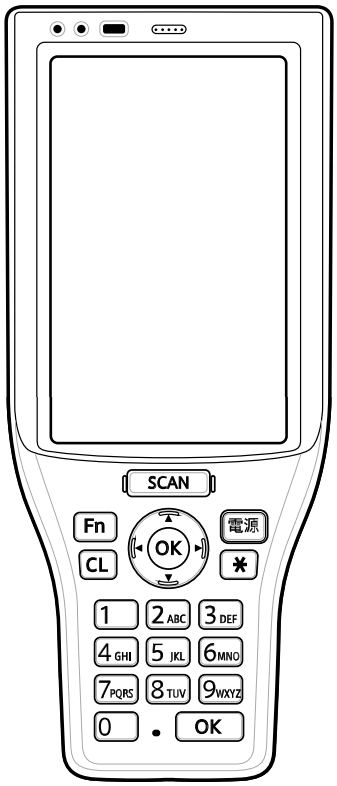
RZ-H271

Mobile Computer



Product Reference Guide
for Android™

MN-004216-06EN Rev A

Contents

About This Guide

This guide provides information about setting up and using RZ-H271 mobile computers with Android™ 11and 13 operating systems. Some screens shown in this guide may differ from the actual screens shown on the device.

Device Configurations

The following table includes all configurations of the device.

Table 1 Device Configurations

Part Number	Radios	Camera	Memory	Data Capture Options	Operating System
RZ-H271	WLAN: 802.11 a/b/g/n/ac WPAN: Bluetooth v5.0 Low Energy	13 MP rear	4 GB RAM 64 GB Flash	2D imager (SE4770) and integrated NFC	Runs on Android 11/13

Notational Conventions

Notational conventions are used to highlight important information.

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

Icon Conventions

The following icons are used throughout the document. The icons and their associated meanings are described below.

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

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

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

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

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

Service Information

If you have a problem with your equipment, contact Customer Support for your region. Contact information is available at: https://members-site.Sharp-sbs.co.JP/Handy/login.html.

When contacting support, please have the following information available:

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

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

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

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

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:
   - **Battery information**
   - **Emergency information**
   - **SW components**
   - **Legal information**

- **Model & hardware**
- **Android version**
  - **Android security patch level**
  - **Kernel version**
  - **Build number**

Determining the 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 > Model & hardware > Serial number.**

Getting Started

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

Unpacking

To unpack the device:

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:
   - Mobile computer
   - PowerPrecision Lithium-ion battery
   - Hand strap
   - Regulatory Guide.
3. Inspect the equipment for damage. If any equipment is missing or damaged, contact Sharp Customer Support center immediately.

Features

Front View

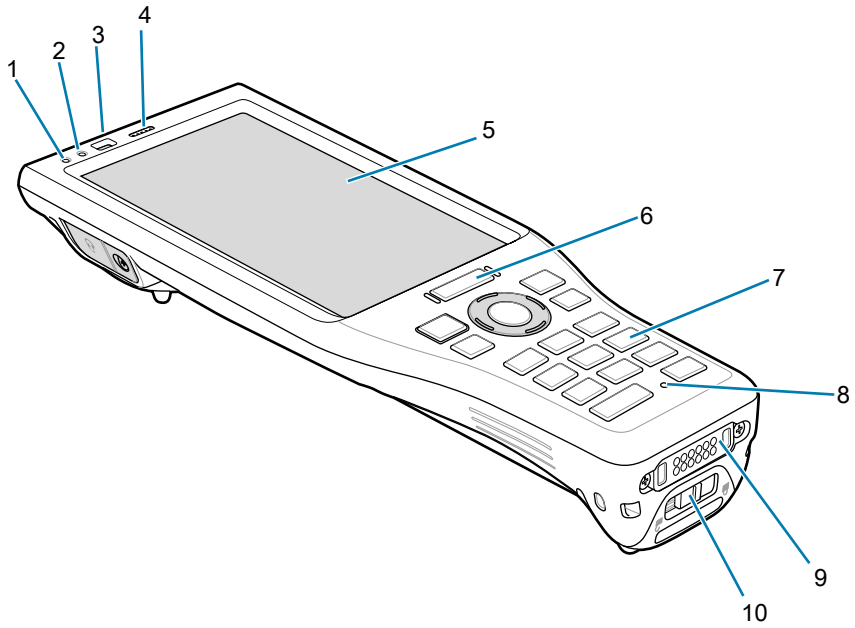


Table 2 Front View Features

Number	Item	Function
1	Application/Notification LED	Indicates application generated notifications.
2	Charging LED	Indicates battery charging status while charging.
3	Light/Proximity sensor	Allows the device to switch between speaker and receiver mode.
4	Speaker/Receiver	Provides audio output playback (for voice communication, video and music) through speaker or receiver (if used in handset mode).
5	Touch screen	Displays all information needed to operate the device.
6	Scan button	Initiates data capture when a scan application is enabled.
7	Keypad	Use to enter data and navigate on screen functions.
8	Microphone	Use for communications in Speakerphone mode.
9	Interface connector	Provides USB host and client communications, and device charging via cables and accessories.
10	Battery door latch	Secures battery cover.

Back View

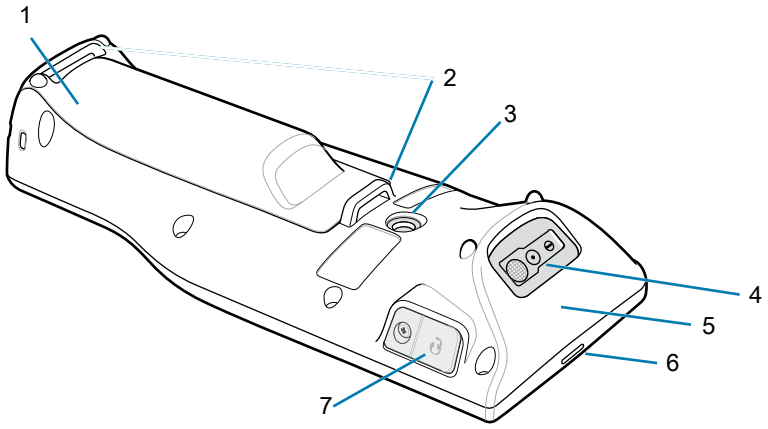


Table 3 Back View Features

Number	Item	Function
1	Battery cover	Provides access to the battery.
2	Hand strap mounting points	Use for securing the hand strap to the device.
3	Camera	Takes photos and videos.
4	Exit window	Provides data capture using integrated imager.
5	NFC antenna	Provides communication with other NFC-enabled devices.
6	Speaker vent	Releases audio pressure when front speaker/receiver is being utilized for audio playback.
7	3.5 mm headset jack	For audio output to a wired headset.

Setting Up the Device

To start using the device for the first time:

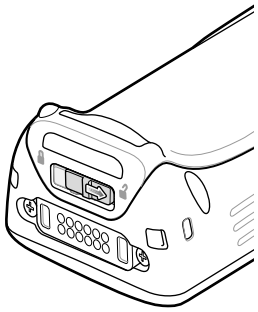
1. Install a micro secure digital (SD) card (optional).
2. Install the battery.
3. Install the hand strap.
4. Charge the device.
5. Power on the device.

Installing a microSD Card

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

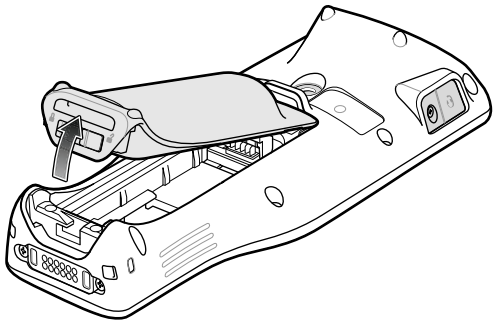
CAUTION: Do not connect or disconnect the microSD card in a dry place where static electricity is likely to be generated. Doing so may result in malfunction.

1. Slide the battery latch to the unlock position.

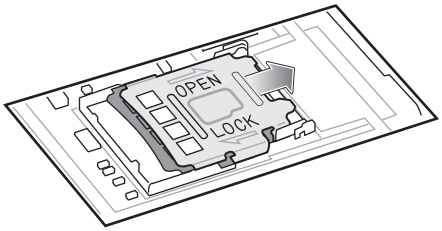


2. Lift the battery cover.

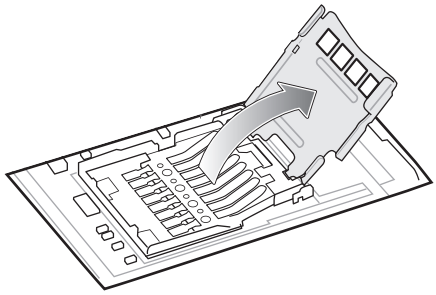
   If a battery was previously installed, the microSD card holder is located under the battery.



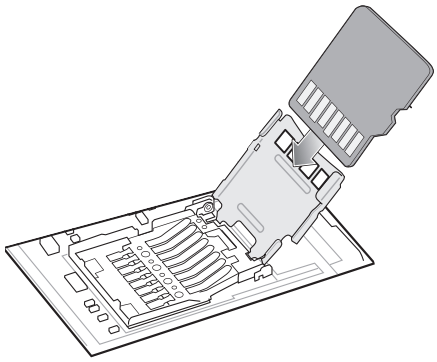
3. Slide the microSD card holder to the Open position.



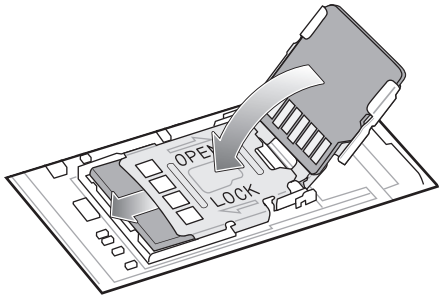
4. Lift the microSD card holder.



5. Insert the microSD card into the card holder door ensuring that the card slides into the holding tabs on each side of the door.



6. Close the microSD card holder and slide into the Lock position.

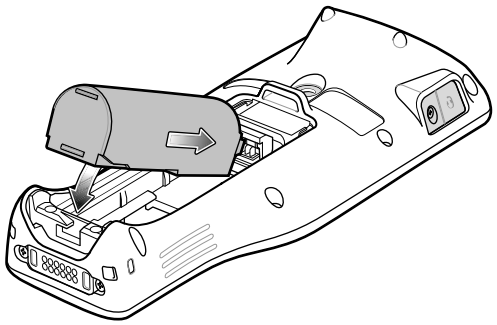


7. Replace the battery. See Installing the Battery on page 6.

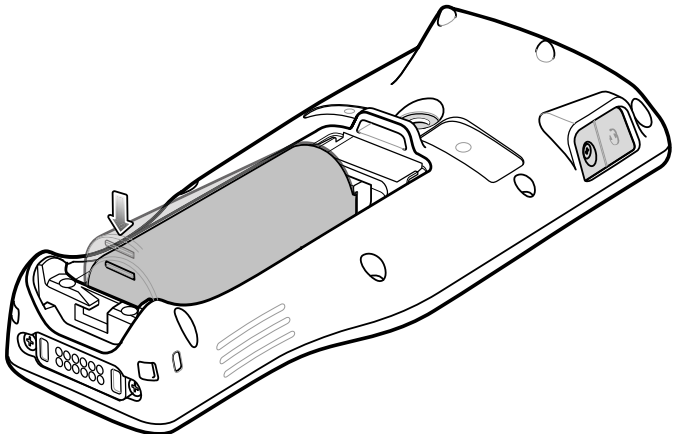
Installing the Battery

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

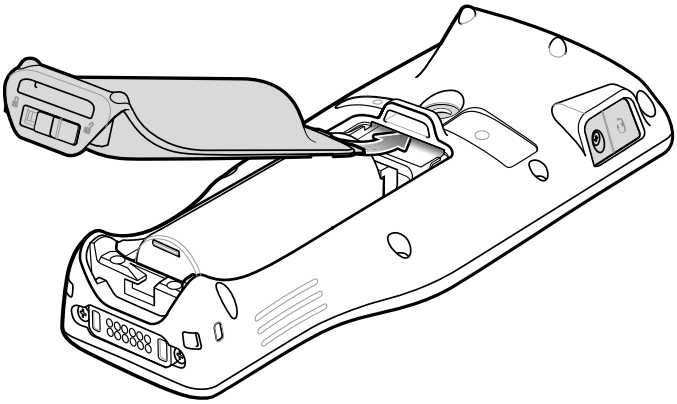
1. Insert the battery, top first, into the battery compartment in the back of the device.



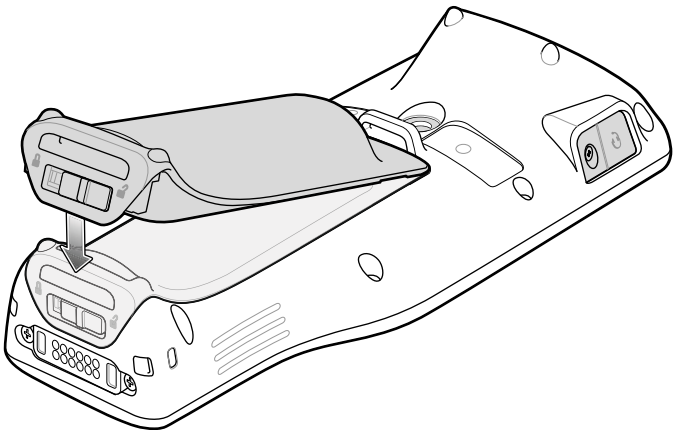
2. Press the bottom of the battery down, into the battery compartment, until the bottom battery tab locks into place.



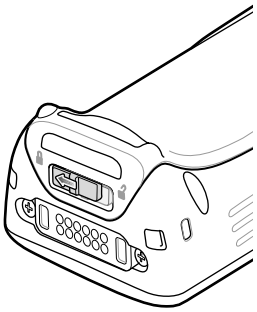
3. Insert the battery cover, top first, into the battery well.



4. Press down the battery cover at the bottom of the device.



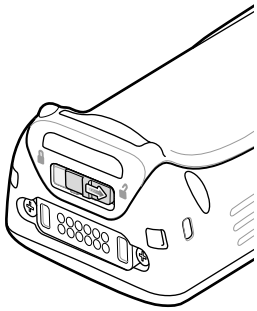
5. Slide the battery latch to the lock position.



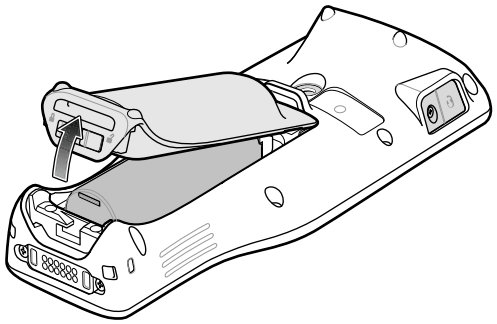
Removing the Battery

NOTE: It is recommended to remove the hand strap from the mounting bar found at the bottom of the battery cover before removing or replacing the battery.

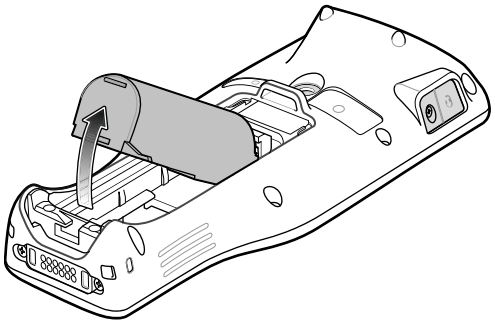
1. Press the power button until the menu appears.
2. Touch **Power off** or **Warm Swap** (by following the on device instructions).
3. Slide the battery latch to the unlock position.



4. Lift the battery cover.



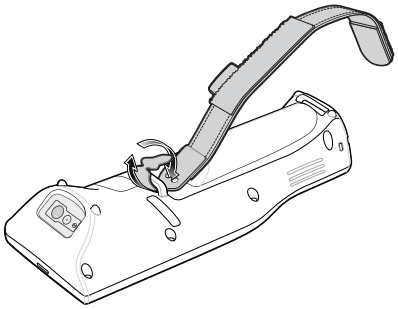
5. Remove the battery.



