

ET51/56

Enterprise Tablet



Integrator Guide for Microsoft[®] Windows[®] 10 IoT Enterprise



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Revision History

Changes to the original guide are listed below:

Change	Date	Description
-01 Rev A	2/2019	Initial release
-02 Rev. A	4/2019	Correct Bluetooth Class and range. Add ET56 information.

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About This Guide

Introduction

This guide provides information about using the tablet and accessories.



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

Configurations

This guide covers the following configurations:

Table 1 *Configurations*

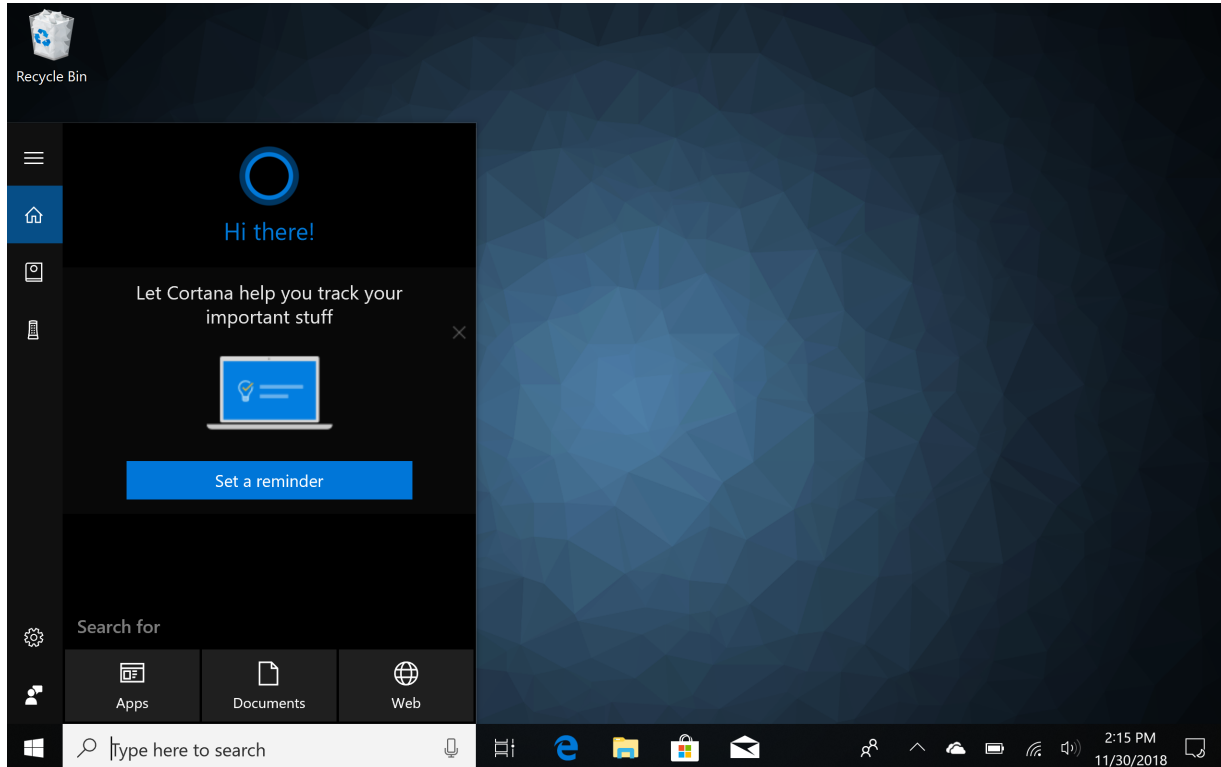
Configuration	Operating System	Radios	Display	Memory	Data Capture
ET51AE	Windows® 10 IoT Enterprise	WLAN: 802.11a/b/g/n/ac/d/h/i/w WPAN: Bluetooth	8.4" color	4 GB RAM/ 64 GB Flash	Optional SE4710 or SE4750 Expansion Backs
ET56BE	Windows® 10 IoT Enterprise	WLAN: 802.11a/b/g/n/ac/d/h/i/w WPAN: Bluetooth WWAN: LTE	8.4" color	4 GB RAM/ 64 GB Flash	Optional SE4710 or SE4750 Expansion Backs

Software Release Information

To check the software release information:

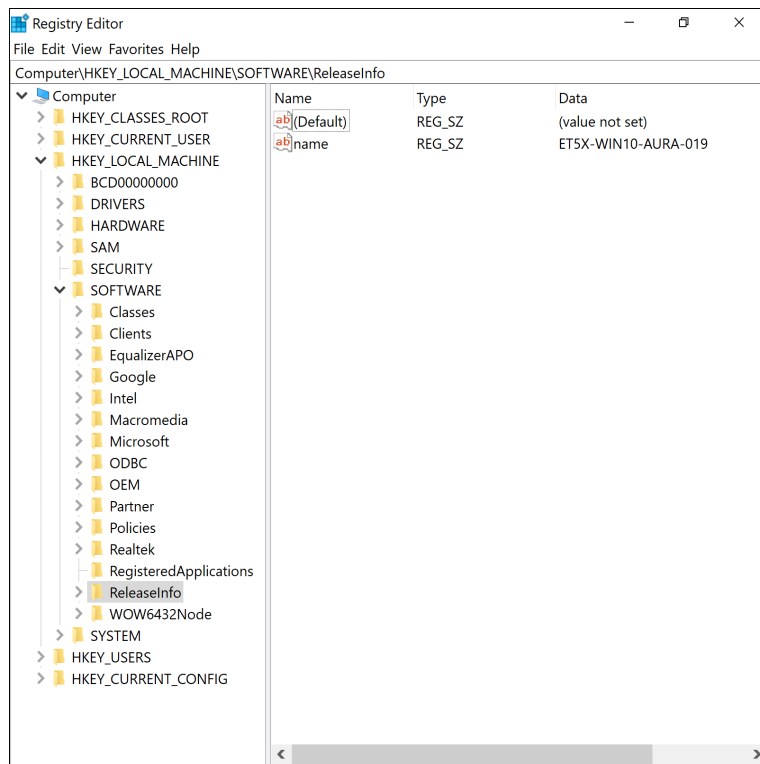
1. Touch the Cortana icon .

Figure 1 Software Release Information



2. In the Search text box, type regedit.
3. Touch **Run Command**. The **User Account Control** dialog box appears.
4. Touch **Yes**.
5. Navigate to **HKEY_LOCAL_MACHINE > SOFTWARE > ReleaseInfo**. The version appears in the **Data** column.

Figure 2 Regedit Window



Chapter Descriptions

Topics covered in this guide are as follows:

- [Getting Started](#) provides information on getting the tablet up and running for the first time.
- [Accessories](#) describes the accessories available for the tablet and how to use the accessories with the tablet.
- [Software](#) explains how to reset the tablet and perform system updates.
- [Maintenance and Troubleshooting](#) includes instructions on cleaning and storing the tablet, and provides troubleshooting solutions for potential problems during tablet operation.
- [Specifications](#) includes the technical specifications for the tablet and accessories.

Notational Conventions

The following conventions are used in this document:

- “Device” or “tablet” refers to the Zebra ET51/56 tablet
- **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.

Related Documents and Software

The following documents provide more information about the tablets:

- ET51/56 Quick Reference Guide, p/n MN-003332-xx
- ET51/56 User Guide for Microsoft Windows 10 IoT Enterprise, p/n MN-003446-xx

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

Service Information

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

When contacting support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software type and version number. See [Checking Operating System Version on page 49](#) for more information.

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

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

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

Provide Documentation Feedback

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

Getting Started

Introduction

This chapter explains how to set up the device for the first time.

Unpacking

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

Verify that you received the following:

- Tablet with lithium polymer battery
- Quick Start Guide.

Inspect the equipment for damage. If you are missing any equipment or if you find any damaged equipment, contact the Zebra Support Center immediately. See [Service Information](#) for contact information.

Getting Started

In order to start using the device for the first time:

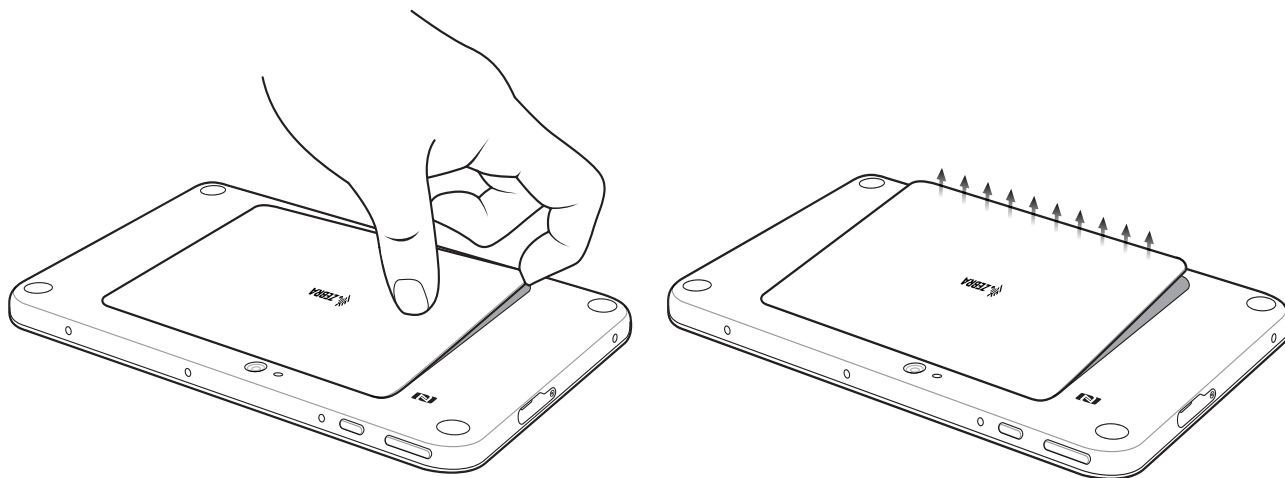
- Install microSD card
- Install the nano SIM Card (ET56 only)
- Charge the battery
- Restart or reboot the device

Installing a microSD Card or nano SIM Card

To install a microSD card or nano SIM card (ET56 only):

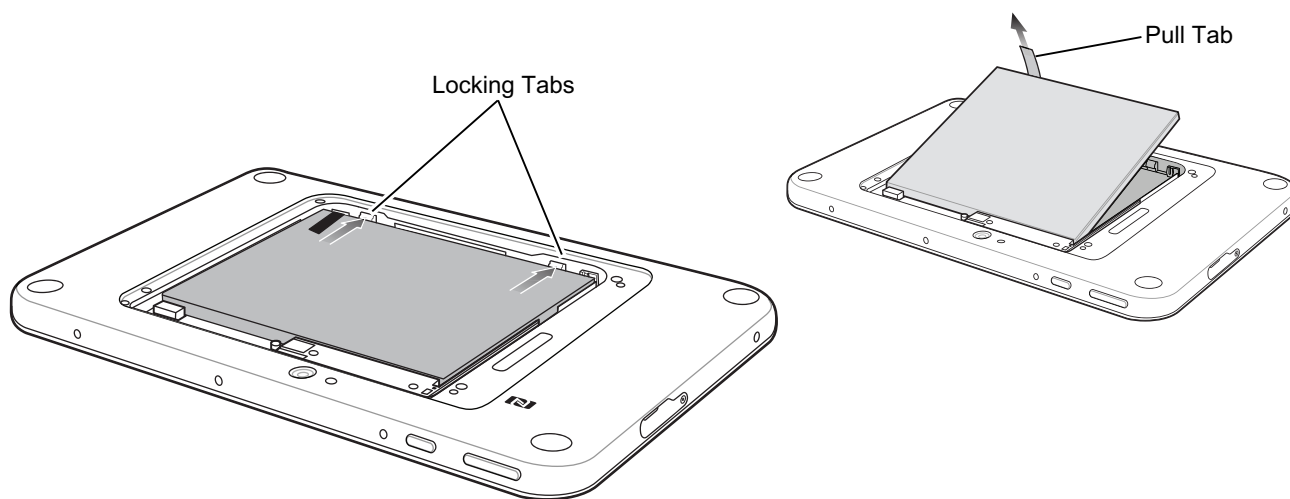
1. Press the Power button to turn off the device.
2. Lift the notched corner of the battery cover and carefully lift the battery cover off the device.

Figure 3 Lifting the Battery Cover



3. Carefully lift the battery cover off the device.
4. On the 8.4" version, push the two locking tabs up, then pull up on the tab to remove battery.

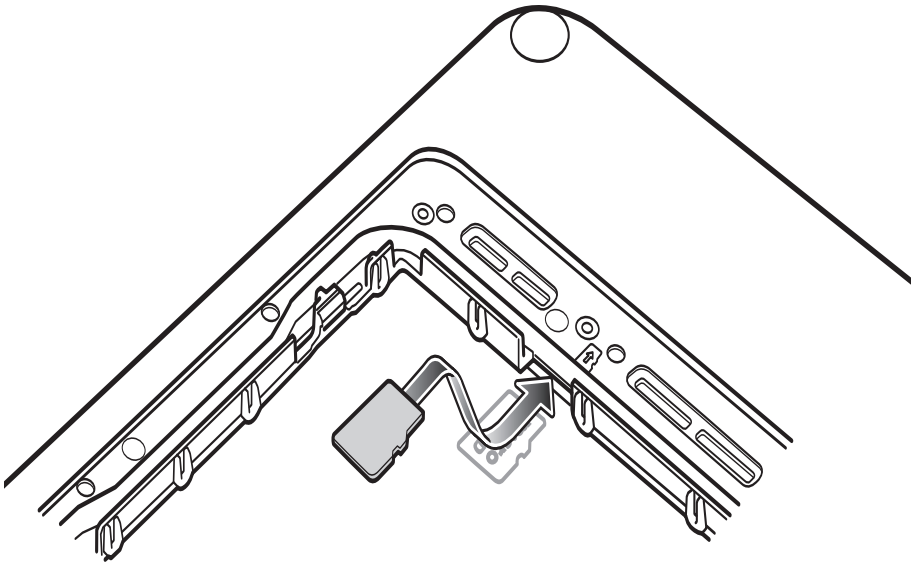
Figure 4 Removing the Battery



Install the microSD card

1. Insert the microSD card with contacts facing down.

Figure 5 Inserting microSD Card

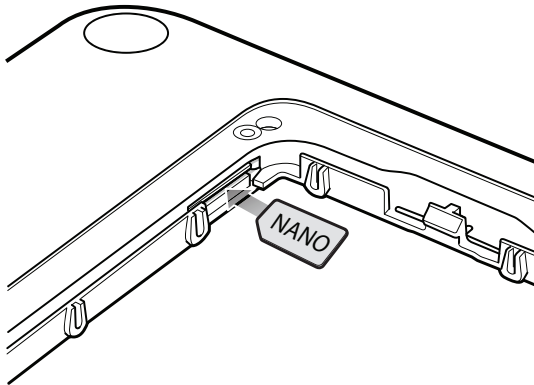


2. Push the micro SD card in and ensure that it locks into place.

Install the nano SIM card

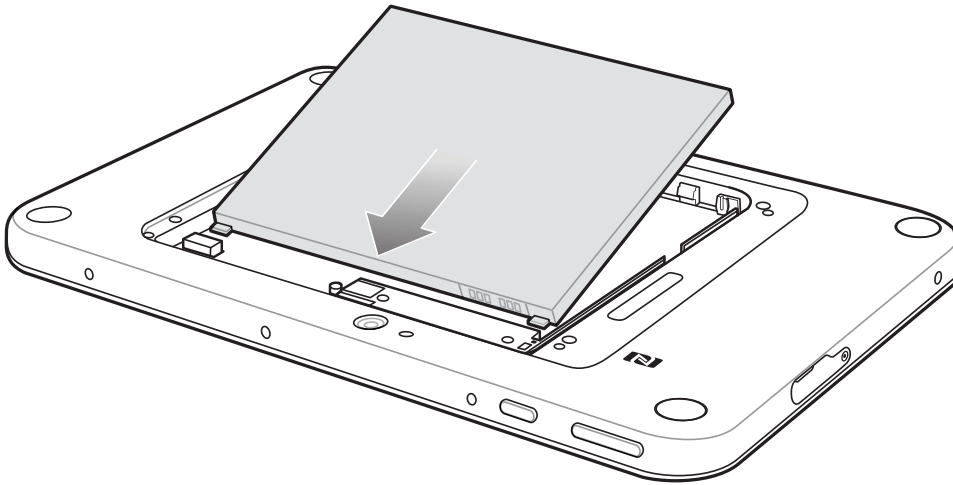
1. Insert the nano SIM card with contacts facing down.

