instructions for connecting and disconnecting USB devices, to avoid damaging or corrupting files.

NOTE: This method is not recommended due to limited Internal Storage.

1. Connect the device to a host computer using the USB-C cable.
2. On the device, pull down the Notification panel and touch **Charging this device via USB**.

   By default, **No data transfer** is selected.
3. Touch **File Transfer**.
4. On the host computer, open a file explorer application.
5. On the host computer, copy the application APK file from the host computer to the device.
6. Disconnect the device from the host computer.
7. Swipe the screen up and select to view files on the Internal Storage.
8. Locate the application APK file.
9. Touch the application file.
10. Touch **Continue** to install the app or **Cancel** to stop the installation.
11. To confirm installation and accept what the application affects, touch **Install**. Otherwise, touch **Cancel**.

12. Touch **Open** to open the application or **Done** to exit the installation process.

    The application displays in the App list.

Installing Applications Using the Android Debug Bridge

Use ADB commands to install applications onto the device.

1. Ensure that the ADB drivers are installed on the host computer.
2. Connect the device to a host computer using a USB cable.
3. Go to **Settings**.
4. Touch **System** > **Developer options**.
5. Touch the **USB debugging** toggle to enable it.

   The **Allow USB debugging?** message appears.
6. Touch **OK**.
7. On the host computer, navigate to the **platform-tools** folder and open a command prompt window.
8. Type `adb install <application>`.

   where: <application> = the path and filename of the apk file.
9. Disconnect the device from the host computer.

Installing Applications Using Wireless ADB

Use ADB commands to install an application onto the device.

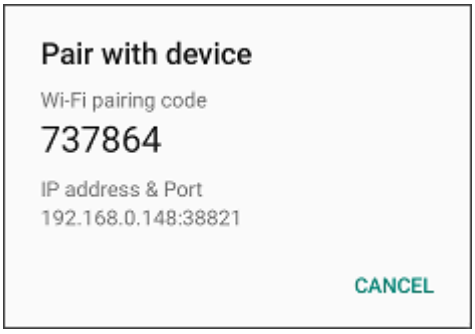
Go to the Zebra Support & Downloads web site at zebra.com/support and download the appropriate file to a host computer.

IMPORTANT: Note the following:

- Ensure that the latest adb files are installed on the host computer.
- The device and the host computer must be on the same wireless network.

1. Go to **Settings**.
2. Touch **System** > **Developer options**.
3. Slide the **USB debugging** switch to the **ON** position.
4. Slide the **Wireless debugging** switch to the **ON** position.
5. If the device and host computer are connected for the first time, the **Allow wireless debugging on this network?** dialog box with the **Always allow from this network** check box displays. Select the check box, if required.
6. Touch **ALLOW**.
7. Touch **Wireless debugging**.
8. Touch **Pair with pairing code**.

   The **Pair with device** dialog box displays.



9. On the host computer, navigate to the **platform-tools** folder and open a command prompt window.
10. Type `adb pair XX.XX.XX.XX.XXXXX`.

    where XX.XX.XX.XX:XXXXX is the IP address and port number from the **Pair with device** dialog box.
11. Type:`adb connect XX.XX.XX.XX.XXXXX`
12. Press **Enter**.
13. Type the pairing code from the **Pair with device** dialog box.
14. Press **Enter**.
15. Type `adb connect`.

    The device is now connected to the host computer.
16. Type `adb devices`.

    The following displays:

```
List of devices attached          XXXXXXXXXXXXXXX device
```

    Where XXXXXXXXXXXXXXX is the device number.

    NOTE: If device number does not appear, ensure that ADB drivers are installed properly.
17. On the host computer command prompt window type:

```
adb install <application>
```

18. On the host computer, type:

    `adb disconnect`.

Installing Applications Using a microSD Card

Use a microSD card to install applications on your device.

CAUTION—PRODUCT DAMAGE: When connecting the device to a host computer and mounting the microSD card, follow the host computer's instructions for connecting and disconnecting USB devices, to avoid damaging or corrupting files.

1. Copy the APK file to the root of the microSD card.
   - Copy the APK file to a microSD card using a host computer (see USB Communication for more information), and then install the microSD card into the device (see Replacing the microSD Card for more information).
   - Connect the device with a microSD card already installed to the host computer, and copy the .apk file to the microSD card. See USB Communication for more information. Disconnect the device from the host computer.
2. Connect the device to a host computer using USB.
3. Copy the application APK file from the host computer to the microSD card.
4. Remove the microSD card from the host computer.
5. Press and hold the Power button on the device until the menu displays.
6. Touch **Power off**.
7. Remove the card holder.
8. Insert the microSD card into the card holder.
9. Replace the card holder.
10. Press and hold **Power** to turn on the device.
11. Swipe the screen up and select to view files on the microSD card.
12. Touch **SD card**.
13. Locate the application APK file.
14. Touch the application file.
15. Touch **Continue** to install the app or **Cancel** to stop the installation.
16. To confirm installation and accept what the application affects, touch **Install**. Otherwise, touch **Cancel**.
17. Touch **Open** to open the application or **Done** to exit the installation process.

