TC72
Touch Computer

User Guide
for Android™ 9 Pie
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<td>2-Slot Charge Only Cradle Technical Specifications</td>
<td>203</td>
</tr>
<tr>
<td>2-Slot USB/Ethernet Cradle Technical Specifications</td>
<td>203</td>
</tr>
<tr>
<td>5-Slot Charge Only Cradle Technical Specifications</td>
<td>204</td>
</tr>
<tr>
<td>5-Slot Ethernet Cradle Technical Specifications</td>
<td>204</td>
</tr>
<tr>
<td>4-Slot Battery Charger Technical Specifications</td>
<td>205</td>
</tr>
<tr>
<td>Charge Only Vehicle Cradle Technical Specifications</td>
<td>205</td>
</tr>
<tr>
<td>Trigger Handle Technical Specifications</td>
<td>206</td>
</tr>
<tr>
<td>Charging Cable Cup Technical Specifications</td>
<td>206</td>
</tr>
<tr>
<td>Snap-On USB Cable Technical Specifications</td>
<td>206</td>
</tr>
<tr>
<td>DEX Cable Technical Specifications</td>
<td>207</td>
</tr>
<tr>
<td>Index</td>
<td>208</td>
</tr>
</tbody>
</table>
About This Guide

Configurations

This guide covers the following configurations:

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Radios</th>
<th>Display</th>
<th>Memory</th>
<th>Data Capture Options</th>
<th>Operating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC720L</td>
<td>WLAN: 802.11 a/b/g/n/ac/d/h/i/l/r/k/v3/w</td>
<td>4.7&quot; High Definition (1280 x 720) LCD</td>
<td>4 GB RAM/32 GB Flash</td>
<td>2D imager, camera and integrated NFC</td>
<td>Android 9</td>
</tr>
<tr>
<td></td>
<td>WPAN: Bluetooth v5.0 Low Energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notational Conventions

The following conventions are used in this document:

- **Bold** text is used to highlight the following:
  - Dialog box, window and screen names
  - Drop-down list and list box names
  - Check box and radio button names
  - Icons on a screen
  - Key names on a keypad
  - Button names on a screen.

- Bullets (•) indicate:
  - Action items
  - Lists of alternatives
  - Lists of required steps that are not necessarily sequential.
  - Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.
Service Information

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

When contacting support, please have the following information available:

• Serial number of the unit (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. 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.

Software Versions

To determine the current software versions:

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:
   • Model
   • Android version
   • Kernel version
   • Build number.

To determine the device serial number, touch About phone > Model & hardware.

• Serial number
Getting Started

Introduction

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

Unpacking

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

2. Verify that the following are included:
   - Touch computer
   - 4,620 mAh PowerPrecision+ Lithium-ion battery
   - Hand strap
   - Regulatory Guide.

3. Inspect the equipment for damage. If any equipment is missing or damaged, contact the Global Customer Support center immediately.

4. Prior to using the device for the first time, remove the protective shipping film that covers the scan window, display, and camera window.
Features

Figure 1  Front View

Table 1  Front View Features

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Touch Screen</td>
<td>Displays all information needed to operate the device.</td>
</tr>
<tr>
<td>2</td>
<td>Scan Button</td>
<td>Initiates data capture (programmable).</td>
</tr>
<tr>
<td>3</td>
<td>PTT Button</td>
<td>Initiates push-to-talk communications (programmable).</td>
</tr>
<tr>
<td>4</td>
<td>Back Button</td>
<td>Displays the previous screen.</td>
</tr>
<tr>
<td>5</td>
<td>Home Button</td>
<td>Displays the Home screen with a single press.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>On device with GMS, opens the Google Now screen when held for a short</td>
</tr>
<tr>
<td></td>
<td></td>
<td>period of time.</td>
</tr>
<tr>
<td>6</td>
<td>Microphone</td>
<td>Use for communications in Handset mode.</td>
</tr>
<tr>
<td>7</td>
<td>Charging</td>
<td>Provides power to the device from cables and cradles.</td>
</tr>
<tr>
<td></td>
<td>Contacts</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Speaker</td>
<td>Provides audio output for video and music playback.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides audio in speakerphone mode.</td>
</tr>
<tr>
<td>9</td>
<td>Search Button</td>
<td>Opens the Recent App screen.</td>
</tr>
<tr>
<td>10</td>
<td>Menu Button</td>
<td>Opens a menu with items that affect the current screen or app.</td>
</tr>
<tr>
<td>11</td>
<td>Light Sensor</td>
<td>Determines ambient light for controlling display backlight intensity.</td>
</tr>
<tr>
<td>12</td>
<td>Proximity Sensor</td>
<td>Determines proximity for turning off display when in handset mode.</td>
</tr>
<tr>
<td>13</td>
<td>Power Button</td>
<td>Turns the display on and off. Press and hold to reset the device, power on or swap battery.</td>
</tr>
</tbody>
</table>
Table 1  Front View Features  (Continued)

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Microphone</td>
<td>Use for communications in Speakerphone mode.</td>
</tr>
<tr>
<td>15</td>
<td>Receiver</td>
<td>Use for audio playback in Handset mode.</td>
</tr>
<tr>
<td>16</td>
<td>Charging/Notification LED</td>
<td>Indicates battery charging status while charging and app generated notifications.</td>
</tr>
<tr>
<td>17</td>
<td>Data Capture LED</td>
<td>Indicates data capture status.</td>
</tr>
<tr>
<td>18</td>
<td>Front Facing Camera</td>
<td>Use to take photos and videos (optional).</td>
</tr>
</tbody>
</table>

Table 2  Back View Features

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Interface Connector</td>
<td>Provides USB host and client communications, audio and device charging via cables and accessories.</td>
</tr>
<tr>
<td>20</td>
<td>Exit Window</td>
<td>Provides data capture using the imager.</td>
</tr>
<tr>
<td>21</td>
<td>Microphone</td>
<td>Use during video recording and for noise cancellation.</td>
</tr>
<tr>
<td>22</td>
<td>Scan Button</td>
<td>Initiates data capture (programmable).</td>
</tr>
<tr>
<td>23</td>
<td>Volume Up/Down Button</td>
<td>Increase and decrease audio volume (programmable).</td>
</tr>
<tr>
<td>24</td>
<td>Battery Release Latches</td>
<td>Press to remove the battery.</td>
</tr>
<tr>
<td>25</td>
<td>Elastic Sleeve</td>
<td>Use to hold optional stylus.</td>
</tr>
<tr>
<td>26</td>
<td>Battery</td>
<td>Provides power to the device.</td>
</tr>
<tr>
<td>27</td>
<td>Hand strap</td>
<td>Use to securely hold the device in your hand.</td>
</tr>
</tbody>
</table>
Setting Up the Device

To start using the device for the first time:

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

Installing the SAM Card

**CAUTION:** Follow proper electrostatic discharge (ESD) precautions to avoid damaging the Secure Access Module (SAM) card. Proper ESD precautions include, but not limited to, working on an ESD mat and ensuring that the user is properly grounded.

**NOTE:** If using a micro SAM card, a third-party adapter is required.

1. Lift the access door.
2. Insert a SAM card into the SAM slot with the cut edge toward the middle of the device and the contacts facing down.

**Figure 4  SAM Card Installation**

3. Ensure that the SAM card is seated properly.
4. Replace the access door.

**Figure 5  Replace Access Door**

5. Press the access door down and ensure that it is properly seated.

**CAUTION:** Access door must be replaced and securely seated to ensure proper device sealing.

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

1. Lift the access door.

**Figure 6  Remove Access Door**
2. Slide the microSD card holder to the Open position.

Figure 7  Open microSD Card Holder

3. Lift the microSD card holder.

Figure 8  Lift microSD Card Holder

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

Figure 9  Insert microSD Card into Holder
5. Close the microSD card holder door and slide the door to the Lock position.

**Figure 10** Close and Lock microSD Card in Holder

6. Replace the access door.

**Figure 11** Replace Access Door

7. Press the access door down and ensure that it is properly seated.

**CAUTION:** Access door must be replaced and securely seated to ensure proper device sealing.

### Installing the Hand Strap and 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 affected. DO NOT put any labels, asset tags, engravings, stickers, etc. in the battery well.

**NOTE:** Installation of the hand strap is optional. Skip to step 3 if not installing the hand strap.

1. Remove the hand strap filler from the hand strap slot. Store the hand strap filler in a safe place for future replacement.

**Figure 12** Remove Filler
2. Insert the hand strap plate into the hand strap slot.

**Figure 13** Insert Hand Strap

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

**Figure 14** Insert Bottom of Battery into Battery Compartment

4. Press the battery down into the battery compartment until the battery release latches snap into place.

**Figure 15** Press Down on Battery
5. Place hand strap clip into hand strap mounting slot and pull down until it snaps into place.

**Figure 16** Secure Hand Strap Clip

---

### Charging the Battery

Before using the device for the first time, charge the main battery until the green Charging/Notification 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.

The 4,620 mAh battery fully charges in less than five hours at room temperature.

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

To charge the main battery:

1. Connect the charging accessory to the appropriate power source.

2. Insert the device into a cradle or attach to a cable. The device turns on and begins charging. The Charging/Notification LED blinks amber while charging, then turns solid green when fully charged.

### Charging Indicators

**Table 3** Charging/Notification LED Charging Indicators

<table>
<thead>
<tr>
<th>State</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The device is not charging. The device is not inserted correctly in the cradle or connected to a power source. Charger/cradle is not powered.</td>
</tr>
<tr>
<td>Slow Blinking Amber (1 blink every 4 seconds)</td>
<td>The device is charging.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>Charging complete.</td>
</tr>
<tr>
<td>Fast Blinking Amber (2 blinks/second)</td>
<td>Charging error:</td>
</tr>
<tr>
<td></td>
<td>• Temperature is too low or too high.</td>
</tr>
<tr>
<td></td>
<td>• Charging has gone on too long without completion (typically eight hours).</td>
</tr>
</tbody>
</table>
Zebra Visibility Services

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

Figure 17  Zebra Services

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

2. Touch OK.

Replacing 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.

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

3. Remove any accessory attached to the device.

4. Press the Power button until the menu appears.
5. Touch **Battery Swap**.

6. Follow the on-screen instructions.

7. Wait for the LED to turn off.

8. If hand strap is attached, slide the hand strap clip up toward the top of the device and then lift.

**Figure 18** Remove Hand Strap Clip

9. Press the two battery latches in.

**Figure 19** Press Battery Latches
10. Lift the battery from the device.

Figure 20  Lift the Battery

CAUTION: Replace the battery within two minutes. After two minutes the device reboots and data may be lost.

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

12. Press the battery down until the battery release latch snaps into place.

13. Replace the hand strap, if required.

14. Press and hold the Power button to turn on the device.

NOTE: After replacing the battery, wait 15 minutes before using Battery Swap again.

Replacing the SAM Card

To replace the SAM card:

1. Press and hold the Power button until the menu appears.

2. Touch Power off.

3. Touch OK.
4. If hand strap is attached, slide the hand strap clip up toward the top of the device and then lift.

**Figure 21**  Remove Hand Strap Clip

5. Press the two battery latches in.
6. Lift the battery from the device.
7. Lift the access door.

**Figure 22**  Remove Access Door

8. Remove card from holder.

**Figure 23**  Remove SAM Card

9. Insert the replacement card.

**Figure 24**  Insert SAM Card
10. Replace the access door.

**Figure 25  Replace Access Door**

11. Press the access door down and ensure that it is properly seated.

**CAUTION:** Access door must be replaced and securely seated to ensure proper device sealing.

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

13. Press the battery down until the battery release latch snaps into place.

14. Replace the hand strap, if required.

15. Press and hold the Power button to turn on the device.

**Replacing the microSD Card**

To replace the microSD card:

1. Press the Power button until the menu appears.

2. Touch **Power off**.

3. Touch **OK**.

4. If hand strap is attached, slide the hand strap clip up toward the top of the device and then lift.

**Figure 26  Remove Hand Strap Clip**

5. Press the two battery latches in.

6. Lift the battery from the device.
7. Lift the access door.

**Figure 27** Remove Access Door

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

9. Lift the microSD card holder.

10. Remove microSD card from holder.

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

12. Close the microSD card holder door and slide the door to the Lock position.

**Figure 28** Close and Lock microSD Card in Holder

13. Replace the access door.

**Figure 29** Replace Access Door

14. Press the access door down and ensure that it is properly seated.

**CAUTION:** Access door must be replaced and securely seated to ensure proper device sealing.

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

16. Press the battery down until the battery release latch snaps into place.
17. Replace the hand strap, if required.

18. Press and hold the Power button to turn on the device.
Home Screen

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

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

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

Figure 30  Home Screen

GMS

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

## Setting Home Screen Rotation

By default the Home screen rotation is disabled.

To enable Home screen rotation:
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 .
5. Rotate the device.

## Status Bar

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

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

### Figure 31  Notification and Status Icons

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.
## Status Icons

### Table 5  Status Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🕒</td>
<td>Alarm is active.</td>
</tr>
<tr>
<td>🍄</td>
<td>Main battery is fully charged.</td>
</tr>
<tr>
<td>🍄</td>
<td>Main battery is partially drained.</td>
</tr>
<tr>
<td>🍄</td>
<td>Main battery charge is low.</td>
</tr>
<tr>
<td>🍄</td>
<td>Main battery charge is very low.</td>
</tr>
<tr>
<td>🍄</td>
<td>Main battery is charging.</td>
</tr>
<tr>
<td>🔊</td>
<td>All sounds, except media and alarms, are silenced and vibrate mode is active.</td>
</tr>
<tr>
<td>📣</td>
<td>Do Not Disturb mode active.</td>
</tr>
<tr>
<td>✈️</td>
<td>Airplane Mode is active. All radios are turned off.</td>
</tr>
<tr>
<td>🔗</td>
<td>Bluetooth is on.</td>
</tr>
<tr>
<td>🔗</td>
<td>The device is connected to a Bluetooth device.</td>
</tr>
<tr>
<td>▼</td>
<td>Connected to a Wi-Fi network.</td>
</tr>
<tr>
<td>▼</td>
<td>Not connected to a Wi-Fi network or no Wi-Fi signal.</td>
</tr>
<tr>
<td>⚛️</td>
<td>Connected to an Ethernet network.</td>
</tr>
<tr>
<td>📞</td>
<td>Speakerphone enabled.</td>
</tr>
</tbody>
</table>

## Notification Icons

### Table 6  Notification Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🍄</td>
<td>Main battery is low.</td>
</tr>
<tr>
<td>⌚</td>
<td>More notifications are available for viewing.</td>
</tr>
<tr>
<td>🔁</td>
<td>Data is syncing.</td>
</tr>
<tr>
<td>🕒</td>
<td>Indicates an upcoming event. Non-GMS devices only.</td>
</tr>
<tr>
<td>🕒</td>
<td>Indicates an upcoming event. GMS devices only.</td>
</tr>
<tr>
<td>🌐</td>
<td>Open Wi-Fi network is available.</td>
</tr>
</tbody>
</table>


Managing Notifications

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

Table 6  Notification Icons  (Continued)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🎧</td>
<td>Headset is connected to the device.</td>
</tr>
<tr>
<td>⏰</td>
<td>PTT Express Voice client status. See the PTT Express PTT Notification Icons for a complete list.</td>
</tr>
<tr>
<td>📲</td>
<td>Indicates that RxLogger app is running.</td>
</tr>
<tr>
<td>📣</td>
<td>Indicates the Bluetooth scanner is connected to the device.</td>
</tr>
<tr>
<td>🌐</td>
<td>Indicates the RS507/RS507X or RS6000 is connected to the device in HID mode.</td>
</tr>
</tbody>
</table>
To open the Notification panel, drag the Status bar down from the top of the screen.

**Figure 32  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.

**Quick Access Panel**

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

To see the full Quick Access panel:
- If the device is locked, swipe down once.
- If the device is unlocked, swipe down once with two fingers, or twice with one finger.
• If the Notification panel is open, swipe down from the Quick Settings bar.

**Figure 33  Quick Access Panel**

![Quick Access Panel](image)

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

To change a setting, touch the icon:

• 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.
• 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.
• 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.
• Flashlight - Turn flashlight on or off. Turn camera flash on or off.

The thermal protection safety feature for the camera provides the following behavior if the temperature range is 40°C or above:

• If the flashlight is kept on for a certain period of time, it is automatically turned off and cannot be turned back on for a period of time until it has cooled off.
• During the cooling off period, the camera cannot be turned on. If you attempt to use the camera, a message displays indicating to try again after a period of time.

• Location - Enable or disable locationing feature.
• Hotspot - Turn on to share the device’s mobile data connection with other devices.
• Data Saver - Turn on to prevent some apps from sending or receiving data in the background.
• Night Light - Tint the screen amber to make it easier to look at the screen in dim light. Set Night Light to turn on automatically from sunset to sunrise, or at other times.
• Cast - Share phone content on Chromecast or a television with Google Cast built-in. Touch cast screen to display a list of devices, then touch a device to begin casting.
Editing Icons on Quick Settings

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

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

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

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

Monitoring Battery Usage

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

1. Go to Settings.
2. Touch Battery.

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

1. Go to Settings.
2. Touch Apps & notifications.
3. Touch an app.
4. Touch Advanced > 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 18%, the device displays a notice to connect the device to power. The user should charge the battery using one of the charging accessories.

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

When the battery charge drops below 4%, the device turns off. The user must charge the battery using one of the charging accessories.

Battery Optimization

Observe the following battery saving tips:
Using the 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.

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.
- **Digital Compass** - The digital compass or magnetometer provides simple orientation in relation to the Earth’s magnetic field. As a result, the device always knows which way is North so it can auto rotate digital maps depending on the physical orientation of the device.
- **Light Sensor** - Detects ambient light and adjusts the screen brightness.
- **Proximity Sensor** - Detects the presence of nearby objects without physical contact.

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

Suspend Mode

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

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

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

Transferring Files with a Host Computer via USB

Connect the device to a host computer using a USB cable or a USB cradle to transfer files between the device and the host computer.