Figure 6 Inserting the nano SIM Card - 8.4"



2. Push the SIM card in and ensure that it locks into place.
3. Replace the battery.

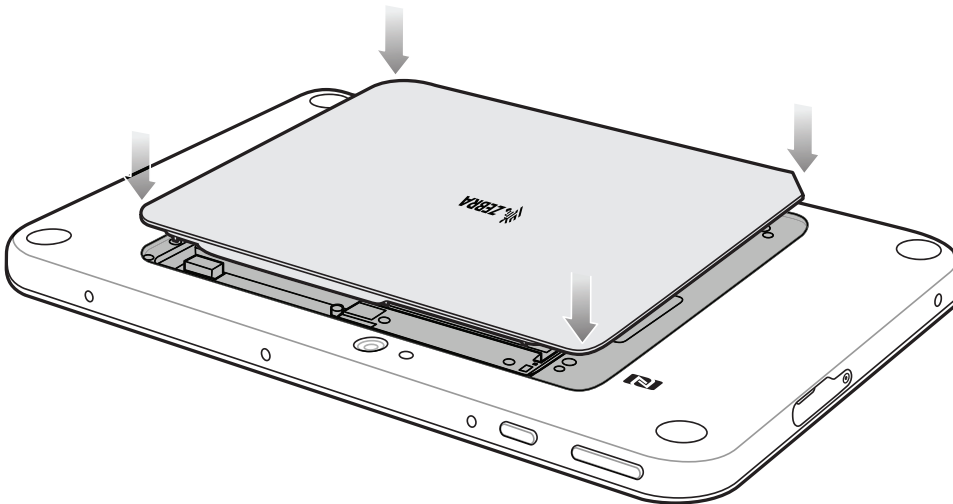
Figure 7 Inserting the Battery



CAUTION: Be aware of the orientation of the battery cover. Failure to replace the battery cover properly may damage the battery cover.

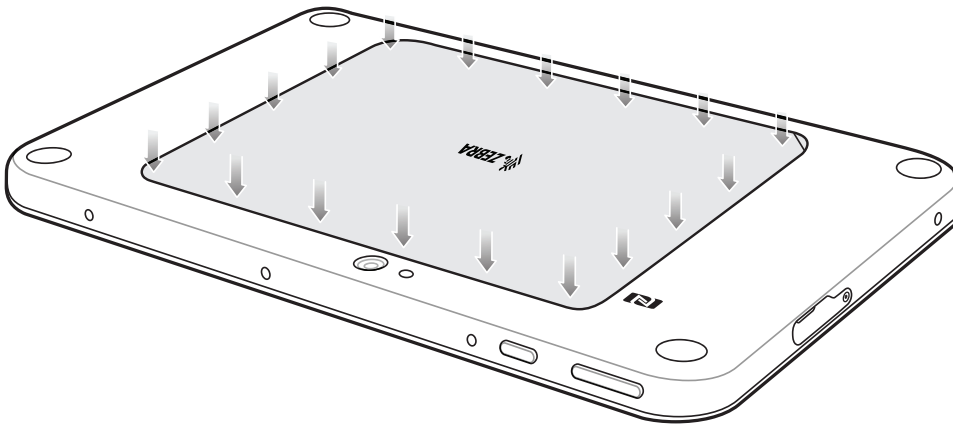
4. Align the tabs on the underside of the cover with the slot around the battery well. Make sure that the notch on the battery cover is at the bottom left corner of the device.

Figure 8 Aligning the Battery Cover



5. Carefully press down around the edge of the cover. Make sure that the cover is seated properly.

Figure 9 Pressing Down on the Battery Cover



6. Press Power button to turn on the device.

Replacing the SIM Card



CAUTION: To avoid damage to the SIM slot, do not pull the SIM card out of the SIM slot. Push the SIM card in to eject it.

To replace the SIM card:

1. Press and hold the Power button until the menu appears.
2. Touch **Power off**.
3. Lift the notched corner of the battery cover and carefully lift the battery cover off the device.
4. On the 8.4" version, push the two locking tabs up, then pull up on the tab to remove battery.
5. Push the SIM card in to eject the card.
6. Remove the SIM card from the card slot.
7. Replace the battery.
8. Press the battery down to ensure the two battery latches engage.
9. Replace the battery cover.

Replacing the microSD Card



CAUTION: To avoid damage to the microSD card slot, do not pull the microSD card out of the microSD Card slot. Push the microSD card in to eject it.

To replace the microSD card:

1. Press and hold the Power button until the menu appears.
2. Touch **Power off**.
3. Lift the notched corner of the battery cover and carefully lift the battery cover off the device.
4. On the 8.4" version, push the two locking tabs up, then pull up on the tab to remove battery.
5. Push the microSD card in to eject the card.

6. Remove the microSD card from the card slot.
7. Replace the battery.
8. Press the battery down to ensure the two battery latches engage.
9. Replace the battery cover.

Charging the Battery

Use one of the cradles to charge the main battery installed in the device. See the chapter [Accessories](#) for charging accessories. See the ET51/56 User Guide for information about battery management.

The 8.4" tablet main battery charges from fully depleted to 90% in approximately 2 hours and from fully depleted to 100% in approximately 3 hours.



NOTE: The Charging indicator only illuminates when the tablet is connected to AC power.

The Charging Indicator LED on the tablet indicates charging status as follows:

- OFF - device is not connected to charger.
- ORANGE - device is charging.
- GREEN - device is connected and fully charged.
- RED - charge error.

Restarting the Device

If the device is running slow or some applications are not functioning properly, restart the device:

1. Touch Start
2. Touch Power > **Update and restart.**
3. If software updates are pending, these install and then the device restarts.

Performing a Cold Boot

If the device does not respond to any input, perform a cold boot:

1. Press and hold the power button for at least 10 seconds. The device shuts down.
2. Press the Power button again to turn on the device.

Accessories

Introduction

The device accessories provide a variety of product support capabilities.

Table 2 *Device Accessories*

Accessory	Part Number	Description
Cradles		
Charge Only Cradle	CRD-ET5X-1SCG1	Charges the main battery and optional Power Pack installed in the Expansion Back. Requires power supply PWR-BGA12V50W0WW, DC line cord CBL-DC-388A1-01 and country-specific AC line cord.
Communication and Charging Cradle	CRD-ET5X-1SCOM1	Charges the main battery and optional Power Pack installed in the Expansion Back. Requires power supply PWR-BGA12V50W0WW, DC line cord CBL-DC-388A1-01, and country-specific AC line cord.
Rugged Communication and Charging Cradle	CRD-ET5X-1SCOM1R	Charges the main battery and optional Power Pack installed in the Expansion Back. Supports rugged frame and rugged IO Adapter. Requires power supply PWR-BGA12V50W0WW, DC line cord CBL-DC-388A1-01, and country-specific AC line cord.
4-Slot Charge Only Cradle	CRD-ET5X-SE4CO1-01	Charges up to four main batteries and optional Power Pack installed in the Expansion Back and up to four Power Packs in the optional 4-Slot Battery Charger. Requires power supply PWR-BGA12V108W0WW, DC line cord 50-16002-029R, and country-specific AC line cord.
Chargers		
Power Supply	PWR-BGA12V50W0WW	Provides power to the Charge Only Cradle, Communication and Charging Cradles, Rugged Charge Connector, and 4-Slot Battery Charger for Optional Battery Power Pack.
Power Supply	PWR-BGA12V108W0WW	Provides power to the 4-Slot Charge Only Cradle.

Table 2 *Device Accessories (Continued)*

Accessory	Part Number	Description
4-Slot Battery Charger	SAC-ET5X-4PPK1-01	Chargers up to four Power Packs. Requires power supply PWR-BGA12V50W0WW, DC Line cord CBL-DC-388A1-01, and country-specific AC line cord.
Rugged Charge Connector	CHG-ET5X-CBL1-01	Charges the main battery and optional Power Pack installed in the Expansion Back. Requires power supply PWR-BGA12V50W0WW, DC Line Cord CBL-DC-388A1-01 and country-specific AC line cord.
Miscellaneous		
Replacement 8.4" Internal Battery	BTRY-ET5X-8IN3-01	Replacement battery for 8.4" device.
Replacement 8.4" Battery Cover	KT-ET5X-8BTDR2-01	Replacement battery cover for 8.4" device.
8.4" Rugged Frame with IO Adapter	SG-ET5X-8RCSE2-02	Add extra protection for the 8.4" device and IO Adapter for connection to the Rugged Communication and Charging Cradle.
Replacement Rugged IO Connector	SG-ET5X-RGIO2-01	Replacement rugged IO connector for the Rugged Frames.
8.4" SE4750 Expansion Back	ZBK-ET5X-8SCN5-01	Provides data capture using the SE4750 scan engine, rotating hand strap and slot for optional Power Pack.
8.4" SE4710 Expansion Back	ZBK-ET5X-8SCN1-01	Provides data capture using the SE4710 scan engine, rotating hand strap and slot for optional Power Pack.
8.4" Expansion Back	ZBK-ET5X-8RH1-01	Provides rotating hand strap and slot for optional Power Pack.
Power Pack	BTRY-ET5X-PRPK2-01	Provides additional power for charging the device battery using an Expansion Back.
Replacement Expansion Back Hand Strap	SG-ET5X-RHTP1-01	Replacement hands strap for Expansion Backs.
Passive Stylus	SG-TC7X-STYLUS-03	Provides easy writing, drawing, and navigation and accuracy with the thin tip and hovering capabilities.
Coiled Stylus Tether	SG-ET5X-SLTETR-01	Secures a stylus to the hand strap.
8.4" Operations Case	SG-ET5X-8HLST-01	Provides carrying solution for 8.4" device.
Universal Shoulder Strap	58-40000-007R	Use with the Operations Case and D-clips to carry device on shoulder.
Breakaway Shoulder Strap	SG-ET5X-SHDRSTP-01	Use with the Operations Case and D-clips to carry device on shoulder. Contains safety feature by the clips that breaks when pulled.
D-Clips	SG-ET5X-DCLIP2-02	Use to attach Universal Shoulder Strap to device.
Handle Strap	SG-ET5X-HNDSTP-01	Use with the Operations Case and D-clips to carry device with hand.

Charge Only Cradle



CAUTION: Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 51](#).



NOTE: The Charge Only Cradle (CRD-ET5X-1SCG1) comes with two inserts; tall insert and short insert. Install the tall insert when using a device without a Rugged Frame or Expansion Back. Install the small insert when using with an Expansion Back and without a Rugged Frame.

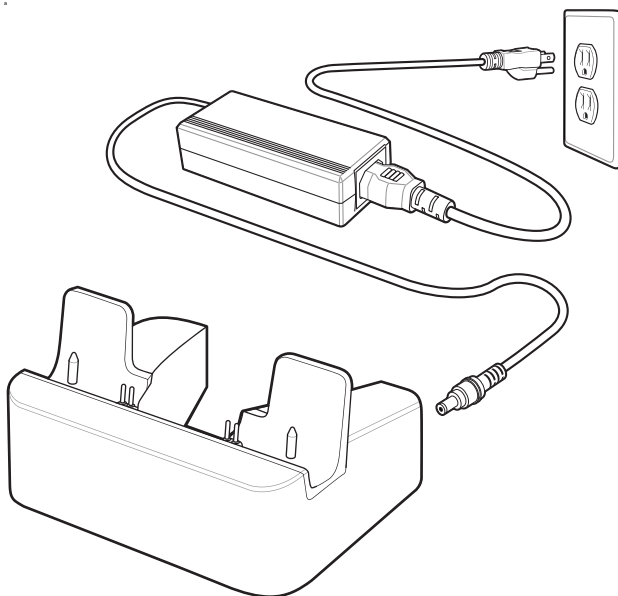
This section describes how to use a Charge Only Cradle with the device.

The Charge Only Cradle:

- Provides power for operating the device.
- Charges the device's battery and optional Power Pack installed in an Expansion Back.

Power Setup

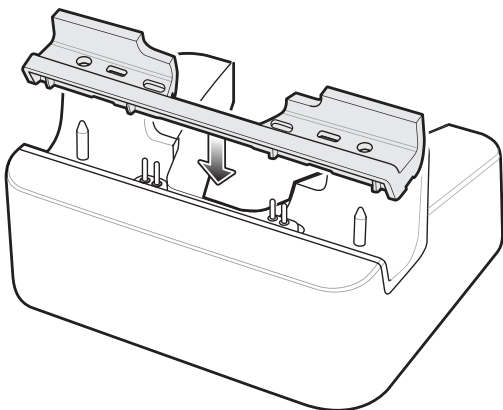
Figure 10 Charge Only Cradle Setup



Installing the Insert

Install the tall insert when using a device without a Rugged Frame or Expansion Back. Install the small insert when using an device with an Expansion Back and without a Rugged Frame.