    The application displays in the App list.

Uninstalling an Application

Free up device memory by removing unused apps.

1. Go to **Settings**.
2. Touch **Apps**.
3. Touch **See all apps** to view all apps in the list.
4. Scroll through the list to the app.
5. Touch the app.

   The **App info** screen displays.
6. Touch **Uninstall**.
7. Touch **OK** to confirm.

Android System Update

System Update packages can contain either partial or complete updates for the operating system. Zebra distributes the System Update packages on the Zebra Support & Downloads website. Perform a system update using either a microSD card or using ADB.

Performing a System Update Using a microSD Card

It is strongly recommended that, prior to use, you format the microSD card on the device.

1. Copy the System Update zip file to the root of the microSD card.
   - Copy the ZIP file to a microSD card using a host computer, and then install the microSD card into the device. See Installing a microSD Card.
   - Connect the device with a microSD card already installed to the host computer, copy the ZIP file to the microSD card, and then disconnect the device from the host computer.
2. Press and hold **Power** until the menu displays.
3. Touch **Restart**.
4. Press and hold **PTT** until the device vibrates.

   The System Recovery screen displays.
5. Press **Volume Up** or **Volume Down** to navigate to **Apply upgrade from SD card**.
6. Press **Power**.
7. Press **Volume Up** or **Volume Down** to navigate to the System Update file.
8. Press **Power**.

   The System Update installs, and then the device returns to the Recovery screen.
9. Press **Power** to reboot the device.

Performing a System Update Using ADB

Use ADB to perform a system update.

Go to the Zebra Support & Downloads web site at zebra.com/support and download the appropriate System Update package to a host computer.

NOTE: If you are not able to enter Android Recovery mode through the adb command, see Entering Android Recovery Manually.

1. Connect the device to a host computer using a USB cable.
2. Go to **Settings**.
3. Touch **System** > **Developer options**.
4. Slide the **USB debugging** switch to the **ON** position.
5. If the device and host computer are connected for the first time, the **Allow USB debugging?** dialog box with the **Always allow from this computer** check box displays. Select the check box, if required.
6. Touch **OK**.
7. Type `adb devices`.

If the device number does not appear, ensure that the ADB drivers are installed properly.

8. Type `adb reboot recovery`.
9. Press **Enter**.

   The System Recovery screen displays on the device.
10. Press **Up Arrow** and **Down Arrow** to navigate to **Apply upgrade from ADB**.
11. Press **Enter**.

    The System Recovery screen displays on the device.
12. On the host computer command prompt window type `adb sideload <file>`.

    where: <file> = the path and filename of the zip file.
13. Press **Enter**.

    The System Update installs (the progress displays as a percentage in the Command Prompt window) and then the System Recovery screen displays on the device.
14. Navigate to **Reboot system now** and press the Enter key or Power button to reboot the device.

Verifying System Update Installation

Verify that the system update was successful.

1. Go to **Settings**.
2. Touch **About phone**.
3. Scroll down to **Build number**.
4. Ensure that the build number matches the new system update package file number.

Android Enterprise Reset

An Enterprise Reset erases all user data in the /data partition, including data in the primary storage locations (/sdcard and emulated storage), while preserving the contents of the /enterprise folder and its subfolders. The contents of the /enterprise folder and its subfolders are preserved. Zebra distributes the Enterprise Reset packages on the Zebra Support & Downloads website.

Before performing an Enterprise Reset, provision all necessary configuration files and restore after the reset.

Performing an Enterprise Reset From Device Settings

Perform an Enterprise Reset from the device settings.

1. Go to **Settings**.
2. Touch **System** > **Reset Options** > **Erase all data (enterprise reset)**.
3. Touch **Erase all data** twice to confirm the Enterprise Reset.

Performing an Enterprise Reset Using microSD Card

It is strongly recommended that, prior to use, you format the microSD card on the device.

Go to the Zebra Support & Downloads web site at zebra.com/support and download the appropriate Enterprise Reset file to a host computer.

1. Copy the Enterprise Reset zip file to the root of the microSD card.
   - Copy the zip file to a microSD card using a host computer and then install the microSD card into the device. See Installing a microSD Card.
   - Connect the device with a microSD card already installed to the host computer and copy zip file to the microSD card. See USB Communication for more information. Disconnect the device from the host computer.
2. Press and hold **Power** until the menu displays.
3. Touch **Restart**.
4. Press and hold **PTT** until the device vibrates.

   The System Recovery screen displays.
5. Press **Volume Up** and **Volume Down** to navigate to **Apply upgrade from SD card**.
6. Press **Power**.
7. Press **Volume Up** and **Volume Down** to navigate to the Enterprise Reset file.
8. Press **Power**.