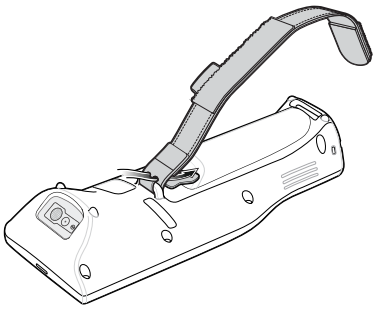
Installing the Hand Strap

To install the hand strap on the device:

1. Feed the top end of the hand strap through the top mounting bar.

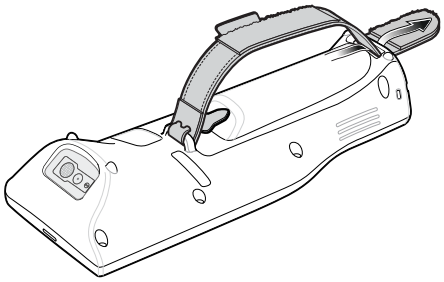


2. Pull the end through the hand strap cut-out.

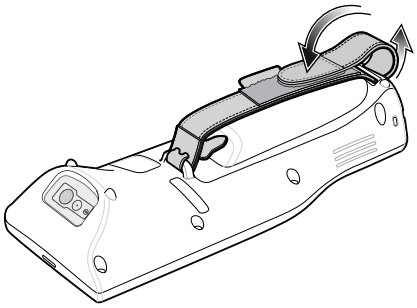


3. Pull the end until the notch sits into the slot.

4. Feed the other end of the hand strap through the slot at the bottom of the device.



5. Pull the end through the slot.
6. Press the hook material against the loop material.



7. Place hand between device and hand strap and adjust hand strap as necessary.

Charging the Battery

Before using the device for the first time, charge the main battery until the solid amber Charging light emitting diode (LED) remains lit. To charge the device use a cable or a cradle with the appropriate power supply. For information about the accessories available for the device see Accessories for more information.

CAUTION: Ensure that you follow the guidelines for battery safety described in Maintenance and Troubleshooting.

To charge a device:

1. Insert the device into a slot to begin charging.
2. Ensure the device is seated properly.

The device's Charging LED indicates the status of the battery charging in the device. Approximate charging time: Up to about 4.5 hours (at 25°C, with the main unit turned off).

Charging LED Indicators

Table 4 Charging LED Indicators

State	Indication
Off	Device is not charging. Device is not inserted correctly in the cradle or connected to a power source. Charger/cradle is not powered.
Solid Amber	Device is charging.
Solid Red	Device is charging but the battery is at end of useful life. Charging complete but the battery is at end of useful life.
Solid Green	Charging complete.
Fast Blinking Amber (2 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 (2 blinks/second)	Charging error but the battery is at end of useful life., for example: • Temperature is too low or too high. • Charging has gone on too long without completion (typically eight hours).

To charge a spare battery:

1. Insert the batteries into the 4-slot battery charger.
2. Gently press down on the battery to ensure proper contact.

The charge LED's on the battery charger (one for each battery slot), indicate the battery charge status. Approximate charging time: Up to about 3 hours.

Table 5 Spare Battery LED Charging Indicators

LED	Indication
Solid Amber	Spare battery is charging.
Solid Green	Spare battery charging is complete.
Solid Red	Spare battery is charging and battery is at the end of useful life. Charging complete and battery is at the end of useful life.
Fast Blinking Red (2 blinks/second)	Error in charging; check placement of spare battery.
Off	No spare battery in slot. Spare battery not placed in slot correctly. Cradle is not powered.

Charging Temperature

When charging the battery pack, do so in an ambient temperature range of 0 °C to 40 °C. The device or accessory always performs battery charging in a safe and intelligent manner. At higher temperatures the device or accessory may for brief periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The device or accessory indicates when charging is disabled due to abnormal temperatures via its LED and a notification appears on the display.

Using the Device

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 a suspend or screen time-out, the Home screen displays with the lock slider. Touch the screen and slide up to unlock.

The Home screen provides four additional screens to place widgets and shortcuts. Swipe the screen left or right to view the additional screens.

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

Figure 1 A11 Home Screen

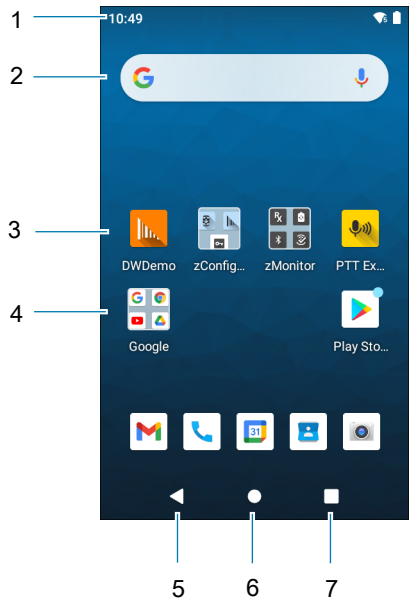
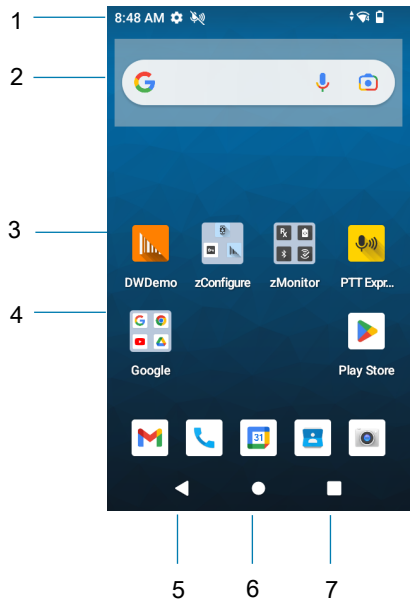


Figure 2 A13 Home Screen



1	Status Bar	Displays the time, status icons (right side), and notification icons (left side). For more information see Notification Icons on page 25 and Managing Notifications on page 26.
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.

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

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

Status Bar

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

Figure 3 Notification and Status Icons

1	Notification Icons. See Notification Icons on page 25.
2	Status Icons. See Status Icons on page 26.

Notification Icons

Notification icons indicate app events and messages.

Table 6 Notification Icons

Icon	Description
	Main battery is low.
	More notifications are available for viewing.
	Data is syncing.
	Indicates an upcoming event. GMS devices only.
	Open Wi-Fi network is available.
	Audio is playing.
	Problem with sign-in or sync has occurred.
	Device is uploading data.
	Animated: the device is downloading data. Static: the download is complete.
	Device is connected to or disconnected from a virtual private network (VPN).
	Preparing internal storage by checking it for errors.
	USB debugging is enabled on the device.
	Wired headset with a boom module is connected to the device.
	Wired headset without a boom module is connected to the device.
	PTT Express Voice client status. See the PTT Express PTT Notification Icons for a complete list.
	Indicates the RxLogger app is running.
	Indicates the Bluetooth scanner is connected to the device.
	Indicates the ring scanner is connected to the device in HID mode.

Status Icons

Status icons display system information for the device.

Table 7 Status Icons

Icon	Description
	Alarm is active.
	Main battery is fully charged.
	Main battery is partially drained.
	Main battery charge is low.
	Main battery charge is very low.
	Main battery is charging.
	All sounds, except media and alarms, are muted. Vibrate mode is active.
	Indicates that all sounds except media and alarms are muted.
	Do Not Disturb mode active.
	Airplane Mode is active. All radios are turned off.
	The device is connected to a Bluetooth device.
5	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.
	Indicates that the Orange key is locked. The round orange icon displays when the Fn key is long pressed.
	Indicates that the Blue key is pressed. The rectangle blue icon displays when the Fn key is short pressed.
	Indicates that a BT headset is connected to the device.

Managing Notifications

Notification icons report the arrival of new messages, calendar events, alarms, and ongoing events. When a notification occurs, an icon appears in the Status bar with a brief description. See Notification Icons on page 25 for a list of possible notification icons and their description.

- To view a list of all notifications, open the Notification panel by dragging the Status bar down from the top of the screen.

Figure 4 A11 Notification Panel

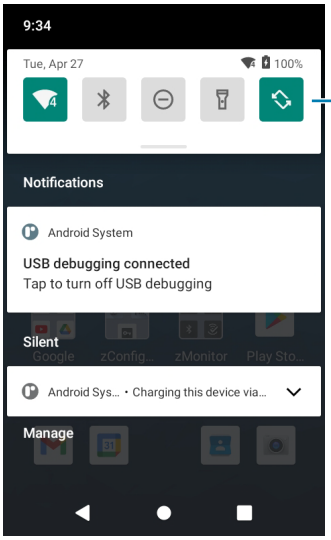
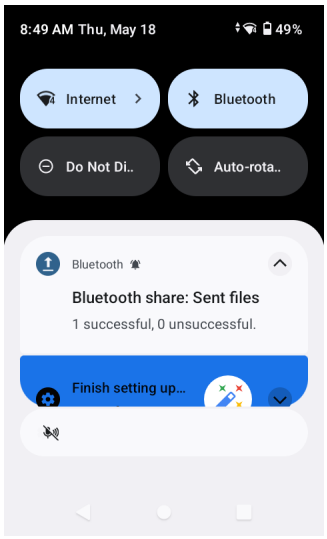


Figure 5 A13 Notification Panel



- To respond to a notification, open the Notification panel and then touch a notification. The Notification panel closes and the corresponding app opens.
- To 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 in the list.
- To close the Notification panel, swipe the Notification panel up.

Opening the Quick Access Panel

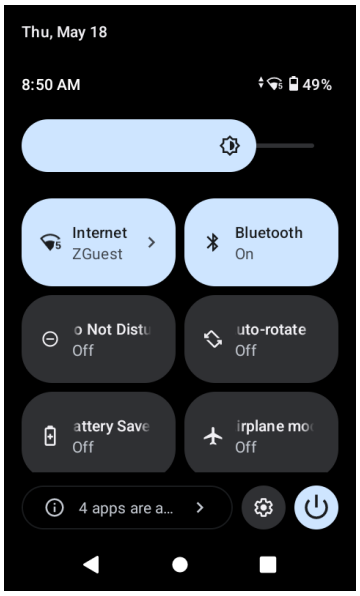
Use the Quick Access panel to access frequently used settings (for example, Airplane mode). To get to the Quick Access Panel:

- If the device is locked, swipe down once.
- If the device is unlocked, swipe down once with two fingers, or twice with one finger.

- If the Notification panel is open, swipe down from the Quick Settings bar.

Figure 6 A11 Quick Access Panel

Figure 7 A13 Quick Access Panel



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

Quick Access Panel Icons

- Display brightness - Use the slider to decrease or increase the brightness of the screen.
- Wi-Fi network - Turn Wi-Fi on or off. To open Wi-Fi settings, touch the Wi-Fi network name. (A11 only)
- Internet - Turn Wi-Fi on or off. To open Wi-Fi settings, touch the Wi-Fi network name. (A13 only)
- Bluetooth settings - Turn Bluetooth on or off. To open Bluetooth settings, touch **Bluetooth**.

- 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.
- Invert colors - Invert the display colors. (A11 only)
- Do not disturb - Control how and when to receive notifications.
- 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.
- 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.
- Screen Cast - Share phone content on Chromecast or a television with Chromecast built-in. Touch cast screen to display a list of devices, then touch a device 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.
- Screen Record - Turn on to record your phone screen. Tap the toggle switches to record audio or show touches on the screen.
- Scan QR code - Opens the camera app for QR code reading. (A13 only)
- NFC - Enables or disables NFC communication.
- Nearby share - Helps find and interact with services and devices close to the device.
- Color inversion - Invert the display colors. (A13 only)
- Live caption - Enables captions to appear for any media playing, regardless of the device's volume level. (A13 only)
- Calculator - Opens the Calculator app. A13 only)
- Security & Privacy - Need information on this item. (A13 only)

Editing Icons on the Quick Settings Bar

The first several setting tiles from the Quick Access panel become the Quick Settings bar.

Open the Quick Access panel and touch ✎ to edit, add, or remove settings tiles.

Battery Management

Observe the recommended battery optimization tips for your device.

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

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

Checking Battery Status

- 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. See Battery Manager on page 46.

  - **Battery present status** indicates if the battery is present.
  - **Battery level** lists the battery charge (as a percentage of fully charged).
- Swipe down with two fingers from the status bar to open the quick access panel.
  - Battery percentage is displayed next to the battery icon.

Monitoring Battery Usage

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

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

Display battery information and power management options for a specific app.

1. Go to **Settings**.
2. On A11, touch **Apps & notifications**.
3. On A13, touch **Apps**.
4. Touch an app.
5. On A11, touch **Advanced > Battery**.
6. On A13, touch **Battery**.

Different apps display different information. Some apps include buttons that open screens with settings to adjust power use. Use the **DISABLE** or **FORCE CLOSE** buttons to turn off apps that consume too much power.

Low Battery Notification

When the battery charge level drops below 5%, the device displays a notice to connect the device to power. The user should charge the battery using one of the charging accessories.

When the battery charge drops below 4%, the device displays a second notice to connect the device to power. The user must charge the battery using one of the charging accessories.

When the battery charge drops below 3%, the device turns off. The user must charge the battery using one of the charging accessories.

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.
- Proximity Sensor - Detects the presence of nearby objects without physical contact. The sensor detects when the device is close to your face during a call and turns off the screen, preventing unintentional screen touches.

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 Suspend mode when you press the Power button or after a period of inactivity (set in the Display settings window).

1. To wake the device from Suspend mode, press the Power button.

   The Lock screen displays.
2. Swipe the screen up to unlock.
   - If the Pattern screen unlock feature is enabled, the Pattern screen appears instead of the Lock screen.
   - If the PIN or Password screen unlock feature is enabled, enter the PIN or password after unlocking the screen.

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

If you forget the PIN, password, or pattern contact your system administrator.

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. For information on USB communication accessories available for this device, see Accessories.

The USB Cradle Settings application found in the Android settings is used to switch between the Client mode (default) and the Host mode. Client mode allows you to communicate with the PC. Host mode allows you to connect to the Ethernet or USB peripherals. This allows users to switch from USB A (Host mode) to USB B (Client mode) when using the RZ-2CH10 1-Slot Charge/Communication Cradle.

Transferring Files

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

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**.
4. On the host computer, open a file explorer application.
5. Locate the **device** as a portable device.

6. 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.

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. On the host computer, open a file explorer application.
5. Copy or delete photos as required.

Disconnect from the Host Computer

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

To disconnect the device from the host computer:

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

Settings

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 sleep time, and change font size.

Setting the Screen Brightness Manually

Manually set the screen brightness using the touchscreen.

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

Setting the Screen Brightness Automatically

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

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

   By default, **Adaptive brightness** is enabled. Toggle the switch to disable.
4. Touch the Home button.

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**.

3. Touch **Night Light**.
4. Touch **Schedule**.
5. Select one of the schedule values:
   - **None** (default)
   - **Turns on at custom time**
   - **Turns on from sunset to sunrise**.
6. By default, **Night Light** is disabled. Touch **TURN ON NOW** to enable.
7. Adjust the tint using the **Intensity** slider.
8. Touch the Home button.

Setting Proximity Sensor

The proximity sensor detects the presence of nearby objects without physical contact.

1. Go to **Settings.**
2. Touch **Display**.
3. Touch **Enable Proximity** or **Disable Proximity** to toggle the proximity sensor on or off.
4. When prompted, reboot the device.

Setting Screen Rotation

By default, screen rotation is enabled.

1. Go to **Settings**.
2. On A11, touch **Display** > **Advanced**.
3. On A13, touch **Accessibility** > **System controls**.
4. Touch **Auto-rotate screen**.

NOTE: To change the Home screen rotation, see Setting Home Screen Rotation on page 24.

5. Touch the Home button.

Setting Screen Timeout

Set the screen sleep time.

1. Go to **Settings**.
2. Touch **Display** > **Screen timeout**.
3. Select one of the sleep values.
   - **15 seconds**
   - **30 seconds**
   - **1 minute**
   - **2 minutes**
   - **5 minutes**

- **10 minutes**
- **30 minutes** (default)
- **Never**

4. Touch the Home button.

Setting Font Size

Set the size of the font in system apps.

1. Go to **Settings**.
2. On A11, touch **Display** > **Advanced** > **Font size**.
3. Select one of the font size values.
   - Small
   - Default
   - Large
   - Largest.
4. On A13, touch **Display size and text**.

   Use the **+** and **-** to vary the size of the text.
5. Touch the Home button.

Touch Panel Mode

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

1. Go to **Settings**.
2. On A11, touch **Display** > **Advanced**.
3. On A13, touch **Display**.
4. Touch **TouchPanelUI**.
5. Select:
   - **Finger Only (Default)** to use a finger on the screen.
   - **Stylus, Glove and Finger** to use a stylus, gloved finger, or a finger on the screen.
6. Touch the Home button.

Setting the Date and Time

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)

1. Go to **Settings**.
2. Touch **System** > **Date & time**.
3. On A11, touch **Use network-provided time** to disable automatic date and time synchronization.
4. On A13, touch **Set time automatically** to disable automatic date and time synchronization.
5. Touch **Date**.

6. In the calendar, set today's date.
7. Touch **OK**.
8. Touch **Time**.
9. Touch the circle, drag to the current hour and then release.
10. Touch the circle, drag to the current minute and then release.
11. Touch **AM** or **PM**.
12. Touch **OK**.
13. Touch **Time zone** > **Time zone** and select the current time zone from the list. This option may not be available in some locations.
14. Touch **Time zone** > **Region** and select the current region from the list.

NOTE: The default time zone region is set to Japan.

15. Touch **Update Interval** to select interval to synchronize the system time from the network.
16. In **TIME FORMAT**, choose either **Use local default** or **Use 24-hour format**.
17. Touch the Home button.