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

Transferring Files

**NOTE:** Use Transfer files to copy files between the device (internal memory or microSD card) and the host computer.

1. Connect a USB cable to the device or place the device into a USB cradle.
2. Pull down the Notification panel and touch **Charging this device via USB**.
   By default, **No data transfer** is selected.
3. Touch **File Transfer**.

**NOTE:** After you change the setting to **File Transfer**, and then disconnect the USB cable, the setting reverts back to **No data transfer**. If the USB cable is reconnected, select **File Transfer** again.

4. On the host computer, open a file explorer application.
5. Locate the **device** as a portable device.
6. Open the **SD card** or the **Internal storage** folder.
7. Copy files to and from the device or delete files as required.

### Transferring Photos

To transfer photos using **Photo Transfer Protocol (PTP)**:

**NOTE:** Use **PTP** to copy photos from either the microSD card or internal memory to the host computer.

1. Connect USB cable to the device or place the device into a USB cradle. See **Accessories** for setup information.
2. 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. Open the **SD card** or the **Internal storage** folder.
6. Copy or delete photos as required.

### Disconnect from the Host Computer

To disconnect the device 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.

1. On the host computer, unmount the device.
2. Remove the USB cable from the device or remove the device from the cradle.
Accessing Settings

Access Settings in any of the following ways:

- 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

To manually set the screen brightness using the touchscreen:
1. Swipe down with two fingers from the Status bar to open the Quick Access panel.
2. Slide the icon to adjust the screen brightness level.

To let the device 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 ☐.

Setting Night Light

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

To enable night 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 ☐.

### Setting Screen Rotation

By default, screen rotation is enabled.

To disable screen rotation:

1. Go to **Settings**.

2. Touch **Display > Advanced**.

3. Touch **Auto-rotate screen**.

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

4. Touch ☐.

### Setting Screen Timeout

To set the screen sleep time:

1. Go to **Settings**.

2. Touch **Display > Advanced > Sleep**.

3. Select one of the sleep values.
   - **15 seconds**
   - **30 seconds**
   - **1 minute** (default)
   - **2 minutes**
   - **5 minutes**
   - **10 minutes**
   - **30 minutes**

4. Touch ☐.
Ambient Display

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

To disable ambient display:
1. Go to Settings.
2. Touch Display > Advanced.
3. Touch Ambient display.
4. In the When to show section, enable or disable an option using the switch.
5. Touch .

Setting Touch Key Light

The four touch keys under the screen are backlit.

To configure the touch key light to save battery power:
1. Go to Settings.
2. Touch Display > Advanced.
3. Touch Touch key light.
4. Select an option to choose how long the touch key light stays on:
   • Always off
   • 6 seconds (default)
   • 10 seconds
   • 15 seconds
   • 30 seconds
   • 1 minute
   • Always on.
5. Touch .

Setting Font Size

To set the size of the font in system apps:
1. Go to Settings.
2. Touch Display > Advanced.
3. Touch Font size.
4. Select one of the font size values.
   • Small
   • Default
   • Large
   • Largest.
5. Touch ☐.

**Touch Panel Mode**

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

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

1. Go to **Settings**.
2. Touch **Display > Advanced**.
3. Touch **Touch panel mode**.
4. Select:
   a. **Glove and Finger (Screen Protector off)** to use a finger or a gloved finger on the screen without a screen protector.
   b. **Stylus and Finger (Screen Protector off)** to use a finger or a stylus on the screen without a screen protector.
   c. **Finger Only (Screen Protector off)** to use a finger on the screen without a screen protector.
   d. **Glove and Finger (Screen Protector on)** to use a finger or a gloved finger on the screen with a screen protector.
   e. **Stylus and Finger (Screen Protector on)** to use a finger or a stylus on the screen with a screen protector.
5. Touch ☐.

**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).

To set the date and time:
1. Go to **Settings**.
2. Touch **System > Date & time**.
3. Touch **Automatic date & time** to disable automatic date and time synchronization.
4. Touch **Set date**.
5. In the calendar, set today’s date.
6. Touch **OK**.
7. Touch **Set time**.
8. Touch the green circle, drag to the current hour and then release.
9. Touch the green circle, drag to the current minute and then release.
10. Touch **AM** or **PM**.
11. Touch **OK**.
12. Touch **Use 24-hour format**.
13. Touch 〇.

**General Sound Setting**

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

To access sound settings:

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

**Sound Options**

- **Zebra volume controls**
  - **Ring volume** - Controls the ringtone volume.
  - **Media volume** - Controls the music, games, and media volume.
  - **Alarm volume** - Controls the alarm clock volume.
  - **Notifications volume** - Controls the notification volume.
  - **Scanner volume** - Controls the scanner volume.
- **Volume presets**
  - Mutes the ring, notifications, and scanner so that the device does not make sounds or vibrate.
  - All sounds except media and alarms are silenced and vibrate mode is active.
  - Enables all sounds at the user defined levels.
- Also vibrate for calls - Switch on or off.
- **Do Not Disturb preferences** - Mutes some or all sounds and vibrations.
- **Shortcut to prevent ringing** - Select how the shortcut method prevents ringing.
- **Phone ringtone** - Select a sound to play when the phone rings.
- **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**
  - **Dial pad tones** - Play a sound when pressing keys on dial pad (default - disabled).
  - **Screen locking sounds** - Play a sound when locking and unlocking the screen (default – enabled).
- **Advanced** - Touch to display advanced sound options.
  - **Charging sounds** - Not applicable.
  - **Touch sounds** - Play a sound when making screen selections (default – enabled).
  - **Touch vibration** - Vibrate the device when making screen selections (default – disabled).
  - **Wireless Emergency alerts** - Touch to configure emergency broadcast settings and notifications.

**Wake-Up Sources**

By default the device wakes from suspend mode when the user presses the **Power** button. The device can be configured to wake when the user presses the **PTT** or **Scan** buttons on the left side of the device.
To configure wake-up sources:

1. Go to **Settings**.
2. Touch **Wake-Up Sources**.
3. Select the **SCAN** checkbox to use the left Scan button to wake the device.
4. Select the **RIGHT_TRIGGER_1** checkbox to use the right Scan button to wake the device.
5. Select the **LEFT_TRIGGER_2** checkbox to use the PTT button to wake the device.
6. Select the **GUN_TRIGGER** checkbox to use any Scan button, or the Trigger Handle to wake the device.
7. Touch ○.

### 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](http://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 **BUTTON REMAPPING** tab or the **SHORTCUT** tab that lists the available functions and applications.
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 ○.
7. If remapping the Back, Home, Search, or Menu button, perform a Soft Reset.

### Keyboards

The device provides the following types of keyboards:

- Android Keyboard - Non-GMS devices only.
- Gboard - GMS devices only
- Enterprise Keyboard

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

### Keyboard Configuration

#### Enabling Keyboards

To enable 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 Android or Gboard keyboards, touch and hold 📝.
- On the Enterprise keyboard, touch 📝.

**Using the Android and Gboard Keyboards**

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

**Editing Text**

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

**Entering Numbers, Symbols, and Special Characters**

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

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

**Using the Enterprise Keyboard**

The Enterprise Keyboard contains the following keyboards:
- Numeric
- Alpha
- Special characters
- Data capture.
Numeric Tab

To access the numeric keyboard, touch the 123 tab. The keys displayed vary on the app being used. For example, an arrow displays in Contacts, however Done displays in Email account setup.

Figure 34  Numeric Keyboard

Alpha Tab

To access the alpha keyboard, touch the EN tab.

Figure 35  Alpha Keyboard

Additional Character Tab

To access additional characters, touch the #/* tab.

Figure 36  Symbols Keyboard
Touch 🎨 to enter emoji icons in a text message.

**Figure 37** Emoji Keyboard

Touch ABC to return to the Symbols keyboard.

**Scan Tab**

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

**Figure 38** Scan Keyboard

**Language Usage**

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

**Changing the Language Setting**

1. Go to Settings.
2. Touch System > Languages & input.
3. Touch Languages. A list of available languages displays.
4. If the desired language is not listed, touch Add a language and select a language from the list.
5. Touch and hold ☐ to the right of the desired language, then drag it to the top of the list.
6. The operating system text changes to the selected language.

**Adding Words to the Dictionary**

1. Go to Settings.
2. Touch System > Languages & input > Advanced > Personal dictionary.
3. If prompted, select the language where this word or phrase is stored.
4. Touch + to add a new word or phrase to the dictionary.
5. Enter the word or phrase.
6. In the Shortcut text box, enter a shortcut for the word or phrase.
7. Touch ☑.
The **APPS** screen displays icons for all installed apps. The table below lists the apps installed on the device. See Application Deployment for information on installing and uninstalling apps. For information on standard Android apps, go to [support.google.com](http://support.google.com).

**Table 7   Apps**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Battery Manager" /></td>
<td><strong>Battery Manager</strong> - Displays battery information, including charge level, status, health and wear level.</td>
</tr>
<tr>
<td><img src="image" alt="Battery Swap" /></td>
<td><strong>Battery Swap</strong> – Use to place device in Battery Swap mode when replacing the battery.</td>
</tr>
<tr>
<td><img src="image" alt="Bluetooth Pairing Utility" /></td>
<td><strong>Bluetooth Pairing Utility</strong> – Use to pair the RS507 Hands-free Imager with the device by scanning a barcode.</td>
</tr>
<tr>
<td><img src="image" alt="Calculator" /></td>
<td><strong>Calculator</strong> - Provides the basic and scientific arithmetic functions.</td>
</tr>
<tr>
<td><img src="image" alt="Calendar" /></td>
<td><strong>Calendar</strong> - Use to manage events and appointments. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td><img src="image" alt="Calendar" /></td>
<td><strong>Calendar</strong> - Use to manage events and appointments. AOSP only.</td>
</tr>
<tr>
<td><img src="image" alt="Camera" /></td>
<td><strong>Camera</strong> - Take photos or record videos. For more information see Camera.</td>
</tr>
<tr>
<td><img src="image" alt="Chrome" /></td>
<td><strong>Chrome</strong> - Use to access the Internet or intranet. GMS/GMS-Restricted only</td>
</tr>
<tr>
<td><img src="image" alt="Chromium" /></td>
<td><strong>Chromium</strong> - Use to access the Internet or intranet. AOSP only.</td>
</tr>
</tbody>
</table>
# Applications

## Table 7  Apps (Continued)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Clock Icon" /></td>
<td><strong>Clock</strong> - Use to schedule alarms for appointments or as a wake-up.</td>
</tr>
<tr>
<td><img src="image" alt="Contacts Icon" /></td>
<td><strong>Contacts</strong> - Use to manage contact information. See Contacts for more information.</td>
</tr>
<tr>
<td><img src="image" alt="DataWedge Icon" /></td>
<td><strong>DataWedge</strong> - Enables data capture using the imager.</td>
</tr>
<tr>
<td><img src="image" alt="Diagnostic Tool Icon" /></td>
<td><strong>Diagnostic Tool</strong> - Use to diagnose the device.</td>
</tr>
<tr>
<td><img src="image" alt="Drive Icon" /></td>
<td><strong>Drive</strong> - Upload photos, videos, documents, and other files to personal storage site. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td><img src="image" alt="Duo Icon" /></td>
<td><strong>Duo</strong> - A one-to-one video calling app. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td><img src="image" alt="DWDemo Icon" /></td>
<td><strong>DWDemo</strong> - Provides a way to demonstrate the data capture features using the imager. See DataWedge Demonstration for more information.</td>
</tr>
<tr>
<td><img src="image" alt="Email Icon" /></td>
<td><strong>Email</strong> - Use to send and receive email. AOSP only.</td>
</tr>
<tr>
<td><img src="image" alt="Files Icon" /></td>
<td><strong>Files</strong> - Organize and manage files on the device. See Files for more information.</td>
</tr>
<tr>
<td><img src="image" alt="Gallery Icon" /></td>
<td><strong>Gallery</strong> - Use to view photos stored on the microSD card. For more information, see Gallery for more information. AOSP only.</td>
</tr>
<tr>
<td><img src="image" alt="Gmail Icon" /></td>
<td><strong>Gmail</strong> - Use to send and receive email using a Google email account. GMS/GMS-Restricted only</td>
</tr>
<tr>
<td><img src="image" alt="Google Icon" /></td>
<td><strong>Google</strong> - Launches Google™ search app. GMS/GMS-Restricted only</td>
</tr>
<tr>
<td><img src="image" alt="Keep Icon" /></td>
<td><strong>Keep</strong> - Use to create, edit, and share notes. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td><img src="image" alt="License Manager Icon" /></td>
<td><strong>License Manager</strong> - Use to manage software licenses on the device.</td>
</tr>
<tr>
<td>Icon</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>🌍</td>
<td><strong>Maps</strong> - Use to see your location on a map (with public transit, traffic, or satellite overlays). Search for any business or place of interest. Provides turn-by-turn navigation with voice guidance, traffic-avoidance, and alternate routes, for drivers, cyclists, walkers, and users of public transportation. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td>🏖️</td>
<td><strong>MSRN</strong> - Use to verify authenticity of the paired Snap-on MSR and to provision the Snap-on MSR.</td>
</tr>
<tr>
<td>🎵</td>
<td><strong>Music</strong> - Play music stored on the microSD card. AOSP only.</td>
</tr>
<tr>
<td>📸</td>
<td><strong>Photos</strong> - Use to sync photos with Google account. For more information, see Photo Settings. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td>🎬</td>
<td><strong>Play Movies &amp; TV</strong> - View movies and video on your device. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td>🎵</td>
<td><strong>Play Music</strong> - Use to listen to music. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td>🌐</td>
<td><strong>Play Store</strong> - Download music, movies, books, and Android apps and games from the Google Play Store. GMS/GMS-Restricted only.</td>
</tr>
<tr>
<td>🎤</td>
<td><strong>PTT Express</strong> - Use to launch PTT Express client for VoIP communication.</td>
</tr>
<tr>
<td>🔍</td>
<td><strong>RxLogger</strong> - Use to diagnose device and app issues. See the device Integrator Guide for Android Version 8.1 for more information.</td>
</tr>
<tr>
<td>🔎</td>
<td><strong>RxLogger Utility</strong> - Use to view, backup, and archive RxLogger data.</td>
</tr>
<tr>
<td>🔍</td>
<td><strong>Search</strong> - Use to search the Web. Requires an Internet connection. AOSP only.</td>
</tr>
<tr>
<td>🛠️</td>
<td><strong>Settings</strong> - Use to configure the device.</td>
</tr>
<tr>
<td>📜</td>
<td><strong>SimulScan Demo</strong> - Use to demonstrate the document capture feature of the device.</td>
</tr>
<tr>
<td>🎧</td>
<td><strong>Sound Recorder</strong> - Use to record audio.</td>
</tr>
</tbody>
</table>
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

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

Battery Manager

The Battery Manager provides detailed information about the battery.

To open Battery Manager, swipe up from the bottom of the Home screen and touch .
Table 8  Battery Icon Description

<table>
<thead>
<tr>
<th>Battery icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌋</td>
<td>Battery charge level.</td>
</tr>
<tr>
<td>⚡️</td>
<td>Battery charging.</td>
</tr>
<tr>
<td>🔌</td>
<td>Battery charge level is below 20%.</td>
</tr>
</tbody>
</table>

- **Battery level** - The current battery charge level as a percentage. Displays -% when level is unknown.
- **Time until full** - The amount of time until the battery is fully charged.
- **Time since charging** - The amount of time since the device began charging.
- **Time until empty** - The amount of time until the battery is empty.
- **Battery status**
  - **Not charging** - The device is not connected to AC power.
  - **Charging over AC** - The device is connected to AC power and charging.
  - **Charging over USB** - The device is connected to a host computer with a USB cable and charging.
  - **Discharging** - That the battery is discharging.
  - **Full** - That the battery is fully charged.
  - **Unknown** - The battery status is unknown.
- **Battery health** - The health of the battery. If a critical error occurs, 🚨 appears. Touch to view the error description.
  - **Decommission** - The battery is past its useful life and should be replaced. See system administrator.
  - **Good** - The battery is good.
  - **Charge error** - An error occurred while charging. See system administrator.
  - **Over Current** - An over-current condition occurred. See system administrator.
  - **Dead** - The battery has no charge. Replace the battery.
  - **Over Voltage** - An over-voltage condition occurred. See system administrator.
  - **Below Temperature** - The battery temperature is below the operating temperature. See system administrator.
  - **Failure Detected** - A failure has been detected in the battery. See system administrator.
  - **Unknown** - See system administrator.
- **Wear level** - The health of the battery in graphical form. When the wear level exceeds 80%, the bar color changes to red.
• **Advanced info** - Touch to view additional battery information.
  • **Battery present status** - Indicates that the battery is present.
  • **Battery level** - The battery charge level as a percentage of scale.
  • **Battery scale** - The battery scale level used to determine battery level (100).
  • **Battery voltage** - The current battery voltage in millivolts.
  • **Battery temperature** - The current battery temperature in degrees Centigrade.
  • **Battery technology** - The type of battery.
  • **Battery current** - The average current into or out of the battery over the last second in mAh.
  • **Battery manufacture date** - The date of manufacture.
  • **Battery serial number** - The battery serial number. The number matches the serial number printed on the battery label.
  • **Battery part number** - The battery part number.
  • **Battery rated capacity** - Lists the rated capacity of the backup battery in mAh.
  • **Battery decommission status** - Indicates if the battery is past its life span.
    • **Battery Good** - The battery is in good health.
    • **Decommissioned Battery** - The battery is past its useful life and should be replaced.
  • **Base cumulative charge** - Cumulative charge using Zebra charging equipment only.
  • **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.
  • **App version** - The application version number.
Camera

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

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.

Taking Photos

NOTE: See Photo Settings for camera setting descriptions.

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

Figure 39 Camera Mode

2. If necessary, touch the Camera Mode icon and touch Camera Switch.

3. To switch between the rear camera and front camera (if available), touch Camera Switch.

4. Frame the subject on the screen.
5. To zoom in or out, press two fingers on the display and pinch or expand fingers. The zoom controls appear on the screen.