1. Align the insert over the pins.

Figure 11 Align Insert with Cradle

2. Press the insert down until it seats flush in the cradle.

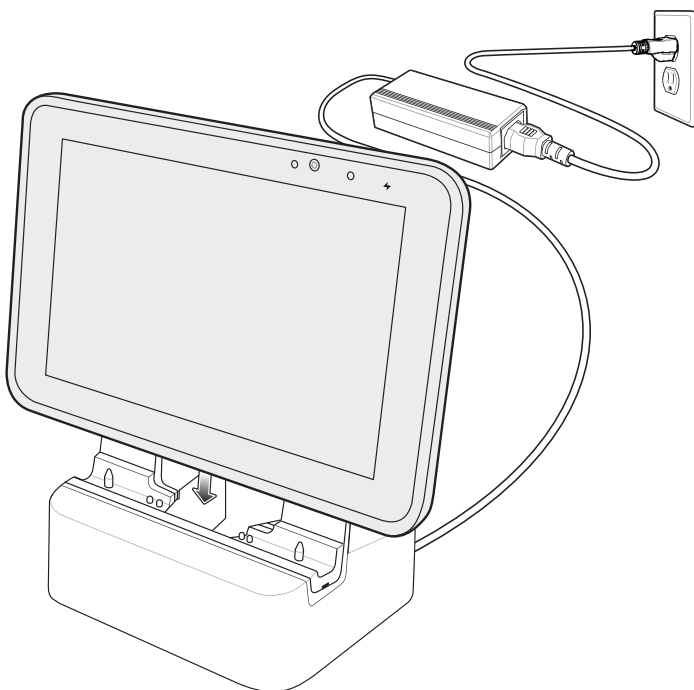
Charging the Device

To charge the device in the Charge Only Cradle:

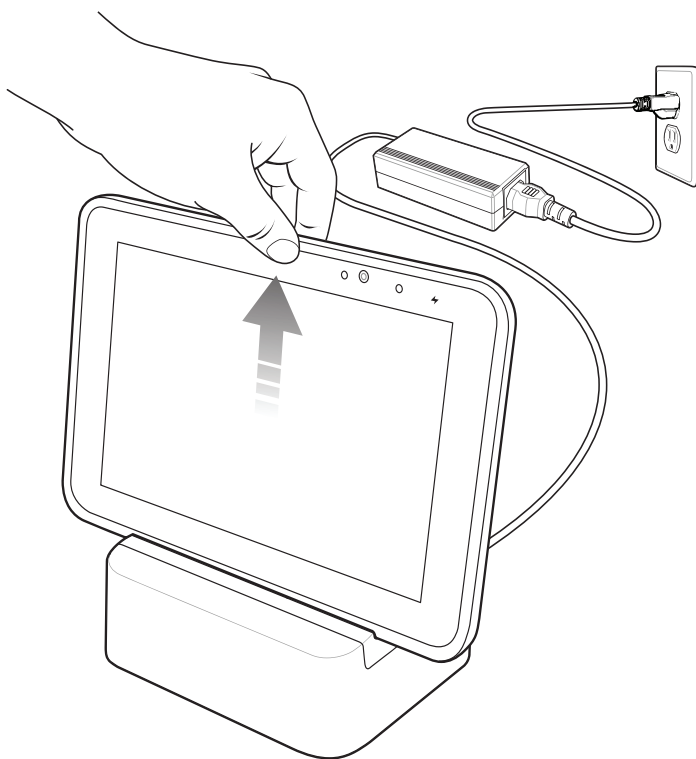
1. Align the device with the alignment pins on the cradle.
2. Insert the device into the cradle.



NOTE: Ensure the device is flat on the cradle and all charging contacts are touching the charging base.

Figure 12 Insert Device into Charge Only Cradle

3. The device Charging LED indicates charging.
4. To remove the device from the Charge Only Cradle, hold the cradle down with one hand and lift the device.

Figure 13 Remove device from Charge Only Cradle

Charge batteries in ambient temperatures from 0°C to +60°C (32°F to 140°F) as reported by the battery. Charging is intelligently controlled by the charger. To accomplish this, for small periods of time, the charger alternately enables and disables battery charging to keep the battery at acceptable temperatures.

The 8.4" main battery charges from fully depleted to 90% in approximately 2 hours and from fully depleted to 100% in approximately 3 hours.



NOTE: The Charging indicator only illuminates when the device is connected to AC power.

Table 3 *Charging Indicator*

LED	Indication
Off	Device is not in cradle; not seated properly; or cradle is not powered.
Orange	Device is charging.
Green	Charging complete.
Red	Error in charging; check placement of the device.

Communication and Charging Cradle



CAUTION: Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 51](#).



NOTE: The Communication and Charging Cradle (CRD-ET5X-1SCOM1) comes with two inserts; tall insert and short insert. Install the tall insert when using without a Rugged Frame or Expansion Back. Install the small insert when using with an Expansion Back and without a Rugged Frame.

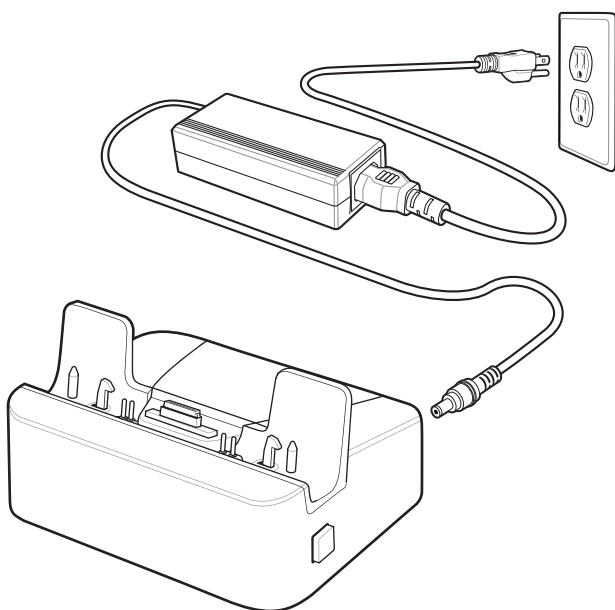
This section describes how to use a Communication and Charging Cradle with the device.

The Communication and Charging cradle:

- Provides power for operating the device.
- Provides ports for connecting USB devices, video output and connection to a LAN.
- Charges the device's battery and optional Power Pack installed in an Expansion Back.

Power Setup

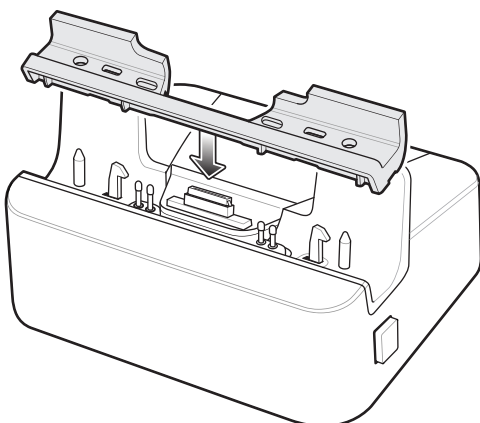
Figure 14 Communication and Charging Cradle - Setup



Installing the Insert

Install the tall insert when using a device without a Rugged Frame or Expansion Back. Install the small insert when using a device with an Expansion Back and without a Rugged Frame.

1. Align the insert over the pins.

Figure 15 Align Insert with Cradle

2. Press the insert down until it seats flush in the cradle.

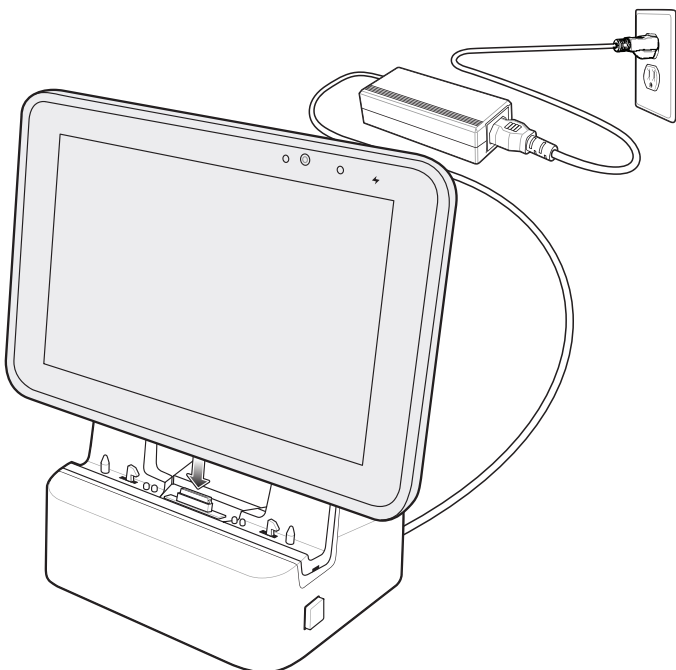
Charging the Device

To charge the device in the Communication and Charging Cradle:

1. Open the bottom access door and hold it to the back of the device.
2. Align the device with the alignment pins on the cradle.
3. Insert the device into the cradle. Note that the Communication and Charging Cradles contains a locking mechanism that locks the device to the cradle.



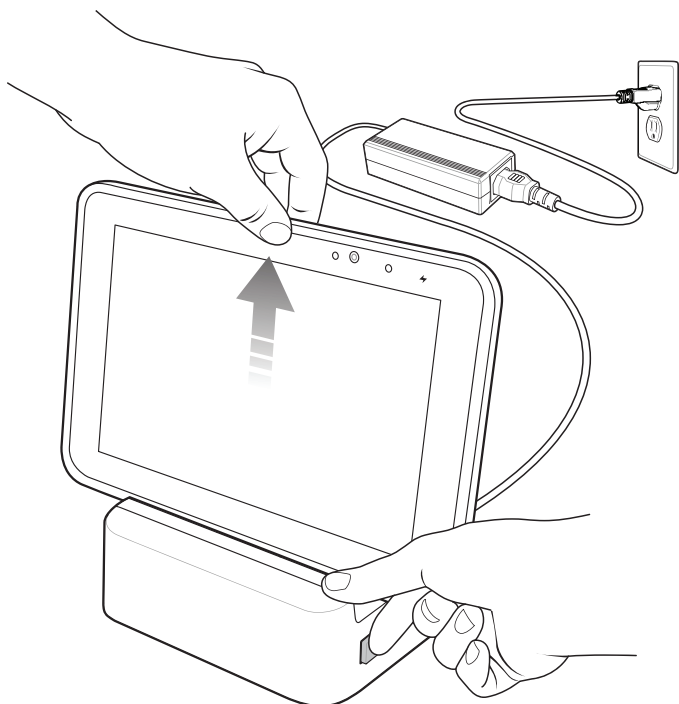
NOTE: Ensure the device is flat on the cradle and all charging contacts are touching the charging base.

Figure 16 Insert device into Communication and Charging Cradle

4. The device Charging LED indicates charging.

5. To remove the device from the Communication and Charging Cradle, press the release button on the right side of the cradle and lift the device. Use thumb to hold down the cradle.

Figure 17 Remove ET5X from Communication and Charging Cradles



Charge batteries in ambient temperatures from 0°C to +60°C (32°F to 140°F) as reported by the battery. Charging is intelligently controlled by the charger. To accomplish this, for small periods of time, the charger alternately enables and disables battery charging to keep the battery at acceptable temperatures.

The 8.4" main battery charges from fully depleted to 90% in approximately 2 hours and from fully depleted to 100% in approximately 3 hours.



NOTE: The Charging indicator only illuminates when the device is connected to AC power.

Rugged Communication and Charging Cradle



CAUTION: Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 51](#).

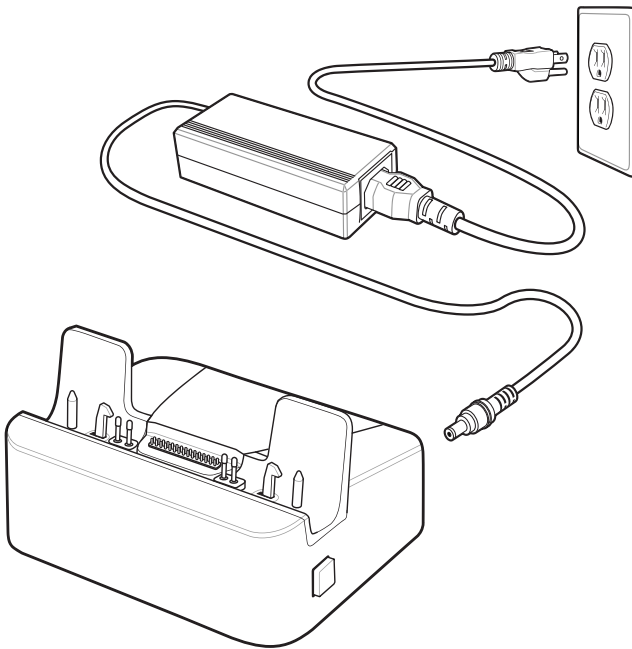
This section describes how to use a Rugged Communication and Charging Cradle with the device.

The Rugged Communication and Charging cradle:

- Provides power for operating the device.
- Provides ports for connecting USB devices, video output and connection to a LAN.
- Charges the device's battery and optional Power Pack installed in an Expansion Back.

Power Setup

Figure 18 Rugged Communication and Charging Cradle - Setup



Charging the Device

To charge the device using the Rugged Communication and Charging Cradle:

1. Align the device with the alignment pins on the cradle.
2. Insert the device into the cradle. Note that the Rugged Communication and Charging Cradles contains a locking mechanism that locks the device to the cradle.



NOTE: Ensure the device is flat on the cradle and all charging contacts are touching the charging base.

Charge batteries in ambient temperatures from 0°C to +60°C (32°F to 140°F) as reported by the battery. Charging is intelligently controlled by the charger. To accomplish this, for small periods of time, the charger alternately enables and disables battery charging to keep the battery at acceptable temperatures.

The 8.4" main battery charges from fully depleted to 90% in approximately 2 hours and from fully depleted to 100% in approximately 3 hours.



NOTE: The Charging indicator only illuminates when the device is connected to AC power.

4-Slot Charge Only Cradle

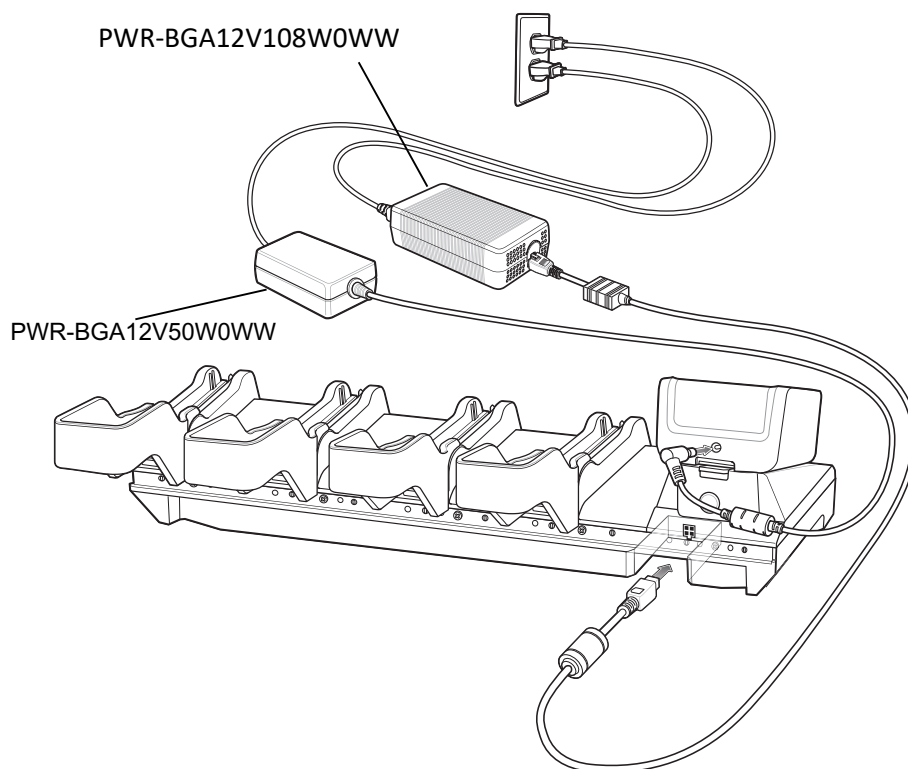


CAUTION: Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines on page 51](#).