   The Enterprise Reset occurs and then the device returns to the Recovery screen.
9. Press **Power** to reboot the device.

Performing an Enterprise Reset Using ADB

Perform an Enterprise Reset using ADB.

NOTE: If you are not able to enter Android Recovery mode through the adb command, see Entering Android Recovery Manually.

1. Connect the device to a host computer using a USB cable.
2. Go to **Settings**.
3. Touch **System** > **Developer options**.
4. Slide the **USB debugging** switch to the **ON** position.
5. If the device and host computer are connected for the first time, the **Allow USB debugging?** dialog box with the **Always allow from this computer** check box displays. Select the check box, if required.
6. Touch **OK**.
7. On the host computer, navigate to the **platform-tools** folder and open a command prompt window.
8. Type `adb reboot recovery`.
9. Press **Volume Up** and **Volume Down** to navigate to **Apply upgrade from ADB**.
10. Press **Power**.
11. On the host computer command prompt window type `adb sideload <file>`

where: <file> = the path and filename of the zip file.

12. Press **Enter**.

    The Enterprise Reset package installs and then the System Recovery screen appears on the device.

13. Press **Power** to reboot the device.

Android Factory Reset

A Factory Reset erases all data in the /data and /enterprise partitions in internal storage and clears all device settings. A Factory Reset returns the device to the last installed operating system image. To revert to a previous operating system version, re-install that operating system image. Zebra distributes the Factory Reset packages on the Zebra Support & Downloads website.

Performing a Factory Reset Using microSD Card

Perform a Factory Reset using a microSD card.

Go to the Zebra Support & Downloads website at zebra.com/support and download the appropriate Factory Reset file to a host computer.

1. Copy the Factory Reset zip file to the root of the microSD card.
   - Copy the zip file to a microSD card using a host computer and then installing the microSD card into the device. See Installing a microSD Card.
   - Connect the device with a microSD card already installed to the host computer, copy zip file to the microSD card, and then disconnect the device from the host computer.
2. Press and hold **Power** until the menu displays.
3. Touch **Restart**.
4. Press and hold **PTT** until the device vibrates.

   The System Recovery screen displays.
5. Press **Volume Up** or **Volume Down** to navigate to **Apply upgrade from SD card**.
6. Press **Power**.
7. Use **Up Arrow** or **Down Arrow** to navigate to the Factory Reset file.
8. Press **Power**.

   The Factory Reset occurs, and then the device returns to the Recovery screen.
9. Press **Power** to reboot the device.

Performing a Factory Reset Using ADB

Perform a Factory Reset using ADB.

Go to the Zebra Support & Downloads web site at zebra.com/support and download the appropriate Factory Reset file to a host computer.

NOTE: If you are not able to enter Android Recovery mode through the adb command, see Entering Android Recovery Manually.

1. Connect the device to a host computer using a USB cable.
2. Go to **Settings**.
3. Touch **System** > **Developer options**.
4. Slide the **USB debugging** switch to the **ON** position.
5. If the device and host computer are connected for the first time, the **Allow USB debugging?** dialog box with the **Always allow from this computer** check box displays. Select the check box, if required.
6. Touch **OK**.
7. On the host computer, navigate to the **platform-tools** folder and open a command prompt window.
8. Type `adb reboot recovery`.
9. Press **Enter**.

   The System Recovery screen appears on the device.
10. Press **Volume Up** and **Volume Down** buttons to navigate to **Apply upgrade from ADB**.
11. Press **Power**.
12. On the host computer command prompt window type`adb sideload <file>`.

    where: <file> = the path and filename of the zip file.
13. Press **Enter**.

    The Factory Reset package installs, and then the System Recovery screen appears on the device.
14. Press **Power** to reboot the device.

Android Storage

The device contains multiple types of file storage.

- Random Access Memory (RAM)
- Internal storage
- External storage (microSD card)
- Enterprise folder

NOTE: It is recommended to install a microSD card on the device due to limited internal storage space.

Random Access Memory

Executing programs use RAM to store data. Data stored in RAM is lost upon a reset.

The operating system manages how applications use RAM. It only allows applications and component processes and services to use RAM when required. It may cache recently used processes in RAM, so they restart more quickly when opened again, but it will erase the cache if it needs the RAM for new activities.

The screen displays the amount of used and free RAM.

- **Performance** - Indicates memory performance.
- **Total memory** - Indicates the total amount of RAM available.

- **Average used (%)** - Indicates the average amount of memory (as a percentage) used during the period of time selected (default - 3 hours).
- **Free** - Indicates the total amount of unused RAM.
- **Memory used by apps** - Touch to view RAM usage by individual apps.

Viewing Memory

View the amount of memory used and free RAM.

1. Go to **Settings**.
2. Touch **System** > **Developer options**.
3. Touch **Memory**.

Internal Storage

The device has internal storage. The internal storage content can be viewed and files copied to and from when the device is connected to a host computer. Some applications are designed to be stored on the internal storage rather than in internal memory.