6. Touch an area on the screen to focus. The focus circle appears. The two bars turn green when in focus.

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

Taking a Panoramic Photo

Panorama mode creates a single wide image by panning slowly across a scene.

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

Figure 40  Panoramic Mode

2. Touch the Camera Mode icon and touch 

3. Frame one side of the scene to capture.

4. Touch and slowly pan across the area to capture. A small white square appears inside the button indicating the capture is in progress.
   If you are panning too quickly, the message **Too fast** appears.

5. Touch to end the shot. The panorama appears immediately and a progress indicator displays while it saves the image.
Recording Videos

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

**Figure 41** Video Mode

3. To switch between the rear camera and front camera (if available), touch 📚.
4. Point the camera and frame the scene.
5. To zoom in or out, press two fingers on the display and pinch or expand fingers. The zoom controls appear on the screen.
6. Touch 🎥 to start recording.
   The video time remaining appears in the top left of the screen.
7. Touch 🎥 to the end recording.
   The video momentarily displays as a thumbnail in the lower left corner.
Photo Settings

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

Rear Camera

- **Flash** - Select whether the camera relies on its light meter to decide whether a flash is necessary, or to turn it on or off for all shots.
  - Off - Disable flash.
  - Auto - Adjust flash automatically depending upon light meter (default).
  - On - Enable flash upon taking a photo.
  - Torch - Turn flash on continuously.
- **Picture size** - The size (in pixels) of the photo to: 13M pixels (default), 8M pixels, 5M pixels, 3M pixels, HD 1080, 2M pixels, HD720, 1M pixels, WVGA, VGA, or QVGA.
- **Picture quality** - Set the picture quality setting to: Low, Standard (default) or High.
- **Countdown timer** - Select Off (default), 2 seconds, 5 seconds or 10 seconds.
- **Storage** – Set the location to store the photo to: Phone or SD Card.
- **Face Detection** - Select to turn face detection Off (default) or On.
- **ISO** - Set camera sensitivity to light to: Auto (default), ISO Auto (HJR), ISO100, ISO200, ISO400, ISO800 or ISO1600.
- **Exposure** - Set the exposure settings to: +2, +1, 0 (default), -1 or -2.
- **White balance** - Select how the camera adjusts colors in different kinds of light, to achieve the most natural-looking colors:
  - Incandescent - Adjust the white balance for incandescent lighting.
  - Fluorescent - Adjust the white balance for florescent lighting.
  - Auto - Adjust the white balance automatically (default).
  - Daylight - Adjust the white balance for daylight.
  - Cloudy - Adjust the white balance for a cloudy environment.
- **ZSL** - Set the camera to immediately take a picture when the button is pressed (default – enabled).
- **Anti Banding** - Allows the camera to avoid problems caused by artificial light sources that are not constant. These sources cycle (flicker) fast enough to go unnoticed to the human eye, appearing continuous. The camera’s eye (its sensor) can still see this flicker. Options: Auto (default), 60 Hz, 50 Hz, or Off.

Front Camera

- **Picture size** - Set the size (in pixels) of the photo to: 5M pixels (default), HD720, 1M pixels, WVGA, VGA, or QVGA.
- **Picture quality** - Set picture quality setting to: Low, Standard (default) or High.
- **Countdown timer** - Set to: Off (default), 2 seconds, 5 seconds or 10 seconds.
- **Storage** – Set location to store the photo to: Phone or SD Card.
- **Face Detection** - Select to turn face detection Off (default) or On.
Video Settings

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

Rear Camera

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

Front Camera

- **Video quality** - Set video quality to: HD 720p (default), or SD 480p.
- **Video duration** - Set to: 30 seconds (MMS) or 30 minutes (default).
- **Storage** – Set the location to store the photo to: Phone (default) or SD Card.
DataWedge Demonstration

**NOTE:** DataWedge is disabled on the Home screen. To enable this feature, go to the DataWedge settings and enable Barcode input option.

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

**Table 9  DataWedge Demonstration Icons**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Illumination" /></td>
<td>Imager illumination is on. Touch to turn illumination off.</td>
</tr>
<tr>
<td><img src="image2" alt="Illumination" /></td>
<td>Imager illumination is off. Touch to turn illumination on.</td>
</tr>
<tr>
<td><img src="image3" alt="Data Capture" /></td>
<td>The data capture function is through the internal imager.</td>
</tr>
<tr>
<td><img src="image4" alt="Bluetooth" /></td>
<td>An RS507 or RS6000 Bluetooth imager is connected.</td>
</tr>
<tr>
<td><img src="image5" alt="Bluetooth" /></td>
<td>An RS507 or RS6000 Bluetooth imager is not connected.</td>
</tr>
<tr>
<td><img src="image6" alt="Scan Mode" /></td>
<td>Imager is in picklist mode. Touch to change to normal scan mode.</td>
</tr>
<tr>
<td><img src="image7" alt="Scan Mode" /></td>
<td>Imager is in normal scan mode. Touch to change to picklist mode.</td>
</tr>
<tr>
<td><img src="image8" alt="Options" /></td>
<td>Opens a menu to view the application information or to set the application DataWedge profile.</td>
</tr>
</tbody>
</table>

**NOTE:** To configure DataWedge, refer to [techdocs.zebra.com/datawedge/](http://techdocs.zebra.com/datawedge/).

Scanner Selection

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

See Data Capture for more information.

Either press the programmable button or touch the yellow scan button to capture data. The data appears in the text field below the yellow button.
Device Central

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

- RS507/RS507X Hands-free Imager
- RS6000 Bluetooth Ring Scanner
- RS5000 Corded Ring Scanner
- HS3100 Bluetooth Headset
- DS3678 Digital Scanner.

Device Central features include:

- Discovering and pairing with supported peripherals via Bluetooth or corded connection.
- Paging a connected RS6000 Ring Scanner.
- Updating the firmware of supported ring scanners. Refer to the RS5000 Quick Start Guide or RS6000 User Guide for more information.
- Displaying the connection status of peripherals.
- Displaying information for a connected peripheral in the notification bar.

Figure 42  Device Central Screen

Scan and Pair Tab

Pairing to a Bluetooth peripheral is accomplished by one of the following methods:

- Scan and Pair
- Scan to Pair
- Manually Pairing.

Scan and Pair

To scan the peripheral Bluetooth barcode to pair:

1. In the Scan and Pair tab, touch Scan barcode to pair. The peripheral’s scan beam illuminates.
2. Ensure that Bluetooth is enabled on the peripheral and is set to discoverable mode. Refer to the peripheral user guide for instructions.

3. Scan the Bluetooth MAC address barcode label on the desired peripheral to pair.
   When pairing is successful, the peripheral displays in the list. A green dot appears next to a Bluetooth scanner when the device is connected, and may be in use. A red dot appears next to other Bluetooth peripherals, such as a Bluetooth headset or printer, while they are connected but not in use.

**Scan to Pair**

Use Scan and Pair to pair by scanning a barcode displayed on the screen. This applies to peripherals that have scanning capability, such as Bluetooth handheld scanners and ring scanners.

1. In the **Scan and Pair** tab, touch **Display barcode to pair**. A barcode displays.
2. Using the peripheral, scan the barcode on the screen.
   When the pairing is successful, the peripheral displays in the list with a green dot indicating that it is paired.

**Manually Pairing**

To manually pair a peripheral that is unable to pair via Bluetooth:

1. In the **Scan and Pair** tab, touch the **MAC address** field.
2. Enter the Bluetooth MAC address of the peripheral.
3. Touch **Pair**.
   When pairing is successful, the peripheral displays in the list. A green dot appears next to a Bluetooth scanner when the device is connected, and may be in use. A red dot appears next to other Bluetooth peripherals, such as a Bluetooth headset or printer, while they are connected but not in use.

**Peripherals Tab**

The **Peripherals** Tab displays all currently connected and previously connected peripherals. Connected peripherals display the length of time (in minutes) that they have been connected.

Touch the connected device icon to display details about the peripheral. The **Device Details** screen appears. When an RS6000 is connected the **Page** button displays at the bottom of the **Device Details** screen. See Paging an RS6000 Ring Scanner.

**My Device Tab**

The **My Device** Tab displays information about the device.
- **Device Model** - Displays the name assigned to the device.
- **Device Serial Number** - Displays the serial number of the device.
- **OS Version** - Displays the operating system version.
- **Build Number** - Displays the software build number.
- **Battery Level** - The current battery charge level as a percentage.
- **Battery Part Number** - The battery part number.
- **Battery Serial Number** - The battery serial number. The number matches the serial number printed on the battery label.
- **Battery Manufactured Date** - The date of manufacture.
### Unpairing a Peripheral

To unpair a Bluetooth peripheral:

1. In the **Scan and Pair** tab, touch **Unpair** for the desired peripheral to unpair.
   
   A confirmation pop-up message appears.

2. Touch **OK**.

   Once unpaired, a message appears indicating the peripheral has been disconnected, and the peripheral is removed from the list.

### Paging an RS6000 Ring Scanner

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

1. With the RS6000 Ring Scanner connected, swipe up from the bottom of the Home screen, and touch ![ Consumables icon](icon.png).

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

2. Touch RS6000. The Device Details screen displays.

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

**Figure 43** Page RS6000

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

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

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

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

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

Figure 44 Subsystem Screen

4. Touch one of the subsystems to view details.

Table 10 Subsystem Test Result Indicators

<table>
<thead>
<tr>
<th>Status Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![checkmark]</td>
<td>Test passed.</td>
</tr>
<tr>
<td>![x]</td>
<td>Test failed.</td>
</tr>
<tr>
<td>![x]</td>
<td>Test not supported or not enabled.</td>
</tr>
</tbody>
</table>

Settings

By default only the Battery and System tests are enabled. To enable other tests:
1. Touch \( \text{Apps} > \text{Settings}. \)
2. Touch to the left of the test name. A green box with a checkmark appears.
3. Touch SAVE.
4. Touch Yes to confirm.
5. Touch \( \leftarrow \).

**Battery Test Information**

The Battery Test obtains the following information:

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

**GPS Test Information**

Not supported on this device.

**System Test Information**

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

The System Test obtains the following information:

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

**WLAN Test Information**

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

The WLAN test obtains the following information:

- **WLAN Enabled** - WLAN radio is enabled or disabled
- **WLAN Status** - Current status of association with the access point
- **ESSID** - Name of the wireless network
Applications

- **BSSID** - MAC address of the connected access point
- **MAC Address** - Device’s MAC address
- **Signal** - Strength of the Wi-Fi signal (in dBm)
- **IP Address** - IP address of the device.

**WWAN Test Information**

Not supported on this device.

**Bluetooth Test Information**

The Bluetooth Test obtains the following information:
- **Enabled** - Whether the Bluetooth radio is enabled or disabled
- **Status** - Whether the device is paired to another Bluetooth device
- **Connectable/Discoverable** - Whether the device is discoverable or able to connect
- **Address** - Bluetooth radio MAC address
- **Name** - Bluetooth name for the device.
PTT Express Voice Client

NOTE: PTT Express Voice Client enables Push-To-Talk (PTT) communication between disparate enterprise devices. Leveraging existing Wireless Local Area Network (WLAN) infrastructure, PTT Express delivers simple PTT communication without requiring 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 45  PTT Express Default User Interface**

![PTT Express Default User Interface](image)

**Table 11  PTT Express Default User Interface Descriptions**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification Icon</td>
<td>Indicates the current state of the PTT Express client.</td>
</tr>
<tr>
<td>Service Indication</td>
<td>Indicates the status of the PTT Express client. Options: Service Enabled, Service Disabled or Service Unavailable.</td>
</tr>
<tr>
<td>Talk Groups</td>
<td>Lists all 32 Talk Groups available for PTT communication.</td>
</tr>
<tr>
<td>Settings</td>
<td>Opens the PTT Express Settings screen.</td>
</tr>
<tr>
<td>Enable/Disable Switch</td>
<td>Turns the PTT service on and off.</td>
</tr>
</tbody>
</table>
PTT Audible Indicators

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

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

PTT Notification Icons

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

**Table 12  PTT Express Icon Descriptions**

<table>
<thead>
<tr>
<th>Status Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>The PTT Express Voice client is disabled.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The PTT Express Voice client is enabled but not connected to a WLAN.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>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.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>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.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The PTT Express Voice client is enabled, connected to a WLAN, and in a private response.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The PTT Express Voice client is enabled and muted.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The PTT Express Voice client is enabled but it is not able to communicate due to a VoIP telephony call in progress.</td>
</tr>
</tbody>
</table>

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.

Figure 46  PTT communication may be established as a Group Call. When PTT Express is enabled, the PTT button on the left side of the device is assigned for PTT communication. When the Wired Headset is used, Group Calls can also be initiated using the headset Talk button.

Creating a Group Call

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 ☐.
RxLogger

RxLogger is a comprehensive diagnostic tool that provides application and system metrics, allows for the creation of custom plug-ins, 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 on the microSD card in the RxLogger\config folder. Copy the file from the device to a host computer using a USB connection. Edit the configuration file and then replace the XML file on the device. There is no need to stop and restart the RxLogger service since the file change is automatically detected.

Enabling Logging

To enable logging:
1. Swipe the screen up and select 📅.
2. Touch Start.
3. Touch ☐.

Disabling Logging

To disable logging:
1. Swipe the screen up and select 📅.
2. Touch Stop.
3. Touch ☐.

Extracting Log Files

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

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.
Sound Recorder

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

Recordings are saved on the microSD card (if installed) or the internal storage and are available in the Music application (non-GMS devices) or the Play Music application (GMS devices).

Touch 

- **File type** - Select the file type for the recording file.
  - AMR
  - 3GPP
  - AAC
  - WAV
  - AMR-WB
  - AMR-WB-3GPP.

- **Storage location** - Select the location for the recording file.
  - Phone storage
  - SD card.
**Introduction**

The device supports data capture using:

- Integrated Imager
- Integrated Camera
- RS507/RS507X Hands-free Imager
- RS6000 Bluetooth Ring Scanner
- DS3578 Digital Scanner
- DS3608 Digital Scanner
- DS3678 Digital Scanner.

**Integrated Imager**

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

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

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

**Operational Modes**

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

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

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

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

**Digital Camera**

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.

**RS507/RS507X Hands-Free Imager**

The RS507/RS507X Hands-free Imager is a wearable barcode scan solution for both 1D and 2D barcode symbologies.

![RS507/RS507X Hands-Free Imager](image)

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

**RS6000 Bluetooth Ring Scanner**

The RS6000 Bluetooth Ring Scanner is a wearable barcode scan solution for both 1D and 2D barcode symbologies.

![RS6000 Bluetooth Ring Scanner](image)

Refer to the RS6000 Bluetooth Ring Scanner Product Reference Guide for more information.
DS3678 Digital Scanner

The cordless DS3678 combines superior 1D and 2D omnidirectional barcode scanning performance and advanced ergonomics in a lightweight design. See the DS36X8 Product Reference Guide for more information.

Figure 49  DS3678 Digital Scanner

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 on the top of the device at a barcode.

**Figure 50**  Imager Scanning

3. Press and hold the scan button.
   The red 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 crosshair or aiming dot touches the barcode.

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

**Figure 51**  Aiming Pattern

5. The Data Capture LED lights green and a beep sounds, by default, to indicate the barcode was decoded successfully.
6. Release the scan button.
   The barcode content data displays in the text field.

**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.

### Scanning with Integrated Camera

To capture bar code data:

**NOTE:** When capturing bar code data in poor lighting, turn on Illumination mode in the DataWedge app. See the device Integrator Guide for detailed information on configuring DataWedge.

1. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).
   For example, open the web browser and touch the text field.

2. Aim the camera at a bar code.

3. Press and hold the Scan button. By default, a preview window appears on the screen. The Decode light emitting diode (LED) lights red to indicate that data capture is in process.

   ![App with Preview Window](image)

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

4. Move the device until the bar code is visible on the screen.

5. The Decode LED lights green, a beep sounds and the device vibrates, by default, to indicate the bar code was decoded successfully.

6. The captured data appears in the text field.

### Scanning with RS507/RS507X Hands-Free Imager

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

To scan with the RS507/RS507X:
1. Pair the RS507/RS507X with the device. See Pairing Using Simple Serial InterfacePairing Bluetooth Scanners or Pairing Using Bluetooth Human Interface Device for more information.

2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).

3. Point the RS507/RS507X at a barcode.

**Figure 54**  Barcode Scanning with RS507/RS507X

4. Press and hold the trigger.

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

   The RS507/RS507X LEDs light green and a beep sounds to indicate the barcode was decoded.
successfully. When the RS507/RS507X is in Pick List mode, the RS507/RS507X does not decode the barcode until the center of the crosshair touches the barcode.

**Figure 55**  RS507/RS507X Aiming Pattern

![RS507/RS507X Aiming Pattern](image)

**Figure 56**  RS507/RS507X Pick List Mode with Multiple Barcodes in Aiming Pattern

![RS507/RS507X Pick List Mode](image)

5. The captured data appears in the text field.

**Scanning with RS6000 Bluetooth Ring Scanner**

To read a barcode, a scan-enabled app is required. Devices that contain the Zebra DataWedge app allows you to enable the scanner to decode barcode data and display the barcode content.

To scan with the RS6000:

1. Pair the RS6000 with the device. See Pairing Using Bluetooth Human Interface Device for more information.

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

**Figure 57**  Barcode Scanning with RS6000

4. Press and hold the trigger.

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

The RS6000 LEDs light green and a beep sounds to indicate the barcode was decoded successfully. When the RS6000 is in Pick List mode, the RS6000 does not decode the barcode until the center of the crosshair touches the barcode.

**Figure 58**  RS6000 Aiming Pattern

**Figure 59**  RS6000 Pick List Mode with Multiple Barcodes in Aiming Pattern

5. The captured data appears in the text field.
Scanning with the DS3608 USB Scanner or DS3678 Bluetooth Scanner

To scan with the DS3608 or DS3678:

1. Pair the scanner with the device. For more information, see Connecting a USB Scanner for the DS3608 or Pairing Bluetooth Scanners for the DS3678.