- Provides 5 VDC power for operating the device.
- Simultaneously charges up to four devices and up to four Power Packs using the optional Battery Charger Adapter.

Power Setup

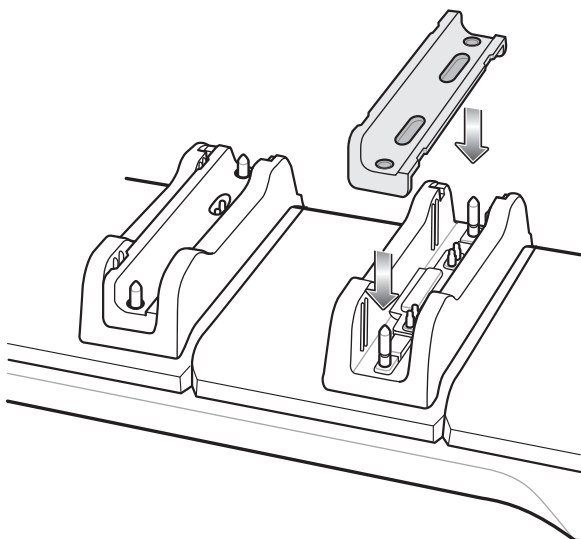
Figure 19 Power Setup with Optional Charger



Insert Installation

Install inserts into slots for devices without Rugged Frame.

Figure 20 Install Insert in Slot

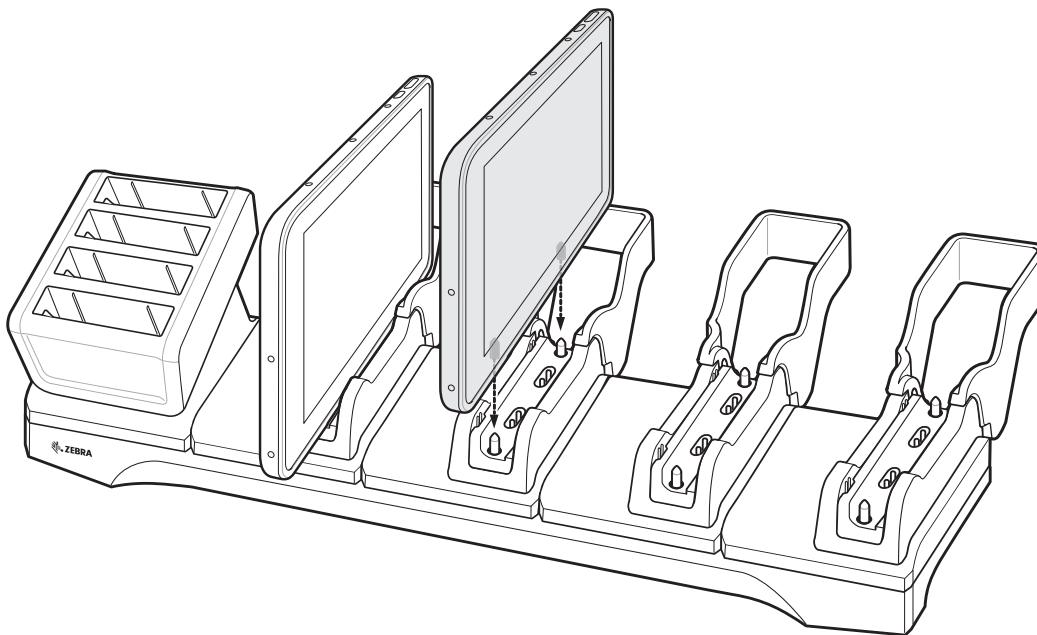


Insert Device into Slot

Device without Rugged Frame

1. Install insert into slot.
2. Align the two alignment holes on the bottom of the device with the two alignment pins in the slot.

Figure 21 Insert ET5X without Rugged Frame into Slot



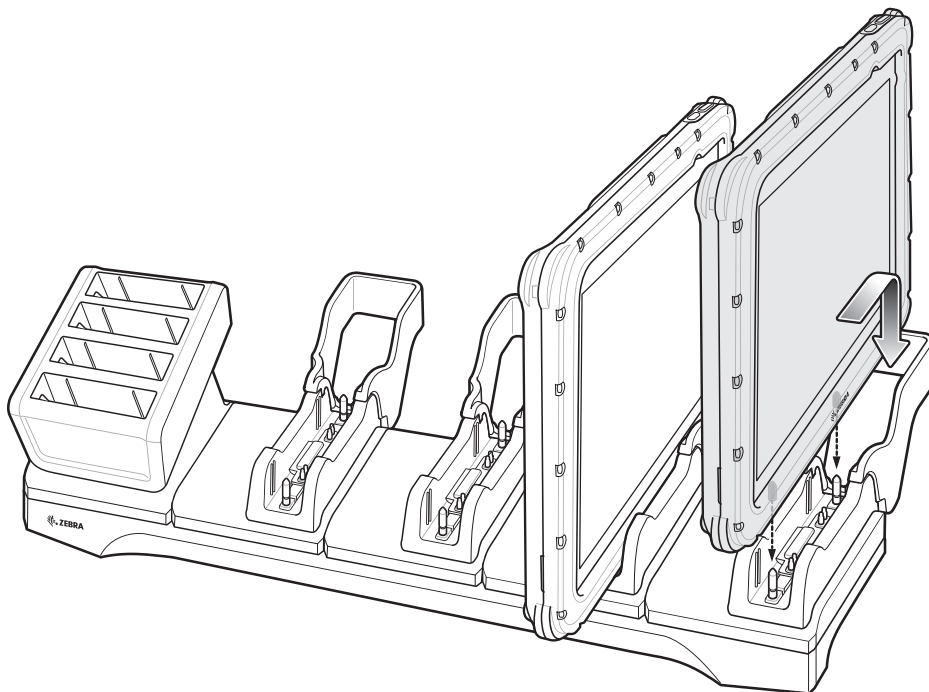
3. Place the device down into the slot with display facing away from Battery Charger.

Device with Rugged Frame

1. If applicable, remove insert from slot.

- Slide device over slot into it touches the guide.

Figure 22 Insert device with Rugged Frame into Slot



- Place the device down into the slot with display facing away from Battery Charger.

Charging the Battery

Charge batteries in ambient temperatures from 0°C to +60°C (32°F to 140°F) as reported by the battery. Charging is intelligently controlled by the charger. To accomplish this, for small periods of time, the charger alternately enables and disables battery charging to keep the battery at acceptable temperatures.

The 8.4" main battery charges from fully depleted to 90% in approximately 2 hours and from fully depleted to 100% in approximately 3 hours.



NOTE: The Charging indicator only illuminates when the device is connected to AC power.

Using the 4-Slot Battery Charger

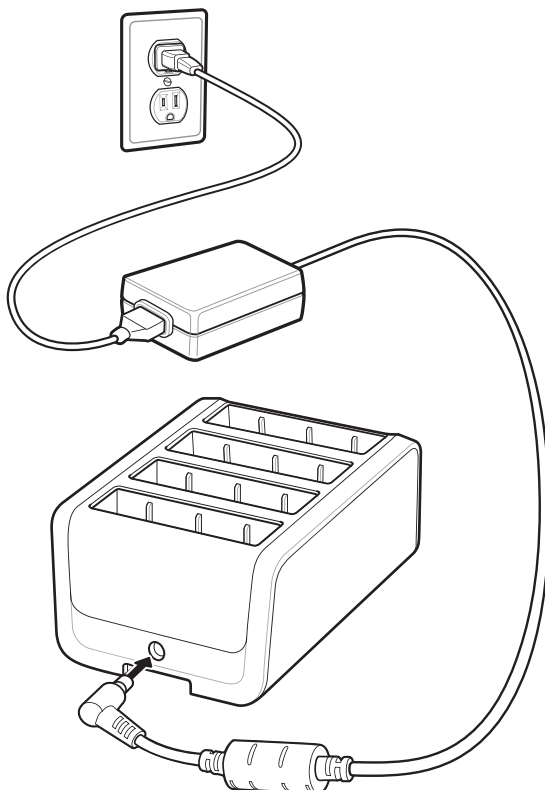


CAUTION: Ensure that you follow the guidelines for battery safety described in [Battery Safety Guidelines](#) on page 51.

Use the 4-Slot Battery Charger to charge up to four Power Packs.

Power Setup

Figure 23 4-Slot Battery Charger Setup



Charging the Power Pack

Charge Power Packs in ambient temperatures from 0°C to +60°C (32°F to 140°F) as reported by the Power Pack. Charging is intelligently controlled by the charger. To accomplish this, for small periods of time, the charger alternately enables and disables Power Pack charging to keep the battery at acceptable temperatures.

The Power Pack charge LED shows the status of the battery charging. The Power Pack charges in less than three hours. When charging, the Charge LEDs indicate the charge level.

Figure 24 Power Pack Charge LEDs

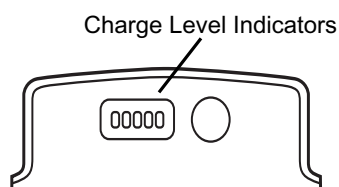


Table 4 *Power Pack Charge Status Indicators*

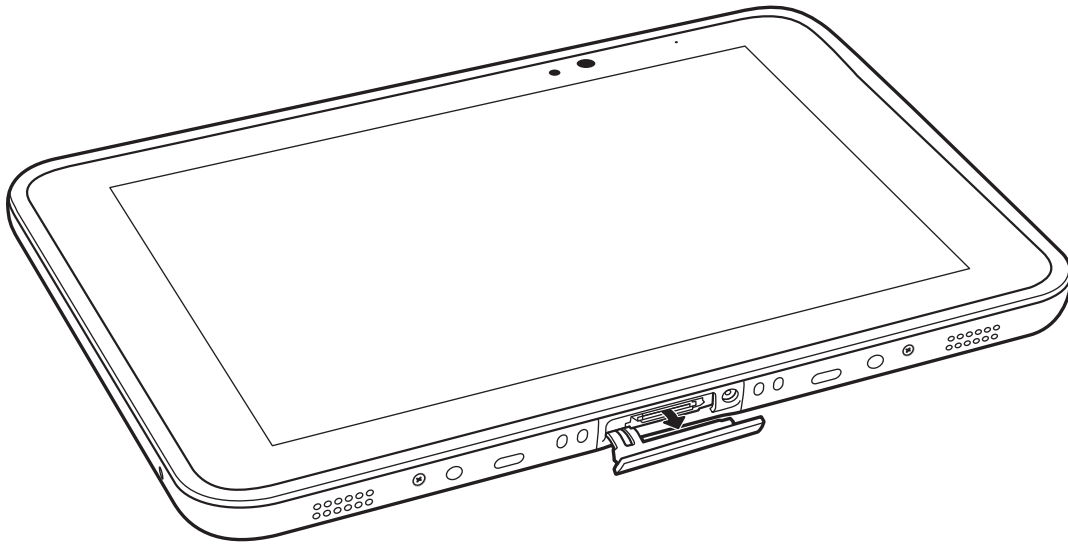
Power Pack Indicators	Description
	Power not applied to Power Pack.
	Charge level is between 0% and 20%.
	Charge level is between 20% and 40%.
	Charge level is between 40% and 60%.
	Charge level is between 60% and 80%.
	Charge level is between 80% and 100%.
	Fully charged.
	Charging error.
	Solid Green LED
	Blinking Green LED
	Blinking Red LED

Rugged Frame

The Rugged Frame adds additional protection to the device. Use the Rugged I/O Adapter when docking the device into the Rugged Communications and Charging Cradle.

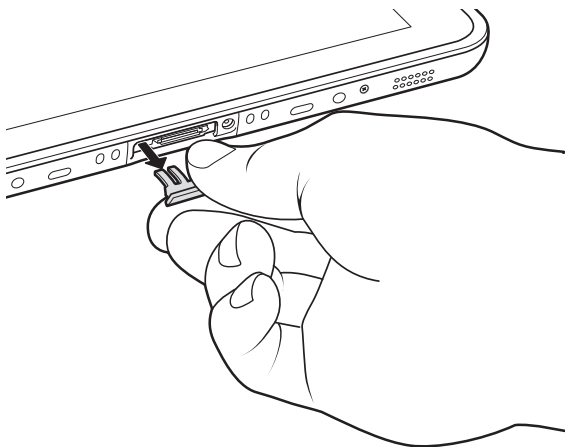
1. Open the access cover.

Figure 25 Open Access Door



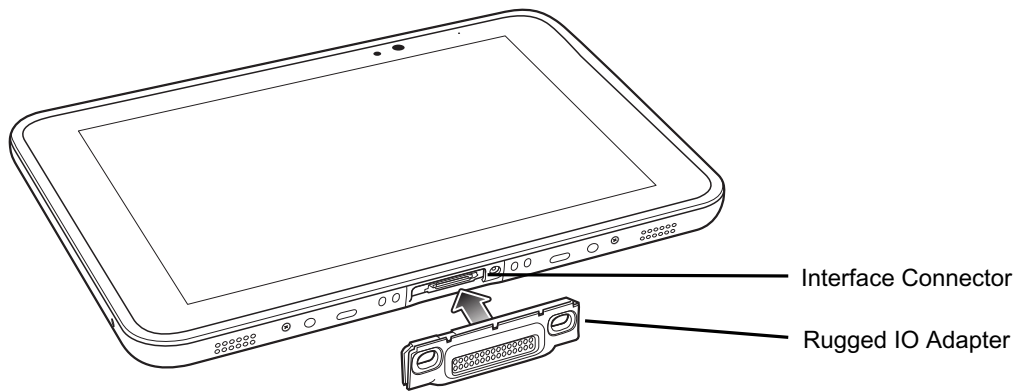
2. If installing the Rugged IO Adapter, pull the access cover away from the device until it separates from the device.

Figure 26 Remove Access Door



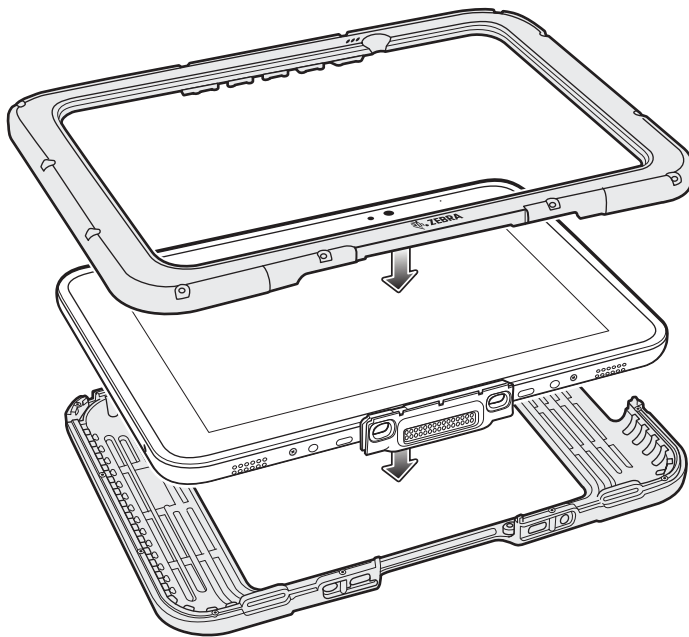
3. Insert the Rugged IO Adapter onto the device.