Viewing Internal Storage

View available and used internal storage on the device.

1. Go to **Settings**.
2. Touch **Storage**.

   It displays the total amount of space on internal storage and amount used.

   If the device has removable storage installed, touch **Internal shared storage** to display the amount of internal storage used by apps, photos, videos, audio, and other files.

External Storage

The device can have a removable microSD card. The microSD card content can be viewed and files copied to and from when the device is connected to a host computer.

Viewing External Storage

Portable storage displays the total amount of space on the installed microSD card and the amount used.

1. Go to **Settings**.
2. Touch **Storage**.

   Touch **SD card** to view the contents of the card.

3. To unmount the microSD card, touch ⏏.

Formatting a microSD Card as Portable Storage

Format a microSD card as portable storage for the device.

1. Touch **SD card**.
2. Touch ⋮ > **Storage settings**.
3. Touch **Format**.
4. Touch **ERASE & FORMAT**.
5. Touch **DONE**.

Formatting a microSD Card as Internal Memory

You can format a microSD card as internal memory to increase the actual amount of the device's internal memory. Once formatted, the microSD card can only be read by this device.

NOTE: The suggested maximum SD card size is 128 GB when using internal storage.

1. Touch **SD card**.
2. Touch ⋮ > **Storage settings**.
3. Touch **Format as internal**.
4. Touch **ERASE & FORMAT**.
5. Touch **DONE**.

Enterprise Folder

The Enterprise folder (within internal flash) is a super-persistent storage that is persistent after a reset and an Enterprise Reset.

The Enterprise folder is erased during a Factory Reset. The Enterprise folder is used for deployment and device-unique data. The Enterprise folder is approximately (formatted). Applications can persist data after an Enterprise Reset by saving data to the enterprise/user folder. The folder is ext4 formatted and is only accessible from a host computer using ADB or from an MDM.

Managing Apps

Apps use two kinds of memory: storage memory and RAM. Apps use storage memory for themselves and any files, settings, and other data they use. They also use RAM when they are running.

1. Go to **Settings**.
2. Touch **Apps**.
3. Touch **See all XX apps** to view all apps on the device.
4. Touch ⋮ > **Show system** to include system processes in the list.
5. Touch an app, process, or service in the list to open a screen with details about it and, depending on the item, to change its settings, permissions, and notifications and to force stop or uninstall it.

App Details

Apps have different kinds of information and controls.

- **Force stop** - Stop an app.
- **Disable** - Disable an app.
- **Uninstall** - Remove the app and all of its data and settings from the device.
- **Notifications** - Set the app notification settings.
- **Permissions** - Lists the areas on the device that the app has access to.
- **Storage & cache** - Lists how much information is stored and includes buttons for clearing it.
- **Mobile data & Wi-Fi** - Provides information about data consumed by an app.
- **Advanced:**
  - **Screen time** - Displays the amount of time the app has displayed on the screen.
  - **Battery** - Lists the amount of computing power used by the app.
  - **Open by default** - If you have configured an app to launch certain file types by default, you can clear that setting here.
  - **Display over other apps** - Allows an app to display on top of other apps.
  - **App details** - Provides a link to additional app details on the Play store.
  - **Additional settings in the app** - Opens settings in the app.
  - **Modify system settings** - Allows an app to modify the system settings.

Managing Downloads

Files and apps downloaded using the Browser or Email are stored on the microSD card or Internal storage in the Download directory. Use the Downloads app to view, open, or delete downloaded items.

1. Swipe the screen up and touch .
2. Touch > **Downloads**.
3. Touch and hold an item to delete, and then touch .

   The item is deleted from the device.

Maintenance and Troubleshooting

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

Maintaining the Device

Follow these guidelines to maintain the device properly.

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

- To avoid scratching the screen, use a Zebra-approved, capacitive-compatible stylus intended for use with a touch-sensitive screen. Never use an actual pen, pencil, or other sharp object on the surface of the device screen.
- The device's touch-sensitive screen is made of 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 dusty, damp, or wet location.
- 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.
- Periodically replace the rechargeable battery to ensure maximum battery life and product performance. Battery life depends on individual usage patterns.
- A screen protector may be applied to the device. Zebra recommends using a screen protector to minimize wear and tear. Screen protectors enhance the usability and durability of touchscreen displays. Benefits include:
  - Protection from scratches and gouges
  - Abrasion and chemical resistance
  - Glare reduction
  - Keeping the device's screen looking new
  - Quick and easy installation.
- Periodically inspect accessory cables and connectors. Check the inside and outside of cradles to ensure good electrical contact.

Display Best Practices

When a static image displays for extended periods of time, you may see a faint remnant of that image even after a new image displays. This is called image retention.