2. Ensure that an app is open on the device and a text field is in focus (text cursor in text field).

3. Point the scanner at a barcode.

4. Press and hold the trigger.

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

5. The captured data appears in the text field.
Pairing the RS507/RS507X/RS6000 Hands-Free Imager

To connect the RS507/RS507X or RS6000 imager to the device, use one of the following methods:

- Near Field Communication (NFC) (RS6000 only)
- Simple Serial Interface (SSI)
- Bluetooth Human Interface Device (HID) Mode.

Pairing Using Near Field Communication

The device provides the ability to pair the RS6000 using NFC.

**NOTE:** RS6000 Only.

To pair using NFC:

1. Ensure that the RS6000 is in SSI mode. Refer to the RS6000 User Guide for more information.
2. Ensure that NFC is enabled on the device.
3. Align the NFC icon on the RS6000 with the NFC antenna on the device.

The RS6000 Status LED blinks blue indicating that the RS6000 is attempting to establish connection with the device. When connection is established, the Status LED turns off and the RS6000 emits a single string of low/high beeps.

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

**Figure 63** Align NFC Antennas

Pairing in HID Mode Using Near Field Communication

The device provides the ability to pair the RS6000 in HID mode using NFC.

**NOTE:** RS6000 Only.

To pair in HID mode using NFC:

1. Ensure that NFC is enabled on the device.
2. Ensure that Bluetooth is enabled on the device.
3. Place the RS6000 in Human Interface Device (HID) mode. If the RS6000 is already in HID mode, skip to step 4.
   a. Remove the battery from the RS6000.
   b. Press and hold the Restore key.
   c. Install the battery onto the RS6000.
   d. Keep holding the Restore key for about five seconds until a chirp is heard and the Scan LEDs flash green.
   e. Scan the barcode below to place the RS6000 in HID mode.

Figure 64  RS6000 Bluetooth HID Barcode

4. Remove the battery from the RS6000.
5. Re-install the battery into the RS6000.
6. Align the NFC icon on the RS6000 with the NFC antenna on the device.

   The RS6000 Status LED blinks blue indicating that the RS6000 is attempting to establish connection with the device. When connection is established, the Status LED turns off and the RS6000 emits a single string of low/high beeps.

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

Figure 65  Align NFC Antennas

Pairing Using Simple Serial Interface (SSI)

To pair the RS507/RS507X or RS6000 with the device using SSI.
1. Swipe up from the bottom of the Home screen and touch \( \text{Bluetooth} \).

**Figure 66 Bluetooth Pairing Utility**

2. Using the RS507/RS507X or RS6000, scan the barcode on the screen.

The RS507/RS507X or RS6000 emits a string of high/low/high/low beeps. The Scan LED flashes green indicating that the RS507/RS507X or RS6000 is attempting to establish connection with the device. When connection is established, the Scan LED turns off and the RS507/RS507X or RS6000 emits one string of low/high beeps.

A notification appears on the Notification panel and the \( \text{Bluetooth} \) icon appears in the Status bar.

**Pairing Using Bluetooth Human Interface Device**

To pair the RS507/RS507X or RS6000 with the device using Human Interface Device (HID):

1. Ensure that Bluetooth is enabled on both devices.
2. Ensure that the Bluetooth device to discover is in discoverable mode.
3. Ensure that the two devices are within 10 meters (32.8 feet) of one another.
4. Place the RS507/RS507X or RS6000 in HID mode. If the RS507/RS507X or RS6000 is already in HID mode, skip to step 5.
   a. Remove the battery from the RS507/RS507X or RS6000.
   b. Press and hold the Restore key.
   c. Install the battery onto the RS507/RS507X or RS6000.
   d. Keep holding the Restore key for about five seconds until a chirp is heard and the Scan LEDs flash green.
e. Scan the barcode below to place the RS507/RS507X or RS6000 in HID mode.

**Figure 67**  RS507 Bluetooth HID Barcode

---

5. Remove the battery from the RS507/RS507X or RS6000.
6. Re-install the battery into the RS507/RS507X or RS6000.
7. Swipe down from the Status bar to open the Quick Access panel and then touch 📷.
8. Touch Bluetooth.
9. Touch Pair new device. The device begins searching for discoverable Bluetooth devices in the area and displays them under Available devices.
10. Scroll through the list and select RS507/RS507X or RS6000.

The device connects to the RS507/RS507X or RS6000 and Connected appears below the device name. The Bluetooth device is added to the Paired devices list and a trusted (“paired”) connection is established.

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

## Pairing a Bluetooth Scanner

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

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

### Pairing Using Bluetooth Human Interface Device

To pair the scanner with the device using HID:
1. Remove the battery from the scanner.
2. Replace the battery.
3. After the scanner reboots, scan the barcode below to place the scanner in HID mode.

**Figure 69**  Bluetooth HID Classic Barcode
4. On the device, swipe down from the Status bar to open the Quick Access panel and then touch 📲.

5. Touch Bluetooth.

6. Touch Pair new device. The device begins searching for discoverable Bluetooth devices in the area and displays them under Available devices.

7. Scroll through the list and select XXXXX xxxxxx, where XXXXX is the scanner and xxxxxx is the serial number.

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

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

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 .

Disabling 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 disappears from the checkbox indicating that DataWedge is disabled.
4. Touch .

Supported Decoders

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

<table>
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<th>Decoders</th>
<th>Internal Imager SE4750-SR &amp; SE4750-MR</th>
<th>RS507/RS507X</th>
<th>RS6000</th>
<th>DS3678</th>
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Table 13  Supported Decoders (Continued)

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### Table 13  Supported Decoders (Continued)

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Touch ⭕️ to return to the previous screen.
This section provides information on the wireless features:

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

### Accessing Settings

Access Settings in any of the following ways:

- 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.

### Wireless Local Area Networks

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

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

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

The device supports the following WLAN security options:

- Open
- Wireless Equivalent Privacy (WEP)
- Wi-Fi Protected Access (WPA)/WPA2 Personal (PSK)
Wireless

- Extensible Authentication Protocol (EAP).
  - LEAP
  - Protected Extensible Authentication Protocol (PEAP) - with MSCHAPV2 and GTC authentication
  - Transport Layer Security (TLS)
  - TTLS - with Password Authentication Protocol (PAP), MSCHAP and MSCHAPv2 authentication.
  - EAP-FAST - with MSCHAPV2 and GTC authentication.
  - PWD

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

Figure 70 Wi-Fi Screen

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

   The device obtains a network address and other required information from the network using the dynamic host configuration protocol (DHCP) protocol. To configure the device with a fixed internet protocol (IP) address, Refer to the device Integrator Guide for more information.

5. In the Wi-Fi setting field, **Connected** appears indicating that the device is connected to the WLAN.

**Removing a Wi-Fi Network**

To remove a remembered or connected network:

1. Go to **Settings**.
2. Touch **Network & Internet > Wi-Fi**.
3. Scroll down to the bottom of the list and touch **Saved networks**.
4. Touch the name of the network.
5. In the dialog box, touch **FORGET**.
6. Touch ○.

**WLAN Configuration**

This section provides information on configuring Wi-Fi settings.

**Configuring a Secure Wi-Fi Network**

To set up a Wi-Fi network:

1. Go to **Settings**.
2. Touch **Network & Internet > Wi-Fi**.
3. Slide the switch to the **ON** position.
4. The device searches for WLANs in the area and lists them on the screen.
5. Scroll through the list and select the desired WLAN network.
6. Touch the desired network. If the network security is **Open**, the device automatically connects to the network. For all other network security a dialog box appears.
7. If the network security is **WEP** or **WPA/WPS2 PSK**, enter the required password and then touch **Connect**.
8. If the network security is 802.1x EAP:
   • Touch the **EAP method** drop-down list and select **PEAP**, **TLS**, **TTLS**, or **LEAP**.
   • Touch the **Phase 2 authentication** drop-down list and select an authentication method.
   • If required, touch **CA certificate** and select a Certification Authority (CA) certificate. Note: Certificates are installed using the **Security** settings.
   • If required, touch **User certificate** and select a user certificate. Note: User certificates are installed using the Location & security settings.
   • If required, in the **Identity** text box, enter the username credentials.
   • If desired, in the **Anonymous identity** text box, enter an anonymous identity username.
   • If required, in the **Password** text box, enter the password for then given identity.

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

9. Touch **Connect**.

10. Touch ☑️.

**Manually Adding a Wi-Fi Network**

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

1. Go to **Settings**.
2. Touch **Network & Internet** > **Wi-Fi**.
3. Slide the Wi-Fi switch to the **On** position.
4. Scroll to the bottom of the list and select **Add network**.
5. In the **Network name** text box, enter the name of the Wi-Fi network.
6. In the **Security** drop-down list, set the type of security to:
   • **None**
   • **WEP**
   • **WPA/WPA2 PSK**
   • **802.1x EAP**
7. If the network security is **None**, touch **Save**.
8. If the network security is **WEP** or **WPA/WPA2 PSK**, enter the required password and then touch **Save**.
9. If the network security is 802.1x EAP:
   • Touch the EAP method drop-down list and select PEAP, TLS, TTLS, or LEAP.
   • Touch the Phase 2 authentication drop-down list and select an authentication method.
   • If required, touch CA certificate and select a Certification Authority (CA) certificate. Note: Certificates are installed using the Security settings.
   • If required, touch User certificate and select a user certificate. Note: User certificates are installed using the Security settings.
   • If required, in the Identity text box, enter the username credentials.
   • If desired, in the Anonymous identity text box, enter an anonymous identity username.
   • If required, in the Password text box, enter the password for the given identity.

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

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

11. Touch .

**Configuring for a Proxy Server**

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

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

To configure the device for a proxy server:

1. Go to Settings.
2. Touch Network & Internet > Wi-Fi.
3. Slide the Wi-Fi switch to the On position.
4. In the network dialog box, select and touch a network.
5. Touch Advanced options.
7. In the Proxy hostname text box, enter the address of the proxy server.
8. In the Proxy port text box, enter the port number for the proxy server.
9. In the Bypass proxy for text box, enter addresses for web sites that are not required to go through the proxy server. Use a comma "," between addresses. Do not use spaces or carriage returns between addresses.
10. Touch Connect.

11. Touch 〇.

Configuring the Device to Use a Static IP Address

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

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

1. Go to Settings.
2. Touch Network & Internet > Wi-Fi.
3. Slide the Wi-Fi switch to the On position.
4. In the network dialog box, select and touch a network.
5. Touch Advanced options.
6. Touch IP settings and select Static.
7. In the IP address text box, enter an IP address for the device.
8. If required, in the Gateway text box, enter a gateway address for the device.
9. If required, in the Network prefix length text box, enter the prefix length.
10. If required, in the DNS 1 text box, enter a Domain Name System (DNS) address.
11. If required, in the DNS 2 text box, enter a DNS address.
12. Touch Connect.
13. Touch 〇.

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 W-Fi automatically** - When enabled, Wi-Fi automatically turns back on when near high quality saved networks.
- **Open network notification** - When enabled, notifies the user when an open network is available.
- **Advanced - Touch to expand options.**
  - **Additional settings** - See Additional 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.
  - **Wi-Fi Direct** - Displays a list of devices available for a direct Wi-Fi connection.
  - **MAC address** - Displays the Media Access Control (MAC) address of the device when connecting to Wi-Fi networks.
  - **IP address** - Displays the IP address of the device when connecting to Wi-Fi networks.
Additional Wi-Fi Settings

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

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

- **Regulatory**
  - **Country Selection** - Displays the acquired country code if 802.11d is enabled, else it displays the currently selected country code.
  - **Region code** - Displays the current region code.

- **Band and Channel Selection**
  - **Wi-Fi frequency band** - Set the frequency band to: Auto (default), 5 GHz only or 2.4 GHz only.
  - **Available channels (2.4 GHz)** - Touch to display the Available channels menu. Select specific channels and touch OK.
  - **Available channels (5 GHz)** - Touch to display the Available channels menu. Select specific channels and touch OK.

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

- **About**
  - **Version** - Displays the current Fusion information.

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.
5. 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 2 device power class. The maximum output power is 2.5 mW and the expected range is 10 m (32.8 ft). A definition of ranges based on power class is difficult to obtain due to power and device differences, and whether in open space or closed office space.

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

**Security**

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

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

Recommendations are:

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

Bluetooth Profiles

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

Table 14  Bluetooth Profiles

<table>
<thead>
<tr>
<th>Profile</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Discovery Protocol (SDP)</td>
<td>Handles the search for known and specific services as well as general services.</td>
</tr>
<tr>
<td>Serial Port Profile (SPP)</td>
<td>Allows use of RFCOMM protocol to emulate serial cable connection between two Bluetooth peer devices. Example, connecting the device to a printer.</td>
</tr>
<tr>
<td>Object Push Profile (OPP)</td>
<td>Allows the device to push and pull objects to and from a push server.</td>
</tr>
<tr>
<td>Advanced Audio Distribution Profile (A2DP)</td>
<td>Allows the device to stream stereo-quality audio to a wireless headset or wireless stereo speakers.</td>
</tr>
<tr>
<td>Audio/Video Remote Control Profile (AVRCP)</td>
<td>Allows the device to control A/V equipment to which a user has access. It may be used in concert with A2DP.</td>
</tr>
<tr>
<td>Personal Area Network (PAN)</td>
<td>Allows the use of Bluetooth Network Encapsulation Protocol to provide L3 networking capabilities over a Bluetooth link. Only PANU role is supported.</td>
</tr>
<tr>
<td>Human Interface Device Profile (HID)</td>
<td>Allows Bluetooth keyboards, pointing devices, gaming devices and remote monitoring devices to connect to the device.</td>
</tr>
<tr>
<td>Headset Profile (HSP)</td>
<td>Allows a hands-free device, such as a Bluetooth headset, to place and receive calls on the device.</td>
</tr>
<tr>
<td>Hands-Free Profile (HFP)</td>
<td>Allows car hands-free kits to communicate with the device in the car.</td>
</tr>
<tr>
<td>Phone Book Access Profile (PBAP)</td>
<td>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.</td>
</tr>
<tr>
<td>Out of Band (OOB)</td>
<td>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.</td>
</tr>
<tr>
<td>Symbol Serial Interface (SSI)</td>
<td>Allows for communication with Bluetooth Imager.</td>
</tr>
</tbody>
</table>

Bluetooth Power States

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

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

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

Enabling Bluetooth

To enable Bluetooth:
1. Go to **Settings**.
2. Touch ✖ to turn Bluetooth on.
3. Touch ○.

Disabling Bluetooth

To disable Bluetooth:
1. Go to **Settings**.
2. Touch ✖ to turn Bluetooth off.
3. Touch ○.

Discovering Bluetooth Device(s)

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

1. Ensure that Bluetooth is enabled on both devices.
2. Ensure that the Bluetooth device to discover is in discoverable mode.
3. Ensure that the two devices are within 10 meters (32.8 feet) of one another.
4. Swipe down from the Status bar to open the Quick Access panel.
5. Touch 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 .

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. To select a profile:

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 .

Unpairing a Bluetooth Device

To unpair a Bluetooth device and erase 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 .
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. The technology is based on ISO/IEC 14443 type A and B (proximity) and ISO/IEC 15693 (vicinity) standards, using the HF 13.56 MHz unlicensed band. The device supports the following operating modes:

- Reader mode
- Peer-to-Peer communication
- 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).
- Exchange data with another NFC device.
- Emulate contactless card such as payment, ticket, or SmartPoster.

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

The device NFC antenna is located on the back of the device, near the Interface Connector.

Reading NFC Cards

To read NFC 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).
Sharing Information Using NFC

You can beam content like a web page, contact cards, pictures, YouTube links or location information from your screen to another device by bringing the devices together back to back.

Make sure both devices are unlocked, support NFC, and have both NFC and Android Beam turned on.

1. Open a screen that contains a web page, video, photo or contact.
2. Move the back of the device toward the back of the other device.

When the devices connect, a sound emits, the image on the screen reduces in size, the message **Touch to beam** displays.

3. Touch anywhere on the screen.
   The transfer begins.
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 .
This table lists the accessories available for the device.