Figure 27 Insert Rugged IO Adapter



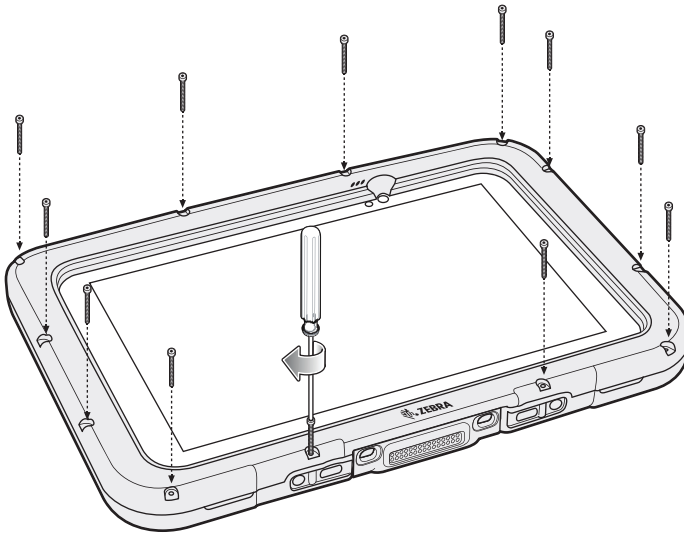
4. Remove the Rugged Frame and screws from box.
5. Separate the top and bottom sections of the Rugged Frame.
6. Place the bottom section on a flat surface.

Figure 28 Protective Boot Assembly



7. Place the device into the bottom section.
8. Align the top section over the bottom section.
9. Press the top section down onto the bottom section.
10. Using a T6 Torx screwdriver, secure the Rugged Frame together using the provided M1.6 Torx screws.

Figure 29 Secure 8.4" Rugged Frame



11. Torque the screws to 12 N-cm.

Expansion Back

The Expansion Backs provide data capture and or Power Pack slot for the device.

Installation

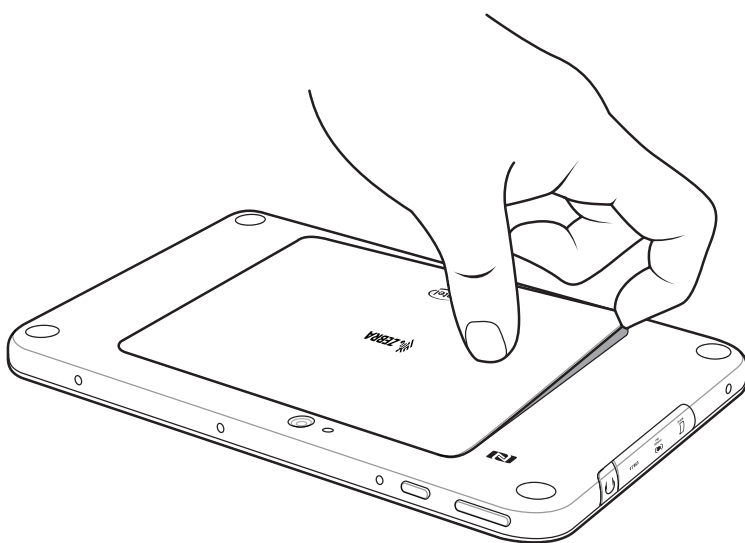
To install an Expansion Back:



CAUTION: Remove power before installing the Expansion Back.

1. Power off the device.
2. Remove battery cover and store in safe place.

Figure 30 Remove Battery Cover



3. On 8.4" version only, remove rubber gasket.

Figure 31 Remove Rubber Gasket

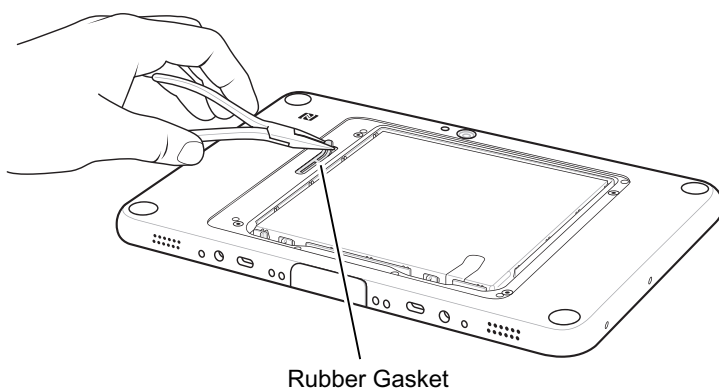
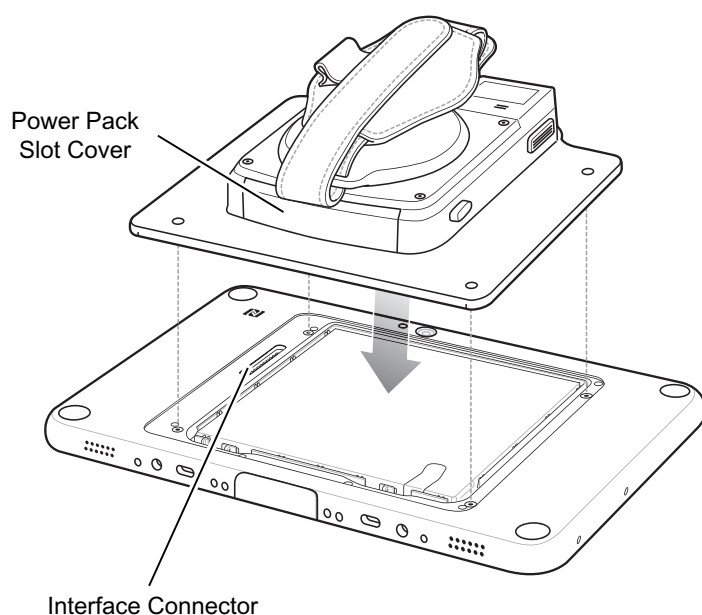
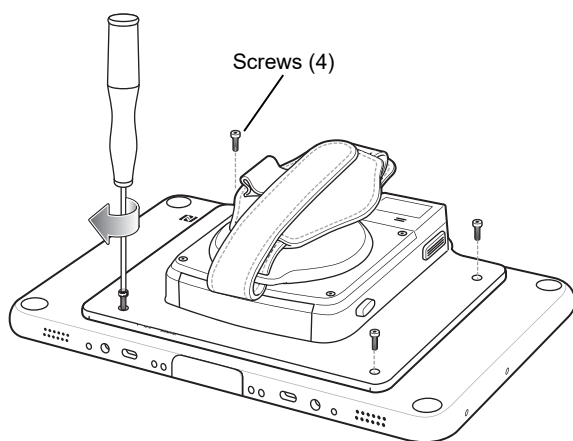


Figure 32 Align Expansion Back with 8.4" Configuration



4. Align expansion back with device. Ensure that the power pack slot cover is aligned with the bottom of the device and the interface connector on expansion back aligns with interface connector on device.

Figure 33 Secure Screws



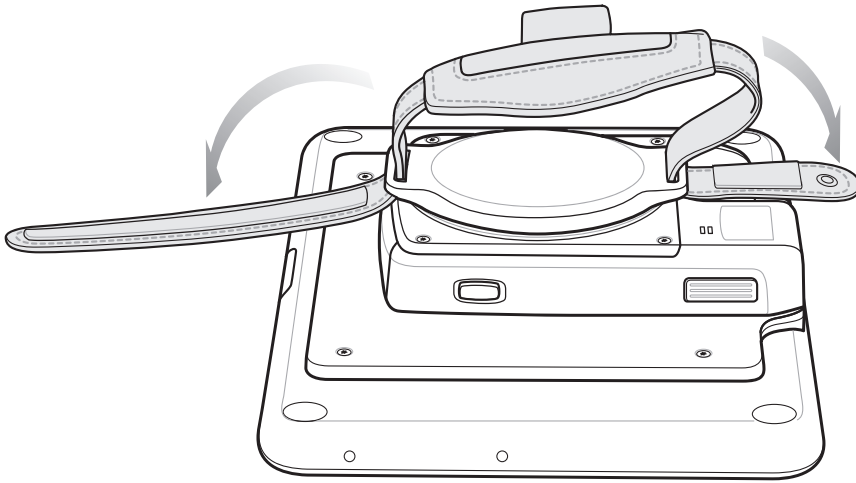
5. Using a T6 Torx screwdriver, secure expansion back to device using four screws. Torque to 14 n-cm.

Replacement Hand Strap

To replace the hand strap:

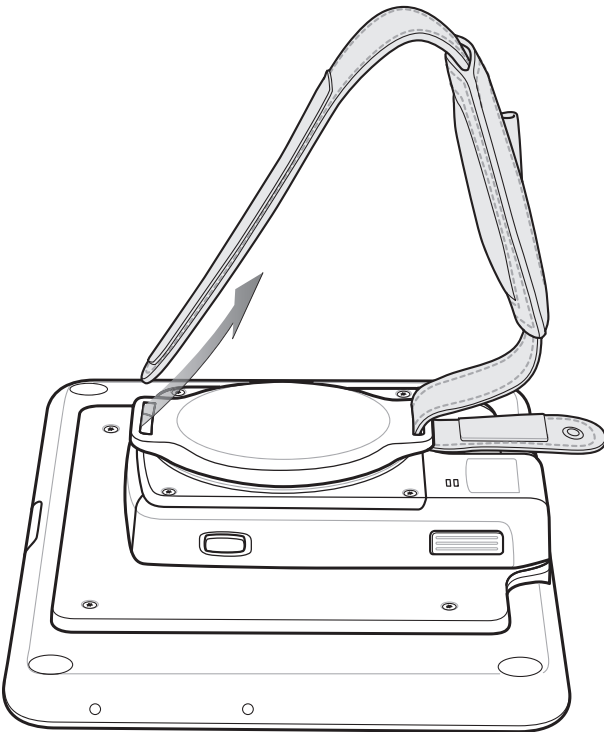
1. If the Power Pack is installed, remove the Power Pack.
2. Rotate the disk so that the strap end without the eyelet is aligned with the Power Pack opening.
3. Open both ends of the hand strap.

Figure 34 Open Straps



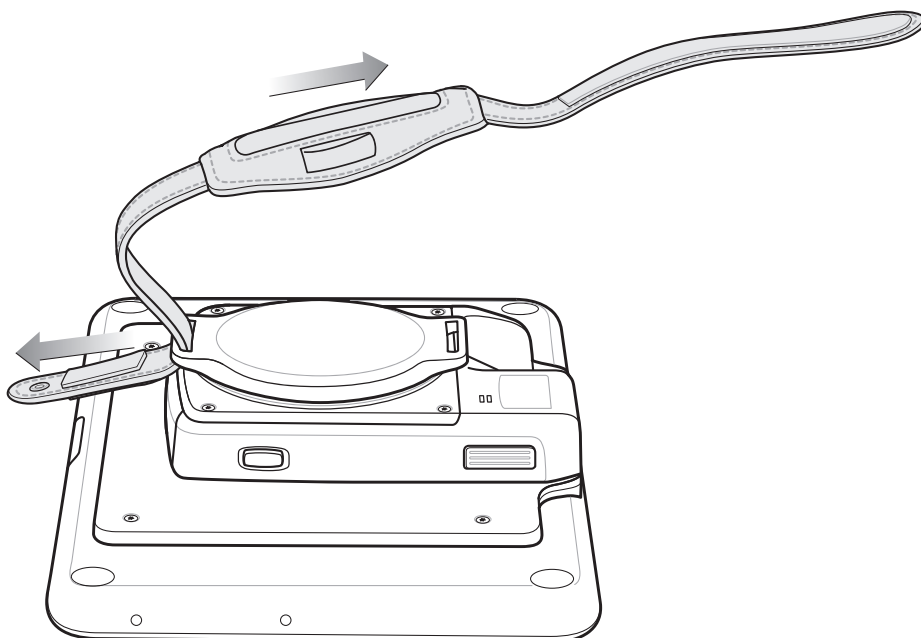
4. Pull the strap end without the eyelet through the slot on the Expansion Back.

Figure 35 Remove Strap



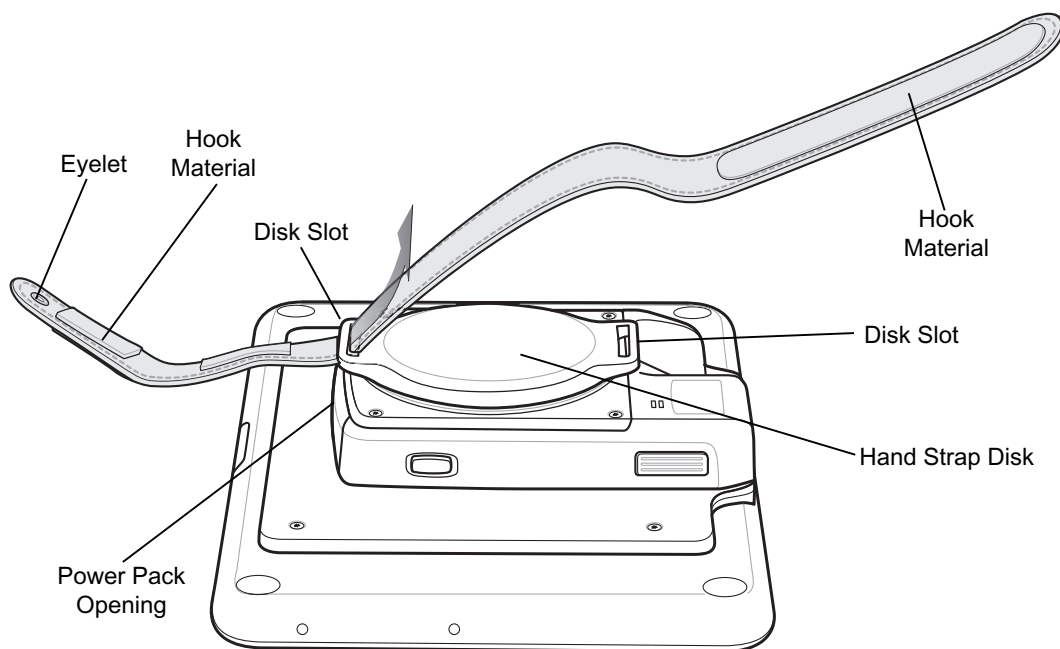
5. Rotate the disk 180°.
6. Slide the pad off the hand strap.
7. Pull the eyelet end through the slot on the Expansion Back.