To prevent image retention:

- Set the display to turn off after a few minutes of idle time.
- Rotate background images periodically.
- Turn off the display when the device is not in use.
- While the static image is active, use a screen saver with one or more of the following characteristics:
  - The background color is set to black.
  - A small moving image (approximately 2% of the display size).
  - The image moves randomly across the screen.

Best Practices for Enterprise Mobile Devices Operating in Hot Environments and Direct Sunlight

Exceeding the operating temperature by external hot environments will cause the device's thermal sensor to notify you of a shutdown of the WAN modem or shutdown of the device until the device's temperature returns to the operational temperature range.

- Avoid direct sunlight to the device - The easiest way to prevent overheating is to keep the device out of direct sunlight. The device absorbs light and heat from the sun and retains it, getting hotter the longer it remains in sunlight and heat.
- Avoid leaving the device in a vehicle on a hot day or hot surface - Similar to leaving the device out in direct sunlight, the device will also absorb the thermal energy from a hot surface or when left on the dashboard of a vehicle or seat, getting warmer the longer it remains on the hot surface or inside the hot vehicle.
- Turn off unused apps on the device. Open, unused apps running in the background can cause the device to work harder, which in turn may cause it to heat up. This will also improve your mobile computer device's battery life performance.
- Avoid turning your screen brightness up - Just the same as running background apps, turning your brightness up will force your battery to work harder and create more heat. Minimizing your screen brightness may extend operating the mobile computer device in hot environments.

Battery Safety Guidelines

To use the device safely, you must follow the battery guidelines.

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken when the device is charged in a non-commercial environment.
- Follow the battery usage, storage, and charging guidelines found in this guide.
- To charge the mobile device battery, the ambient battery and charger temperatures must be between 5°C and 40°C (41°F and 104°F).
- 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.
- To enable authentication of an approved battery, as required by IEEE1725 clause 10.2.1, all batteries will carry a hologram. Do not fit any battery without checking if it has the authentication hologram.
- Do not disassemble, open, crush, bend, deform, puncture, or shred the 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 a battery into a microwave oven or dryer.
- Battery usage by children should be supervised.
- Please follow local regulations to properly dispose of used rechargeable batteries.
- Do not dispose of batteries in a 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.

Cleaning Instructions

This section provides instructions for cleaning the device.

Use caution and avoid damaging the device when using cleaning materials.

CAUTION: Always wear eye protection. Read the 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.

Cleaning and Disinfecting Guidelines

This section explains the proper procedures for cleaning and disinfecting the device.

- Turn off and/or disconnect the device from AC/DC power.
- Use only approved cleaning and disinfecting agents specified for the device to avoid damage to it or its accessories.
- Follow the manufacturer's directions on the approved cleaning and disinfecting agent for using their product properly and safely.

- Use pre-moistened wipes or dampen a soft sterile cloth (not wet) with the approved agent. Never spray or pour chemical agents directly onto the device.
- Use a moistened cotton-tipped applicator to reach tight or inaccessible areas. Be sure to remove any lint the applicator leaves behind.
- Do not allow liquid to pool.
- Allow the device to air dry before use or dry with a soft lint-free cloth or towelette. Ensure the electrical contacts are fully dry before reapplying power.

Approved Cleaning and Disinfectant Agents

This section lists the approved cleaning and disinfectant agents.

Use pre-moistened wipes, and do not allow the liquid cleaner to pool. 100% of the active ingredients in any cleaner must consist of one or some combination of the following:

- Isopropyl alcohol
- Bleach/sodium hypochlorite (see the following important note)
- Hydrogen peroxide
- Ammonium chloride
- Mild dish soap

IMPORTANT:

When using sodium hypochlorite (bleach) based products, always follow the manufacturer's recommended instructions: Use gloves during application and remove the residue afterward with a damp alcohol cloth or a cotton swab to avoid prolonged skin contact while handling the device. Because of the powerful oxidizing nature of sodium hypochlorite, the metal surfaces on the device are prone to oxidation (corrosion) when exposed to this chemical in liquid form (including wipes).

If these types 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.

Special Cleaning Notes

This section describes essential handling precautions.

Do not handle the device while wearing vinyl gloves containing phthalates. Remove vinyl gloves and wash hands to eliminate any residue left from the gloves.

If products containing any of the harmful ingredients listed above are used prior to handling the device, such as a hand sanitizer that contains 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 Frequency

This section explains how often you must clean the device.

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 the build-up of particles, which makes the device more difficult to clean later on.

For consistency and optimum image capture, it is recommended to clean the camera window periodically especially when used in environments prone to dirt or dust.

Cleaning the Device

This section describes how to clean the housing and battery of the device.

For more information on cleaning the device connector, refer to Cleaning the Connectors.

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.

Camera and Exit Window

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

Battery Guide Slots

Insert a cotton-tipped applicator dipped in alcohol into the battery guide rails to clean out debris and then dry with a dry cotton-tipped applicator.

Cleaning Battery Connectors

This section provides instructions on how to clean the battery and terminal 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

This section provides instructions on how to clean the cradle connectors.