Table 15  Accessories

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cradles</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Slot Charge Only Cradle</td>
<td>CRD-TC7X-SE2CPP-01</td>
<td>Provides device and spare battery charging. Use with power supply, p/n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PWR-BGA12V50W0WW.</td>
</tr>
<tr>
<td>2-Slot USB/Ethernet Cradle</td>
<td>CRD-TC7X-SE2EPP-01</td>
<td>Provides device and spare battery charging and USB communication with a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>host computer and Ethernet communication with a network. Use with power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>supply, p/n PWR-BGA12V50W0WW.</td>
</tr>
<tr>
<td>5-Slot Charge Only Cradle</td>
<td>CRD-TC7X-SE5C1-01</td>
<td>Charges up to five devices. Use with power supply, p/n PWR-BGA12V108W0WW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and DC line cord, p/n CBL-DC-381A1-01. Can accommodate one 4-Slot Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Charger using the Battery Adapter Cup.</td>
</tr>
<tr>
<td>5-Slot Ethernet Cradle</td>
<td>CRD-TC7X-SE5E1–01</td>
<td>Provides device charging and provides Ethernet communication for up to five</td>
</tr>
<tr>
<td></td>
<td></td>
<td>devices. Use with power supply, p/n PWR-BGA12V108W0WW and DC line cord,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p/n CBL-DC-381A1-01. Can accommodate one 4-Slot Battery Charger using the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Battery Adapter Cup.</td>
</tr>
<tr>
<td>Cradle Mount</td>
<td>BRKT-SCRD-SMRK-01</td>
<td>Mounts the 5-Slot Charge Only Cradle, 5-Slot Ethernet Cradle, and 4-Slot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Battery Charger to a wall or rack.</td>
</tr>
<tr>
<td><strong>Batteries and Chargers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,620 mAh PowerPrecision+</td>
<td>BTRY-TC7X-46MPP-01</td>
<td>Replacement battery (single pack).</td>
</tr>
<tr>
<td>battery</td>
<td>BTRY-TC7X-46MPP-10</td>
<td>Replacement battery (10–pack).</td>
</tr>
<tr>
<td>4-Slot Spare Battery</td>
<td>SAC-TC7X-4BTYPP-01</td>
<td>Charges up to four battery packs. Use with power supply, p/n PWR-BGA12V50W0WW</td>
</tr>
<tr>
<td>Charger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessory</td>
<td>Part Number</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Battery Charger Adapter Cup</td>
<td>CUP-SE-BTYADP1-01</td>
<td>Allows for one 4-Slot Battery Charger to be charged and docked on the left most slot of the 5-Slot cradles (maximum one per cradle).</td>
</tr>
<tr>
<td><strong>Vehicle Solutions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charging Cable Cup</td>
<td>CHG-TC7X-CLA1-01</td>
<td>Provides power to the device from a cigarette lighter socket.</td>
</tr>
<tr>
<td>Charge Only Vehicle Cradle</td>
<td>CRD-TC7X-CVCD1-01</td>
<td>Charges and securely holds the device. Requires power cable CHG-AUTO-CLA1-01 or CHG-AUTO-HWIRE1-01, sold separately.</td>
</tr>
<tr>
<td>TC7X Data Communication Enabled Vehicle Cradle with Hub Kit</td>
<td>CRD-TC7X-VCD1-01</td>
<td>Contains the TC7X Vehicle Communication Charging Cradle and the USB I/O Hub.</td>
</tr>
<tr>
<td>Cigarette Light Adapter Auto Charge Cable</td>
<td>CHG-AUTO-CLA1-01</td>
<td>Provides power to the Vehicle Cradle from a cigarette lighter socket.</td>
</tr>
<tr>
<td>Hard-wire Auto Charge Cable</td>
<td>CHG-AUTO-HWIRE1-01</td>
<td>Provides power to the Vehicle Cradle from the vehicle's power panel.</td>
</tr>
<tr>
<td>RAM Mount</td>
<td>RAM-B-166U</td>
<td>Provides window mounting option for the Vehicle Cradle. RAM Twist Lock Suction Cup with Double Socket Arm and Diamond Base Adapter. Overall Length: 6.75&quot;.</td>
</tr>
<tr>
<td>RAM Mount Base</td>
<td>RAM-B-238U</td>
<td>RAM 2.43&quot; x 1.31&quot; Diamond Ball base with 1&quot; ball.</td>
</tr>
<tr>
<td><strong>Charge and Communication Cables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charging Cable Cup</td>
<td>CHG-TC7X-CBL1-01</td>
<td>Provides power to the device. Use with power supply, p/n PWR-BUA5V16W0WW, sold separately.</td>
</tr>
<tr>
<td>Snap-On USB Cable</td>
<td>CBL-TC7X-USB1-01</td>
<td>Provides power to the device and USB communication with a host computer. Use with power supply, p/n PWR-BUA5V16W0WW, sold separately.</td>
</tr>
<tr>
<td>MSR Adapter</td>
<td>MSR-TC7X-SNP1-01</td>
<td>Provides power and USB communication with a host computer. Use with USB-C cable, sold separately.</td>
</tr>
<tr>
<td>Snap-On DEX Cable</td>
<td>CBL-TC7X-DEX1-01</td>
<td>Provides electronic data exchange with devices such as vending machines.</td>
</tr>
<tr>
<td><strong>Audio Accessories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rugged Headset</td>
<td>HS2100-OTH</td>
<td>Rugged wired headset. Includes HS2100 Boom Module and HSX100 OTH Headband Module.</td>
</tr>
<tr>
<td>Bluetooth Headset</td>
<td>HS3100-OTH</td>
<td>Rugged Bluetooth Headset. Includes HS3100 Boom Module and HSX100 OTH Headband Module.</td>
</tr>
<tr>
<td>Accessory</td>
<td>Part Number</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3.5 mm Audio Adapter</td>
<td>ADP-TC7X-AUD35-01</td>
<td>Snaps onto the device and provides audio to a wired headset with 3.5 mm plug.</td>
</tr>
<tr>
<td>3.5 mm Headset</td>
<td>HDST-35MM-PTVP-01</td>
<td>Use for PTT and VoIP calls.</td>
</tr>
<tr>
<td>3.5 mm Quick Disconnect Adapter Cable</td>
<td>ADP-35M-QDCBL1-01</td>
<td>Provides connection to the 3.5 mm Headset.</td>
</tr>
</tbody>
</table>

### Scanning

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger Handle</td>
<td>TRG-TC7X-SNP1-02</td>
<td>Adds gun-style handle with a scanner trigger for comfortable and productive scanning.</td>
</tr>
<tr>
<td>Trigger Handle Attach Plate with Tether</td>
<td>ADP-TC7X-CLHTH-10</td>
<td>Trigger Handle Attach Plate with tether. Allows for installation of the Trigger Handle (10-pack). Use with charge only cradles.</td>
</tr>
<tr>
<td>Trigger Handle Attach Plate</td>
<td>ADP-TC7X-CLPTH1-20</td>
<td>Trigger Handle Attach Plate. Allows for installation of the Trigger Handle (20-pack). Use with Ethernet and charge only cradles.</td>
</tr>
</tbody>
</table>

### Carrying Solutions

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Holster</td>
<td>SG-TC7X-HLSTR1-02</td>
<td>TC7X soft holster.</td>
</tr>
<tr>
<td>Rigid Holster</td>
<td>SG-TC7X-RHLSTR1-01</td>
<td>TC7X rigid holster.</td>
</tr>
<tr>
<td>Hand Strap</td>
<td>SG-TC7X-HSTRP2-03</td>
<td>Replacement hand strap with hand strap mounting clip (3-pack).</td>
</tr>
<tr>
<td>Stylus and Coiled Tether</td>
<td>SG-TC7X-STYLUS-03</td>
<td>TC7X stylus with coiled tether (3-pack).</td>
</tr>
<tr>
<td>Screen Protector</td>
<td>SG-TC7X-SCRNTMP-01</td>
<td>Provides additional protection for the screen (1-pack).</td>
</tr>
</tbody>
</table>

### Power Supplies

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>PWR-BUA5V16W0WW</td>
<td>Provides power to the device using the Snap-On USB Cable, Snap-on Serial Cable or Charging Cable Cup. Requires DC Line Cord, p/n DC-383A1-01 and country specific three wire grounded AC line cord sold separately.</td>
</tr>
<tr>
<td>Power Supply</td>
<td>PWR-BGA12V50W0WW</td>
<td>Provides power to the 2–Slot cradles and 4-Slot Spare Battery Charger. Requires DC Line Cord, p/n CBL-DC-388A1-01 and country specific three wire grounded AC line cord sold separately.</td>
</tr>
</tbody>
</table>
Battery Charging

Main Battery Charging

The device’s Charging/Notification LED indicates the status of the battery charging in the device.

The 4,620 mAh battery fully charges in less than five hours at room temperature.

Spare Battery Charging

The Spare battery Charging LED on the cup indicates the status of the spare battery charging.

The 4,620 mAh battery fully charges in less than five hours at room temperature.

Table 15  Accessories (Continued)

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>PWR-BGA12V108W0WW</td>
<td>Provides power to the 5-Slot Charge Only cradle and the 5-Slot Ethernet Cradle. Requires DC Line Cord, p/n CBL-DC-381A1-01 and country specific three wire grounded AC line cord sold separately.</td>
</tr>
<tr>
<td>DC Line Cord</td>
<td>CBL-DC-388A1-01</td>
<td>Provides power from the power supply to the 2-Slot cradles and 4-Slot Spare Battery Charger.</td>
</tr>
<tr>
<td>DC Line Cord</td>
<td>CBL-DC-381A1-01</td>
<td>Provides power from the power supply to the 5-Slot Charge Only Cradle and 5-Slot Ethernet Cradle.</td>
</tr>
</tbody>
</table>

Table 16  Spare Battery Charging LED Indicators

<table>
<thead>
<tr>
<th>LED</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow Blinking Amber</td>
<td>Spare battery is charging.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>Charging complete.</td>
</tr>
<tr>
<td>Fast Blinking Amber</td>
<td>Error in charging; check placement of spare battery.</td>
</tr>
<tr>
<td>Slow Blinking Red</td>
<td>Spare battery is charging and battery is at the end of useful life.</td>
</tr>
<tr>
<td>Solid Red</td>
<td>Charging complete and battery is at the end of useful life.</td>
</tr>
<tr>
<td>Fast Blinking Red</td>
<td>Error in charging; check placement of spare battery and battery is at the end of useful life.</td>
</tr>
<tr>
<td>Off</td>
<td>No spare battery in slot; spare battery not placed correctly; cradle is not powered.</td>
</tr>
</tbody>
</table>

Charging Temperature

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

### 2-Slot Charge Only Cradle

**CAUTION:** Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 189](#).

The 2-Slot Charge Only Cradle:
- Provides 5 VDC power for operating the device.
- Charges the device’s battery.
- Charges a spare battery.

![Figure 73 2–Slot Charge Only Cradle](image)

- **Power LED**
- **Spare Battery Charging LED**
Setup

Figure 74  2–Slot Charge Only Cradle
Charging the Device

1. Insert the device into the slot to begin charging.

   **Figure 75** Battery Charging

2. Ensure the device is seated properly.
Charging the Spare Battery

1. Insert the battery into the right slot to begin charging.

Figure 76  Spare Battery Charging

2. Ensure the battery is seated properly.
2-Slot USB/Ethernet Cradle

**CAUTION:** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines on page 189.*

The 2-Slot USB/Ethernet Cradle:
- Provides 5.0 VDC power for operating the device.
- Charges the device’s battery.
- Charges a spare battery.
- Connects the device to an Ethernet network.
- Provides communication to a host computer using a USB cable.

**NOTE:** Remove all attachments on the device, except the hand strap, before place onto the cradle.

*Figure 77  2-Slot USB/Ethernet Cradle*
Setup

**Figure 78** 2-Slot USB/Ethernet Cradle
Charging the Device

1. Place the bottom of the device into the base.

   **Figure 79** Battery Charging

2. Rotate the top of the device until the connector on the back of the device mates with the connector on the cradle.

3. Ensure the device is connected properly. The charging Charging/Notification LED on the device begins blinking amber indicating that the device is charging.
Charging the Spare Battery

1. Insert the battery into the right slot to begin charging.

*Figure 80  *Spare Battery Charging

2. Ensure the battery is seated properly.

USB/Ethernet Communication

The 2–Slot USB/Ethernet Cradle provides both Ethernet communication with a network and USB communication with a host computer. Prior to using the cradle for Ethernet or USB communication, ensure that the switch on the USB/Ethernet module is set properly.

Turn the cradle over to view the module.

*Figure 81  *2–Slot USB/Ethernet Cradle Module Switch

For Ethernet communication, slide the switch to the \( \Rightarrow \) position.

For USB communication, slide the switch to the \( \Rightarrow \) position.

Place the switch in the center position \( \circ \) to disable communications.
**Ethernet LED Indicators**

There are two LEDs on the USB/Ethernet Module RJ-45 connector. The green LED lights to indicate that the transfer rate is 100 Mbps. When the LED is not lit the transfer rate is 10 Mbps. The yellow LED blinks to indicate activity, or stays lit to indicate that a link is established. When it is not lit it indicates that there is no link.

![LED Indicators](image)

**Table 17** USB/Ethernet Module LED Data Rate Indicators

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>Yellow LED</th>
<th>Green LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Mbps</td>
<td>On/Blink</td>
<td>On</td>
</tr>
<tr>
<td>10 Mbps</td>
<td>On/Blink</td>
<td>Off</td>
</tr>
</tbody>
</table>

**Establishing Ethernet Connection**

1. Swipe down from the Status bar to open the Quick Access panel and then touch 🌐.
2. Touch 🌐Ethernet.
3. Slide the Ethernet switch to the ON position.
4. Insert the device into a slot.
   The 🌐 icon appears in the Status bar.
5. Touch Eth0 to view Ethernet connection details.

**Ethernet Settings**

The following settings can be configured when using Ethernet communication:
- Proxy Settings
- Static IP.

**Configuring Ethernet Proxy Settings**

The device includes Ethernet cradle drivers. After inserting the device, configure the Ethernet connection:
1. Swipe down with two fingers from the status bar to open the quick access panel and then touch 🌐.
2. Touch Network & Internet.
3. Touch Ethernet.
4. Place the device into the Ethernet cradle slot.
5. Slide the switch to the ON position.
6. Touch and hold Eth0 until the menu appears.
7. Touch Modify Proxy.
8. Touch the Proxy drop-down list and select Manual.
9. In the Proxy hostname field, enter the proxy server address.
10. In the Proxy port field, enter the proxy server port number.

NOTE: When entering proxy addresses in the Bypass proxy for field, do not use spaces or carriage returns between addresses.
11. In the Bypass proxy for text box, enter addresses for web sites that do not require to go through the proxy server. Use the separator "|" between addresses.
12. Touch MODIFY.
13. Touch .

Configuring Ethernet Static IP Address

The device includes Ethernet cradle drivers. After inserting the device, configure the Ethernet connection:

1. Swipe down with two fingers from the status bar to open the quick access panel and then touch .
2. Touch Network & Internet.
3. Touch Ethernet.
4. Place the device into the Ethernet cradle slot.
5. Slide the switch to the ON position.
6. Touch Eth0.
7. Touch Disconnect.
8. Touch Eth0.
9. Touch and hold the IP settings drop-down list and select Static.
10. In the IP address field, enter the proxy server address.
11. If required, in the Gateway field, enter a gateway address for the device.
12. If required, in the Netmask field, enter the network mask address.
13. If required, in the DNS address fields, enter a Domain Name System (DNS) addresses.
14. Touch CONNECT.
15. Touch .
5-Slot Charge Only Cradle

**CAUTION:** Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 189](#).

The 5-Slot Charge Only Cradle:

- Provides 5 VDC power for operating the device.
- Simultaneously charges up to five devices and up to four devices and one 4-Slot Battery Charger using the Battery Charger Adapter. See the device Integrator Guide for Android 8.1 Oreo for information on installing the 4-Slot Battery Charger onto the cradle.
- Consists of a cradle base and cups that can be configured for various charging requirements.

**Figure 83** 5-Slot Charge Only Cradle

**Setup**

**Figure 84** 5-Slot Charge Only Cradle
Charging the Device

1. Insert the device into a slot to begin charging.

**Figure 85** Battery Charging
2. Ensure the device is seated properly.
Installing the Four Slot Battery Charger

**NOTE:** The Battery Charger must be installed in the first slot only.

1. Remove power from the cradle.

   *Figure 87*  Remove Power from Cradle

2. Using a Phillips screwdriver, remove the screw securing the cup to the cradle base.

   *Figure 88*  Remove Screw
3. Slide the cup to the front of the cradle.

**Figure 89**  Remove Cup

4. Carefully lift the cup up to expose the cup power cable.

5. Disconnect the cup power cable.

**Figure 90**  Disconnect Cup Power Cable

**NOTE:**  Place power cable into adapter to avoid pinching cable.
6. Connect the Battery Adapter power cable to the connector on the cradle.

Figure 91  Connect Adapter Power Cable

7. Place adapter onto cradle base and slide toward rear of cradle.

Figure 92  Install Adapter
8. Using a Phillips screwdriver, secure adapter to cradle base with screw.

**Figure 93** Secure adapter to Cradle

9. Align mounting holes on the bottom of the Four Slot Battery Charger with the stubs on the Battery Adapter.

**Figure 94** Install Four Slot Battery Charger

10. Slide the Four Slot battery Charger down toward the front of the cradle.
11. Connect the output power plug into the power port on the Four Slot Battery Charger.

**Figure 95** Connect Output Power Plug

**Removing the 4-Slot Battery Charger**

1. Disconnect the output power plug from the 4-Slot Battery Charger.
2. At the back of the cup, press down on the release latch.

**Figure 96** Press Release Latch

3. Slide the 4-Slot Battery Charger toward the front of the cradle.
4. Lift the 4-Slot off the cradle cup.
4-Slot Charge Only Cradle with Battery Charger

**CAUTION:** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines on page 189.*

The 4-Slot Charge Only Cradle with Battery Charger:

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

**Figure 97** 4-Slot Charge Only Cradle with Battery Charger
Setup

**Figure 98**  Connect Battery Charger Output Power Plug

**Figure 99**  Connect Charge Only Cradle Power
Charging the Device

1. Insert the device into a slot to begin charging.

   **Figure 100**  Battery Charging

2. Ensure the device is seated properly.

   **NOTE:** See the device Integrator Guide for Android 8.1 Oreo for information on installing the 4-Slot Battery Charger onto the cradle.

Charging Spare Batteries

1. Connect the charger to a power source.
2. Insert the battery into a battery charging well and gently press down on the battery to ensure proper contact.

**Figure 101** 4-Slot Battery Charger
5-Slot Ethernet Cradle

**CAUTION:** Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 189.](#)

The 5-Slot Ethernet Cradle:

- Provides 5.0 VDC power for operating the device.
- Connects up to five devices to an Ethernet network.
- Simultaneously charges up to five devices and up to four devices and on 4-Slot Battery Charger using the Battery Charger Adapter.

*Figure 102  5-Slot Ethernet Cradle*
Setup

Connect the 5-Slot Ethernet cradle to a power source.

**Figure 103** 5-Slot Ethernet Cradle Setup

Daisy-chaining Ethernet Cradles

Daisy-chain up to ten 5-Slot Ethernet cradles to connect several cradles to an Ethernet network. Use either a straight or crossover cable. Daisy-chaining should not be attempted when the main Ethernet connection to the first cradle is 10 Mbps as throughput issues will almost certainly result.

To daisy-chain 5-Slot Ethernet cradles:

1. Connect power to each 5-Slot Ethernet cradle.

2. Connect an Ethernet cable to the one of the ports on the back of the first cradle and to the Ethernet switch.
3. Connect the other end of the Ethernet cable to one of the ports of the back of the second 5-Slot Ethernet cradle.

**Figure 104** Daisy-chaining 5-Slot Ethernet Cradles

4. Connect additional cradles as described in step 2 and 3.
Charging the Device

1. Insert the device into a slot to begin charging.

Figure 105  Battery Charging
2. Ensure the device is seated properly.