Figure 36 Pull Eyelet End



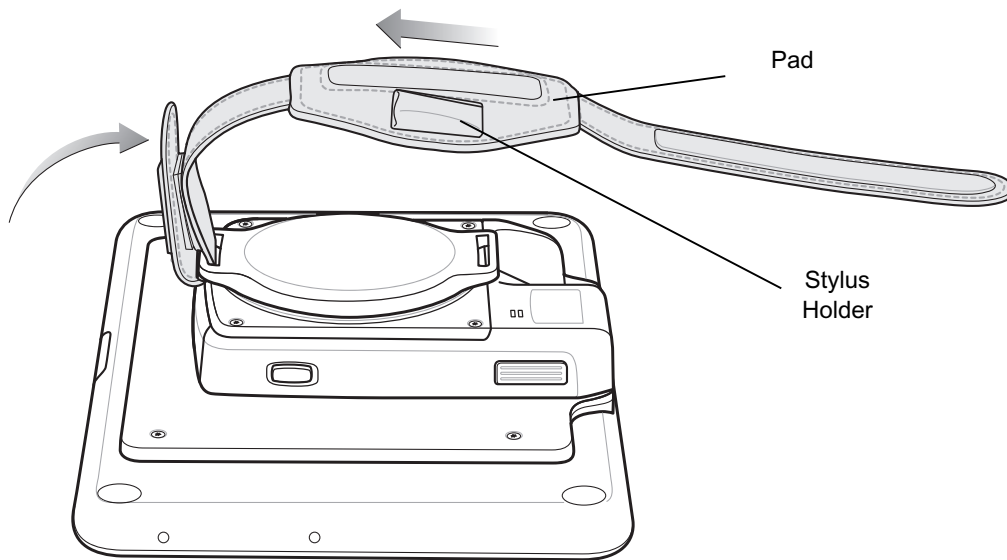
8. Remove pad from new replacement hand strap.
9. Rotate the disk so that one of the slots is aligned with the Power Pack opening.
10. Feed the new hand strap through the slot at the Power Pack opening.

Figure 37 Feed New Strap



11. Slide pad onto hand strap with the stylus holder facing up.
12. Fold the eyelet end of the strap up and press hook and loop material together.

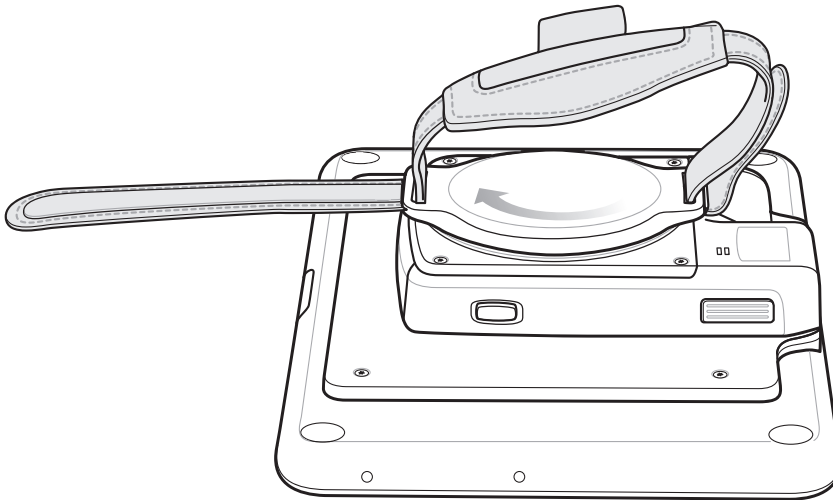
Figure 38 Secure Eyelet End



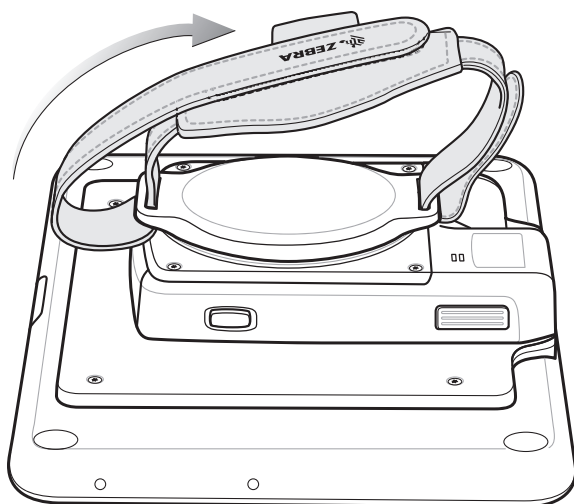
13. Rotate disk 180° so that the empty slot is aligned with the Power Pack opening.

14. Feed strap through the slot.

Figure 39 Feed Strap

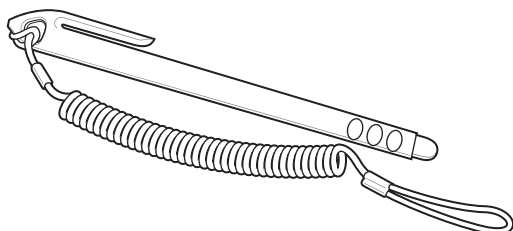


15. Fold the end of the strap up and press hook and loop material together.

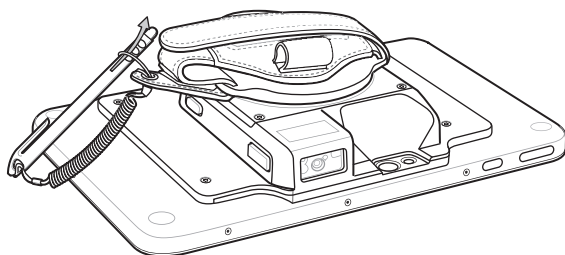
Figure 40 Secure Strap

Attaching the Stylus to the Expansion Back

The Expansion Backs provide a holder for the stylus. To install the stylus onto the Expansion Back:

Figure 41 Passive Stylus

1. Insert the loop of the tether through the eyelet on the hand strap of the Expansion Back.
2. Feed the stylus through the loop.

Figure 42 Feed Stylus through Loop

3. Pull the stylus all the way through the loop.
4. Slide the stylus into the holder for storing the stylus.

Removal

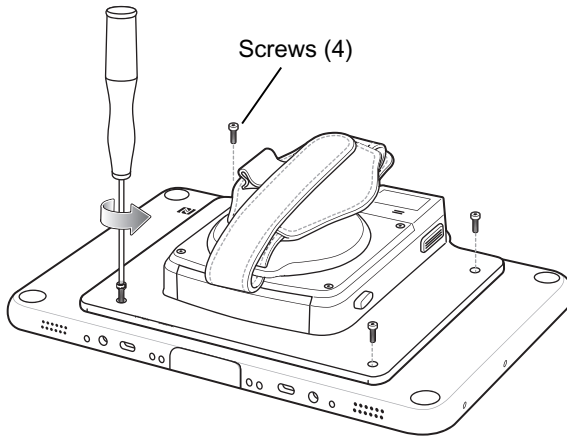
To remove an Expansion Back:



CAUTION: Remove power before removing the Expansion Back.

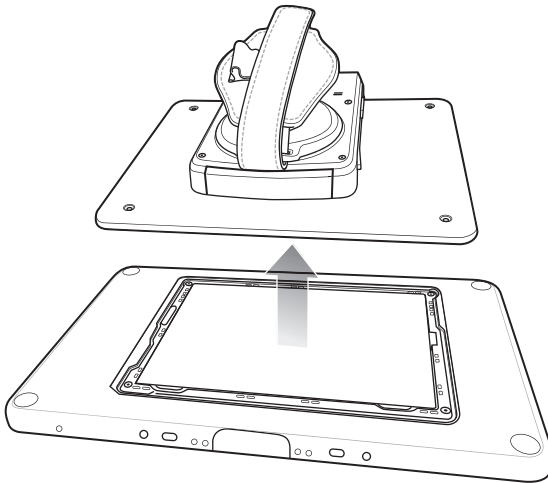
1. Power off the device.
2. Using a T6 Torx screwdriver, remove four screws securing expansion back to device.

Figure 43 Remove Screws



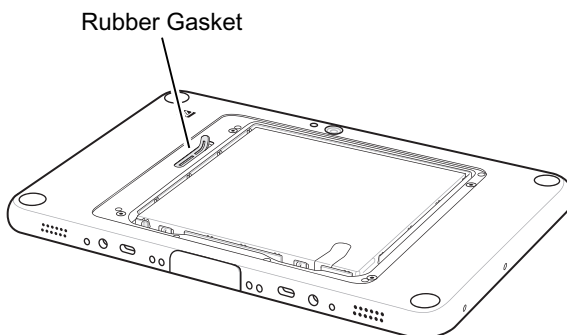
3. Lift Expansion Back off device.

Figure 44 Lift Expansion Back



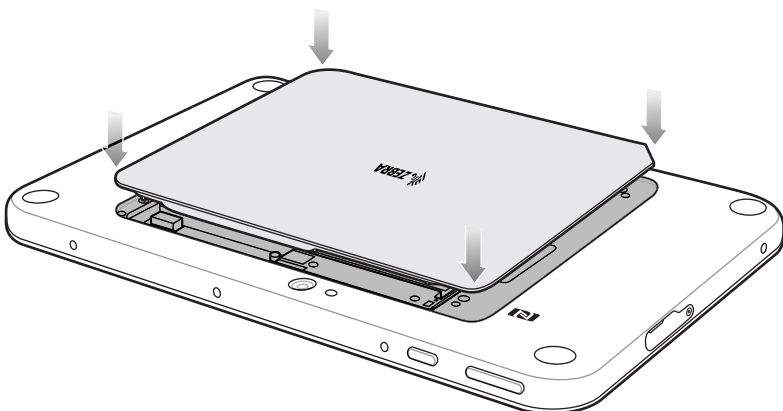
4. On 8.4" version only, replace rubber gasket removed during installation.

Figure 45 Rubber Gasket Replacement



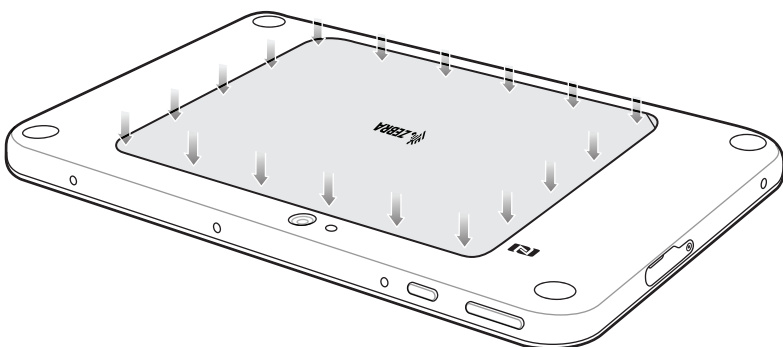
5. Replace battery cover.

Figure 46 Align Battery Cover



6. Carefully press down around the edge of the cover. Make sure that the cover is seated properly.

Figure 47 Press Down on Battery Cover



7. Press the Power button to turn on the device.

Software

Introduction

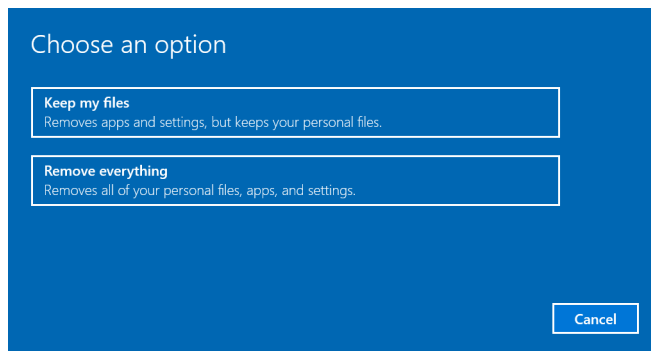
This chapter provides instructions on how to reset and update the tablet.

Factory Reset

Restores Windows to original factory settings. To reset the device:

1. Place the device in a Charging or Communications and Charging cradle.
2. Touch **Settings** > **Update and security** > **Recovery**.
3. Under **Reset this PC**, touch **Get started**.

Figure 1 Reset Option Dialog Box



4. Touch **Keep my files** to remove all apps and settings but keep all personal files or **Remove everything** to remove all personal files, apps, and settings.



CAUTION: Removing everything erases all data, including your account configuration, applications, music, pictures and files. Make sure that you back up all the required data before you proceed.

5. Touch **Next** until the reset process begins. The process can take an hour or longer.
6. When the reset is complete the Windows setup process begins. See [Initial Windows Setup](#) for information.

Operating System and Firmware Updates

System Update packages contain either partial or complete updates for the firmware and operating system. Zebra distributes the System Update packages on the Zebra Support & Downloads web site.

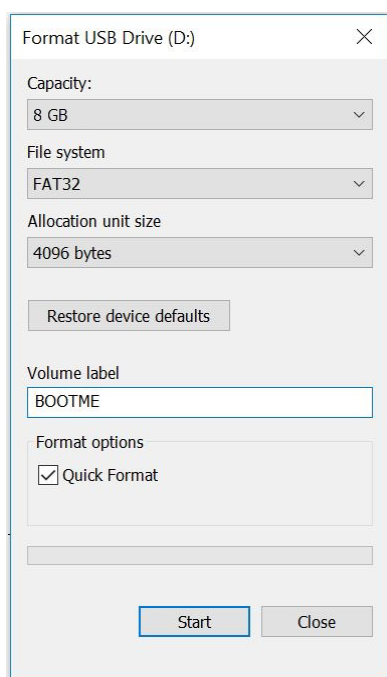
1. Navigate to the Zebra Support & Downloads web site, <http://www.zebra.com/support>.
2. Download the appropriate System Update package to a host computer and unzip the file.

Creating an Installation USB Flash Drive

Follow these steps to create a bootable installation on a USB flash drive.

1. Insert an 8 GB or larger USB flash drive into a host computer.
2. From **Windows Explorer** right click on the USB flash drive and select **Format**.

Figure 2 Format Dialog Box



3. In the **File system** drop down, select **FAT32**.



CAUTION: Only FAT32 format is recognized by the system BIOS.

4. In the **Volume label** text box, enter BOOTME.
5. Click **Start**. A warning appears; click **OK** to proceed.
6. Click **OK** when the format complete and confirmation dialogs appear.
7. Using **Windows Explorer**, copy the System Update package files you downloaded onto the flash drive.
8. Ensure that all the files copied successfully and then safely unmount the USB drive.

Performing the System Updates

Setup Using a Communication Dock

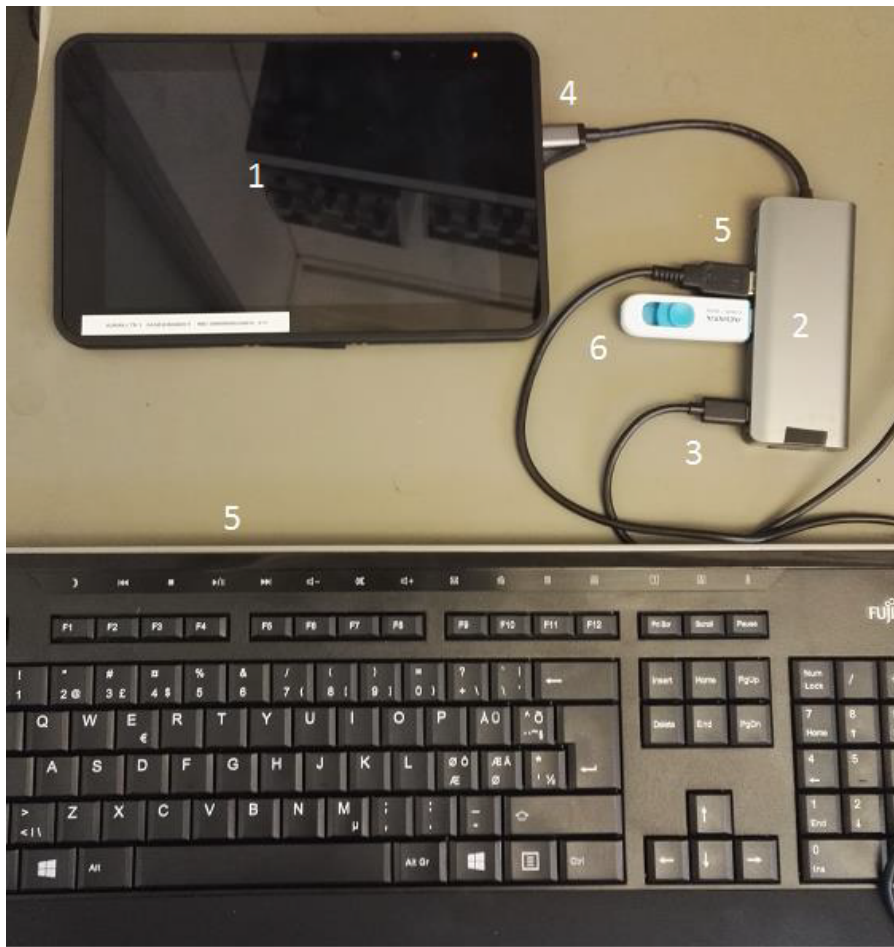
The following is required:

- USB keyboard
 - Communication Dock with power supply.
 - Bootable installation USB flash drive (the one you created in the previous step).
1. Connect power to the Communication Dock.
 2. Insert the tablet into the Communication Dock.
 3. Plug the USB keyboard connector into a USB port on the back of the dock.
 4. Plug the bootable USB flash drive into the tablet USB port.