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 instructions to remove bleach from the connectors.

Troubleshooting

This section provides information for resetting and troubleshooting the device and accessories.

Resetting the Device

There are two reset functions, soft reset and hard reset.

Performing a Soft Reset

Perform a soft reset if applications stop responding.

1. Press and hold the Power button until the menu displays.
2. Touch **Restart**.
3. The device reboots.

Performing a Hard Reset

Perform a hard reset if the device stops responding.

NOTE: Performing a hard reset with a microSD card installed in the device may cause damage or data corruption to the microSD card.

1. Simultaneously press the Power and Volume Up buttons for at least four seconds.
2. When the screen turns off, release the buttons.
3. The device reboots.

Device Troubleshooting

Provides solutions to common device issues.

Table 27 Troubleshooting the Device

Problem	Cause	Solution
After installing the battery, the device does not boot up.	Power button was not pressed.	Press the Power button.
When pressing the power button, the device does not turn on.	Battery is not charged.	Charge or replace the battery in the device.
	Battery is not installed properly.	Install the battery properly.
	System crash.	Perform a reset.
When pressing the power button, the device does not turn on, but two LEDs blink.	Battery charge is at a level where data is maintained, but the battery should be recharged.	Charge or replace the battery in the device.
The battery did not charge.	Battery failed.	Replace the battery. If the device still does not operate, perform a reset.
	Device removed from the cradle while the battery was charging.	Insert the device in the cradle.
	Extreme battery temperature.	The battery does not charge if the ambient temperature is below 5°C to 50°C (41°F to 122°F).
Cannot see characters on display.	Device is not powered on.	Press the Power button.
	Device brightness too low.	Raise the brightness.
During data communication with a host computer, no data transmitted or transmitted data was incomplete.	Device removed from the cradle or disconnected from the host computer during communication.	Replace the device in the cradle, or reattach the communication cable and re-transmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software was incorrectly installed or configured.	Perform setup.

Table 27 Troubleshooting the Device (Continued)

Problem	Cause	Solution
During data communication over Wi-Fi, no data transmitted or transmitted data was incomplete.	The Wi-Fi radio is not on.	Turn on the Wi-Fi radio.
	You moved out of range of an access point.	Move closer to an access point.
During data communication over Bluetooth, no data transmitted or transmitted data was incomplete.	Bluetooth radio is not on.	Turn on the Bluetooth radio.
	You moved out of range of another Bluetooth device.	Move within 10 meters (32.8 feet) of the other device.
During data communication over WAN, no data transmitted or transmitted data was incomplete.	Mobile data is not on.	Turn on mobile data. If it is already on, turn it off and on again.
	You moved out of the coverage area.	Move into a coverage area.
	SIM card not installed properly.	Remove and re-install the SIM card.
No sound.	Volume setting is low or turned off.	Adjust the volume.
Device shuts off.	Device is inactive.	The display turns off after a period of inactivity. Set this period to 15 seconds, 30 seconds, 1, 2, 5, 10, or 30 minutes.
	The battery is depleted.	Replace the battery.
Tapping the window buttons or icons does not activate the corresponding feature.	Device is not responding.	Reboot the device.
A message appears stating that the device's memory is full.	Too many files are stored on the device.	Delete unused memos and records. Save these records on the host computer (or use an SD card for additional memory).
	Too many applications are installed on the device.	Remove user-installed applications on the device to recover memory. Select **Settings** > **Apps** > **All Apps**. Select the app in the list and select **UNINSTALL**.
Device does not decode with reading barcode.	Scanning application is not loaded.	Load a scanning application on the device or enable DataWedge. See the system administrator.
	Unreadable barcode.	Ensure the symbol is not defaced.
	Distance between the exit window and barcode is incorrect.	Place the device within the proper scanning range.
	Device is not programmed for the bar code.	Program the device to accept the type of bar code being scanned. Refer to the EMDK or DataWedge application.
	Device is not programmed to generate a beep.	If the device does not beep on a good decode, set the application to generate a beep on a good decode.

Table 27 Troubleshooting the Device (Continued)

Problem	Cause	Solution
	Battery is low.	If the scanner stops emitting a laser beam upon a trigger press, check the battery level. When the battery is low, the scanner shuts off before the device low battery condition notification. **NOTE:** If the scanner is still not reading symbols, contact the distributor or the Global Customer Support Center.
Device cannot find any Bluetooth devices nearby.	Too far from other Bluetooth devices.	Move closer to the other Bluetooth device(s), within a range of 10 meters (32.8 feet).
	Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) to find.
	Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode. If needed, refer to the device's user documentation for help.
Cannot unlock the device.	User enters an incorrect password.	If the user enters an incorrect password five times, the user is requested to wait for 30 seconds when using a PIN, Pattern, or Password.
Multi-User mode is causing undefined behavior.	Multi-User mode is not supported by the Mobility DNA Enterprise License.	Perform a soft or hard reset on the device.