General Sound Setting

Press the volume buttons on the device to display on screen volume controls. Devices display the Zebra volume controls icon on the left side of the screen. Devices display the standard Android volume controls on the right side of the screen.

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

- **Media volume** - Controls the music, games, and media volume.
- **Alarm volume** - Controls the alarm clock volume.
- **Notification volume** - Controls the notification volume (WLAN only).
- **Do Not Disturb** - Mutes some or all sounds and vibrations.
- **Media** - Enable or disable to show media controls in Quick Access Panel.
- **Vibration & haptics** (A13 only) - Vibrate the device when making screen selections (default – enabled).
- **Shortcut to prevent ringing** - Select how the shortcut method prevents ringing.
- **Default notification sound** - Select a sound to play for all system notifications.
- **Default alarm sound** - Select a sound to play for alarms.
- **Other sounds and vibrations**
  - **Screen locking sounds** - Play a sound when locking and unlocking the screen (default – enabled).

- **Charging sounds and vibration** - Plays a sound and vibrates when power is applied to the device (default - enabled).
- **Touch sounds** - Play a sound when making screen selections (default – enabled).
- **Touch vibration**(A11 only) - Vibrate the device when making screen selections (default – enabled).

Setting Wake-Up Sources

By default the device wakes from suspend mode with the following:

- Power button
- Power source
- RTC (Real-Time Clock).

In addition, the device can be configured to wake when the user presses certain keys.

1. Go to **Settings**.
2. Touch **Wake-Up Sources**.
   - **NAV_OK**
   - **SCAN**
   - **STAR**
3. Touch a checkbox. A check appears in the checkbox.
4. Touch the Home button.
   - **Touch vibration** - Vibrate the device when making screen selections (default – enabled).

By default the device wakes from suspend mode with the following:

- Power button
- Power source
- RTC (Real-Time Clock).

In addition, the device can be configured to wake when the user presses certain keys.

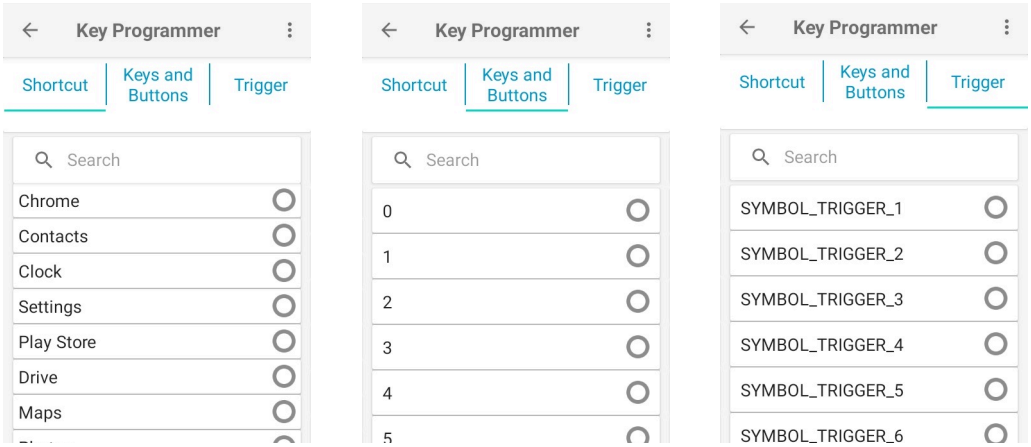
- **NAV_OK**
- **SCAN**
- **STAR**

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, refer to: techdocs.zebra.com.

NOTE: It is not recommended to remap 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** tab that lists the available functions, applications, and triggers.



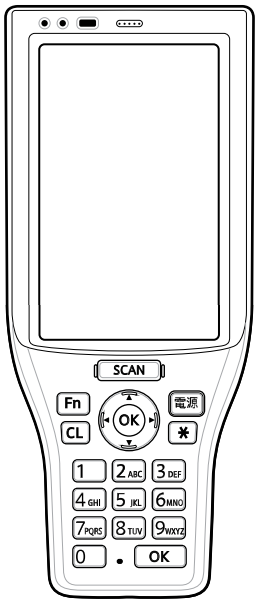
5. Touch a function or application shortcut to map to the button.

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

6. Touch the Home button.

Remappable Keys

Figure 8 Key Positions



UI Listed Keys

- NAV_OK
- SCAN
- UP
- DOWN
- LEFT
- RIGHT

- FN
- STAR
- CLEAR
- 0 - 9
- ENTER

Non-Remappable Keys

- POWER
- BACK (Not a physical key)
- HOME (Not a physical key)
- RECENT (Not a physical key)

Keyboards

The device provides multiple keyboard options.

- Gboard - GMS devices only
- Enterprise Keyboard- Not pre-installed on the device.

NOTE: By default the Enterprise and Virtual Keyboards are disabled.

Keyboard Configuration

Enabling Keyboards

1. Go to **Settings**.
2. Touch **System > Languages & input > Virtual keyboard > Manage keyboards**.
3. Touch a keyboard to enable.

Switching Between Keyboards

- To switch between keyboards, touch in a text box to display the current keyboard.
  - On the Gboard keyboard, touch and hold (GMS devices only).
  - On the Enterprise keyboard, touch . Not pre-installed on the device.

Using the Android and Gboard Keyboards

Use the Android or Gboard keyboards to enter text in a text field.

To configure the keyboard settings on the Japanese keyboard, touch on the top of the keyboard.

To configure the keyboard settings on the English keyboard, touch and hold the comma and then slide your finger to .

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

The Japanese keyboard includes two types; 12-Key and QWERTY.

Japanese Keyboard

1. Enter numbers and symbols.
   - Touch あa1 to switch to the numbers and symbols keyboard.
   - Touch !?# key on the numbers and symbols keyboard to view another numbers and symbols keyboard.

English Keyboard

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

Using the Enterprise Keyboard

The Enterprise Keyboard contains multiple keyboard types.

- 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.

NOTE: The default language is set to Japan.

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.
6. The operating system text changes to the selected language.

Adding Words to the Dictionary

1. Go to **Settings**.
2. On A11, touch **System** > **Languages & input** > **Advanced** > **Personal dictionary**.
3. On A13, touch **System** > **Languages & input** > **Personal dictionary**.
4. If prompted, select the language where this word or phase is stored.
5. Touch **+** to add a new word or phrase to the dictionary.
6. Enter the word or phrase.
7. In the **Shortcut** text box, enter a shortcut for the word or phrase.
8. Touch the Home button.

Notifications

Setting App Notifications

To set notification settings for a specific app:

1. Go to **Settings**.
2. On A11, touch **Apps & notifications**.
3. On A13, touch **Apps**.
4. Under Recently opened apps, touch **SEE ALL XX APPS**. The **App info** screen displays.

   If there are no recently opened apps, touch **App info** to open the **App Info** screen.
5. Select an app. Options vary depending on the app selected.

6. Select an available option:

- **Open** - Opens the app.
- **Disable** - Turn the app off and hide it. The app no longer appears in the All Apps list. You must re-enable the app to use it.
- **Force Stop** - Turn off the app.
- **Notifications**
  - **All app notifications** - Select to turn all notifications from this app on (default) or off.

    Touch a specific notification category to display additional options.
  - **Default** - Allow notifications from this app to make sound.
  - **Silent** - Do not allow notifications from this app to make sound.
  - **Minimize** - In the Notification panel, collapse notifications to one line.
  - **Advanced** - Touch for additional options.
    - **Allow notification dot** - Do not allow this app to add a notification dot to the app icon.
    - **Additional settings in the app** - Open the app settings.
- **Permissions** - Configure which permissions are allowed or denied for this app.
- **Storage & cache** - View the amount of storage and cache space used for this app. You can choose to **Clear Storage** and **Clear Cache** for the app to free up storage space on the device.
- **Advanced** - Touch for additional options.
- **Screen time** - Touch for options to set an **App timer** that limits the amount of time you can use this app and to **Manage notifications**.
- **Battery** - Set **Background restriction** and **Battery optimization** for this app.
- **Open by default** - Modify which links or files the app opens by default.
- **Advanced**
  - **Picture-in-picture** - Allow this app to create a picture-in-picture window when the app is running in the background.
  - **Install unknown apps** - Allow this app to install unknown apps.
  - **Display over other apps** - Allow this app to display over other apps.
  - **Modify system settings** - Allow this app to modify system settings.
- **Store**
  - **App details** - Opens Google Play to display information about the app.

Viewing Notification Settings for All Apps

To view the notification settings for all apps:

1. Go to **Settings**.
2. On A11, touch **Apps & Notifications**.
3. On A13, touch **Apps**.
4. Scroll down to **Notifications** to view how many apps have notifications turned off.
5. To set or view notifications settings for a specific app, see Setting App Notifications on page 41.

Controlling Lock Screen Notifications

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

1. Go to **Settings**.
2. On A11, touch **Apps & notifications** > **Notifications**.
3. On A13, touch **Notifications**.
4. Touch **Notifications on lockscreen** and select one of the following:
   - **Show conversations, default, and silent** (default)
   - **Hide silent conversations and notifications**
   - **Don't show any notifications.**

Blink Light

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

To change the notification setting:

1. Go to **Settings**.
2. On A11, touch **Apps & notifications > Notifications > Advanced**.
3. On A13, touch **Notifications**.
4. Touch **Blink light** to toggle the notification on or off.

Applications

The **APPS** screen displays icons for all installed apps. See Application Deployment for information on installing and uninstalling apps. For information on standard Android apps, go to Google Play.

Installed Applications

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

NOTE: Not all apps are available on all devices.

Table 1 Apps

Icon	Description
	**Battery Manager** - Displays 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. (A11 only)
	**Bluetooth Pairing Utility** – Use to pair a Zebra Bluetooth scanner with the device by scanning a barcode. (A13 only)
	**DataWedge** - Enables data capture using the imager. For more information, see DataWedge Demonstration on page 52.
	**DWDemo** - Provides a way to demonstrate the data capture features using the imager. For more information, see DataWedge Demonstration on page 52.

Table 1 Apps (Continued)

Icon	Description
	**License Manager** - Use to manage software licenses on the device.
	**PTT Express** - Use to launch PTT Express client for VoIP communication.
	**RxLogger** - Use to diagnose device and app issues. For more information, see RxLogger on page 56.
	**StageNow** - Allows the device to stage a device for initial use by initiating the deployment of settings, firmware, and software.
	**Worry Free Wifi Analyzer** - A diagnostic intelligent app. Use to diagnose surrounding area and display network stats, such as coverage hole detection, or AP in vicinity. Refer to the Worry Free Wi-Fi Analyzer Administrator Guide for Android. (A11 only)
	**Wireless Analyzer** - A diagnostic intelligent app. Use to diagnose surrounding area and display network stats, such as coverage hole detection, or AP in vicinity. Refer to the Worry Free Wi-Fi Analyzer Administrator Guide for Android. (A13 only)
	**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

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

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

Use the Recent button to switch between recently used apps.

1. Touch Recent button.

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

Battery Manager

The **Battery Manager** provides detailed information about the battery and battery swap procedures on supported devices.

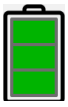
Opening Battery Manager

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

Battery Manager Information Tab

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

Table 2 Battery Icon Description

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 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.
  - **Charging-AC** - The device is connected to AC power and charging.
  - **Discharging** - The battery is discharging.
  - **Full** - That 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 present capacity** - Maximum amount of charge that could be pulled from the battery under the present discharge conditions if the battery were fully charged.
- **Battery health percentage** - With a range from **0** to **100**, this is the ratio of “present_capacity” to “design_capacity” at a discharge rate of “design_capacity”.
- **% decommission threshold** - The default % decommission threshold for a gifted battery as 80%.
- **Battery present charge** - Amount of usable charge remaining in the battery at present under the current discharge conditions.
- **Battery total cumulative charge** - The total accumulated charge in all chargers.
- **Battery time since first use** - The time passed since the battery was placed in a Zebra terminal for the first time.
- **Battery error status** - The error status of the battery.
- **Charge Mode** - Indicates Standard or Custom and are mapped as follows:
  - Standard represents Battery run time mode (4.2V Higher voltage)
  - Custom represents Extended cycle life mode (4.1V Lower voltage)
- **App version** - The application version number.

Battery Manager Swap Tab

NOTE: The **Swap** tab also appears when the user presses the Power button and selects **Battery Swap**.

Use to place the device in Battery Swap mode when replacing the battery. Follow the instructions on the screen. Touch **Proceed with battery swap** button.

Camera

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 the internal storage.

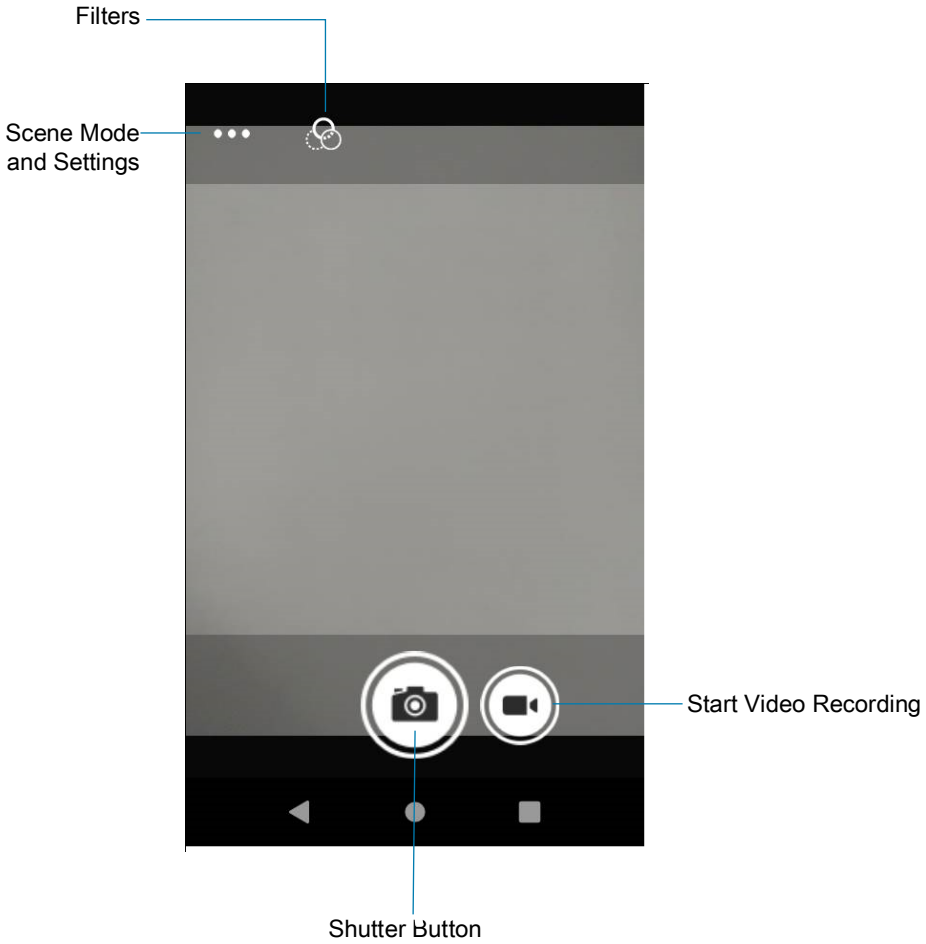
NOTE: On camera only devices without an internal scan engine, the back camera is used for barcode scanning.

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

Taking Photos

NOTE: See Camera Settings on page 50 for camera setting descriptions.

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



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

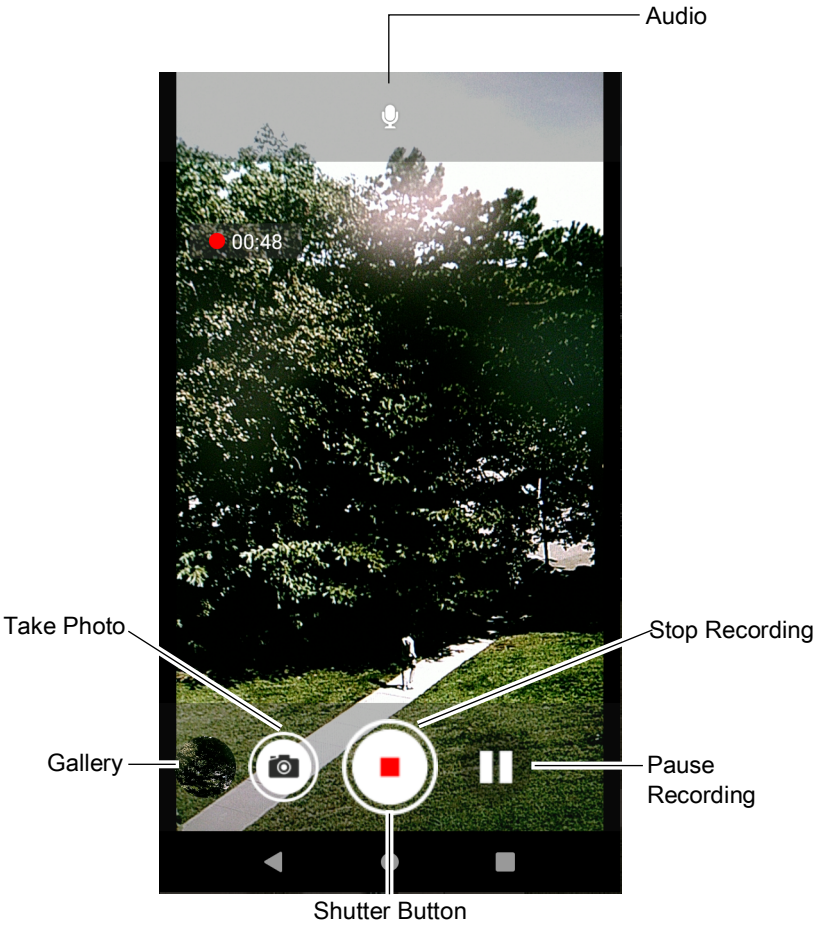
5. Touch ⊙.