Setup Using a USB Hub

The following is required:

- USB keyboard
- USB-C Hub with external power supply
- USB cable/charger
- Bootable installation USB flash drive (the one you created in the previous step)

Figure 3 Setup Using USB Hub

The picture illustrates the following:

1. Device.
2. USB-C hub with external power source.
3. USB-C charger connected to USB-C port.
4. USB-C hub connected to device USB-C port.
5. USB keyboard connected to USB-C hub.
6. Bootable installation USB stick connected to USB-C hub.

Initiating the Update

To initiate the update:



1. Re-boot the device; when the Zebra logo displays, press the ESC key repeatedly until the boot screen appears.
2. On the keyboard, press the right arrow key to highlight **Boot Manager**.

3. Press **ENTER**. The following displays:

- **Windows Boot Manager**
- **EFI USB Device.**



NOTE: If Boot Manager does not display EFI USB Device (USB flash drive type), confirm that the USB is formatted as FAT32 and that bootmgr.efi file is visible on the USB drive. Re-seat the USB drive in the USB port and try again.

4. Using the keyboard, use the arrow keys to highlight **EFI USB Device** then press **ENTER**. The tablet boots to WinPE and installs operating system and BIOS updates. Installation takes approximately 9 minutes.
5. When complete, the device boots and the Windows setup process initiates. See [Initial Windows Setup](#).
6. After Windows setup is complete, in the taskbar, touch , then touch , then touch **Eject (drive name)**.
7. After the message **Safe To Remove Hardware** message appears, remove the flash drive from the tablet.

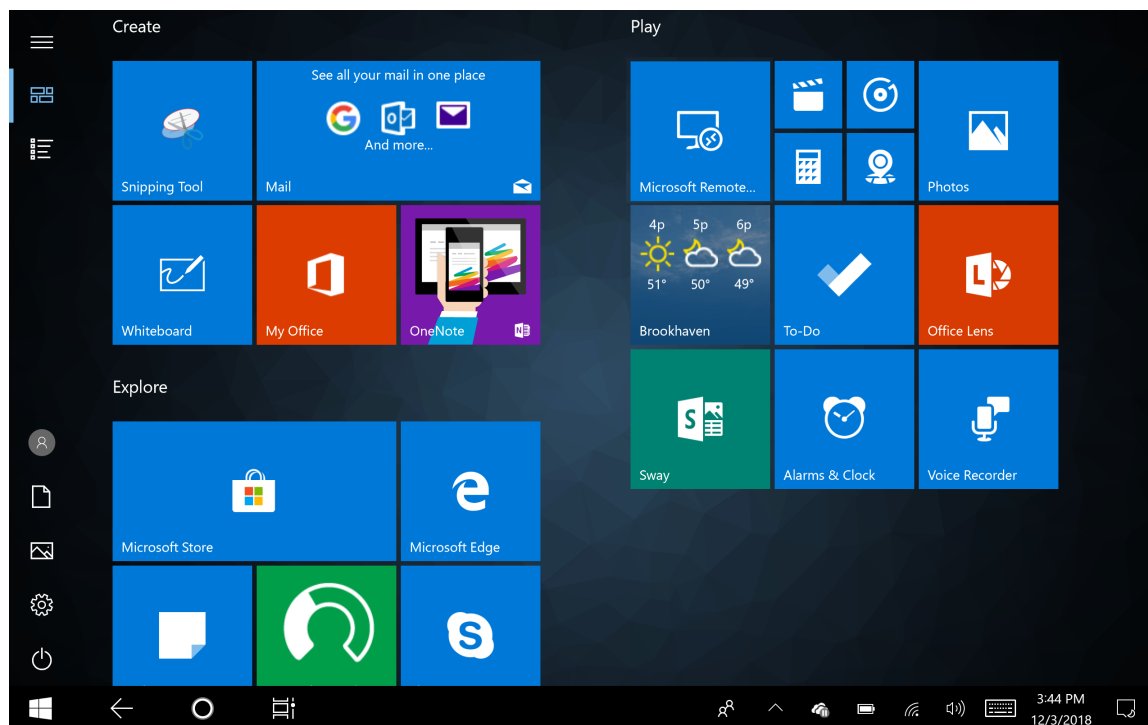
Initial Windows Setup

After performing a factory reset or updating the tablet firmware or operating system, the Windows setup process begins.

The Cortana welcome screen appears and then a series of windows prompt you for information regarding your preferences including Keyboard Layout, Network Setup, Account Name, Security, and Privacy.

Next, a short configuration process occurs after which the Windows home screen displays.

Figure 4 Windows Home Screen



Any apps that you installed from the Windows Store prior to reset, are automatically reinstalled using your mobile broadband or Wi-Fi internet connection when connected; apps installed from other sources are not. After the process is complete a list of apps removed during reset is created on the desktop.

Checking Versions

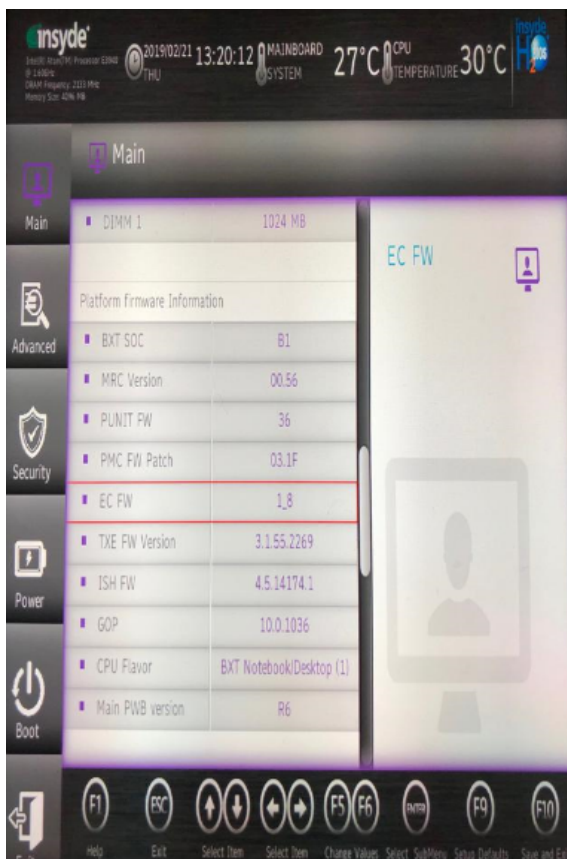
You may check the versions for:

- EC FW (firmware)
- BIOS
- Operating system.

Check EC FW Version

1. Setup tablet with USB hub or cradle. See [Setup Using a Communication Dock](#) and [Setup Using a USB Hub](#).
2. Reboot the tablet and when the logo appears, press ESC key on keyboard.
3. Use the keyboard arrow keys to select **Setup Utility**.
4. Press Enter key. The BIOS screen appears.

Figure 5 BIOS Screen



5. Check **EC FW** field to view the version number:
e.g. EC FW = 1_8.
6. Press ESC key to exit the BIOS screen.
7. Use the arrow keys to select **Continue**.

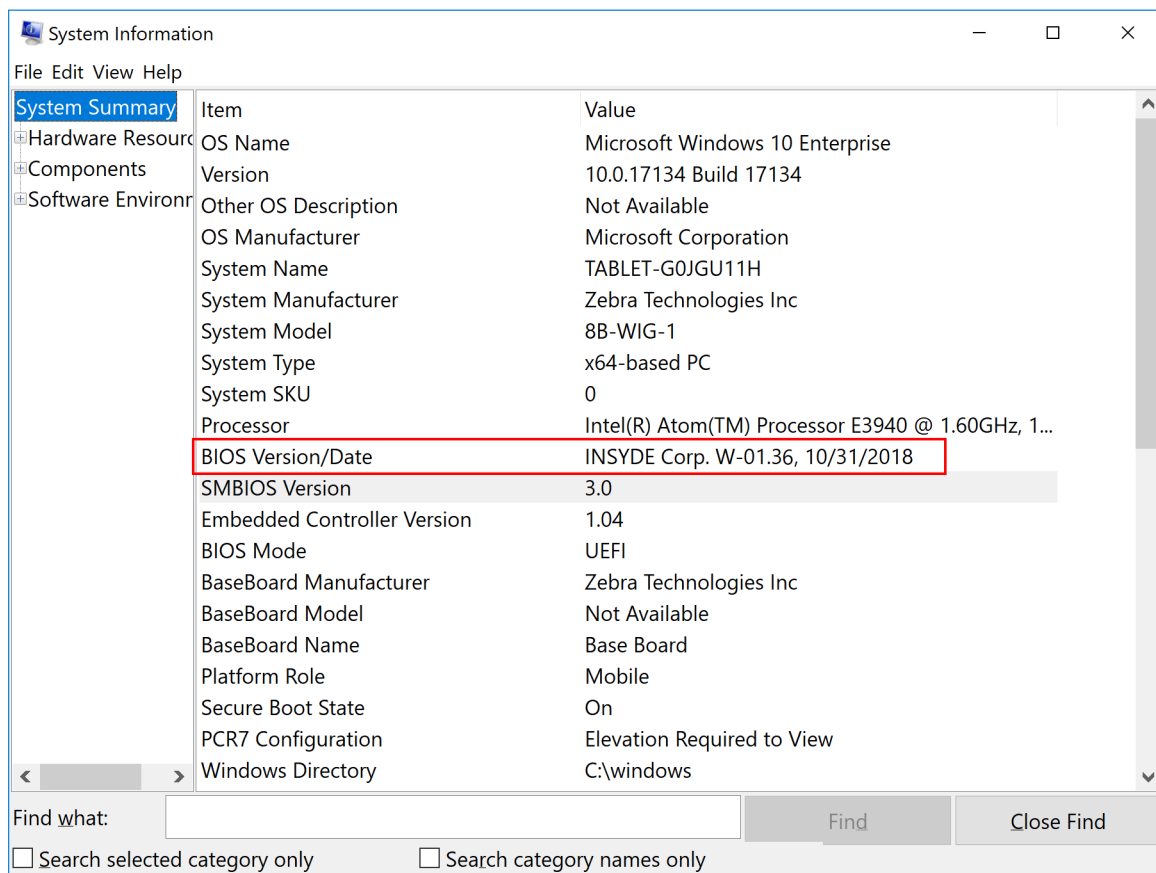
- Press Enter to reboot the tablet.

Check BIOS Version

To check the current version of the BIOS:

- In the Cortana search field, type `cmd`, then touch **Command Prompt Desktop App** to open.
- In the Command window, type `msi nfo32`.
- Press Enter key. The **System Information** window appears. The BIOS version displays in the **BIOS Version/Date** field.

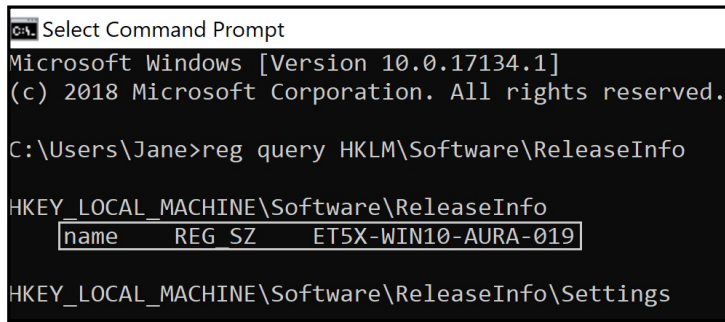
Figure 6 System Information Window



Checking Operating System Version

To check the current operating system version:

- In the Cortana search field, type `cmd`, then touch **Command Prompt Desktop App** to open.
- In the Command window, type `reg query HKLM\Software\ReleaseInfo`. The release information appears on the screen.

Figure 7 Release Information

```

C:\Users\Jane>reg query HKLM\Software\ReleaseInfo

HKEY_LOCAL_MACHINE\Software\ReleaseInfo
    name      REG_SZ      ET5X-WIN10-AURA-019

HKEY_LOCAL_MACHINE\Software\ReleaseInfo\Settings

```

Zebra Barcode Scanning Resources

To obtain Zebra scanning resources such as applications, SDKs, drivers, and RFID software see the Zebra Barcode Scanning Software web page:


<http://www.zebra.com/us/en/products/software/scanning-systems.html>.

Application Installation

Install programs and apps from the Internet, or a local network. Make sure you trust the publisher of the app and the website.

In your web browser, tap or click the link to the app. To install it now, tap **Open** or **Run**, and then follow the instructions on your screen. To install the app later, tap **Save** or **Save as** to download it.

Windows Store

To obtain apps from the Windows Store, select the Store tile  from the Start menu or taskbar.

Maintenance and Troubleshooting

Introduction

This chapter includes instructions on cleaning and storing the tablet, battery maintenance and provides troubleshooting solutions for potential problems during tablet operations.

Maintaining the Device

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

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

Battery Safety Guidelines

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non commercial environment.
- Follow battery usage, storage, and charging guidelines found in this guide.
- Improper battery use may result in a fire, explosion, or other hazard.
- To charge the mobile device battery, the battery and charger temperatures must be between +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 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 hypochlorite¹ (see important note below), or mild dish soap.



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

¹When 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.



NOTE: If using the tablet in a healthcare environment, do not use PDI Sani-Hands/ PDI Super Sani Cloth Germicidal Wipes to clean the device.

Device Cleaning Instructions

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



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

Special Cleaning Notes

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

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



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

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

Cleaning Materials Required

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

Cleaning Frequency

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

Cleaning 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

Table 1 *Troubleshooting the tablet*

Problem	Cause	Solution
Tablet does not turn on.	Battery not charged.	Charge the battery in the tablet.
	Battery not installed properly.	Ensure battery is installed properly.
	System crash.	If the tablet does not turn on, perform a cold boot. See Performing a Cold Boot on page 16 .