**Figure 106**  5-Slot Ethernet Cradle with 4-Slot Battery Charger
Installing the Four Slot Battery Charger

**NOTE:** The Battery Charger must be installed in the first slot only.

1. Remove power from the cradle.

   **Figure 107**  Remove Power from Cradle

2. Using a Phillips screwdriver, remove the screw securing the cup to the cradle base.

   **Figure 108**  Remove Screw
3. Slide the cup to the front of the cradle.

**Figure 109  Remove Cup**

4. Carefully lift the cup up to expose the cup power cable.

5. Disconnect the cup power cable.

**Figure 110  Disconnect Cup Power Cable**

---

**NOTE:** Place power cable into adapter to avoid pinching cable.
6. Connect the Battery Adapter power cable to the connector on the cradle.

**Figure 111** Connect Adapter Power Cable

7. Place adapter onto cradle base and slide toward rear of cradle.

**Figure 112** Install Adapter
8. Using a Phillips screwdriver, secure adapter to cradle base with screw.

**Figure 113** Secure adapter to Cradle

9. Align mounting holes on the bottom of the Four Slot Battery Charger with the stubs on the Battery Adapter.

**Figure 114** Install Four Slot Battery Charger

10. Slide the Four Slot battery Charger down toward the front of the cradle.
11. Connect the output power plug into the power port on the Four Slot Battery Charger.

**Figure 115**  Connect Output Power Plug

---

**Removing the 4-Slot Battery Charger**

1. Disconnect the output power plug from the 4-Slot Battery Charger.

2. At the back of the cup, press down on the release latch.

**Figure 116**  Press Release Latch

3. Slide the 4-Slot Battery Charger toward the front of the cradle.

4. Lift the 4-Slot off the cradle cup.
Ethernet Communication

Ethernet LED Indicators

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

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>1000 LED</th>
<th>100/10 LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gbps</td>
<td>On/Blink</td>
<td>Off</td>
</tr>
<tr>
<td>100 Mbps</td>
<td>Off</td>
<td>On/Blink</td>
</tr>
<tr>
<td>10 Mbps</td>
<td>Off</td>
<td>On/Blink</td>
</tr>
</tbody>
</table>

Establishing Ethernet Connection

1. Swipe down from the Status bar to open the Quick Access panel and then touch .
2. Touch Ethernet.
3. Slide the Ethernet switch to the ON position.
4. Insert the device into a slot.
   The Ethernet icon appears in the Status bar.
5. Touch Eth0 to view Ethernet connection details.

Ethernet Settings

The following settings can be configured when using Ethernet communication:
- Proxy Settings
- Static IP.

Configuring Ethernet Proxy Settings

The device includes Ethernet cradle drivers. After inserting the device, configure the Ethernet connection:
1. Swipe down with two fingers from the status bar to open the quick access panel and then touch .
2. Touch Network & Internet.
3. Touch Ethernet.
4. Place the device into the Ethernet cradle slot.
5. Slide the switch to the ON position.
6. Touch and hold Eth0 until the menu appears.
7. Touch Modify Proxy.
8. Touch the Proxy drop-down list and select Manual.
9. In the Proxy hostname field, enter the proxy server address.
10. In the Proxy port field, enter the proxy server port number.
NOTE: When entering proxy addresses in the Bypass proxy for field, do not use spaces or carriage returns between addresses.

11. In the Bypass proxy for text box, enter addresses for web sites that do not require to go through the proxy server. Use the separator “|” between addresses.

12. Touch MODIFY.

13. Touch ☑.

**Configuring Ethernet Static IP Address**

The device includes Ethernet cradle drivers. After inserting the device, configure the Ethernet connection:

1. Swipe down with two fingers from the status bar to open the quick access panel and then touch ☑.
2. Touch Network & Internet.
3. Touch Ethernet.
4. Place the device into the Ethernet cradle slot.
5. Slide the switch to the ON position.
6. Touch Eth0.
7. Touch Disconnect.
8. Touch Eth0.
9. Touch and hold the IP settings drop-down list and select Static.
10. In the IP address field, enter the proxy server address.
11. If required, in the Gateway field, enter a gateway address for the device.
12. If required, in the Netmask field, enter the network mask address
13. If required, in the DNS address fields, enter a Domain Name System (DNS) addresses.
14. Touch CONNECT.
15. Touch ☑.

**4-Slot Battery Charger**

**CAUTION:** Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 189.

This section describes how to use the 4-Slot Battery Charger to charge up to four device batteries.
Setup

**Figure 117** Four Slot Battery Charger Power Setup

Charging Spare Batteries

1. Connect the charger to a power source.

2. Insert the battery into a battery charging well and gently press down on the battery to ensure proper contact.

**Figure 118** 4-Slot Battery Charger
3.5 mm Audio Adapter

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

Connecting a Headset to the 3.5 mm Audio Adapter

1. Connect the Quick Disconnect connect of the headset to the Quick Disconnect connector of the 3.5 mm Quick Disconnect Adapter Cable.

   Figure 119  Connect Headset to Adapter Cable

2. Connect the audio jack of the 3.5 mm Quick Disconnect Adapter Cable to the 3.5 mm Audio Adapter.

   Figure 120  Connect Adapter Cable to Audio Adapter
Attaching the 3.5 mm Audio Adapter

1. Align the top mounting points on the 3.5 mm Audio Adapter with the mounting slots on the device.

   Figure 121   Audio Adapter Installation

2. Rotate the Audio Adapter down and press down until it snaps into position.

**Device with 3.5 mm Audio Adapter in Holster**

When using the device and the audio adapter in a holster, ensure that the display faces in and the headset cable is securely attached to the audio adapter.

   Figure 122   Device with 3.5 mm Audio Adapter in Holster
Removing the 3.5 mm Audio Adapter

1. Disconnect headset plug from 3.5 mm Audio Adapter.
2. Lift the bottom of the Audio Adapter away from the device.

Figure 123  Remove Audio Adapter from Device

3. Remove Audio Adapter from the device.

Snap-On USB Cable

The Snap-On USB Cable snaps on to the back of the device and removes easily when not in use. When attached to the device the Snap-On USB Cable allows the device to transfer data to a host computer and provide power for charging the device.

Connecting to Device

1. Align the top mounting points on the cable with the mounting slots on the device.

Figure 124  Cable Installation
2. Rotate the cable down and press until it snaps into place. Magnetics hold the cable to the device.

**Figure 125** Cable Attached to Device

---

**USB Communication**

1. Connect the Snap-On USB Cable to the device.

**Figure 126** Cable Removed from Device

2. Connect the USB connector of the cable to a host computer.

---

**Charging the Device**

1. Connect the Snap-On USB Cable to the device.
2. Connect the power supply to the Snap-On USB Cable

**Figure 127**  Power Setup

3. Connect to the power supply to an AC outlet.

**Disconnecting from Device**

1. Press down on the cable.

**Figure 128**  Press Down on Cable
2. Rotate away from the device. The magnetics release the cable from the device.

**Figure 129**  Remove Cable from Device

---

**Charging Cable Cup**

This section describes how to use the Charging Cable Cup to charge the device.

**Charging the Device**

1. Insert the device into the cup of the Charging Cable Cup.

**Figure 130**  Charging

2. Ensure the device is seated properly.
3. Slide the two yellow locking tabs up to lock the cable to the device.

**Figure 131** Lock Cable Cup

4. Connect the power supply to the Charging Cable Cup and to a power source.

**Figure 132** Connect Cable to Power Supply

**Snap-On DEX Cable**

The Snap-On DEX Cable snaps on to the back of the device and removes easily when not in use. When attached to the device the Snap-On DEX Cable provides electronic data exchange with devices such as vending machines.
Connecting to Device

1. Align the top mounting points on the cable with the mounting slots on the device.

   **Figure 133**  Cable Installation

2. Rotate the cable down and press until it snaps into place. Magnetics hold the cable to the device.

   **Figure 134**  Cable Attached to Device

DEX Communication

1. Connect the Snap-On DEX Cable to the device.
2. Connect the DEX connector of the cable to a device such as a vending machine.

Figure 135  DEX Cable Connection

Disconnecting from Device

1. Press down on the cable.

Figure 136  Press Down on Cable

2. Rotate away from the device. The magnetics release the cable from the device.

Figure 137  Remove Cable from Device
Trigger Handle

The Trigger Handle adds a gun-style handle with a scanning trigger to the device. It increases comfort when using the device in scan-intensive applications for extended periods of time.

NOTE: The Attachment Plate with Tether can only be used with Charge Only cradles.

Figure 138  Trigger Handle

Installing the Attachment Plate to Trigger Handle

NOTE: Attachment Plate with Tether only.

To install the attachment plate to the Trigger Handle:

1. Insert the loop end of the tether into the slot on the bottom of the handle.
2. Feed the attachment plate through the loop.

Figure 139  Install Attachment Plate to Handle

3. Pull the attachment plate until the loop tightens on the tether.
Installing the Trigger Handle Plate

1. Press and hold the **Power** button until the menu appears.
2. Touch **Power off**.
3. Touch **OK**.
4. Press in the two battery latches.
5. Lift the battery from the device.
6. Remove the hand strap filler plate from the hand strap slot. Store the hand strap filler plate in a safe place for future replacement.

**Figure 140**  Remove Hand Strap Plate

7. Insert the attachment plate into the hand strap slot.

**Figure 141**  Insert Trigger Handle Plate

8. Insert the battery, bottom first, into the battery compartment in the back of the device.
9. Rotate the top of the battery into the battery compartment.
10. Press the battery down into the battery compartment until the battery release latches snap into place.
Inserting the Device into the Trigger Handle

1. Align the back of the Trigger handle with the Trigger Mounting Plate.

*Figure 142* Connect Device to Trigger Handle

2. Press the two release latches.
3. Rotate the device down and press down until it snaps into place.

**Figure 143**  Rotate Device onto Trigger Handle
Removing the Device from the Trigger Handle

1. Press both Trigger Handle release latches.

Figure 144  Press Release Latches
2. Rotate the device up and remove from the Trigger handle.

**Figure 145** Rotate Device Up
Vehicle Charging Cable Cup

This section describes how to use the Vehicle Charging Cable Cup to charge the device.

Figure 146   Vehicle Charging Cable Cup
Charging the Device

1. Insert the device into the cup of the Vehicle Charging Cable.

Figure 147 Charging

2. Ensure the device is seated properly.

3. Slide the two yellow locking tabs up to lock the cable to the device.

Figure 148 Lock Cable Cup
4. Insert the Cigarette Lighter plug into the vehicle cigarette lighter socket.

**Figure 149** Connect Cable to Vehicle Power Source

---

**Vehicle Cradle**

The cradle:

- holds the device securely in place
- provides power for operating the device
- re-charges the battery in the device.
The cradle is powered by the vehicle’s 12V or 24V electrical system. The operating voltage range is 9V to 32V and supplies a maximum current of 3A.

**Figure 150** Vehicle Cradle

---

**Device Insertion and Removal**

**CAUTION:** Ensure that the device is fully inserted into the cradle. Lack of proper insertion may result in property damage or personal injury. Zebra Technologies Corporation is not responsible for any loss resulting from the use of the products while driving.
To ensure the device was inserted correctly, listen for the audible click that signifies that the device locking mechanism was enabled and the device was locked into place.

**Figure 151** Install Device into Vehicle Cradle
To remove the device from the cradle, grasp the device and lift out of the cradle.

**Figure 152  Remove Device from Vehicle Cradle**

---

**Battery Charging**

Ensure the cradle is connected to a power source.

Insert the device into the cradle. The device starts to charge through the cradle as soon as it is inserted. This does not deplete the vehicle battery significantly. The battery charges in approximately four hours. See Table 3 on page 22 for charging indications.

**NOTE:** The Vehicle Cradle operating temperature is -40°C to +85°C. When in the cradle, the device will only charge when its temperature is between 0°C to +40°C.

**TC7X Vehicle Communication Charging Cradle**

The Vehicle Communication Charging Cradle:

- holds the device securely in place
- provides power for operating the device
- re-charges the battery in the device.

The cradle is powered by the USB I/O Hub.
Refer to the TC7X Vehicle Cradle Installation Guide for information on installing the TC7X Vehicle Communication Charging Cradle.

**Figure 153** TC7X Vehicle Communication Charging Cradle
Device Insertion and Removal

**Figure 154**  Insert Device into Cradle

**Figure 155**  Remove Device from Cradle

To ensure the device was inserted correctly, listen for the audible click that signifies that the device locking mechanism was enabled and the device was locked into place.

**CAUTION:** Ensure that the device is fully inserted into the cradle. Lack of proper insertion may result in property damage or personal injury. Zebra Technologies Corporation is not responsible for any loss resulting from the use of the products while driving.

To remove the device from the cradle, press the release latch, grasp the device and lift out of the vehicle cradle.

Device Battery Charging

Insert the device into the cradle. The device starts to charge through the cradle as soon as it is inserted. This does not deplete the vehicle battery significantly. The battery charges in approximately four hours. See Table 3 on page 22 for all charging indications.

**Charging Note**

The Vehicle Cradle operating temperature is -40°C to +85°C. When in the cradle, the device will only charge when its temperature is between 0°C to +40°C.
USB I/O Hub

The USB I/O Hub:
• provides power to a vehicle cradle
• provides USB hub for three USB devices (such as printers)
• provides a powered USB port for charging another device.

The cradle is powered by the vehicle’s 12V or 24V electrical system. The operating voltage range is 9V to 32V and supplies a maximum current of 3A to the vehicle cradle and 1.5 A to the four USB ports simultaneously.

Refer to the device Integrator Guide for Android 8.1 Oreo for information on installing the USB I/O Hub.

Figure 156  USB I/O Hub

Connect USB Cables

The USB I/O Hub provides three USB ports for connecting devices such as printers to a device in the vehicle cradle. To connect USB cables:
1. Slide the cable cover down and remove.

**Figure 157  Remove Cover**

2. Insert the USB cable connector into one of the USB ports.

3. Place each cable into the cable holder.

**Figure 158  Connect USB Cable**

4. Align the cable cover onto the USB I/O Hub. Ensure that the cables are within the cover opening.

**Figure 159  Replace Cover**

5. Slide cable cover up to lock into place.

**External USB Cable**

The USB I/O Hub provides a USB port for charging external devices such as cell phones. This port is for charging only.
1. Open the USB Access Cover.
2. Insert the USB cable connector into the USB port.

**Figure 160** Insert External USB Cable

---

**Power to Vehicle Cradle**

The USB I/O Hub can provide power to a Vehicle Cradle.

1. Connect the Power Output Cable connector to the Power Input Cable connector of the Vehicle Cradle.
2. Tighten thumbscrews by hand until tight.

**Figure 161** Connect Power to Vehicle Cradle

---

**Audio Headset Connection**

The USB I/O Hub provides audio connection to the device in a vehicle cradle.
Depending upon the headset, connect the headset and audio adapter to the Headset connector.

**Figure 162** Connect Audio Headset

---

**Hand Strap Replacement**

**CAUTION:** Close all running applications prior to replacing the hand strap.

1. Press and hold the **Power** button until the menu appears.
2. Touch **Power Off**.
3. Touch **OK**.
4. Remove the hand strap clip from the hand strap mounting slot.

**Figure 163** Remove Hand Strap Clip
5. Press the two battery latches in.

**Figure 164**  Press Battery Latches

6. Lift the battery from the device.

**Figure 165**  Lift the Battery

7. Remove the battery.
8. Remove the hand strap plate from the hand strap slot.
9. Insert the replacement hand strap plate into the hand strap slot.

**Figure 166** Insert Hand Strap

10. Insert the battery, bottom first, into the battery compartment.

**Figure 167** Insert Bottom of Battery into Battery Compartment

11. Rotate the top of the battery into the battery compartment.
12. Press the battery down into the battery compartment until the battery release latches snap into place.

**Figure 168** Press Down on Battery
13. Place hand strap clip into hand strap mounting slot and pull down until it snaps into place.

**Figure 169**  Secure Hand Strap Clip
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 microSD card or the device’s internal memory. See USB Communication for information about connecting the device to a host computer and copying files.
2. Go to Settings.
4. Touch Install from storage.
5. Navigate to the location of the certificate file.
6. Touch the filename of the certificate to install.
7. 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.
8. If prompted, enter the certificate’s password and touch OK.
9. Enter a name for the certificate and in the Credential use drop-down, select VPN and apps or Wi-Fi.

10. Touch OK.
    The certificate can now be used when connecting to a secure network. For security, the certificate is deleted from the microSD card or internal memory.

Configuring Credential Storage Settings

1. Go to Settings.
   • Trusted credentials - Touch to display the trusted system and user credentials.
   • User credentials - Touch to display user credentials.
   • Install from storage - Touch to install a secure certificate from the microSD card or internal storage.
   • Clear credentials - Deletes all secure certificates and related credentials.

Development Tools

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 the Java language, 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.

Target Device

Open the Developer options screen to set development related settings.

By default, the Developer Options are hidden. To un-hide the developer options:
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 .
7. Slide the USB debugging switch to the ON position.
EMDK for Android

EMDK for Android provides developers with a comprehensive set of tools to easily create powerful line-of-business applications for enterprise mobile computing devices. It's designed for Google's Android SDK and Android Studio, and includes class libraries, sample applications with source code, and all associated documentation to help your applications take full advantage of what Zebra devices have to offer.

The kit also delivers Profile Manager, a GUI-based device configuration tool providing exclusive access to the Zebra MX device management framework. This allows developers to configure Zebra devices from within their applications in less time, with fewer lines of code and with fewer 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 bar code, 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 bar code, 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 removed from the device and communication with Google (analytics data collection and location services) is disabled. It also provides enhanced security and privacy.

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 www.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. To enable USB debugging:

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 .
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. Type adb devices.
   The following displays:
   List of devices attached
   XXXXXXXXXXXX device (where XXXXXXXXXXXX is the device number).

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

13. Touch .

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

Installing Applications Using the USB Connection

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

1. Connect the device to a host computer using the Rugged Charge/USB cable.
2. Pull down the Notification panel and touch Charging this device via USB.
3. Touch **File Transfer**.