   The camera takes a photo and a shutter sound plays.

   The photo momentarily displays as a thumbnail in the lower left corner.

Recording Videos

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



2. Point the camera and frame the scene.
3. To zoom in or out, press two fingers on the display and pinch or expand fingers. The zoom controls appear on the screen.
4. Touch ⊙ to start recording.

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

5. Touch ⊙ to end the recording.

The video momentarily displays as a thumbnail in the lower left corner.

Camera Settings

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

- **General** - These settings apply to both the still camera and video camera.

- **Face Detection** - Select to turn face detection Off (default) or On.
- **Storage** – Set the location to store the photo to: Phone or SD Card.

- **Still Camera** - These settings apply only to the still camera.
  - **Countdown timer** - Select **Off** (default), **2 seconds**, **5 seconds** or **10 seconds**.
  - **Continuous Shot** - Select to take a series of photos quickly while holding the capture button. Off (default) or On.
  - **Picture size** - The size (in pixels) of the photo to: **13M pixels** (default), **8M pixels**, **5M pixels**, **3M pixels**, **HD1080**, **2M pixels**, **HD720**, **1M pixels**, **WVGA**, **VGA**, or **QVGA**.
  - **Picture quality** - Set the picture quality setting to: **Low**, **Standard**, or **High** (default).
  - **Exposure** - Set the exposure settings to: **-2**, **-1.5**, **-1**, **-0.5**, **0** (default), **+0.5**, **+1**, **+1.5**, **+2**.
  - **White balance** - Select how the camera adjusts colors in different kinds of light, to achieve the most natural-looking colors:
    - **Incandescent** - Adjust the white balance for incandescent lighting.
    - **Fluorescent** - Adjust the white balance for florescent lighting.
    - **Auto** - Adjust the white balance automatically (default).
    - **Daylight** - Adjust the white balance for daylight.
    - **Cloudy** - Adjust the white balance for a cloudy environment.
  - **Shutter Sound** - Select to play a shutter sound when taking a photo. Options: Disable or Enable (default).
  - **AF Animation** - Select to enable or disable the camera focus ring in the camera preview. Options: Disable (default) or Enable.
  - **Picture Format** - All still images are saved in JPEG format.
- **Video Camera** - These settings apply only to the video camera.
  - **Video quality** - Set video quality to: **HD 1080p** (default), **HD 720p**, **SD 480p**, **CIF**, or **QVGA**.
  - **Video duration** - Set to: **30 seconds (MMS)**, **10 minutes**, **30 minutes** (default), or **no limit**.
  - **Image Stabilization** - Set to reduce blurry videos due to device movement. Options: On or Off (default).
  - **Noise Reduction** - **Off** (default), **Fast**, **High Quality**
  - **Video Encoder** - Set the video encoder to: **MPEG4**, **H264** (default).
  - **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**.
  - **Time Lapse** - Set the time lapse interval to: **Off** (default), or a time between **0.5 seconds** and **24 hours**.
- **System**
  - **Restore default** - Select to restore all settings to the default values.
  - **Version Info** - Displays the software version of the camera app.

DataWedge Demonstration

Use **DataWedge Demonstration** (DWDemo) to demonstrate data capture functionality. To configure DataWedge, refer to techdocs.zebra.com/datawedge/.

NOTE: DataWedge is enabled on the Home screen. To disable this feature, go to the DataWedge settings and disable the **Launcher** profile.

Table 3 DataWedge Demonstration Icons

	Icon	Description
Illumination		Imager illumination is on. Touch to turn illumination off.
		Imager illumination is off. Touch to turn illumination on.
Data Capture		The data capture function is through the internal imager.
		A Bluetooth scanner is connected.
		A Bluetooth scanner is not connected.
		The data capture function is through the rear camera.
Scan Mode		Imager is in picklist mode. Touch to change to normal scan mode.
		Imager is in normal scan mode. Touch to change to picklist mode.
Menu		Opens a menu to view the application information or to set the application DataWedge profile.

Scanner Selection

To select a scanner, touch ⋮ > **Settings** > **Scanner selection**.

See the Data Capture section for more information.

Press the programmable button or touch the yellow scan button to capture data. The data appears in the text field below the yellow button.

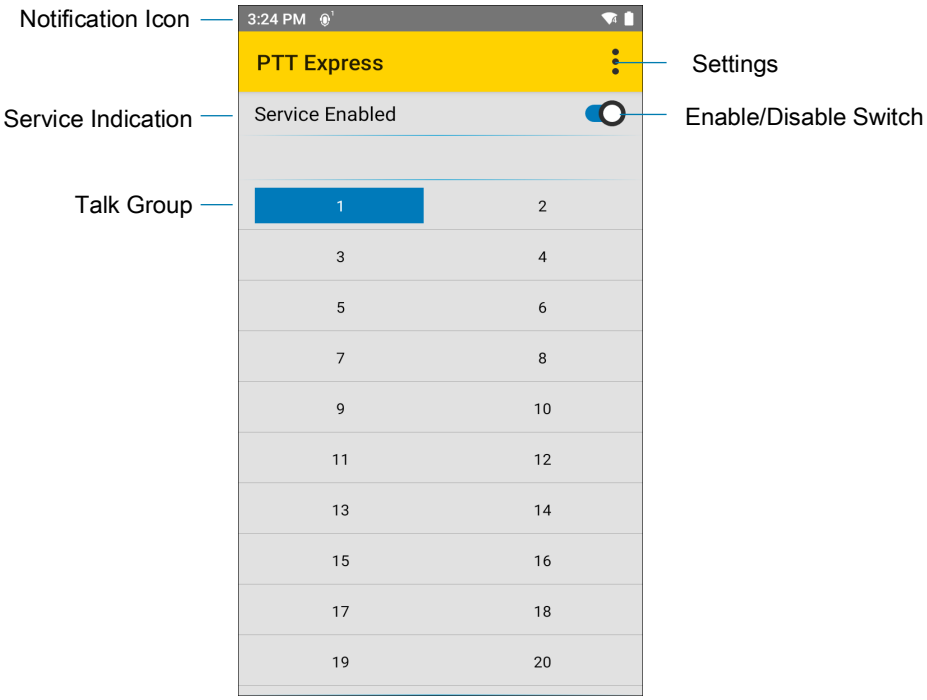
PTT Express Voice Client

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

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

PTT Express User Interface

Figure 1 PTT Express Default User Interface



PTT Audible Indicators

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

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

- Three decreasing pitch beeps. Plays when PTT Express loses the WLAN connection or the service is disabled.

PTT Notification Icons

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

Table 4 PTT Express Icon Descriptions

Status Icon	Description
	The PTT Express Voice client is disabled.
	The PTT Express Voice client is enabled but not connected to a WLAN.
	The PTT Express Voice client is enabled, connected to a WLAN, and listening on the Talk Group indicated by the number next to the icon.
	The PTT Express Voice client is enabled, connected to a WLAN, and communicating on the Talk Group indicated by the number next to the icon.
	The PTT Express Voice client is enabled, connected to a WLAN, and in a private response.
	The PTT Express Voice client is enabled and muted.
	The PTT Express Voice client is enabled but it is not able to communicate due to a VoIP telephony call in progress.

Enabling PTT Communication

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

Selecting a Talk Group

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

PTT Communication

NOTE: This section describes the default PTT Express client configuration. Refer to the PTT Express V1.2 User Guide for detailed information on using the client. PTT Express does not support Bluetooth accessories. PTT Express only supports Zebra PTT headsets – HDST-35MM-PTT1-01. By default, the PTT button on this headset will initiate PTT calls.

PTT communication may be established as a Group Call. When PTT Express is enabled, the PTT button is assigned for PTT communication. When the Wired Headset is used, Group Calls can also be initiated using the headset Talk button.

1. Press and hold the PTT button (or the Talk button on the headset) and listen for the talk tone.

   If you hear a busy tone, release the button and wait a moment before making another attempt. Ensure that PTT Express and the WLAN are enabled.
2. Start talking after hearing the talk tone.

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

Responding with a Private Response

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

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

Disabling PTT Communication

1. Swipe up from the bottom of the Home screen and touch .
2. Slide the **Enable/Disable Switch** to the **OFF** position. The button changes to **OFF**.
3. Touch the Home 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, GPS logging, logcat, FTP push/pull, ANR dumps, etc. 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, refer to techdocs.zebra.com/rxlogger/.

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

Configuration File

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

Enabling Logging

To enable logging:

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

Disabling Logging

To disable logging:

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

Extracting Log Files

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

Backing Up

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

To initiate the Main Chat Head:

1. Open **RxLogger**.
2. Touch ⋮ > **Toggle Chat Head**. The Main Chat Head icon appears on the screen.
3. Touch and drag the Main Chat head icon to move it around the screen.

Removing the Main Chat Head

To remove the Main Chat Head icon:

1. Touch and drag the icon. A circle with an X appears.
2. Move the icon over the circle and then release.

Viewing Logs

To view logs:

1. Touch the Main Chat Head icon. The RxLogger Utility screen appears.
2. Touch a log to open it. The user can 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

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 appears.
2. Touch **Yes** to create the back up.

Data Capture

The device supports data capture using:

- Integrated camera
- SE4770 Internal Imager
- RS5100 Bluetooth Ring Scanner
- RS6000 Bluetooth Ring Scanner
- DS3678 Digital Scanner
- LI3678 Linear Imager
- DS2278 Digital Scanner
- DS8178 Digital Scanner

Imaging

The imager uses imaging technology to take a picture of a barcode, stores the resulting image in its memory, and executes state-of-the-art software decoding algorithms to extract the barcode data from the image. With a 2D imager, the device has the following features:

- Omnidirectional reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- Advanced intuitive laser aiming cross-hair and dot aiming for easy point-and-shoot operation.

Digital Camera

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.

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

- 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 the following modes of operation, listed below. Activate each mode by pressing the Scan button.

- **Decode Mode**: In this mode, the device attempts to locate and decode enabled barcodes within its field of view. The imager remains in this mode as long as the user holds the scan button, or until it decodes a barcode.

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

- **Pick List Mode**: This mode allows the user to selectively decode a barcode when more than one barcode is in the device's field of view. To accomplish this, move the aiming crosshair or dot over the required barcode to decode only this barcode. This feature is ideal for pick lists containing multiple barcodes and manufacturing or transport labels containing more than one barcode type (either 1D or 2D).

NextGen Simulscan

NextGen SimulScan consists of major SimulScan capabilities migrated to the internal scanning framework accessible through DataWedge and DataWedge intent APIs. These capabilities are supported on certain Bluetooth scanners and all Zebra devices with built-in imager and/or camera running Android 8.x Oreo and higher. NextGen SimulScan features (formerly part of SimulScan) are:

- MultiBarcode - acquire multiple, unique barcodes in a single scan session and deliver scanned data either immediately or after the specified number of barcodes per scan is reached. Options currently available:
  - Number of barcodes per scan - set a fixed quantity of barcodes to scan.
  - Instant Reporting - instantaneously report unique barcodes within a scanning session. (Must not be confused with DataWedge Reporting that is deprecated.)
  - Report decoded barcodes - report decoded barcodes in a single scan session.
- Document Capture - retrieve barcode data from documents, and/or capture partial or entire images of documents based on a Document Capture/NextGen SimulScan template. Contact your local Zebra sales representative for assistance to create a Document Capture/NextGen SimulScan template.
- OCR - OCR was not migrated from legacy SimulScan and is not supported in NextGen SimulScan. However, OCR A/B, the feature that captures travel documents, is supported.

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 best 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.

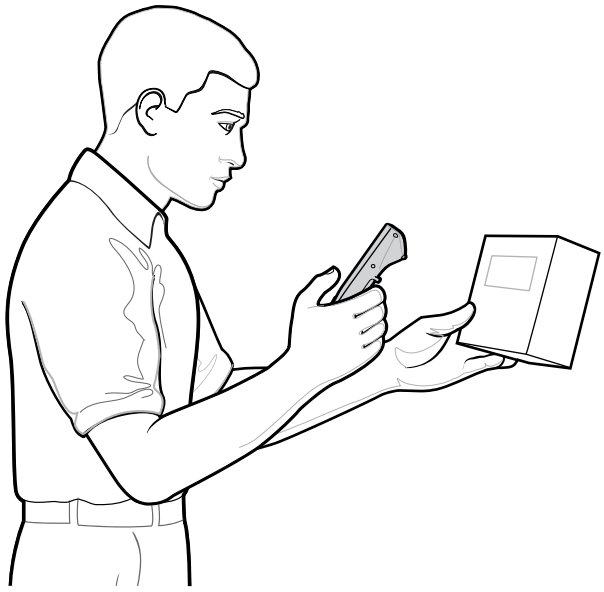
NOTE: Scanning procedures depend on the app and device configuration. An app may use different scanning procedures from the one listed above.

Scanning with Internal Imager

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

To scan with the internal imager:

1. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
2. Point the exit window at the desired barcode.
3. Press and hold the scan button.
   The white laser aiming pattern turns on to assist in aiming.



NOTE: When the device is in Picklist mode, the imager does not decode the barcode until the cross-hair or aiming dot touches the barcode.

4. Ensure the barcode is within the area formed by the cross-hairs in the aiming pattern.

Figure 2 Aiming Pattern

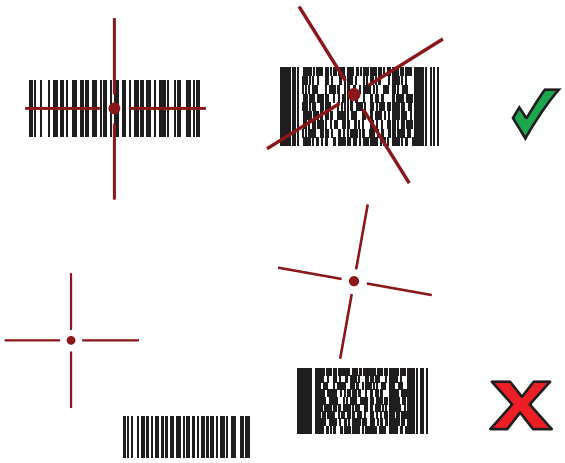


Figure 3 Pick List Mode with Multiple Barcodes

5. A beep sounds, by default, to indicate the barcode was decoded successfully.
6. 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.

7. The barcode content data displays in the text field.

Scanning with Internal Camera

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.

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

To scan with the internal camera:

1. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
2. Point the camera exit window on the back of the device at a barcode.
3. Press and hold the scan button. By default, a preview window appears on the screen.
4. If Picklist mode is enabled, move the device until the bar code is centered under the red target on the screen.
5. Move the device until the barcode is visible on the screen.
6. A beep sounds and the device vibrates, by default, to indicate the barcode was decoded successfully.

7. The captured data appears in the text field.

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. The captured barcode data is converted to keystrokes and sent to the target application as if it was 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 device.
- Properly format and transmit data to a specific app.

To configure DataWedge refer to techdocs.zebra.com/datawedge/.

Enabling DataWedge

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

Disabling DataWedge

1. Touch .
2. Touch **Settings**.
3. Touch **DataWedge enabled**.

The blue check disappears from the checkbox indicating that DataWedge is disabled.

Supported Decoders

NOTE: DataWedge supports the decoders listed below but not all are validated on this device.