1-Slot Cradle Only with Spare Battery Cradle Troubleshooting

The following table provides troubleshooting options for the cradle.

Table 28 Troubleshooting the 1-Slot Cradle Only with Spare Battery Cradle

Symptom	Possible Cause	Action
LEDs do not light when the device is inserted.	Cradle is not receiving power.	Ensure the power cable is connected securely to the cradle and AC power.
	Device is not seated firmly in the cradle.	Remove and re-insert the device into the cradle, ensuring it is firmly seated.
Device battery is not charging.	Device was removed from the cradle, or the cradle was unplugged from AC power too soon.	Ensure the cradle is receiving power. Ensure the device is seated correctly. Confirm main battery is charging. The standard battery charges from fully depleted to 80% in less than 1 hour and 20 minutes. The extended battery charges from fully depleted to 80% in less than 1 hour and 50 minutes.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	Device is not fully seated in the cradle.	Remove and re-insert the device into the cradle, ensuring it is firmly seated.

Table 28 Troubleshooting the 1-Slot Cradle Only with Spare Battery Cradle (Continued)

Symptom	Possible Cause	Action
	Extreme battery temperature.	Battery does not charge if the ambient temperature is below 5°C (41°F) or above 40°C (104°F).
Spare battery is not charging.	Battery is not fully seated in the charging slot.	Remove and re-insert the spare battery in the cradle, ensuring it is firmly seated. The standard battery charges from fully depleted to 80% in less than 1 hour and 20 minutes. The extended battery charges from fully depleted to 80% in less than 1 hour and 50 minutes.
	Battery was inserted incorrectly.	Re-insert the battery so the charging contacts on the battery align with the contacts on the cradle.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.

4-Slot Battery Charger Troubleshooting

The following table provides troubleshooting options for the charger.

Table 29 Troubleshooting the 4-Slot Battery Charger

Problem	Cause	Solution
Spare Battery Charging LED does not light when the spare battery is inserted.	Spare battery is not correctly seated.	Remove and re-insert the spare battery into the charging slot, ensuring it is correctly seated.
Spare battery not charging.	Charger is not receiving power.	Ensure the power cable is connected securely to the charger and AC power.
	Spare battery is not correctly seated.	Remove and re-insert the battery into the battery adapter, ensuring it is correctly seated.
	Battery adapter is not seated properly.	Remove and re-insert the battery adapter into the charger, ensuring it is correctly seated.
	Battery was removed from the charger, or the charger was unplugged from AC power too soon.	Ensure the charger is receiving power. Ensure the spare battery is seated correctly. The standard and extended battery charges from fully depleted to 90% in less than 4 hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.

Table 29 Troubleshooting the 4-Slot Battery Charger (Continued)

Problem	Cause	Solution
	Ambient temperature of the cradle is too warm.	Move the cradle to an area where the ambient temperature is between 5°C (41°F) and 40°C (104°F).

Technical Specifications

For device technical specifications, go to zebra.com/support.

SE4100 Decode Distances

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

Table 30 Typical SE4100 Decode Distances

Symbol Density/Barcode Type	Near	Far
5 mil Code 39	6.1 cm (2.4 in.)	24.1 cm (9.5 in.)
5 mil Code 128	7.1 cm (2.8 in.)	22.9 cm (9.0 in.)
6.67 mil PDF417	6.1 cm (2.4 in.)	20.3 cm (8.0 in.)
10 mil Data Matrix	7.4 cm (2.9 in.)	22.9 cm (9.0 in.)
100% UPCA	4.6* cm (1.8* in)	49.5 cm (19.5 in.)
15 mil QR Code	3.05* cm (1.2* in)	30.5 cm (12.0 in.)
20 mil QR Code	3.05* cm (1.2* in)	35.6 cm (14.0 in.)
20 mil Code 39	6.35* cm (2.5* in)	66.0 cm (26.0 in.)

*Limited by the width of the barcode in the field of view.

NOTE: Photographic quality barcode at 18° tilt pitch angle under 30 fcd ambient illumination. UPC, 20mil code 39, 15mil QR, and 20mil QR near distances correspond to the barcode located in the overlapping region of illumination and imaging fields of view.

SR500 Decode Distances

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

Table 31 Typical SR500 Decode Distances

Symbol Density/Barcode Type	Near	Far
3 mil Code 39	7.6 cm (3.0 in.)	14.7 cm (5.8 in.)