4. On the host computer, open a file manager application.

5. 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 unmount the microSD card and disconnect USB devices correctly to avoid losing information.

6. Disconnect the device from the host computer.

7. Swipe the screen up and select 📁 to view files on the microSD card or Internal Storage.

8. Locate the application .apk file.

9. Touch the application file.

10. Touch **Continue** to install the app or **Cancel** to stop the installation.

11. To confirm installation and accept what the application affects, touch **Install** otherwise touch **Cancel**.

12. Touch **Open** to open the application or **Done** to exit the installation process. The application appears in the App list.

### Installing Applications Using the Android Debug Bridge

Use ADB commands to install application onto the device.

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

Ensure that the ADB drivers are installed on the host computer. See ADB USB Setup.

1. Connect the device to a host computer using USB. See USB Communication.

2. Go to **Settings**.

3. Touch **System > Advanced > Developer options**.

4. Slide the switch to the **ON** position.

5. Touch **USB Debugging**. A check appears in the check box. The **Allow USB debugging?** dialog box appears.

6. Touch **OK**.

7. 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.

8. Disconnect the device from the host computer. See USB Communication.

### 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 for connecting and disconnecting USB devices, to avoid damaging or corrupting files.

1. Connect the device to a host computer using USB. See USB Communication.
2. Copy the application APK file from the host computer to the microSD card.
3. Remove the microSD card from the host computer.
4. Press and hold the Power button on the device until the menu appears.
5. Touch **Power off**.
6. Press the two battery latches in.
7. Lift the battery from the device.
8. Lift the access door.
9. Insert the microSD card.
10. Replace the access door.
11. Insert the battery, bottom first, into the battery compartment in the back of the device.
12. Press the battery down until the battery release latches snap into place.
13. Replace the hand strap, if required.
14. Press and hold the Power button to turn on the device.
15. Swipe the screen up and select 📁 to view files on the microSD card.
16. Touch ⌁ > **SD card**.
17. Locate the application .apk file.
18. Touch the application file.
19. Touch **Continue** to install the app or **Cancel** to stop the installation.
20. To confirm installation and accept what the application affects, touch **Install** otherwise touch **Cancel**.
21. Touch **Open** to open the application or **Done** to exit the installation process. The application appears in the App list.

**Uninstalling an Application**

To uninstall 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 system update using either a microSD card or using ADB.

Downloading the System Update Package

To download the system update package:
2. Download the appropriate System Update package to a host computer.

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 (see USB Communication for more information), and then installing 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 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. Touch OK. The device resets.
5. Press and hold the PTT button until the device vibrates. The System Recovery screen appears.
6. Press the Volume Up and Volume Down buttons to navigate to apply from sdcard.
7. Press the Power button.
8. Press the Volume Up and Volume Down buttons to navigate to Full OTA Package or Diff OTA Package.
9. Press the Power button.
11. Press the Power button. The System Update installs and then the device returns to the Recovery screen.
12. Press the Power button to reboot the device.

NOTE: If installing GMS software on a device that had Non-GMS software or Non-GMS software on a device that had GMS software, perform a Factory or Enterprise reset (retains enterprise data).

Using ADB

To update the system using ADB:
1. Connect the device to the Rugged Charge/USB cable or insert the device into the 1-Slot USB/Charge Only Cradle.
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 use the adb command:
   ```
   adb devices
   ```
   The following displays:
   ```
   List of devices attached
   XXXXXXXXXXXXXX device (where XXXXXXXXXXXXXX is the device number).
   ```
   **NOTE:** If device number does not appear, ensure that ADB drivers are installed properly.

9. Type:
   ```
   adb reboot recovery
   ```


11. Press the Volume Up and Volume Down buttons to navigate to **apply from adb**.

12. Press the Power button.

13. Use the Volume Up and Volume Down buttons to navigate to the Full OTA Package or Diff OTA Package file.

14. Press the Power button.

15. On the host computer command prompt window type:
   ```
   adb sideload <file>
   ```
   where: `<file>` = the path and filename of the zip file.

16. Press Enter. The System Update installs (progress appears as percentage in the Command Prompt window) and then the Recovery screen appears.

17. Press the Power button to reboot the device.

   **NOTE:** If installing GMS software on a device that had Non-GMS software or Non-GMS software on a device that had GMS software, perform a Factory or Enterprise reset (retains enterprise data).

**Verify System Update Installation**

To check that the system update installed properly:

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.
Performing an 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 using either a microSD card or using ADB.

Downloading the Enterprise Reset Package

To download the system update package:
2. Download the Enterprise Reset file to a host computer.

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 (see USB Communication for more information) and then installing 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 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. Touch OK. The device resets.
5. Press and hold the PTT button until the device vibrates. The System Recovery screen appears.
6. Press the Volume Up and Volume Down buttons to navigate to apply from sdcard.
7. Press the Power button.
8. Use the Volume Up and Volume Down buttons to navigate to Full OTA Package.
9. Press the Power button.
10. Use the Volume Up and Volume Down buttons to navigate to the Enterprise Reset file.
11. Press the Power button. The Enterprise Reset occurs and then the device returns to the Recovery screen.
12. Press the Power button.

Using ADB

To perform an Enterprise Reset using ADB:
1. Connect the device to the Rugged Charge/USB cable or insert the device into the 1-Slot USB/Charge Only Cradle.
2. Connect the cable or cradle to the host computer.

3. Go to Settings.


5. Slide the switch to the ON position.


7. Touch OK.

8. On the host computer, open a command prompt window and type:
   ```
   adb devices.
   ```
   The following displays:
   ```
   List of devices attached
   XXXXXXXXX device (where XXXXXXXXX is the device number).
   ```
   
   NOTE: If device number does not appear, ensure that ADB drivers are installed properly.

9. Type:
   ```
   adb reboot recovery
   ```

11. Press the Volume Up and Volume Down buttons to navigate to apply from adb.

12. Press the Power button.

13. Press the Volume Up and Volume Down buttons to navigate to Full OTA Package.

14. Press the Power button.

15. On the host computer command prompt window type:
   ```
   adb sideload <file>
   ```
   where: <file> = the path and filename of the zip file.

16. Press Enter. The Enterprise Reset package installs and then the Recovery screen appears.

17. Press the 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:


2. Download the appropriate Factory Reset file to a host computer.
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 (see USB Communication for more information) and then installing 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 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 Reboot.

4. Touch OK. The device resets.

5. Press and hold the PTT button until the device vibrates. The System Recovery screen appears.

6. Press the Volume Up and Volume Down buttons to navigate to apply from sdcard.

7. Press the Power button.

8. Use the Volume Up and Volume Down buttons to navigate to Full OTA Package.

9. Press the Power button.

10. Use the Volume Up and Volume Down buttons to navigate to the Factory Reset file.

11. Press the Power button. The Factory Reset occurs and then the device returns to the Recovery screen.

12. Press the Power button.

Using ADB

To perform an Factory Reset using ADB:

1. Connect the device to the Rugged Charge/USB cable or insert the device into the 1-Slot USB/Charge Only Cradle.

2. Connect the cable or cradle to the host computer.

3. Go to Settings.


5. Slide the switch to the ON position.


7. Touch OK.

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

   adb devices.

   The following displays:

   List of devices attached
   XXXXXXXXXXXXXXXX device (where XXXXXXXXXXXXXXXX is the device number).
NOTE: If device number does not appear, ensure that ADB drivers are installed properly.

9. Type:
   `adb reboot recovery`


11. Press the Volume Up and Volume Down buttons to navigate to apply from adb.

12. Press the Power button.

13. Press the Volume Up and Volume Down buttons to navigate to Full OTA Package.

14. Press the Power button.

15. On the host computer command prompt window type:
    `adb sideload <file>`
    where: `<file>` = the path and filename of the zip file.

16. Press Enter. The Factory Reset package installs and then the Recovery screen appears.

17. Press the 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) or
- Enterprise folder.

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.

1. Go to Settings.

2. Touch System > Advanced > Developer options > Memory.

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.
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.

To view the used and available space on the internal storage:

1. Go to Settings.
2. Touch Storage.
   • Internal Storage - Displays the total amount of space on internal storage and amount used.

   Touch Internal shared storage to display the amount of 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.

To view the used and available space on the microSD card:

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 SD card to view the contents of the card.

Formatting a microSD Card or USB Drive as Portable Storage

To format an installed microSD card or USB drive as portable storage:

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. To format an installed microSD card as internal memory:

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 128 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.

**App Management**

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

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

**Viewing App Details**

Apps have different kinds of information and controls, but commonly include:

- **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 for information about uninstalling apps.
- **Storage** - lists how much information is stored, and includes a button for clearing it.
- **Data usage** - provides information about data (Wi-Fi) consumed by an app.
- **Permissions** - lists the areas on the device that the app has access to.
- **Notifications** - set the app notification settings.
- **Open by default** - clears If you have configured an app to launch certain file types by default, you can clear that setting here.
- **Battery** - lists the amount of computing power used by the app.
- **Memory** - lists the average app memory usage.
- Advanced
  - **Draw over other apps** - allows an app to display on top of other apps.
Managing Downloads

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

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

Battery Safety Guidelines

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non-commercial environment.
- Follow battery usage, storage, and charging guidelines found in this guide.
- Improper battery use may result in a fire, explosion, or other hazard.
- To charge the mobile device battery, the ambient battery and charger temperatures must be between +32°F and +104°F (0°C and +40°C).
- 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 re-chargeable batteries.
• Do not dispose of batteries in fire.
• In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with water for 15 minutes, and seek medical advice.
• If you suspect damage to your equipment or battery, contact Customer Support to arrange for inspection.

Cleaning Instructions

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

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

Approved Cleanser Active Ingredients

100% of the active ingredients in any cleaner must consist of one or some combination of the following: isopropyl alcohol, bleach/sodium hypochlorite\(^1\) (see important note below), 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.

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.

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

The device should not be handled while wearing vinyl gloves containing phthalates, or before hands are washed to remove contaminant residue after gloves are removed.

If products containing any of the harmful ingredients listed above are used prior to handling the device, such as hand sanitizer that contain ethanolamine, hands must be completely dry before handling the device to prevent damage to the device.

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

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

Cleaning Materials Required

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

Cleaning Frequency

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

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 an approved alcohol wipe.

Display

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

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

Cleaning Battery Connectors

To clean the battery connectors:

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

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

Cleaning Cradle Connectors

To clean the connectors on a cradle:

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

CAUTION: After cleaning the cradle connectors with bleach-based chemicals, follow the Cleaning Cradle Connectors instructions to remove bleach from the connectors.
Troubleshooting

Performing a Soft Reset

Perform a soft reset if applications stop working.
1. Press and hold the Power button until the menu appears.
2. Touch Restart.
   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. All un-saved data is lost after performing a hard reset.

Perform a hard reset if the device stops responding.
1. Simultaneously press the Power, Scan and Volume Up buttons for at least four seconds.
2. When the screen turns off, release the buttons.
   The device reboots.

TC72

The following tables provides typical problems that might arise and the solution for correcting the problem.

Table 19  Troubleshooting the TC72

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>When pressing the power button the device does not turn on.</td>
<td>Battery not charged.</td>
<td>Charge or replace the battery in the device.</td>
</tr>
<tr>
<td></td>
<td>Battery not installed properly.</td>
<td>Install the battery properly.</td>
</tr>
<tr>
<td></td>
<td>System crash.</td>
<td>Perform a reset.</td>
</tr>
<tr>
<td>When pressing the power button the device does not turn on but two LEDs blink.</td>
<td>Battery charge is at a level where data is maintained but battery should be re-charged.</td>
<td>Charge or replace the battery in the device.</td>
</tr>
<tr>
<td>Battery did not charge.</td>
<td>Battery failed.</td>
<td>Replace battery. If the device still does not operate, perform a reset.</td>
</tr>
<tr>
<td></td>
<td>Device removed from cradle while battery was charging.</td>
<td>Insert device in cradle. The 4,620 mAh battery fully charges in less than five hours at room temperature.</td>
</tr>
<tr>
<td></td>
<td>Extreme battery temperature.</td>
<td>Battery does not charge if ambient temperature is below 0°C (32°F) or above 40°C (104°F).</td>
</tr>
<tr>
<td>Cannot see characters on display.</td>
<td>Device not powered on.</td>
<td>Press the Power button.</td>
</tr>
</tbody>
</table>
## Maintenance and Troubleshooting

### Table 19  Troubleshooting the TC72

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>During data communication with a host computer, no data transmitted, or transmitted data was incomplete.</td>
<td>Device removed from cradle or disconnected from host computer during communication.</td>
<td>Replace the device in the cradle, or reattach the communication cable and re-transmit.</td>
</tr>
<tr>
<td></td>
<td>Incorrect cable configuration.</td>
<td>See the system administrator.</td>
</tr>
<tr>
<td></td>
<td>Communication software was incorrectly installed or configured.</td>
<td>Perform setup.</td>
</tr>
<tr>
<td>During data communication over Wi-Fi, no data transmitted, or transmitted data was incomplete.</td>
<td>Wi-Fi radio is not on.</td>
<td>Turn on the Wi-Fi radio.</td>
</tr>
<tr>
<td></td>
<td>You moved out of range of an access point.</td>
<td>Move closer to an access point.</td>
</tr>
<tr>
<td>During data communication over WAN, no data transmitted, or transmitted data was incomplete.</td>
<td>You are in an area of poor cellular service.</td>
<td>Move into an area that has better service.</td>
</tr>
<tr>
<td></td>
<td>APN is not set up correctly.</td>
<td>See system administrator for APN setup information.</td>
</tr>
<tr>
<td></td>
<td>SIM card not installed properly.</td>
<td>Remove and re-install the SIM card.</td>
</tr>
<tr>
<td></td>
<td>Data plan not activated.</td>
<td>Contact your service provider and ensure that your data plan is enable.</td>
</tr>
<tr>
<td>During data communication over Bluetooth, no data transmitted, or transmitted data was incomplete.</td>
<td>Bluetooth radio is not on.</td>
<td>Turn on the Bluetooth radio.</td>
</tr>
<tr>
<td></td>
<td>You moved out of range of another Bluetooth device.</td>
<td>Move within 10 meters (32.8 feet) of the other device.</td>
</tr>
<tr>
<td>No sound.</td>
<td>Volume setting is low or turned off.</td>
<td>Adjust the volume.</td>
</tr>
<tr>
<td>Device shuts off.</td>
<td>Device is inactive.</td>
<td>The display turns off after a period of inactivity. Set this period to 15 seconds, 30 seconds, 1, 2, 5, 10 or 30 minutes.</td>
</tr>
<tr>
<td></td>
<td>Battery is depleted.</td>
<td>Replace the battery.</td>
</tr>
<tr>
<td>Tapping the window buttons or icons does not activate the corresponding feature.</td>
<td>The device is not responding.</td>
<td>Reset the device.</td>
</tr>
</tbody>
</table>
### Table 19  Troubleshooting the TC72

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>A message appears stating that the device memory is full.</td>
<td>Too many files stored on the device.</td>
<td>Delete unused memos and records. If necessary, save these records on the host computer (or use an SD card for additional memory).</td>
</tr>
<tr>
<td></td>
<td>Too many applications installed on the device.</td>
<td>Remove user-installed applications on the device to recover memory. Select ☰ &gt; Storage &gt; FREE UP SPACE &gt; REVIEW RECENT ITEMS. Select the unused program(s) and tap FREE UP.</td>
</tr>
<tr>
<td>The device does not decode with reading bar code.</td>
<td>Scanning application is not loaded.</td>
<td>Load a scanning application on the device or enable DataWedge. See the system administrator.</td>
</tr>
<tr>
<td></td>
<td>Unreadable bar code.</td>
<td>Ensure the symbol is not defaced.</td>
</tr>
<tr>
<td></td>
<td>Distance between exit window and bar code is incorrect.</td>
<td>Place the device within proper scanning range.</td>
</tr>
<tr>
<td></td>
<td>Device is not programmed for the bar code.</td>
<td>Program the device to accept the type of bar code being scanned. Refer to the EMDK or DataWedge application.</td>
</tr>
<tr>
<td></td>
<td>Device is not programmed to generate a beep.</td>
<td>If the device does not beep on a good decode, set the application to generate a beep on good decode.</td>
</tr>
<tr>
<td></td>
<td>Battery is low.</td>
<td>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.</td>
</tr>
<tr>
<td>Device cannot find any Bluetooth devices nearby.</td>
<td>Too far from other Bluetooth devices.</td>
<td>Move closer to the other Bluetooth device(s), within a range of 10 meters (32.8 feet).</td>
</tr>
<tr>
<td></td>
<td>The Bluetooth device(s) nearby are not turned on.</td>
<td>Turn on the Bluetooth device(s) to find.</td>
</tr>
<tr>
<td></td>
<td>The Bluetooth device(s) are not in discoverable mode.</td>
<td>Set the Bluetooth device(s) to discoverable mode. If needed, refer to the device’s user documentation for help.</td>
</tr>
<tr>
<td>Cannot unlock device.</td>
<td>User enters incorrect password.</td>
<td>If the user enters an incorrect password eight times, the user is requested to enter a code before trying again. If the user forgot the password, contact system administrator.</td>
</tr>
</tbody>
</table>
### 2-Slot Charge Only Cradle