Table 5 Supported Decoders

Decoders	Camera	Internal Imager SE4770	RS5100	RS6000	DS3678	LI3678	DS2278	DS8178
Australian Postal	--	--	--	--	--	N/A	--	--
Aztec	✓	✓	✓	✓	✓	N/A	✓	✓
Canadian Postal	--	--	--	--	N/A	N/A	N/A	N/A
Chinese 2 of 5	--	--	--	--	--	--	--	--
Codabar	✓	✓	✓	✓	✓	✓	✓	✓
Code 11	--	--	--	--	--	--	--	--
Code 128	✓	✓	✓	✓	✓	✓	✓	✓
Code 39	✓	✓	✓	✓	✓	✓	✓	✓
Code 93	--	--	--	--	--	--	--	--
Composite AB	--	--	--	--	--	N/A	--	--
Composite C	--	--	--	--	--	N/A	--	--
Discrete 2 of 5	--	--	--	--	--	--	--	--
Datamatrix	✓	✓	✓	✓	✓	N/A	✓	✓
Dutch Postal	--	--	--	--	--	N/A	--	--
DotCode	✓	--	--	--	--	--	--	--
EAN13	✓	✓	✓	✓	✓	✓	✓	✓
EAN8	✓	✓	✓	✓	✓	✓	✓	✓
Finnish Postal 4S	--	--	N/A	N/A	N/A	N/A	N/A	N/A
Grid Matrix	--	--	--	--	--	--	--	--
GS1 DataBar	✓	✓	✓	✓	✓	✓	✓	✓
GS1 DataBar Expanded	✓	✓	✓	✓	✓	✓	✓	✓
GS1 DataBar Limited	--	--	--	--	--	--	--	--
GS1 Datamatrix	--	--	--	--	--	N/A	--	--
GS1 QRCode	--	--	--	--	--	N/A	--	--
HAN XIN	--	--	--	--	--	--	N/A	N/A
Interleaved 2 of 5	--	--	--	--	--	--	--	--
Japanese Postal	--	--	--	--	--	N/A	--	--

Table 5 Supported Decoders (Continued)

Decoders	Camera	Internal Imager SE4770	RS5100	RS6000	DS3678	LI3678	DS2278	DS8178
Korean 3 of 5	--	--	--	--	--	--	--	--
MAIL MARK	✓	✓	✓	✓	✓	N/A	✓	✓
Matrix 2 of 5	--	--	--	--	--	--	--	--
Maxicode	✓	✓	✓	✓	✓	N/A	✓	✓
MicroPDF	--	--	--	--	--	N/A	--	--
MicroQR	--	--	--	--	--	N/A	--	--
MSI	--	--	--	--	--	--	--	--
OCR A	N/A	--	N/A	N/A	N/A	N/A	N/A	N/A
OCR B	N/A	--	N/A	N/A	N/A	N/A	N/A	N/A
PDF417	✓	✓	✓	✓	✓	N/A	✓	✓
QR Code	✓	✓	✓	✓	✓	N/A	✓	✓
Decoder Signature	--	--	--	--	N/A	N/A	--	N/A
TLC 39	--	--	--	--	--	--	--	--
Trioptic 39	--	--	--	--	--	--	--	--
UK Postal	--	--	--	--	--	N/A	--	--
UPCA	✓	✓	✓	✓	✓	✓	✓	✓
UPCE0	✓	✓	✓	✓	✓	✓	✓	✓
UPCE1	--	--	--	--	--	--	--	--
US4state	--	--	--	--	--	N/A	--	--
US4state FICS	--	--	--	--	--	N/A	--	--
US Currency	N/A	--	N/A	N/A	N/A	N/A	N/A	N/A
US Planet	--	--	--	--	--	N/A	--	--
US Postnet	--	--	--	--	--	N/A	--	--

Key

✓ = Enabled
-- = Disabled
N/A = Not Supported

Wireless

This section provides information on the following wireless features:

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

Wireless Local Area Networks

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

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

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

The device supports the following WLAN security options:

- Enhanced Open
- Wireless Equivalent Privacy (WEP)
- Wi-Fi Protected Access (WPA)/WPA2 Personal (PSK)
- WPA3-Personal
- WPA/WPA2/WPA3 Enterprise (EAP) (A11 only)
  - Lightweight Extensible Authentication Protocol (LEAP)
  - Protected Extensible Authentication Protocol (PEAP) - with MSCHAPV2 and GTC authentication.
  - Transport Layer Security (TLS)
  - Tunneled Transport Layer Security (TTLS) - with Password Authentication Protocol (PAP), MSCHAP, MSCHAPv2, and GTC authentication
  - Password (PWD)
  - Lightweight Extensible Authentication Protocol (LEAP).
- WPA/WPA2-Enterprise (A13 only)
  - Protected Extensible Authentication Protocol (PEAP) - with MSCHAPV2 and GTC authentication.

    - Transport Layer Security (TLS)
    - Tunneled Transport Layer Security (TTLS) - Password Authentication Protocol (PAP), MSCHAP, MSCHAPv2, and GTC
    - PWD
    - Lightweight Extensible Authentication Protocol (LEAP)
- WPA3-Enterprise (A13 only)
    - Protected Extensible Authentication Protocol (PEAP) - with MSCHAPV2 and GTC authentication.
    - Transport Layer Security (TLS)
    - Tunneled Transport Layer Security (TTLS) - Password Authentication Protocol (PAP), MSCHAP, MSCHAPv2, and GTC
    - PWD
    - Lightweight Extensible Authentication Protocol (LEAP)
- WPA3-Enterprise 192-bit

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

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

Connecting to a Wi-Fi Network

To connect to a Wi-Fi network:

1. Go to **Settings** > **Network & Internet**.
2. On A11, touch **Wi-Fi** to open the **Wi-Fi** screen. The device searches for WLANs in the area and lists them.
3. On A13, touch **Internet** to open the **Internet** screen. The device searches for WLANs in the area and lists them.
4. Scroll through the list and select the desired WLAN network.
5. For open networks, touch 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) protocol. To configure the device with a fixed internet protocol (IP) address, see Configuring the Device to Use a Static IP Address on page 69.
6. In the Wi-Fi setting field, **Connected** appears indicating that the device is connected to the WLAN.

Removing a Wi-Fi Network

To remove a remembered or connected network:

1. Go to **Settings**.
2. On A11, touch **Network & Internet** > **W-Fi**.
3. On A13, touch **Network & Internet** > **Internet**.
4. Scroll down to the bottom of the list and touch **Saved networks**.
5. Touch the name of the network.

6. Touch **FORGET**.
7. Touch the Home button.

WLAN Configuration

This section provides information on configuring Wi-Fi settings.

Configuring a Secure Wi-Fi Network

1. Go to **Settings**.
2. On A11, touch **Network & Internet** > **Wi-Fi**.
3. On A13, touch **Network & Internet** > **Internet**.
4. Slide the switch to the **ON** position.
5. The device searches for WLANs in the area and lists them on the screen.
6. Scroll through the list and select the desired WLAN network.
7. Touch the desired network. If the network security is **Open**, the device automatically connects to the network. For all other network security a dialog box appears.
8. If the network security is WPA/WPA2-Personal, or WEP, enter the required password and then touch **Connect**.
9. If the network security is WPA/WPA2/WPA3 Enterprise:
   a. Touch the **EAP method** drop-down list and select one of the following:
      - **PEAP**
      - **TLS**
      - **TTLS**
      - **PWD**
      - **LEAP**.
   b. Fill in the appropriate information. Options vary depending on the EAP method chosen.
      - Certification Authority (CA) certificates are installed using the **Security** settings.
      - When using the EAP methods PEAP, TLS, or TTLS you must specify a domain.
      - Touch **Advanced options** to display additional network options.
10. If the network security is **WPA3-Enterprise 192-bit**:
    - You must specify a domain and user certificate.
    - Certification Authority (CA) and User certificates are installed using the **Security** settings.
    - Touch **Advanced options** to display additional network options.

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

11. Touch **Connect**.
12. Touch the Home button.

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. On A11, touch **Network & Internet** > **Wi-Fi**.
3. On A13, touch **Network & Internet** > **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**
   - **WEP**
   - **WPA/WPA2-Personal**
   - **WPA/WPA2/WPA3-Enterprise**
8. If the network security is **None**, touch **Save**.
9. If the network security is **WEP** or **WPA/WPA2-Personal**, enter the required password and then touch **Save**.
10. If the network security is WPA/WPA2/WPA3 Enterprise:
    a. Touch the **EAP method** drop-down list and select one of the following:
       - **PEAP**
       - **TLS**
       - **TTLS**
       - **PWD**
       - **LEAP**.
    b. Fill in the appropriate information. Options vary depending on the EAP method chosen.
       - Certification Authority (CA) certificates are installed using the **Security** settings.
       - When using the EAP methods PEAP, TLS, or TTLS you must 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.
    - 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**. See Configuring for a Proxy Server on page 69 for setting connection to a proxy server and see Configuring the Device to Use a Static IP Address on page 69 for setting the device to use a static IP address. Change the Hidden network setting from **No** (default) to **Yes** to connect a Hidden network.

12. Touch **Save**. To connect to the saved network, touch and hold on the saved network and select **Connect to network**.
13. Touch the Home button.

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. On A11, touch **Network & Internet** > **Wi-Fi**.
3. On A13, touch **Network & Internet** > **Internet**.
4. Slide the Wi-Fi switch to the **On** position.
5. In the network dialog box, select and touch a network.
6. To edit a connected network, touch 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 editing a connected network, touch **Save**, otherwise, touch **Connect**.
13. Touch the Home button.

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. On A11, touch **Network & Internet** > **Wi-Fi**.
3. On A13, ouch **Network & Internet** > **Internet**.
4. Slide the Wi-Fi switch to the **On** position.
5. In the network dialog box, select and touch a network.
6. To edit a connected network, touch 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. In the **Privacy** drop-down, the default **Use randomized MAC (default)** provides enhanced privacy, or you can choose **Use device MAC**.
15. If editing a connected network, touch **Save**, otherwise, touch **Connect**.
16. Touch the Home button.

Wi-Fi Preferences

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

- **Turn on Wi-Fi automatically** - When enabled, Wi-Fi automatically turns back on when near high quality saved networks.
- **Notify for public networks** - Notifies you when a high-quality public network is available.
- **Advanced** - Touch to expand options.
  - **Additional settings** - See Additional Wi-Fi Settings.
  - **Install Certificates** – Touch to install certificates.
  - **Network rating provider** - Disabled (AOSP devices). To help determine what constitutes a good Wi-Fi network, Android supports external Network rating providers that provide information about the quality of open Wi-Fi networks. Select one of the providers listed or **None**. If none are available or selected, the Connect to open networks feature is disabled. (A11 only)
  - **Wi-Fi Direct** - Displays a list of devices available for a direct Wi-Fi connection.

Additional Wi-Fi Settings

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

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

- **Regulatory**
  - **Country Selection** - Displays the acquired country code if 802.11d is enabled, else it displays the currently selected country code.
  - **Region code** - Displays the current region code.
- **Band and Channel Selection**
  - **Wi-Fi frequency band** - Set the frequency band to: **Auto** (default), **5 GHz only** or **2.4 GHz only**.
  - **Available channels (2.4 GHz)** - Touch to display the **Available channels** menu. Select specific channels and touch **OK**.
  - **Available channels (5 GHz)** - Touch to display the **Available channels** menu. Select specific channels and touch **OK**.

- **Logging**
  - **On A11, Advanced Logging** – Touch to enable advanced logging or change the log directory.
  - **On A13, Advanced Logging** – Touch to enable advanced logging, enable Wi-Fi verbose logging (A13 only), or change the log directory.
  - **Wireless logs** - Use to capture Wi-Fi log files.
    - **Fusion Logger** - Touch to open the **Fusion Logger** application. This application maintains a history of high level WLAN events which helps to understand the status of connectivity.
    - **Fusion Status** - Touch to display live status of WLAN state. Also provides information about the device and connected profile.
- **About**
  - **Version** - Displays the current Fusion information.

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 you want to connect to.

1. Go to **Settings**.
2. Touch **Wi-Fi > Wi-Fi preferences > Advanced > Wi-Fi Direct**. The device begins searching for another Wi-Fi Direct device.
3. Under **Peer devices**, touch the other device name.
4. On the other device, select **Accept**.

Connected appears on the device. On both devices, in their respective Wi-Fi Direct screens, the other device name appears 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 1 device power class. The maximum output power is 4.5 mW and the expected range is 100 m. A definition of ranges based on power class is difficult to obtain due to power and device differences, and whether in open space or closed office space.

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

Security

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

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

Recommendations are:

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

Bluetooth Profiles

The device supports the Bluetooth services listed.

Table 6 Bluetooth Profiles

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

Bluetooth Power States

The Bluetooth radio is off by default.

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

Bluetooth Radio Power

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

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

Enabling Bluetooth

1. Swipe down from the Status bar to open the Notification panel.
2. Touch to turn Bluetooth on.
3. Touch the Home button.

Disabling Bluetooth

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

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 meters (32.8 feet) 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 appears.
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**.
6. Touch the Home button.

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** appears 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.
5. Touch the Home button.

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**.
5. Touch the Home button.

Using a Bluetooth Headset

Use a Bluetooth headset for audio communication when using an audio-enabled app. See Bluetooth for more information on connecting a Bluetooth headset to the device. Set the volume appropriately before putting on the headset. When a Bluetooth headset is connected, the speakerphone is muted.

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.
5. Touch the Home button.

Near Field Communications

NFC/HF RFID is a short-range wireless connectivity technology standard that enables secure transaction between a reader and a contactless smartcard and FeliCa. The technology is based on ISO/IEC 14443 type A and B (proximity) ISO/IEC 15693 (vicinity) standards, using the HF 13.56 MHz unlicensed band.

The device supports the following operating modes:

- Reader mode
- Card Emulation mode.

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 NFC interface such as vending machines.
- Read information from supported medical sensors.
- Pair with supported Bluetooth devices such as printers, ring scanners (ex. RS6000), and headsets (ex. HS3100).
- Emulate contactless card such as ticket, or access control.

The device 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.

Figure 4 Reading Cards

1. Launch an NFC enabled application.
2. Hold device as shown.
3. Move the device close to the NFC card until it detects the card.
4. 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.

To open Enterprise NFC Settings, go to **Settings > Connected devices > Connection Preference > Enterprise NFC Settings**.

- **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.
- **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** - Allows the logging of NFC events on the device.
- **Other NFC settings available with Zebra administrator tools (CSP)** - Allows configuration of additional Enterprise NFC Settings through staging tools and Mobile Device Management (MDM) solutions with an MX version that supports the Enterprise NFC Settings Configuration Service Provider (CSP). For more information on using the Enterprise NFC Settings CSP, refer to: techdocs.zebra.com.

Accessories

The following table lists the accessories available for the device.

Table 7 Accessories

Accessory	Part Number	Description
Cradles		
1-Slot Charge Only Cradle	RZ-2CH9/RZ-2CH9B	Provides device charging. Optional power supply (EA-70S) sold separately.
1-Slot Charge/Communication Cradle	RZ-2CH10	Provides device charging and communication. Requires power supply (EA-70S) sold separately.
5-Slot Charge Only Cradle	DCCS25E	Charges up to five devices. Includes power supply and AC line cord.
Batteries and Chargers		
3300 mAh PowerPrecision Standard Battery	BTRYMC2035MA01	Replacement standard battery (single pack).
4-Slot Battery Charger	SACMC204SCHG01	Charges up to four spare batteries. Requires power supply (PWR-BGA12V50W0WW), DC line cord (CBL-DC-388A1-01), and AC line cord.
Miscellaneous		
Tempered Glass Screen Protector	MISCMC20SCPR01	Add additional screen protection (3-pack).
Carrying Solutions		
Spare Hand Strap	SGMC20HDST01	Replacement hand strap.
Power Supplies		
AC/DC Power Supply w/AC Cable	EA-70S	Provides AC input: 100-240V, DC output: 5V, 2A, 10W (Japan only)

Table 7 Accessories (Continued)

Accessory	Part Number	Description
Power Supply	PWR-BGA12V50W0WW	Provides power to the 4-Slot Battery Charger. Requires DC line cord CBL-DC-388A1-01 and country specific AC line cord sold separately.
DC Line Cord	CBL-DC-388A1-01	Provides power from the power supply (PWR-BGA12V50W0WW) to the 4-Slot Battery Charger.
AC Line Cord	50-16000-218R	1.8m, grounded, three wire, NEMA 1-15P plug, Country Japan

1-Slot Charge Only Cradle

The 1-Slot Charge Only Cradle:

- Provides 5 VDC power for operating the device.
- Charges the device's battery.