Table 31 Typical SR500 Decode Distances (Continued)

Symbol Density/Barcode Type	Near	Far
5 mil Code 128	4.8 cm (1.9 in.)	25.7 cm (10.1 in.)
5 mil Code 39	4.6 cm (1.8 in.)	28.4 cm (11.2 in.)
5 mil PDF417	7.1 cm (2.8 in.)	20.3 cm (8.0 in.)
6.67 mil PDF417	5.6 cm (2.2 in.)	26.2 cm (10.3 in.)
10 mil Data Matrix	4.6 cm (1.8 in.)	31.5 cm (12.4 in.)
100% UPCA	3.8 cm (1.5 in.)	65.3 cm (25.7 in.)
15 mil Code 128	6.4 cm (2.5 in.)	74.2 cm (29.2 in.)
20 mil Code 39	5.1 cm (2.0 in.)	102.6 cm (40.4 in.)
20 mil QR Code	5.3 cm (2.1 in.)	49.3 cm (19.4 in.)
NOTE: Photographic-quality barcode; 30 fcd ambient light on barcode.		

SR560 Decode Distances

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

Table 32 Typical SR560 Decode Distances

Symbol Density/Barcode Type	Near	Far
3 mil Code 39	7.6 cm (3.0 in.)	14.7 cm (5.8 in.)
5 mil Code 128	4.8 cm (1.9 in.)	25.7 cm (10.1 in.)
5 mil Code 39	4.6 cm (1.8 in.)	28.4 cm (11.2 in.)
5 mil PDF417	7.1 cm (2.8 in.)	20.3 cm (8.0 in.)
6.67 mil PDF417	5.6 cm (2.2 in.)	26.2 cm (10.3 in.)
10 mil Data Matrix	4.6 cm (1.8 in.)	31.5 cm (12.4 in.)
100% UPCA	3.8 cm (1.5 in.)	65.3 cm (25.7 in.)
15 mil Code 128	6.4 cm (2.5 in.)	74.2 cm (29.2 in.)
20 mil Code 39	5.1 cm (2.0 in.)	102.6 cm (40.4 in.)
20 mil QR Code	5.3 cm (2.1 in.)	49.3 cm (19.4 in.)
NOTE: Photographic-quality barcode; 30 fcd ambient light on barcode.		

I/O Connector Pin-Outs

The device has a 2-pin I/O for charging only.

Figure 26 I/O Connector Pin-Outs

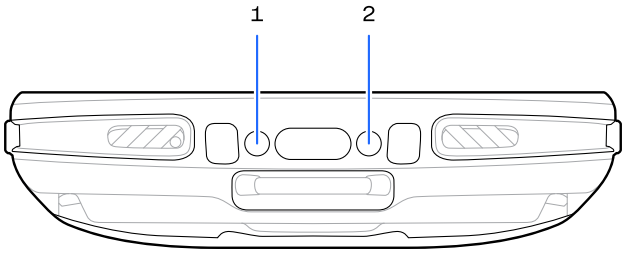


Table 33 I/O Connector Pin-Outs

Pin	Signal	Description
1	GND	Ground
2	DC-IN	12V DC Input

1-Slot Charge Only with Spare Battery Cradle Technical Specifications

This section provides technical specifications for the 1-Slot Charge Only with Spare Battery cradle.

Table 34 1-Slot Charger Only with Spare Battery Cradle Technical Specifications

Item	Description
Dimensions	Height: 10.0 cm (3.9 in.) Width: 13.5 cm (5.3 in.) Depth: 19.7 cm (7.8 in.)
Weight	826 g (29.1 oz.)
Input Voltage	12 VDC
Power Consumption	Up to 50 W
Operating Temperature	5°C to 40°C (41°F to 104°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	5°C to 40°C (41°F to 104°F)
Humidity	5% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.
Electrostatic Discharge (ESD)	+/- 20 kV air +/- 10 kV contact +/- 10 kV indirect discharge

4-Slot Battery Charger Technical Specifications

This section provides technical specifications for the 4-Slot Battery Charger.

Table 35 4-Slot Battery Charger Technical Specifications

Item	Description
Dimensions	Height: 10.2 cm (4.0 in.) Width:9.7 cm (3.8 in.) Depth: 13.2 cm (5.2 in.)
Weight	512 g (18.0 oz.)
Input Voltage	12 VDC
Power Consumption	up to 50 watts
Operating Temperature	5°C to 40°C (41°F to 104°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	5°C to 40°C (41°F to 104°F)
Humidity	5% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.
Electrostatic Discharge (ESD)	+/- 20 kV air +/- 10 kV contact +/- 10 kV indirect discharge

USB-C Cable Technical Specifications

Table 36 USB-C Audio Adapter Technical Specifications

Item	Description
Length	91.4 cm +/- 7.6 cm (36 in. +/- 3 in.)
Input Voltage	5.0 VDC via USB-C interface on device
Compliance	Android USB-C audio compliant
Buttons	Volume up, Volume down, and Zebra PTT buttons.
3.5 mm headset compatibility	Compatible with CTIA wired 3.5 mm 4-pin audio headsetsCompatible with HDST-35MM-PTVP-01 with PTT collar headsetCompatible with HS2100 3.5 mm to 3.5 mm cables
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	10% to 95% non-condensing
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact +/- 8 kV indirect discharge