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEDs do not light when device or spare battery is inserted.</td>
<td>Cradle is not receiving power.</td>
<td>Ensure the power cable is connected securely to both the cradle and to AC power.</td>
</tr>
<tr>
<td></td>
<td>Device is not seated firmly in the cradle.</td>
<td>Remove and re-insert the device into the cradle, ensuring it is firmly seated.</td>
</tr>
<tr>
<td></td>
<td>Spare battery is not seated firmly in the cradle.</td>
<td>Remove and re-insert the spare battery into the charging slot, ensuring it is firmly seated.</td>
</tr>
<tr>
<td>Device battery is not charging.</td>
<td>Device was removed from cradle or cradle was unplugged from AC power too soon.</td>
<td>Ensure cradle is receiving power. Ensure device is seated correctly. Confirm main battery is charging. The 4,620 mAh battery fully charges in less than five hours.</td>
</tr>
<tr>
<td></td>
<td>Battery is faulty.</td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
</tr>
<tr>
<td></td>
<td>The device is not fully seated in the cradle.</td>
<td>Remove and re-insert the device into the cradle, ensuring it is firmly seated.</td>
</tr>
<tr>
<td></td>
<td>Extreme battery temperature.</td>
<td>Battery does not charge if ambient temperature is below 0 °C (32 °F) or above 40 °C (104 °F).</td>
</tr>
<tr>
<td>Spare battery is not charging.</td>
<td>Battery not fully seated in charging slot.</td>
<td>Remove and re-insert the spare battery in the cradle, ensuring it is firmly seated. The 4,620 mAh battery fully charges in less than five hours.</td>
</tr>
<tr>
<td></td>
<td>Battery inserted incorrectly.</td>
<td>Re-insert the battery so the charging contacts on the battery align with the contacts on the cradle.</td>
</tr>
<tr>
<td></td>
<td>Battery is faulty.</td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
</tr>
</tbody>
</table>
### 2-Slot USB/Ethernet Cradle

#### Table 21 Troubleshooting the 2-Slot USB/Ethernet Cradle

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>During communication, no data transmits, or transmitted data was</td>
<td>Device removed from cradle during communications.</td>
<td>Replace device in cradle and retransmit.</td>
</tr>
<tr>
<td>incomplete.</td>
<td>Incorrect cable configuration.</td>
<td>Ensure that the correct cable configuration.</td>
</tr>
<tr>
<td></td>
<td>Device has no active connection.</td>
<td>An icon is visible in the status bar if a connection is currently active.</td>
</tr>
<tr>
<td></td>
<td>USB/Ethernet module switch in not in the correct position.</td>
<td>For Ethernet communication, slide the switch to the position. For USB communication, slide the switch to the position.</td>
</tr>
<tr>
<td>LEDS do not light when device or spare battery is inserted.</td>
<td>Cradle is not receiving power.</td>
<td>Ensure the power cable is connected securely to both the cradle and to AC power.</td>
</tr>
<tr>
<td></td>
<td>Device is not seated firmly in the cradle.</td>
<td>Remove and re-insert the device into the cradle, ensuring it is firmly seated.</td>
</tr>
<tr>
<td></td>
<td>Spare battery is not seated firmly in the cradle.</td>
<td>Remove and re-insert the spare battery into the charging slot, ensuring it is firmly seated.</td>
</tr>
<tr>
<td>Device battery is not charging.</td>
<td>Device was removed from cradle or cradle was unplugged from AC power too soon.</td>
<td>Ensure cradle is receiving power. Ensure device is seated correctly. Confirm main battery is charging. The 4,620 mAh battery fully charges in less than five hours.</td>
</tr>
<tr>
<td></td>
<td>Battery is faulty.</td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
</tr>
<tr>
<td></td>
<td>The device is not fully seated in the cradle.</td>
<td>Remove and re-insert the device into the cradle, ensuring it is firmly seated.</td>
</tr>
<tr>
<td></td>
<td>Extreme battery temperature.</td>
<td>Battery does not charge if ambient temperature is below 0 °C (32 °F) or above 40 °C (104 °F).</td>
</tr>
<tr>
<td>Spare battery is not charging.</td>
<td>Battery not fully seated in charging slot.</td>
<td>Remove and re-insert the spare battery in the cradle, ensuring it is firmly seated. The 4,620 mAh battery fully charges in less than five hours.</td>
</tr>
<tr>
<td></td>
<td>Battery inserted incorrectly.</td>
<td>Re-insert the battery so the charging contacts on the battery align with the contacts on the cradle.</td>
</tr>
<tr>
<td></td>
<td>Battery is faulty.</td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
</tr>
</tbody>
</table>
## 5-Slot Charge Only Cradle

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery is not charging.</td>
<td>Device removed from the cradle too soon.</td>
<td>Replace the device in the cradle. The battery fully charges in approximately five hours.</td>
</tr>
<tr>
<td>Battery is faulty.</td>
<td></td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
</tr>
<tr>
<td>Device is not inserted correctly in the cradle.</td>
<td></td>
<td>Remove the device and reinsert it correctly. Verify charging is active. Touch ⚡ &gt; System &gt; About phone &gt; Battery Information to view battery status.</td>
</tr>
<tr>
<td>Ambient temperature of the cradle is too warm.</td>
<td></td>
<td>Move the cradle to an area where the ambient temperature is between -10 °C (+14 °F) and +60 °C (+140 °F).</td>
</tr>
</tbody>
</table>
5-Slot Ethernet Cradle

Table 23  Troubleshooting the 5-Slot Ethernet Cradle

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>During communication, no data transmits, or transmitted data was incomplete.</td>
<td>Device removed from cradle during communication.</td>
<td>Replace device in cradle and retransmit.</td>
</tr>
<tr>
<td>Incorrect cable configuration.</td>
<td>Ensure that the correct cable configuration.</td>
<td></td>
</tr>
<tr>
<td>Device has no active connection.</td>
<td>An icon is visible in the status bar if a connection is currently active.</td>
<td></td>
</tr>
<tr>
<td>Battery is not charging.</td>
<td>Device removed from the cradle too soon.</td>
<td>Replace the device in the cradle. The battery fully charges in approximately five hours.</td>
</tr>
<tr>
<td>Battery is faulty.</td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
<td></td>
</tr>
<tr>
<td>Device is not inserted correctly in the cradle.</td>
<td>Remove the device and reinsert it correctly. Verify charging is active. Touch ☰ &gt; System &gt; About phone &gt; Battery Information to view battery status.</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature of the cradle is too warm.</td>
<td>Move the cradle to an area where the ambient temperature is between -10 °C (+14 °F) and +60 °C (+140 °F).</td>
<td></td>
</tr>
</tbody>
</table>

4-Slot Battery Charger

Table 24  Troubleshooting the 4-Slot Battery Charger

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spare Battery Charging LED does not light when spare battery is inserted.</td>
<td>Spare battery is not correctly seated.</td>
<td>Remove and re-insert the spare battery into the charging slot, ensuring it is correctly seated.</td>
</tr>
</tbody>
</table>
Spare Battery not charging.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charger is not receiving power.</td>
<td>Remove and re-insert the battery into the battery adapter, ensuring it is correctly seated.</td>
<td>Ensure the power cable is connected securely to both the charger and to AC power.</td>
</tr>
<tr>
<td>Spare battery is not correctly seated.</td>
<td>Remove and re-insert the battery adapter into the charger, ensuring it is correctly seated.</td>
<td>Ensure the charger is receiving power. Ensure the spare battery is seated correctly. If a battery is fully depleted, it can take up to five hours to fully recharge a Standard Battery and it can take up to eight hours to fully recharge an Extended Life Battery.</td>
</tr>
<tr>
<td>Battery adapter is not seated properly.</td>
<td>Remove and re-insert the battery adapter into the charger, ensuring it is correctly seated.</td>
<td>Ensure charger is receiving power. Ensure the spare battery is seated correctly. If a battery is fully depleted, it can take up to five hours to fully recharge a Standard Battery and it can take up to eight hours to fully recharge an Extended Life Battery.</td>
</tr>
<tr>
<td>Battery was removed from the charger or charger was unplugged from AC power too soon.</td>
<td>Remove and re-insert the battery adapter into the charger, ensuring it is correctly seated.</td>
<td>Ensure charger is receiving power. Ensure the spare battery is seated correctly. If a battery is fully depleted, it can take up to five hours to fully recharge a Standard Battery and it can take up to eight hours to fully recharge an Extended Life Battery.</td>
</tr>
<tr>
<td>Battery is faulty.</td>
<td>Verify that other batteries charge properly. If so, replace the faulty battery.</td>
<td>Ensure charger is receiving power. Ensure the spare battery is seated correctly. If a battery is fully depleted, it can take up to five hours to fully recharge a Standard Battery and it can take up to eight hours to fully recharge an Extended Life Battery.</td>
</tr>
</tbody>
</table>
Technical Specifications

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

Data Capture Supported Symbologies

Table 25  Data Capture Supported Symbologies

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D Bar Codes</td>
<td>Code 128, EAN-8, EAN-13, GS1 DataBar Expanded, GS1 128, GS1 DataBar Coupon, UPCA, Interleaved 2 of 5, UPC Coupon Code</td>
</tr>
<tr>
<td>2D Bar Codes</td>
<td>PDF-417, QR Code, Digimarc, Dotcode</td>
</tr>
</tbody>
</table>

SE4750-SR Decode Distances

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

Table 26  SE4750-SR Decode Distances

<table>
<thead>
<tr>
<th>Symbol Density/ Bar Code Type</th>
<th>Typical Working Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Near</td>
</tr>
<tr>
<td>3 mil Code 39</td>
<td>4.1 in.</td>
</tr>
<tr>
<td></td>
<td>10.41 cm</td>
</tr>
<tr>
<td>5.0 mil Code 128</td>
<td>3.5 in.</td>
</tr>
<tr>
<td></td>
<td>8.89 cm</td>
</tr>
<tr>
<td>5 mil PDF417</td>
<td>4.4 in.</td>
</tr>
<tr>
<td></td>
<td>11.18 cm</td>
</tr>
<tr>
<td>6.67 mil PDF417</td>
<td>3.2 in.</td>
</tr>
<tr>
<td></td>
<td>8.13 cm</td>
</tr>
<tr>
<td>10 mil Data Matrix</td>
<td>3.3 in.</td>
</tr>
<tr>
<td></td>
<td>8.38 cm</td>
</tr>
<tr>
<td>100% UPCA</td>
<td>2.0 in.</td>
</tr>
<tr>
<td></td>
<td>5.08 cm</td>
</tr>
</tbody>
</table>
Table 26  SE4750-SR Decode Distances

<table>
<thead>
<tr>
<th>Symbol Density/ Bar Code Type</th>
<th>Typical Working Ranges</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Near</td>
<td>Far</td>
<td></td>
</tr>
<tr>
<td>15 mil Code 128</td>
<td>2.6 in. 6.06 cm</td>
<td>19.8 in. 50.29 cm</td>
<td></td>
</tr>
<tr>
<td>20 mil Code 39</td>
<td>1.8 in. 4.57 cm</td>
<td>27.0 in. 68.58 cm</td>
<td></td>
</tr>
</tbody>
</table>

Note: Photographic quality bar code at 18° tilt pitch angle under 30 fcd ambient illumination.

I/O Connector Pin-Outs

Figure 170  I/O Connector

Table 27  I/O Connector Pin-Outs

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
<td>Power/signal ground.</td>
</tr>
<tr>
<td>2</td>
<td>RXD_MIC</td>
<td>UART RXD + Headset microphone.</td>
</tr>
<tr>
<td>3</td>
<td>PWR_IN_CON</td>
<td>External 5.4 VDC power input.</td>
</tr>
<tr>
<td>4</td>
<td>TRIG_PTT</td>
<td>Trigger or PTT input.</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>Power/signal ground.</td>
</tr>
<tr>
<td>6</td>
<td>USB-OTG_ID</td>
<td>USB OTG ID pin.</td>
</tr>
<tr>
<td>7</td>
<td>TXD_EAR</td>
<td>UART TXD, Headset ear.</td>
</tr>
<tr>
<td>8</td>
<td>USB_OTG_VBUS</td>
<td>USB VBUS</td>
</tr>
<tr>
<td>9</td>
<td>USB_OTG_DP</td>
<td>USB DP</td>
</tr>
<tr>
<td>10</td>
<td>USB_OTG_DM</td>
<td>USB DM</td>
</tr>
</tbody>
</table>
# 2-Slot Charge Only Cradle Technical Specifications

**Table 28**  2-Slot Charge Only Cradle Technical Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Height: 10.6 cm (4.17 in.)</td>
</tr>
<tr>
<td></td>
<td>Width: 19.56 cm (7.70 in.)</td>
</tr>
<tr>
<td></td>
<td>Depth: 13.25 cm (5.22 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>748 g (26.4 oz.)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>30 watts</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 °C to 50 °C (32 °F to 122 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td>Charging Temperature</td>
<td>0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td>Drop</td>
<td>76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10 kV contact</td>
</tr>
<tr>
<td></td>
<td>+/- 10 kV indirect discharge</td>
</tr>
</tbody>
</table>

# 2-Slot USB/Ethernet Cradle Technical Specifications

**Table 29**  2-Slot USB/Ethernet Cradle Technical Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Height: 20 cm (7.87 in.)</td>
</tr>
<tr>
<td></td>
<td>Width: 19.56 cm (7.70 in.)</td>
</tr>
<tr>
<td></td>
<td>Depth: 13.25 cm (5.22 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>870 g (30.7 oz.)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>30 watts</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 °C to 50 °C (32 °F to 122 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td>Charging Temperature</td>
<td>0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td>Drop</td>
<td>76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10 kV contact</td>
</tr>
<tr>
<td></td>
<td>+/- 10 kV indirect discharge</td>
</tr>
</tbody>
</table>
## 5-Slot Charge Only Cradle Technical Specifications

**Table 30 5-Slot Charge Only Cradle Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
</table>
| Dimensions            | Height: 90.1 mm (3.5 in.)  
Width: 449.6 mm (17.7 in.)  
Depth: 120.3 mm (4.7 in.) |
| Weight                | 1.31 kg (2.89 lbs.)                                                         |
| Input Voltage         | 12 VDC                                                                      |
| Power Consumption     | 65 watts                                                                    |
|                       | 90 watts with 4-Slot Battery Charger installed.                             |
| Operating Temperature | 0 °C to 50 °C (32 °F to 122 °F)                                             |
| Storage Temperature   | -40 °C to 70 °C (-40 °F to 158 °F)                                          |
| Charging Temperature  | 0 °C to 40 °C (32 °F to 104 °F)                                             |
| Humidity              | 0% to 95% non-condensing                                                     |
| Drop                  | 76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.       |
| Electrostatic Discharge (ESD) | +/- 20kV air  
+/- 10kV contact  
+/- 10kV indirect discharge |

## 5-Slot Ethernet Cradle Technical Specifications

**Table 31 5-Slot Ethernet Cradle Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
</table>
| Dimensions            | Height: 21.7 cm (8.54 in.)  
Width: 48.9 cm (19.25 in.)  
Depth: 13.2 cm (5.20 in.) |
| Weight                | 2.25 kg (4.96 lbs)                                                          |
| Input Voltage         | 12 VDC                                                                      |
| Power Consumption     | 65 watts                                                                    |
|                       | 90 watts with 4-Slot Battery Charger installed.                             |
| Operating Temperature | 0 °C to 50 °C (32 °F to 122 °F)                                             |
| Storage Temperature   | -40 °C to 70 °C (-40 °F to 158 °F)                                          |
| Charging Temperature  | 0 °C to 40 °C (32 °F to 104 °F)                                             |
| Humidity              | 5% to 95% non-condensing                                                     |
| Drop                  | 76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.       |
| Electrostatic Discharge (ESD) | +/- 20kV air  
+/- 10kV contact  
+/- 10kV indirect discharge |
### 4-Slot Battery Charger Technical Specifications

**Table 32  4-Slot Battery Charger Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Height: 4.32 cm (1.7 in.)</td>
</tr>
<tr>
<td></td>
<td>Width: 20.96 cm (8.5 in.)</td>
</tr>
<tr>
<td></td>
<td>Depth: 15.24 cm (6.0 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>386 g (13.6 oz.)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>40 watts</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td>Charging Temperature</td>
<td>0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td>Drop</td>
<td>76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10kV contact</td>
</tr>
<tr>
<td></td>
<td>+/- 10kV indirect discharge</td>
</tr>
</tbody>
</table>

### Charge Only Vehicle Cradle Technical Specifications

**Table 33  Charge Only Vehicle Cradle Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Height: 12.3 cm (4.84 in.)</td>
</tr>
<tr>
<td></td>
<td>Width: 11.0 cm (4.33 in.)</td>
</tr>
<tr>
<td></td>
<td>Depth: 8.85 cm (3.48 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>320 g (11.3 oz.)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12/24 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>40 watts</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 °C to 85 °C (-40 °F to 185 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 85 °C (-40 °F to 185 °F)</td>
</tr>
<tr>
<td>Charging Temperature</td>
<td>0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td>Drop</td>
<td>76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature.</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10kV contact</td>
</tr>
</tbody>
</table>
## Technical Specifications

### Trigger Handle Technical Specifications

**Table 34  Trigger Handle Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Height: 11.2 cm (4.41 in.)</td>
</tr>
<tr>
<td></td>
<td>Width: 6.03 cm (2.37 in.)</td>
</tr>
<tr>
<td></td>
<td>Depth: 13.4 cm (5.28 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>110 g (3.8 oz.)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 °C to 50 °C (-4 °F to 122 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10% to 95% non-condensing</td>
</tr>
<tr>
<td>Drop</td>
<td>1.8 m (6 feet) drops to concrete over temperature range.</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10kV contact</td>
</tr>
</tbody>
</table>

### Charging Cable Cup Technical Specifications

**Table 35  Charging Cable Cup Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>25.4 cm (10.0 in.)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>5.4 VDC</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 °C to 50 °C (-4 °F to 122 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10% to 95% non-condensing</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10kV contact</td>
</tr>
</tbody>
</table>

### Snap-On USB Cable Technical Specifications

**Table 36  Snap-On USB Cable Technical Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>1.5 cm (60.0 in.)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>5.4 VDC (external power supply)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 °C to 50 °C (-4 °F to 122 °F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10% to 95% non-condensing</td>
</tr>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+/- 20kV air</td>
</tr>
<tr>
<td></td>
<td>+/- 10kV contact</td>
</tr>
</tbody>
</table>
DEX Cable Technical Specifications

Table 37  DEX Cable Technical Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>1.5 cm (60.0 in.)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 ºC to 50 ºC (-4 ºF to 122 ºF)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 ºC to 70 ºC (-40 ºF to 158 ºF)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10% to 95% non-condensing</td>
</tr>
</tbody>
</table>
| Electrostatic Discharge (ESD) | +/- 20kV air  
                          | +/- 10kV contact                 |
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<tr>
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