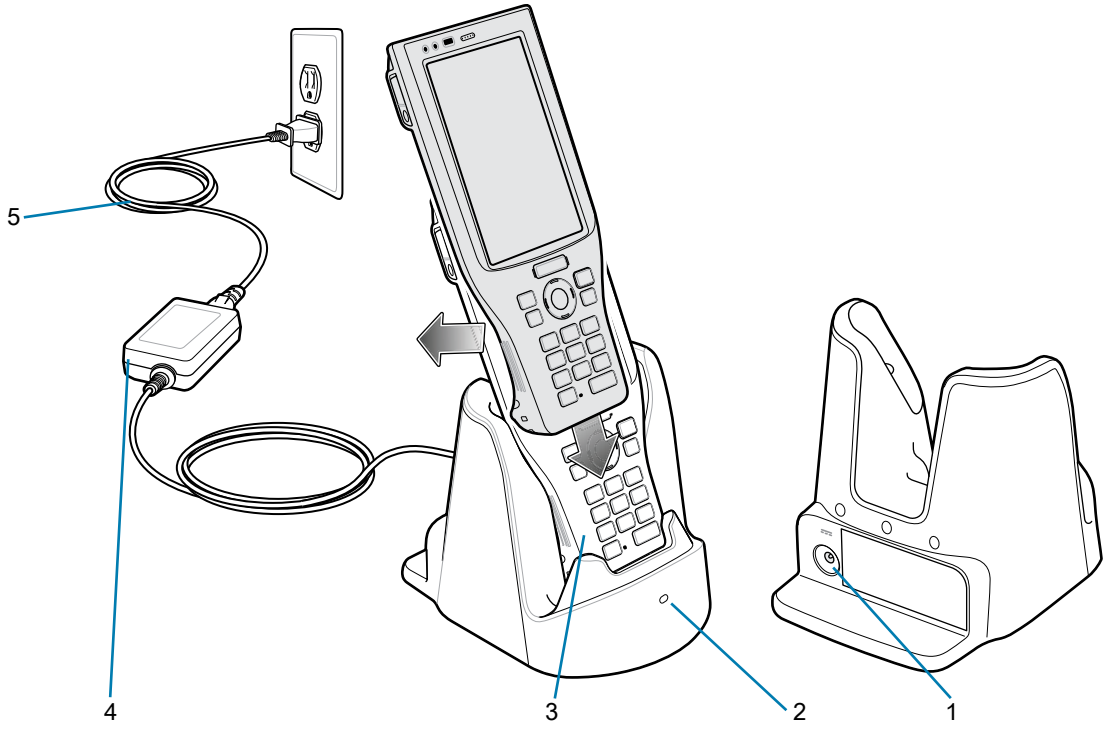


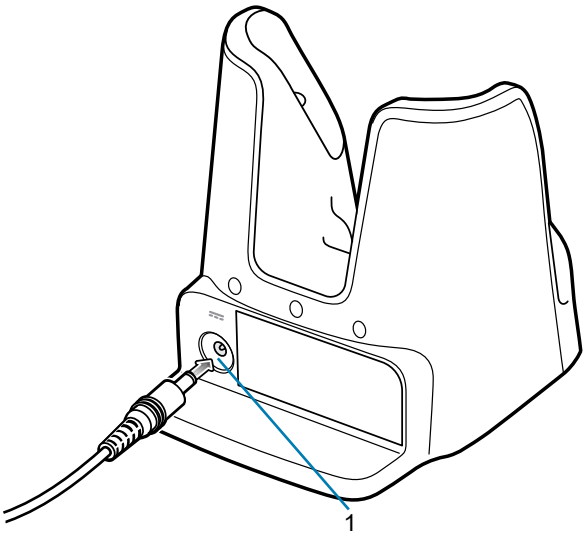
Table 8 1-Slot Charge Only Cradle Features

Number	Item
1	Power port
2	Charge LED
3	Charging slot
4	Power supply
5	AC line cord

To insert the device into the cradle:

1. Insert the device into the cradle.
2. Push the device toward the back of the cradle until it snaps into place.

Setup



Number	Item
1	Power port

1-Slot Charge/Communication Cradle

The 1-Slot Charge/Communication Cradle:

- Provides 5 VDC power for operating the device.
- Provides Ethernet communication using the Ethernet port.
- Charges the device's battery.
- Provides USB communication with host computer (USB Type B; device operates in Client mode).
- Provides USB communication with peripheries (USB Type A; device operates in Host mode).

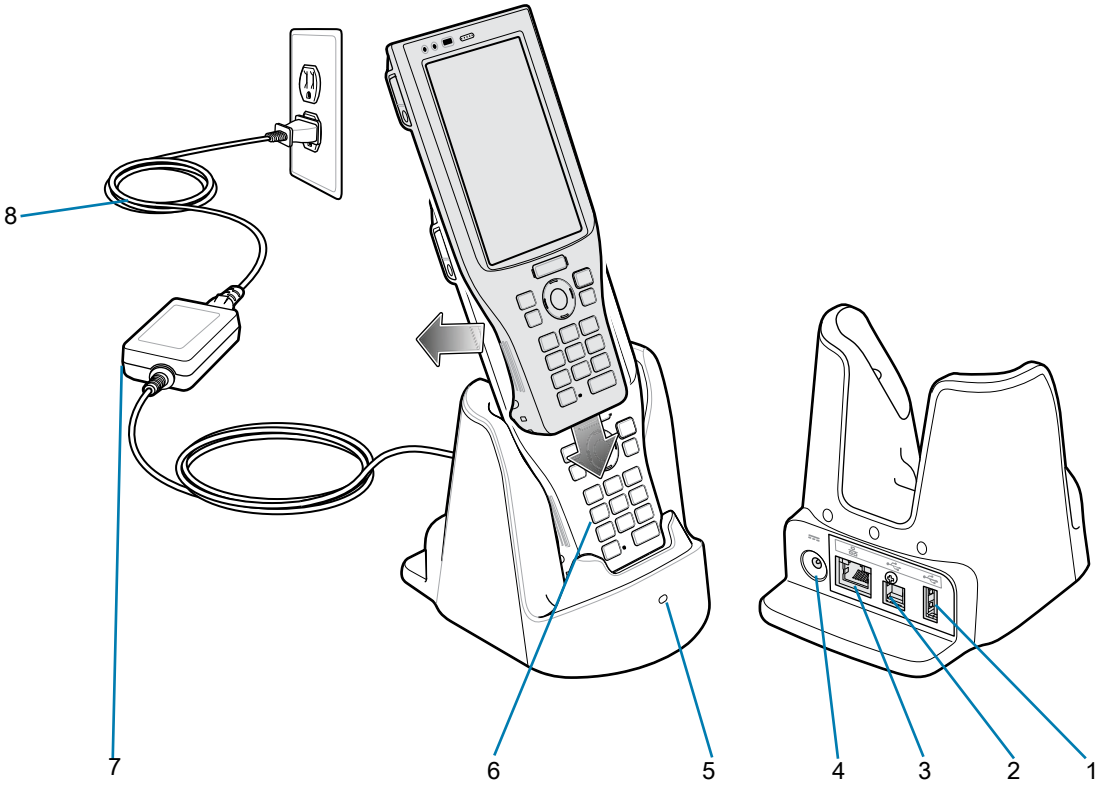
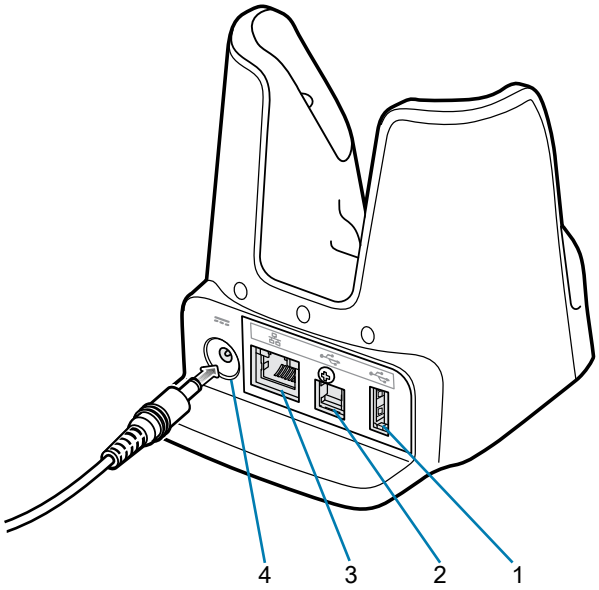


Table 9 1-Slot Charge/Communication Cradle Features

Number	Item
1	USB-A port
2	USB-B port
3	Ethernet port
4	Power port
5	Charging LED
6	Charging slot
7	Power supply
8	AC line cord

Setup



Number	Item
1	USB-A port
2	USB-B port
3	Ethernet port
4	Power port

5-Slot Charge Only Cradle

The 5-Slot Charge Only Cradle:

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

NOTE: You can daisy chain up to four cradles using the supplied cables and cradles. Do not exceed more than four cradles within the daisy chain.

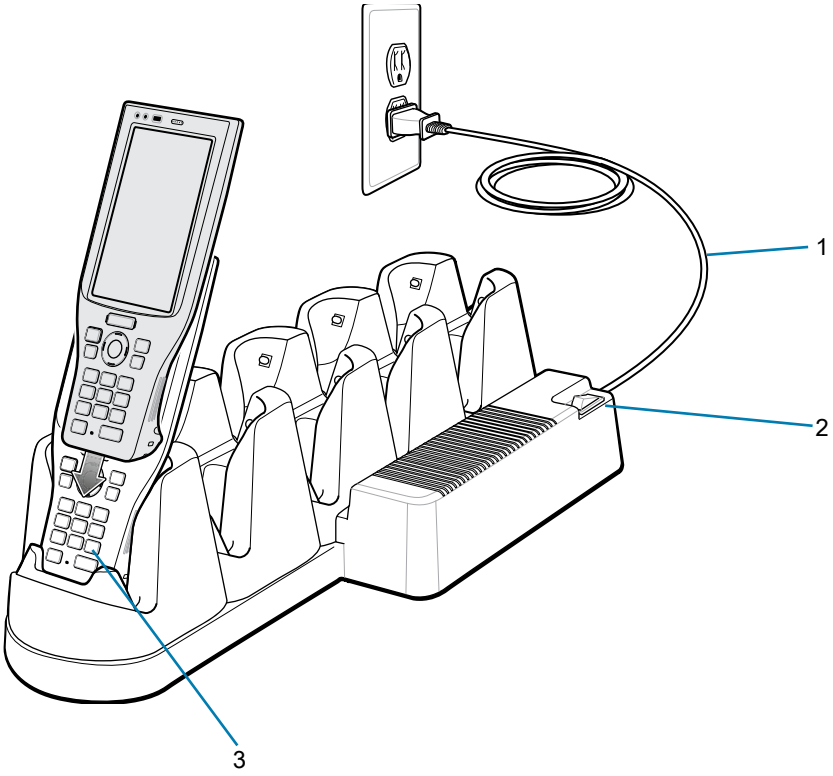
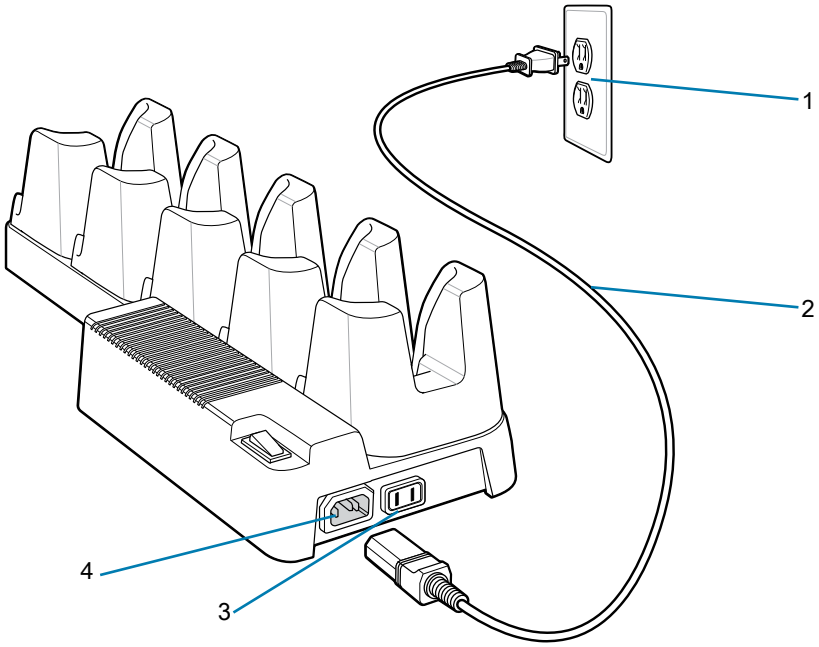


Table 10 5-Slot Charge Only Cradle Features

Number	Item
1	AC line cord
2	Power switch
3	Device slot

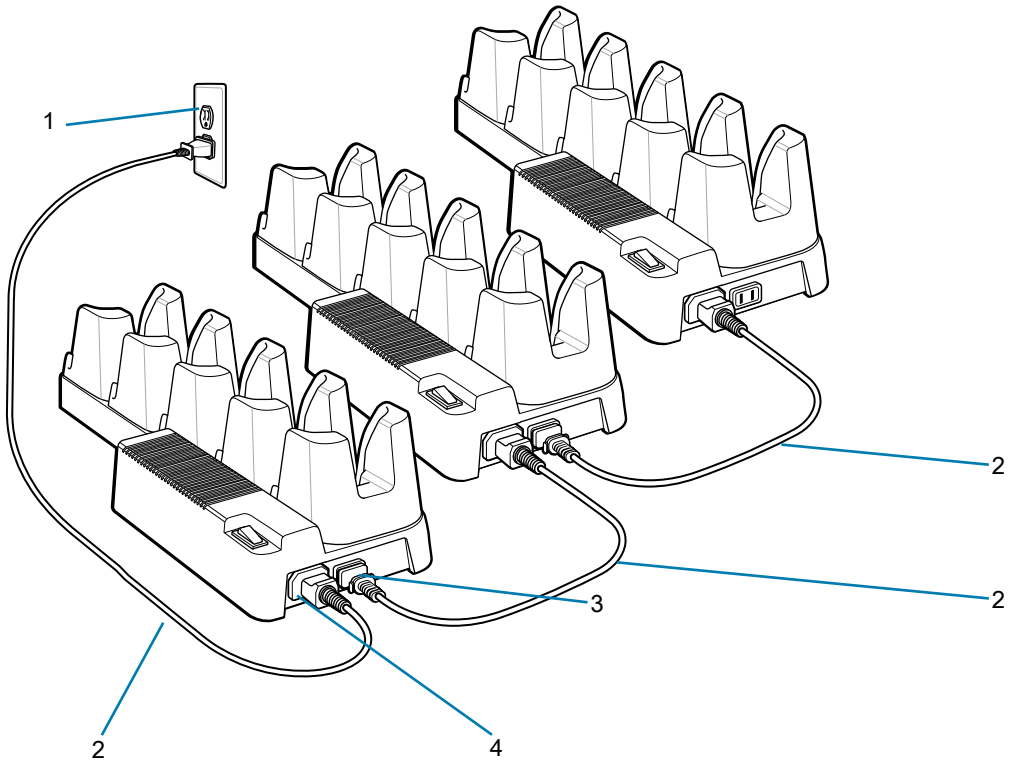
Setup



Number	Item
1	AC outlet
2	AC line cord
3	Power output port
4	Power input port

Daisy Chaining

NOTE: You can daisy chain up to four cradles using the supplied cables and cradles. Do not exceed more than four cradles within the daisy chain.

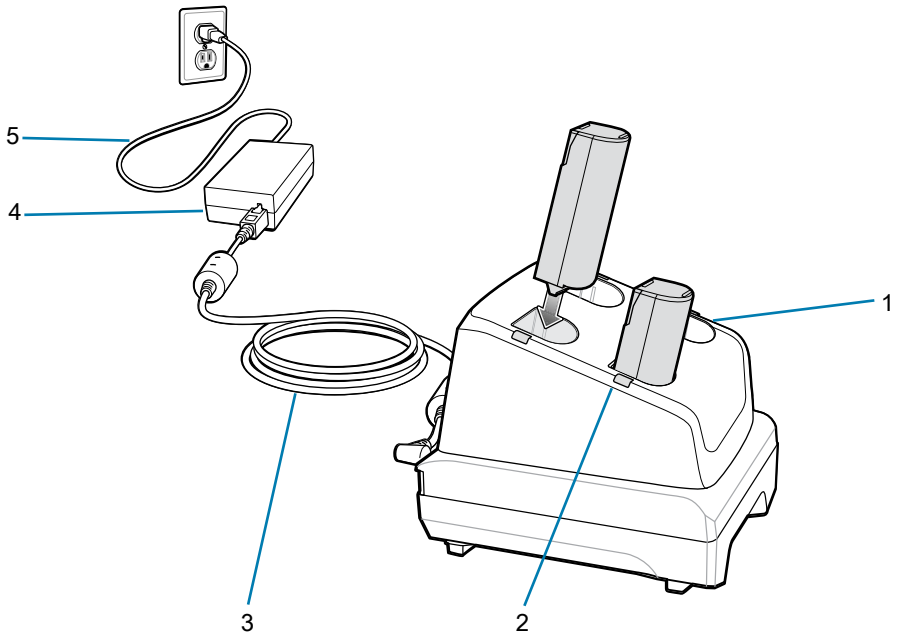


Number	Item
1	AC outlet
2	AC line cord
3	Power output port
4	Power input port

4-Slot Battery Charger

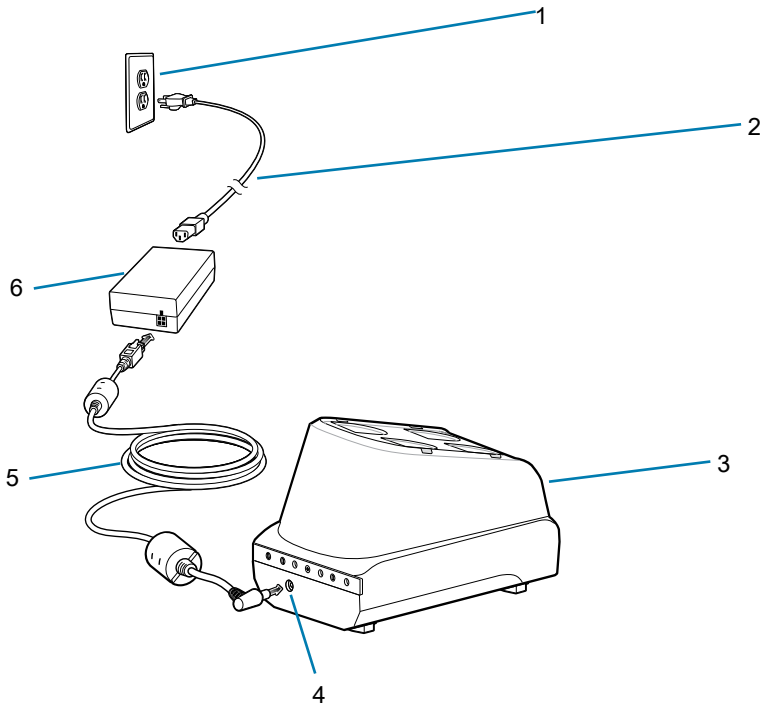
The 4-Slot Battery Charger:

- Charges up to four spare batteries.



Number	Item
1	Battery slot
2	Battery charging LED
3	DC line cord
4	Power supply
5	AC line cord

Setup



Number	Item
1	AC outlet
2	AC line cord
3	Cradle
4	Power input port
5	DC line cord
6	Power supply

Application Deployment

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 web sites.

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 web site, 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

To install a secure certificate:

1. Copy the certificate from the host computer to the root of the device's internal memory. See USB Communication on page 31 for information about connecting the device to a host computer and copying files.
2. Go to **Settings**.
3. Touch **Security** > **Encryption & credentials**.
4. Touch **Install a certificate**.
5. Select **CA certificate**, **VPN & 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. If prompted, enter the certificate's password and touch **OK**.
10. Enter a name for the certificate and in the Credential use drop-down, select **VPN and apps** or **Wi-Fi**.
11. Touch **OK**.

    The certificate can now be used when connecting to a secure network. For security, the certificate is deleted from the internal memory.

Configuring Credential Storage Settings

1. Go to **Settings**.
2. Touch **Security > Encryption & credentials**.
   - **Trusted credentials** - Touch to display the trusted system credentials.
   - **User credentials** - Touch to display user credentials.
   - **Install from storage** - Touch to install a secure certificate from the internal storage.
   - **Clear credentials** - Deletes all secure certificates and related credentials.

Development Tools

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

Android Application Development

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. Once 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 the Back button.
6. Touch **System > Advanced > 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.

StageNow

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, reading a tag, or playing an audio file.

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, read an NFC tag or play an audio file) to deliver staging material to the device.

For more information go to: techdocs.zebra.com.

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 on StageNow, refer to techdocs.zebra.com.

ADB USB Setup

To use the ADB, install the USB driver. This assumes that the development SDK has been installed on the host computer. Go to developer.android.com/sdk/index.html for details on setting up the development SDK.

ADB driver for Windows and Linux are available on the Zebra Support Central web site 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!** appears.
5. Touch the Back button.
6. Touch **System** > **Advanced** > **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.
10. On the device, touch **OK**.
11. On the host computer, navigate to the `platform-tools` folder.
12. Open a command prompt window and use the adb command:

    `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.

13. Touch the Home button.

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 appears.
2. Touch **Restart**.
3. Press and hold the OK key (within the center navigation ring).

Alternatively, you can enter system recovery mode by performing a hard reset.

1. Simultaneously press the Power button and 0 for at least four seconds.
2. When the screen turns off, release the buttons.

   The device reboots.
3. Press and hold the OK key (within the center navigation ring).

Application Installation

After an application is developed, install the application onto the device using one of the following methods:

- USB connection, see Installing Applications Using the USB Connection on page 94.

- Android Debug Bridge, see Installing Applications Using the Android Debug Bridge on page 94.
- microSD Card, see Installing Applications Using a microSD Card on page 95.
- Mobile device management (MDM) platforms that have application provisioning. Refer to the MDM software documentation for details.

Installing Applications Using the USB Connection

CAUTION: 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.

1. Connect the device to a host computer by inserting the device into the 1-Slot Charge/Communication Cradle.
2. Use the USB Cradle Settings application found in the Android settings to switch between Client Mode (default) and Host mode. Client mode allows you to communicate with the PC. Host mode allows you to connect to the Ethernet or USB peripherals.
3. Pull down the Notification panel and touch **Charging this device via USB**.
4. Touch **File Transfer**.
5. On the host computer, open a file manager application.
6. On the host computer, copy the application .apk file from the host computer to the device.

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

7. Disconnect the device from the host computer.
8. Swipe the screen up and select **Files** to view files on the Internal Storage.
9. Locate the application .apk file.
10. Touch the application file.
11. Touch **Continue** to install the app or **Cancel** to stop the installation.
12. To confirm installation and accept what the application affects, touch **Install** otherwise touch **Cancel**.
13. Touch **Open** to open the application or **Done** to exit the installation process. The application appears in the App list.

Installing Applications Using the Android Debug Bridge

Use ADB commands to install an application onto the device.

CAUTION: 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.

1. Ensure that the ADB drivers are installed on the host computer. See ADB USB Setup on page 92.
2. Connect the device to a host computer using USB. See USB Communication on page 31.
3. Enable Developer options. For more information see Enabling USB Debugging on page 92.
4. Go to **Settings**.
5. Touch **System > Advanced > Developer options**.
6. Slide the switch to the **ON** position.

7. Touch **USB Debugging**. A check appears in the check box. The **Allow USB debugging?** dialog box appears.
8. Touch **OK**.
9. On the host computer, open a command prompt window and use the adb command:

   ```
   adb install <application>
   ```

   where: <application> = the path and filename of the apk file.
10. Disconnect the device from the host computer. See USB Communication on page 31.

Installing Applications Using a microSD Card

CAUTION: When connecting the device to a host computer and mounting its microSD card, follow the host computer's instructions 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 apk file to the microSD card. See USB Communication for more information. Disconnect the device from the host computer.
2. Press and hold the Power button to turn on the device.
3. Swipe the screen up and select **Files** to view files on the microSD card.
4. Touch ☰ > **SD card**.
5. Locate the application .apk file.
6. Touch the application file.
7. Touch **Continue**. to install the app or **Cancel** to stop the installation.
8. To confirm installation and accept what the application affects, touch **Install** otherwise touch **Cancel**.
9. Touch **Open** to open the application or **Done** to exit the installation process. The application appears in the App list.

Uninstalling an Application

1. Go to **Settings**.
2. Touch **Apps & notifications**.
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 appears.
6. Touch **Uninstall**.
7. Touch **OK** to confirm.

Performing a 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 web site. Perform a system update using either a microSD card or using ADB.

Downloading the System Update Package

1. Go to the Support & Downloads web site.
2. Download the appropriate System Update package to a host computer.

Performing a System Update Using microSD Card

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 for more information.
   - 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 the Power button until the menu appears.
3. Touch **Restart**.
4. Press and hold the OK key (within the center navigation ring) to enter system recovery mode.
5. Press the Up and Down arrow keys to navigate to **Apply upgrade from SD card**.
6. Press the Enter key or Power button to select.
7. Press the Up and Down arrow keys to navigate to the System Update file.
8. Press the Enter key or Power button to start the system update install. After the installation the device returns to the Recovery screen.
9. Navigate to **Reboot system now** and press the Enter key or Power button to reboot the device.

Performing a System Update Using ADB

1. Ensure that the ADB drivers are installed on the host computer. See ADB USB Setup on page 92.
2. Connect the device to a host computer by inserting the device into the 1-Slot Charge/Communication Cradle and make sure the device is in Client mode.
3. Go to **Settings**.
4. Touch **System > Advanced > Developer options**.
5. Slide the switch to the **ON** position.
6. Touch **USB Debugging**. A check appears in the check box. The **Allow USB debugging?** dialog box appears.
7. Touch **OK**.

8. On the host computer, open a command prompt window and use the adb command:

   `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.

9. Type:

   `adb reboot recovery`

   If you are not able to enter Android Recovery mode through the adb command, go to Entering Android Recovery Manually on page 93.

10. Press Enter. The System Recovery screen appears on the device.
11. Press the Up and Down arrow keys to navigate to **Apply upgrade from ADB**.
12. Press the Enter key or Power button to select.
13. On the host computer command prompt window type:

    `adb sideload <file>`

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

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

Verifying System Update Installation

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.

Enterprise Reset

An Enterprise Reset erases all user data in the **`/data`** partition, including data in the primary storage locations (**`/sdcard`** and emulated storage).

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

Perform Enterprise Reset from the device settings, using a microSD card, or using ADB.

Performing an Enterprise Reset From 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.

Downloading the Enterprise Reset Package

1. Go to the Support & Downloads web site.
2. Download the Enterprise Reset file to a host computer.

Performing an Enterprise Reset Using microSD Card

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 for more information.
   - 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 the Power button until the menu appears.
3. Touch **Restart**.
4. Press and hold the OK key (within the center navigation ring) to enter system recovery mode.
5. Press the Up and Down arrow keys to navigate to **Apply upgrade from SD card**.
6. Press the Enter key or Power button to select.
7. Press the Up and Down arrow keys to navigate to the Enterprise Reset file.
8. Press the Enter key or Power button to start the Enterprise Reset. After the Enterprise Reset the device returns to the Recovery screen.
9. Navigate to **Reboot system now** and press the Enter key or Power button to reboot the device.

Performing an Enterprise Reset Using ADB

1. Connect the device to a host computer by inserting the device into the 1-Slot Charge/Communication Cradle and make sure the device is in Client mode.
2. Connect the cable or cradle to the host computer.
3. Go to **Settings**.
4. Touch **System > Advanced > Developer options**.
5. Slide the switch to the **ON** position.
6. Touch **USB Debugging**. A check appears in the check box. The **Allow USB debugging?** dialog box appears.
7. Touch **OK**.
8. On the host computer, open a command prompt window and 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.

9. Type:

   ```
   adb reboot recovery
   ```

   If you are not able to enter Android Recovery mode through the adb command, go to Entering Android Recovery Manually on page 93.

10. Press Enter. The System Recovery screen appears on the device.
11. Press the Up and Down arrow keys to navigate to **Apply upgrade from ADB**.
12. Press the Enter key or Power button to select.
13. On the host computer command prompt window type:

    ```
    adb sideload <file>
    ```

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

14. Press Enter. The Enterprise Reset package installs and then the System Recovery screen appears on the device.
15. Navigate to **Reboot system now** and press the Enter key or Power button to reboot the device.

Performing a 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. See Performing a System Update for more information.

Downloading the Factory Reset Package

To download the Factory Reset package:

1. Go to the Support & Downloads web site.
2. Download the appropriate Factory Reset file to a host computer.

Performing a Factory Reset Using microSD Card

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 install the microSD card into the device. See Installing a microSD card for more information.
   - 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 the Power button until the menu appears.
3. Touch **Restart**.
4. Press and hold the OK key (within the center navigation ring) to enter system recovery mode.
5. Press the Up and Down arrow keys to navigate to **Apply upgrade from sdcard**.
6. Press the Enter key or Power button to select.
7. Press the Up and Down arrow keys to navigate to the Factory Reset file.
8. Press the Enter key or Power button to start the Factory Reset. After the Factory Reset the device returns to the Recovery screen.

9. Navigate to **Reboot system now** and press the Enter key or Power button to reboot the device.

Performing a Factory Reset Using ADB

To perform an Factory Reset using ADB:

1. Connect the device to a host computer by inserting the device into the 1-Slot Charge/Communication Cradle and make sure the device is in Client mode.
2. Connect the cable or cradle to the host computer.
3. Go to **Settings**.
4. Touch **System** > **Advanced** > **Developer options**.
5. Slide the switch to the **ON** position.
6. Touch **USB Debugging**. A check appears in the check box. The **Allow USB debugging?** dialog box appears.
7. Touch **OK**.
8. On the host computer, open a command prompt window and 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.

9. Type:

   `adb reboot recovery`

   If you are not able to enter Android Recovery mode through the adb command, go to Entering Android Recovery Manually on page 93.
10. Press Enter. The System Recovery screen appears on the device.
11. Press the Up and Down arrow keys to navigate to **Apply upgrade from ADB**.
12. Press the Enter key or Power button to select.
13. On the host computer command prompt window type:

    `adb sideload <file>`

    where: <file> = the path and filename of the zip file.
14. Press Enter. The Factory Reset package installs and then the System Recovery screen appears on the device.
15. Navigate to **Reboot system now** and press the Enter key or Power button to reboot the device.

Storage

The device contains the following 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

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

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

- **Internal Storage** - 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 a 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

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

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

To unmount the microSD card, touch ⏏.

Touch S**D** card to view the contents of the card.

Formatting a microSD Card

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.

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 248 MB (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. On A11, touch **Apps & notifications**.
3. On A13, touch **Apps**.
4. Touch **See all XX apps** to view all apps on the device.
5. Touch ⋮ > **Show system** to include system processes in the list.
6. 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, 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. See Uninstalling an Application on page 95 for information about uninstalling apps.
- **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.
- **On A11, 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 **Files**.
2. Touch ☰ > **Downloads**.
3. Touch and hold an item, select items to delete and touch 🗑. The item is deleted from the device.

Maintenance and Troubleshooting

Maintaining the Device

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 or pencil or other sharp object on the surface of the device screen.
- The touch-sensitive screen of the device is glass. Do not drop the device or subject it to strong impact.
- Protect the device from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- Do not store the device in any location that is dusty, damp, or wet.
- Use a soft lens cloth to clean the device. If the surface of the device screen becomes soiled, clean it with a soft cloth moistened with an approved cleanser. For a list of approved cleansers, see Approved Cleanser Active Ingredients.
- Periodically replace the rechargeable battery to ensure maximum battery life and product performance. Battery life depends on individual usage patterns.

Battery Safety Guidelines

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

CAUTION: Always wear eye protection.
Read warning label on alcohol product before using.
If you have to use any other solution for medical reasons please contact the Global Customer Support Center for more information.

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

Approved Cleanser Active Ingredients

100% of the active ingredients in any cleaner must consist of one or some combination of the following: bleach/sodium hypochlorite[1] **(see important note below)**, hydrogen peroxide, ammonium chloride, or mild dish soap.

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

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

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

Approved cleaners include:

- 409 Glass Cleaner
- Windex Blue

Approved disinfectant solutions include:

- Mild Dish Soap & Warm Water
- 0.5-3% Hydrogen Peroxide Solution

- 1:10 Diluted 5.5% Bleach (Sodium Hypochlorite) Solution

Harmful Ingredients

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

Many vinyl gloves contain phthalate additives, which are often not recommended for medical use and are known to be harmful to the housing of the device.

Cleaners that are not approved include:

- Clorox Disinfecting Wipes
- Hydrogen Peroxide Cleaners
- Bleach Products (that are undiluted).
- 70% Isopropyl Alcohol Solution[2] **(see important note below)**

[2]Do not use isopropyl alcohol solution to wipe down the plastic housing. The use of isopropyl alcohol solution with the use of a cotton-tipped applicator is only allowed on the battery connector and cradle contacts. If cleaning the display with an alcohol wipe, make sure any excess residue is wiped off immediately with a dry lens tissue.

Device Cleaning Instructions

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

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

Special Cleaning Notes

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 Materials Required

- Alcohol wipes
- Lens tissue
- Cotton-tipped applicators

- Isopropyl alcohol
- Can of compressed air with a tube.

Cleaning Frequency

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

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

Housing

Thoroughly wipe the housing, including all buttons and triggers, using approved cleaners or disinfectant solutions.

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

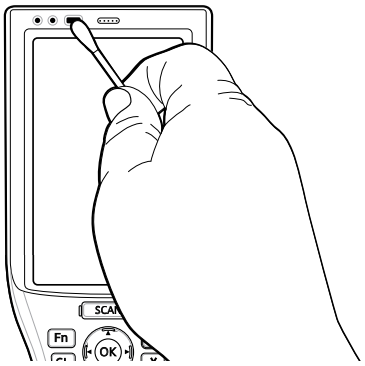
Proximity Sensor Window

Wipe the proximity sensor window periodically with one of the following items, to remove any dust:

- Damp paper towel
- Damp lens tissue or other material suitable for cleaning optical material such as eyeglasses
- Damp cotton-tipped applicator.

Wipe the proximity sensor window with one of the following items, if it is wet from condensation:

- Dry paper towel
- Dry lens tissue or other material suitable for cleaning optical material such as eyeglasses
- Dry cotton-tipped applicator.



Cleaning Battery Connectors

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

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

Cleaning Cradle Connectors

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

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 appears.
2. Touch **Restart**.
3. The device reboots.

Performing a Hard Reset

CAUTION: Performing a hard reset with a microSD card installed in the device may cause damage or data corruption to the microSD card.

Perform a hard reset if the device stops responding.

1. Simultaneously press the Power button and 0 for at least four seconds.
2. When the screen turns off, release the buttons.
3. The device reboots.

Troubleshooting the Device

Table 11 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 not charged.	Charge or replace the battery in the device.
	Battery 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 battery should be re-charged.	Charge or replace the battery in the device.

Table 11 Troubleshooting the Device (Continued)

Problem	Cause	Solution
Battery did not charge.	Battery failed.	Replace battery. If the device still does not operate, perform a reset.
	Device removed from cradle while battery was charging.	Insert device in cradle. See Charging the Battery on page 20.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0°C or above 40°C.
Cannot see characters on display.	Device not powered on.	Press the **Power** button.
During data communication with a host computer, no data transmitted, or transmitted data was incomplete.	Device removed from cradle or disconnected from 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.
During data communication over Wi-Fi, no data transmitted, or transmitted data was incomplete.	Wi-Fi radio is not on.	Turn on the Wi-Fi radio.
	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 of the other device.
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.
	Battery is depleted.	Replace the battery.
Tapping the window buttons or icons does not activate the corresponding feature.	The device is not responding.	Reboot the device.

Table 11 Troubleshooting the Device (Continued)

Problem	Cause	Solution
A message appears stating that the device memory is full.	Too many files stored on the device.	Delete unused memos and records. If necessary, save these records on the host computer (or use an SD card for additional memory).
	Too many applications installed on the device.	Remove user-installed applications on the device to recover memory. Select **Settings > Apps & notifications**. Select the app in the list and select **UNINSTALL**.
The device does not decode with reading bar code.	Scanning application is not loaded.	Load a scanning application on the device or enable DataWedge. See the system administrator.
	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Place the device within 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 good decode.
	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.
	The Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) to find.
	The Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode. If needed, refer to the device's user documentation for help.
Cannot unlock device.	User enters 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.	Perform a soft or hard reset on the device.

1-Slot Charge Only Cradle

Table 12 Troubleshooting the 1-Slot Charge Only Cradle

Symptom	Possible Cause	Action
LEDs do not light when device is inserted.	Cradle is not receiving power.	Ensure the power cable is connected securely to both the cradle and to 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 cradle or cradle was unplugged from AC power too soon.	Ensure cradle is receiving power. Ensure device is seated correctly. Confirm main battery is charging. The standard battery charges from fully depleted to 90% in approximately three hours. The extended battery charges from fully depleted to 90% in less than three and a half hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The device is not fully seated in the cradle.	Remove and re-insert the device into the cradle, ensuring it is firmly seated.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0°C or above 40°C.

1-Slot Charge/Communication Cradle

Table 13 Troubleshooting the 1-Slot Charge/Communication Cradle

Symptom	Possible Cause	Action
LEDs do not light when device is inserted.	Cradle is not receiving power.	Ensure the power cable is connected securely to both the cradle and to 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 cradle or cradle was unplugged from AC power too soon.	Ensure cradle is receiving power. Ensure device is seated correctly. Confirm main battery is charging. The standard battery charges from fully depleted to 90% in approximately three hours. The extended battery charges from fully depleted to 90% in less than three and a half hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The device is not fully seated in the cradle.	Remove and re-insert the device into the cradle, ensuring it is firmly seated.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0°C or above 40°C.

Table 13 Troubleshooting the 1-Slot Charge/Communication Cradle (Continued)

Symptom	Possible Cause	Action
During communication, no data transmits, or transmitted data was incomplete.	Device removed from cradle during communications.	Replace device in cradle and retransmit.
	Incorrect cable configuration.	Ensure that the correct cable configuration.
	Device has no active connection.	An icon is visible in the status bar if a connection is currently active.

5-Slot Charge Only Cradle

Table 14 Troubleshooting the 5-Slot Charge Only Cradle

Problem	Cause	Solution
Battery is not charging.	Device removed from the cradle too soon.	Replace the device in the cradle. The standard battery charges from fully depleted to 90% in approximately three hours. The extended battery charges from fully depleted to 90% in less than three and a half hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	Device is not inserted correctly in the cradle.	Remove the device and reinsert it correctly. Verify charging is active. Touch ⚙ > **System** > **About phone** > **Status** to view battery status.
	Ambient temperature of the cradle is too warm.	Move the cradle to an area where the ambient temperature is between 0°C and 40°C.

4-Slot Battery Charger

Table 15 Troubleshooting the 4-Slot Battery Charger

Problem	Cause	Solution
Spare Battery Charging LED does not light when 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.

Table 15 Troubleshooting the 4-Slot Battery Charger (Continued)

Problem	Cause	Solution
Spare Battery not charging.	Charger is not receiving power.	Ensure the power cable is connected securely to both the charger and to 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 charger was unplugged from AC power too soon.	Ensure charger is receiving power. Ensure the spare battery is seated correctly. The standard battery charges from fully depleted to 90% in approximately three hours. The extended battery charges from fully depleted to 90% in less than three and a half hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	Ambient temperature of the cradle is too warm.	Move the cradle to an area where the ambient temperature is between 0°C and 40°C.

Technical Specifications

For device technical specifications, go to www.zebra.com.

Table 16 Data Capture Supported Symbologies

Item	Description
1D Barcodes	Codebar, Code 128, Code 39, Code 93, Discrete 2 of 5, EAN13, EAN8, GS1 Databar, GS1 Databar Expanded, GS1 Databar Limited, Interleaved 2 of 5, UPCA, UPCE0, UPCE1
2D Barcodes	Aztec, Composite AB, Composite C, DataMatrix, Japanese Postal, Maxicode, MicroPDF, MicroQR, PDF417, QRCode

OCR-A and OCR-B are supported by the device for the integrated scanner (SE4770) only.

Decode Distances

The table below 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 17 SE4770 Decode Distances

Bar Code Type	Near Distance	Far Distance
	Typical	Typical
3 mil Code 39	3.0 in 7.6 cm	5.8 in 14.7 cm
5 mil Code 128	2.3 in 5.8 cm	9.8 in 24.9 cm
5 mil PDF417	3.0 in 7.6 cm	7.9 in 20.1 cm
6.67 mil PDF417	2.5 in 6.4 cm	10.1 in 25.7 cm
10 mil Data Matrix	2.1 in 5.3 cm	11.0 in 27.9 cm
Photographic quality barcode at 18° pitch angle under 30 fcd ambient illumination. *** Dependent upon width of barcode.**		

Table 17 SE4770 Decode Distances (Continued)

Bar Code Type	Near Distance	Far Distance
	Typical	Typical
100% UPCA	1.6 in* 4.1 cm*	24.9 in 63.2 cm
15 mil Code 128	2.4 in* 6.1 cm*	27.8 in 70.6 cm
20.0 mil Code 39	1.6 in* 4.1 cm*	36.1 in 91.7 cm
Photographic quality barcode at 18° pitch angle under 30 fcd ambient illumination. *** Dependent upon width of barcode.**		

1-Slot Charge Only Cradle Technical Specifications

Table 18 1-Slot Charge Only Cradle Technical Specifications

Item	Description
Dimensions	Height: 11.1 cm Width: 9.5 cm Depth: 13.5 cm
Weight	335 g
Input Voltage	5 V
Power Consumption	10 watts
Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 60°C
Ambient Charging Temperature	0°C to 40°C
Humidity	20% to 90% RH
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 6.5 kV contact +/- 6.5 kV indirect discharge

1-Slot Charge/Communication Cradle Technical Specifications

Table 19 1-Slot Charge/Communication Cradle Technical Specifications

Item	Description
Dimensions	Height: 11.1 cm Width: 9.5 cm Depth: 13.5 cm
Weight	350 g
Input Voltage	5 V

Table 19 1-Slot Charge/Communication Cradle Technical Specifications

Item	Description
Power Consumption	10 watts
Ethernet	RJ45 port on the cradle
USB Interface	USB-A to USB-B cable (provided with the cradle)
Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 60°C
Ambient Charging Temperature	0°C to 40°C
Humidity	20% to 90% RH
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 6.5 kV contact +/- 6.5 kV indirect discharge

5-Slot Charge Only Cradle Technical Specifications

Table 20 5-Slot Charge Only Cradle Technical Specifications

Item	Description
Dimensions	Height: 12.5 cm Width: 17.5 cm Depth: 47 cm
Weight	1.8 kg
Input Voltage	100V
Power Consumption	46 watts
Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 60°C
Ambient Charging Temperature	0°C to 40°C
Humidity	20% to 90% RH
Electrostatic Discharge (ESD)	+/- 10 kV air +/- 8 kV contact +/- 8 kV indirect discharge

4-Slot Battery Charger Technical Specifications

Table 21 4–Slot Battery Charger Technical Specifications

Item	Description
Dimensions	Height: 9.94 Width: 9.75 cm Depth: 13.25 cm
Weight	430 g
Input Voltage	12 VDC (power supply PWR-BGA12V50W0WW, cable CBL-DC-388A1-01, and 50-16000-218R - Japan AC Line Cord)
Power Consumption	up to 25watts
Operating Temperature	0°C to 40°C
Storage Temperature	-40°C to 70°C
Ambient Charging Temperature	0°C to 40°C
Humidity	5% to 95% non-condensing
Drop	76.2 cm drops to concrete at room temperature (23°C).
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact +/- 8 kV indirect discharge

Keypad

Introduction

The RZ-H271 offers one type of keypad configuration: 21 key.

21-Key Keypad

The 21-key keypad contains a Power button, scroll keys and function keys. The keypad contains a multi-function key which allows you to switch between data input modes (alternate function key values or alternate alphabetical key values). Note that keypad functions can be changed by an application so the mobile computer keypad may not function as described. See the table below for key and button descriptions and keypad alternate functions.

Table 22 21-Key Keypad Descriptions

Key	Description
SCAN	Used in scanning applications. Press to scan a barcode.
Fn	The multi-function key allows you to switch between data input modes, (alternate function key values or alternate alphabetical key values). Short press Fn to access Function mode. Press Fn again to press another function key. The blue square icon appears on the status bar. Long press Fn to access Alpha mode. After an alphabetical key is pressed, you can type any number of alphabetical keys until you disengage. An orange circle icon appears on the status bar. To disengage, long press the Fn key again. If both the Function mode and Alpha mode are enabled, the priority is for the function keys.
CL	Backspace
OK	OK key/PTT. Executes a selected item or function. It is recommended to use the OK key as the PTT button. The OK key can be mapped as the PTT button or any other key based on preference using Key Programmer. Remap the key to Button_L2. For more information, see Remapping a Button in Settings.
	Navigation Ring; allows you to move up, down, left, or right on the screen or selection menu. Increases/decreases specified values. For example, press the Fn key and the scroll up/down arrow key to increase/decrease the volume.
電源	Powers the mobile computer screen on and off (resume and suspend).

Table 22 21-Key Keypad Descriptions (Continued)

Key	Description
	Star key/PTT. It is recommended to use the STAR key as the PTT button. The star key can be mapped as the diamond key or any other key based on preference using Key Programmer. For more information, see Remapping a Button in Settings. If mapped to the diamond key, the star key provides a 3x3 matrix on the screen with nine additional symbols. With a single tap you can select via touch input or the keyboard, 1-9 numerical keys. Double tapping the Diamond key locks the 3x3 grid, and you can select multiple keys. Pressing the Diamond key a third time closes the 3x3 matrix. You can modify the symbols in the 3x3 matrix using the StageNow utility in the KeyManager sessions.
	Numeric value keys (default), function keys (blue) or alpha keys (orange). By default the numeric values are produced. To access the Function mode, short press the Fn key. To access the Alpha mode, long press the Fn key. When in Alpha mode, each press of the key produces the next alphabetic character found on the key, starting with upper case and ending in lower case. For example, long press the Fn (orange enabled) and then press the “4” key once to produce the letter "G"; press the 4 key six times to produce the letter "i". Continue to press each key to rotate through the characters with the capital letters first, followed by lower case letters.
	Enter Key; executes a selected item or function.

Table 23 Input Modes

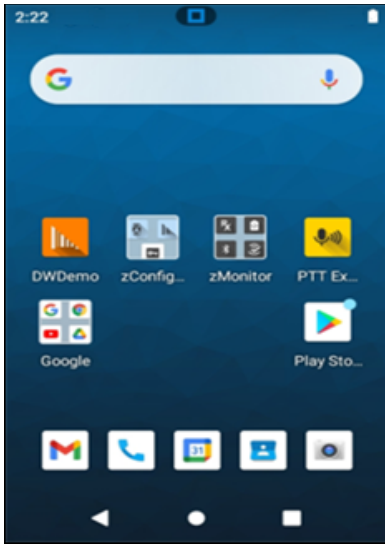
Key	Normal	Fn Short (function)	Fn Long (alpha)
CL	Backspace		
Left Arrow	Move left		
Up Arrow	Move up	Increase Volume	
Down Arrow	Move down	Decrease Volume	
Right Arrow	Move right		
Star	Asterisk		
1	1	F1	
2	2	F2	A,B,C,a,b,c
3	3	F3	D,E,F,d,e,f
4	4	F4	G,H,I,g,h,i
5	5	F5	J,K,L,j,k,l
6	6	F6	M,N,O,m,n,o
7	7	F7	P,Q,R,S,p,q,r,s
8	8	F8	T,U,V,t,u,v
9	9	F9	W,X,Y,Z,w,x,y,z

Table 23 (Continued)Input Modes

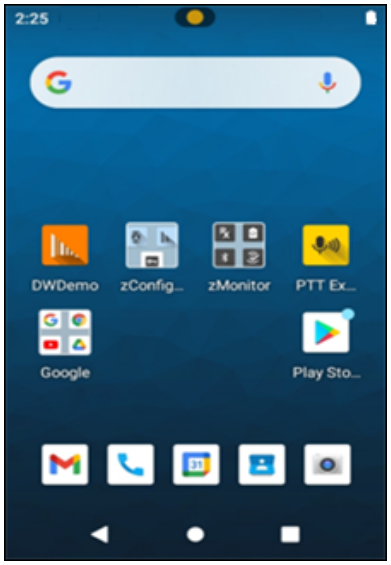
Key	Normal	Fn Short (function)	Fn Long (alpha)
0	0	F10	
OK	Enter		
An application can change the key functions. The keypad may not function exactly as described.			

Function/Alpha Mode

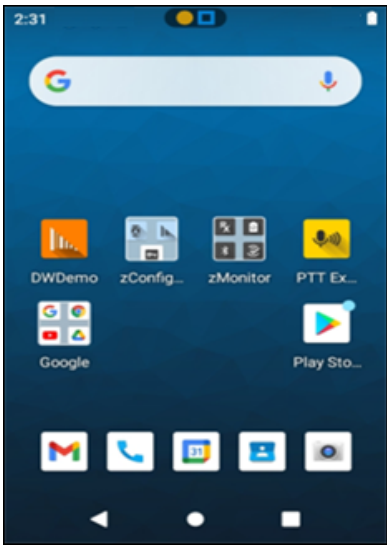
To enable Function mode, short press Fn. A blue square icon appears on the status bar.



To enable Alpha mode, long press Fn. An orange circle icon appears on the status bar.



If both the Function and Alpha mode are enabled, a blue square icon and an orange circle icon appears on the status bar.

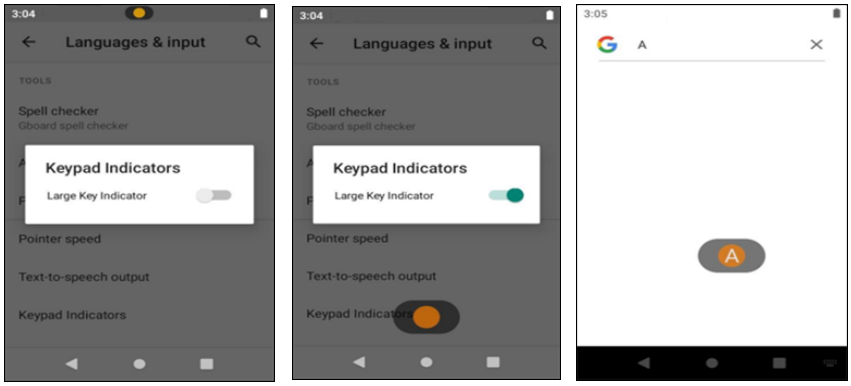


Large Key Indicator

To enable the large key indicator:

On A11, go to **Settings > System > Languages & input > Advanced > Keypad Indicators**.

On A13, go to **Settings > System > Languages & input > Keypad Indicators**.



Keypad Combinations

Use a combination of keys to perform certain functions.

Hard Reset

To perform a hard reset, press the Power + 0 keys simultaneously.

Recovery Mode

To enter into recovery mode, press the OK key when the device is booting.

Screen Capture

To take a screenshot, press the Power + down arrow keys simultaneously.

Increase/Decrease Volume

To increase the volume, short press the Fn key + up arrow key.

To decrease the volume, short press the Fn key + down arrow key.

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