Table 1 Troubleshooting the tablet (Continued)

Problem	Cause	Solution
Battery did not charge.	Battery failed.	Replace battery. If the tablet still does not operate, try a cold boot. See Performing a Cold Boot on page 16 .
	Tablet removed from cradle before charging completed.	Insert the tablet into the cradle and begin charging. The battery fully charges in approximately four hours.
	Ambient temperature of the cradle is too warm or too cold.	The ambient temperature must be between 0 °C and 40 °C (32 °F and 104 °F).
Unable to connect to the wireless network.	SIM card is invalid.	Ensure that the micro SIM card is valid and workable if using a mobile network.
	Not within range of network.	Move within the network's service range and the signal strength is good.
	device is in airplane mode.	Ensure that device is not in Airplane mode.
The multi-touch screen responds slowly or improperly.	Finger or screen is wet.	Ensure that your hands are clean and dry when touching the screen. Restart the tablet to try again.
Tablet turns itself off.	Tablet is inactive.	The tablet turns off after a period of inactivity. If the tablet is running on battery power.
	Battery is depleted.	Place the tablet in the cradle to re-charge the battery.
	The tablet's battery is low and it powers down to protect memory content.	Place the tablet in a cradle to re-charge the battery.
After selecting a link in a full-screen app (Tablet mode), a dialog box or app does not display.	The dialog box or app is hidden behind the full-screen app.	Touch  in the taskbar to view all running apps and select the dialog box or app.
Tablet clock is not synchronizing with local time after enabling the WAN radio.	Windows Time Services is not set properly.	Open Control Panel > Administrative Tools > Services > Windows Time . In the Startup Type drop-down list, select Automatic . In the Services status section, touch Start .

Charge Only Cradle

Table 2 *Troubleshooting the Charge only Cradle*

Symptom	Possible Cause	Solution
Battery is not charging.	Tablet was removed from cradle or cradle was unplugged from AC power.	Ensure cradle is receiving power. Ensure tablet is seated correctly. Confirm main battery is charging. The battery fully charges in approximately four hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The tablet is not fully seated in the cradle.	Remove and re-insert the tablet into the cradle, ensuring it is firmly seated.
	Ambient temperature of the cradle is too warm or too cold.	Move the cradle to an area where the ambient temperature is between 0°C and 40°C (32°F and 104°F).

Communication and Charging Cradles

Table 3 *Troubleshooting the Communication and Charging Cradles*

Symptom	Possible Cause	Solution
Battery is not charging.	Tablet was removed from cradle or cradle was unplugged from AC power.	Ensure cradle is receiving power. Ensure tablet is seated correctly. Confirm main battery is charging. The battery fully charges in approximately four hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The tablet is not fully seated in the cradle.	Remove and re-insert the tablet into the cradle, ensuring it is firmly seated.
	Ambient temperature of the cradle is too warm or too cold.	Move the cradle to an area where the ambient temperature is between 0°C and 40°C (32°F and 104°F).
During communication, no data transmits, or transmitted data was incomplete.	Tablet removed from cradle during communications.	Replace tablet in cradle and retransmit.
	Incorrect cable configuration.	Ensure that the correct cable configuration.
Tablet does not lock into cradle.	Access cover closed.	Open tablet access cover and re-insert tablet onto cradle.
	Tablet with Rugged Frame and IO Adapter does not mate with Communication and Charging Cradle.	Use Rugged Communication and Charging Cradle.

Expansion Backs

Table 4 *Troubleshooting the Expansion Backs*

Symptom	Possible Cause	Solution
Aiming laser does not display when pressing trigger.	On 8" tablet, did not remove rubber gasket during installation.	See system administrator to re-install Expansion Back.
	Tablet is in suspend mode.	Press power button to wake the tablet.
	Battery is low.	If the scanner stops emitting a laser beam upon a scan button press, check the battery level. When the battery is low, the scanner shuts off before the tablet low battery condition notification. Note: If the scanner is still not reading bar codes, contact system administrator.
Laser comes on, but scanner does not decode the bar code.	Tablet is not programmed for the bar code.	Ensure the application is programmed to read the type of bar code being scanned. Contact system administrator.
	Unreadable bar code.	Check the symbol to ensure it is not defaced. Try scanning another bar code of the same type.
	Distance between exit window and bar code is incorrect.	Move the tablet within proper scanning range.
	Scanning application is not loaded.	Load a scanning application. See the system administrator.

4-Slot Charge Only Cradle

Table 5 *Troubleshooting the 4-Slot Charge only Cradle*

Symptom	Possible Cause	Solution
Tablet battery is not charging.	Tablet was removed from cradle or cradle was unplugged from AC power.	Ensure cradle is receiving power. Ensure tablet is seated correctly. Confirm main battery is charging. The battery fully charges in approximately four hours.
	Battery is faulty.	Verify that other tablet batteries charge properly. If so, replace the faulty battery.
	The Tablet is not fully seated in the cradle.	Remove and re-insert the tablet into the cradle, ensuring it is firmly seated. Ensure that an insert is not used with tablet with Rugged Frame. Ensure that an insert is used with tablet without Rugged Frame.
	Ambient temperature of the cradle is too warm or too cold.	Move the cradle to an area where the ambient temperature is between 0°C and 40°C (32°F and 104°F).

Charging Adapter

Table 6 *Troubleshooting the Charging Adapter*

Symptom	Possible Cause	Solution
Tablet battery is not charging.	Tablet was removed from adapter or adapter was unplugged from AC power.	Ensure adapter is receiving power. Ensure tablet is seated correctly. Confirm tablet is charging. The battery fully charges in approximately four hours.
	Battery is faulty.	Verify that other tablet batteries charge properly. If so, replace the faulty battery.
	The tablet is not fully seated in the adapter.	Remove and re-insert the tablet into the adapter, ensuring it is firmly seated.
	Ambient temperature of the adapter is too warm or too cold.	Move the adapter to an area where the ambient temperature is between 0°C and 40°C (32°F and 104°F).

4-Slot Battery Charger

Table 7 *Troubleshooting the 4-Slot Battery Charger*

Symptom	Possible Cause	Solution
Power Pack Charging LED does not light when inserted.	Power Pack is not correctly seated.	Remove and re-insert the spare battery into the charging slot, ensuring it is correctly seated.
Power Pack is not charging.	Power Pack was removed from charger or charger was unplugged from AC power.	Ensure charger is receiving power. Ensure Power Pack is seated correctly. Confirm Power Pack is charging. The Power Pack fully charges in approximately four hours.
	Power Pack is faulty.	Verify that other Power Pack charge properly. If so, replace the faulty Power Pack.
	The Power Pack is not fully seated in the charger.	Remove and re-insert the Power Pack into the charger, ensuring it is firmly seated.
	Ambient temperature of the charger is too warm or too cold.	Move the charger to an area where the ambient temperature is between 0°C and 40°C (32°F and 104°F).

Specifications

Technical Specifications

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

Table 8 Technical Specifications

Item	Description
Physical and Environmental Characteristics	
Dimensions	228 mm W x 150 mm H x 12.7 mm D (9.0 in. L x 5.9 in. W x 0.5 in. H)
Weight	570 g (1.26 lbs)
Display	8.4 in (diagonal) 2560 x 1600 WQXGA with backlight, 720 NITS
Touch panel	Capacitive 10 point multi-touch
Keyboard Options	Virtual, Bluetooth, or USB
Expansion	Integrated connector to easily add accessories
Connectivity	Docking connector: USB 3.0, charging; rugged connector for use with rugged dock Interfaces.
Notification	LED flash; barcode decode, and camera LED indicator
Audio	Stereo speakers and dual front-facing microphones
Battery	3,300 mAh rechargeable lithium polymer; user replaceable Optional hot swappable secondary battery (3,400 mAh @ 7.2 VDC (24.4 Whr).
Performance Characteristics	
CPU	Intel Atom® 3940 (Quad-core). 1.6 GHz (Turbo Frequency = 1.8 GHz) Frequency supports 64 bit OS.
Operating System	Windows 10 IoT Enterprise
Memory	4GB LPDDR4 RAM; 64 GB eMMC Flash; microSDXC card slot
Data Capture	
Front Camera	2 MP 1080p full HD optimized for video and low lighting conditions.
Rear Camera	Image capture: 8 MP auto-focus color camera with user controllable LED flash, illumination; photographs, video, signatures and documents.

Table 8 Technical Specifications (Continued)

Item	Description
Video	1080p (Full HD, 1920 x 1080), Frame rate = 30fps
Scanning	Optional RS507/RS507x Hands-free Imager Optional RS600 Ring Scanner Optional CS4070 Scanner Optional SE4710 Expansion Back Optional SE4750 Expansion Back
User Environment	
Operating Temperature	-20° C to +50° C (-4° F to 122° F)
Storage Temperature	-20° C to +60° C (-4° F to 140° F)
Battery Charging Temperature	0° C to +60° C (32° F to 113° F)
Humidity	10% to 90% RH (non condensing)
Drop Specification	Standard: 1 m (3.28 ft.) drop to concrete without rugged frame With optional rugged frame: 1.8 m (5.9 ft.) to concrete per MIL STD 810G With optional expansion back: 1 m (3.28 ft.) to plywood per MIL STD 810G With optional expansion back and rugged frame: 1.2 m (4 ft.) to plywood per MIL STD 810G
Vibration	Random: 0.02 ² /Hz, 20 Hz to 2 khz 4g RMS 1 hour per axis
Environmental Sealing	IP65
ESD	+/-15kVdc air discharge +/-8kVdc direct discharge +/-8kVdc indirect discharge

Table 8 Technical Specifications (Continued)

Item	Description
WWAN Wireless Data Communications	
	Global LTE North America: AT&T LTE; Verizon LTE
WWAN Security	801.1X (WEP Encryption) with EAP-SIM, EAP-AKA, EAP-AKA'
WLAN Wireless Data Communications	
WLAN radio	802.11 a/b/g/n/ac/r/k/v; dual band 2x2 MIMO for transmit and receive
Output Power	125mW (max) U.S. and International. Actual power depends on regulatory rules and certification agency
Frequency Bands	2.4G/5G
Operating Channels	Chan 1 - 13 (2412 - 2472 MHz), Chan 36 - 165 (5180 - 5825 MHz) Channel Bandwidth: 20, 40, 80 MHz Actual operating channels/frequencies depend on regulatory rules and certification agency.
Antenna	Dual band antennas for 2x2 MIMO
WLAN Security	WPA-2 Personal (AES Encryption) WPA2-Enterprise (AES Encryption): PEAP, Smart Card, or other Certificate with EAP-MSCHAPv2, Smart Card or Other Certificate, EAP-TTLS with PAP, CHAP, MS CHAP, MS CHAPv2 802.1X (WEP Encryption): PEAP, Smart Card, or other Certificate with EAP-MSCHAPv2, Smart Card or Other Certificate, EAP-TTLS with PAP, CHAP, MS CHAP, MS CHAPv2
WPAN Wireless Data Communications	
Bluetooth	Class 1, Bluetooth 4.2(Bluetooth Smart)
Near Field Communication	P2P: ISO 18092 Reader/Writer: ISO 14443 –A-B, MIFARE, FeliCa®, ISO 15693, NFC Forum Tag Type 1 to 4 Card emulation: ISO 14443 –A-B, MIFARE, FeliCa RF
GNSS	GNSS supports GPS, Galileo, and Glonass.
Sensors	
Gyroscope	Maintains orientation based on principles of conservation of angular momentum
Motion Sensor	3-axis accelerometer that enables motion-sensing applications for dynamic screen orientation.
Ambient Light Sensor	Automatically adjusts display brightness and display backlight to maximize power efficiently.
Electronic Compass	Independent — does not depend on GPS

Table 8 Technical Specifications (Continued)

Item	Description
Peripherals and Accessories	
Accessories	See Accessories for list of accessories.
Printers	Supports extensive line of Zebra approved printers.

Table 9 Expansion Back Supported Symbolologies

Bar Code Type	Symbolologies
1D	Bookland EAN, Chinese 2 of 5, Codabar, Code 11, Code 128, Code 32, Code 39, Code 93, Discrete 2 of 5, EAN-8, EAN-13, GS1-128, Interleaved 2 of 5, Inverse 1D, ISBN-128, ISSN EAN, Korean 2 of 5, MSI, Matrix 2 of 5, Trioptic Code 39, UCC Coupon Code, UPCA, UPCE, UPCE1.
2D	Aztec, Aztec Inverse, Composite AB, Composite C, Data Matrix, Data Matrix Inverse, Maxicode, Micro PDF417, Micro QR, PDF417, QR Code, QR Code Inverse, Han Xin, Han Xin Inverse
Postal	Australian Postal, Japan Postal, UK Postal, US Planet, US Postnet, Netherlands KIX Code, USPS 4CB/One Code/Intelligent Mail, UPU FICS Postal

SE4710 Expansion Back Decode Range

Table 10 SE4710 Decode Ranges

Bar Code Type	Near Distance	Far Distance
	Typical	Typical
4 mil Code 39	3.3 in / 8.4 cm	8.8 in / 22.4 cm
5 mil Code 128	2.8 in / 7.1 cm	8.2 in / 20.8 cm
5 mil Code 39	2.0 in / 5.08 cm	13.5 in / 34.3 cm
5mil PDF417	3.1 in / 7.9 cm	8.4 in / 21.3 cm
10 mil Data Matrix	2.9 in / 7.4 cm	10.1 in / 25.7 cm
*Limited by width of bar code in field of view. Note: Photographic quality bar code at 15° tilt pitch angle under 30 fcd ambient illumination.		

Table 10 SE4710 Decode Ranges (Continued)

Bar Code Type	Near Distance	Far Distance
	Typical	Typical
100% UPCA	1.8 in / 4.6 cm*	26.0 in / 66.0 cm
20.0mil Code 39	2.0 in / 5.08 cm*	30.0 in / 76.2 cm
20 mil QR Code	3.2 in / 8.1 cm	15.8 in / 40.1 cm
*Limited by width of bar code in field of view. Note: Photographic quality bar code at 15° tilt pitch angle under 30 fcd ambient illumination.		

SE4750 Expansion Back Decode Range

SE4750 SR Decode Ranges

Table 11 SE4750 SR Decode Distances

Bar Code Type	Near Distance (in, typical)	Far Distance (in, typical)
3 mil Code 39	2.8	6.2
5 mil Code 128	2.3	8.7
5 mil PDF417	3.0	8.1
6.67mil PDF417	2.2	10.6
10 mil Data Matrix	2.4	10.6
100% UPCA	1.6*	23.0
15 mil Code 128	2.4*	25.2
20.0 mil Code 39	1.6*	36.3
* Limited by width of bar code in field of view. Note: Photographic quality bar code at 18° tilt pitch angle under 30 fcd ambient illumination.		

Accessory Specifications

Charge Only Cradle

Table 12 *Charge Only Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 7.9 cm (3.1 in.) Width: 14.2 cm (5.6 in.) Depth: 11.9 cm (4.7 in.)
Weight	550 g (19.4 oz)
Input Voltage	12 VDC
Power Consumption	60 watts
Operating Temperature	0°C to 40°C (32°F to 104°F)
Humidity	10% to 90% non-condensing
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 4 kV contact

Communication and Charging Cradle

Table 13 *Communication and Charging Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 7.9 cm (3.1 in.) Width: 14.2 cm (5.6 in.) Depth: 11.9 cm (4.7 in.)
Weight	550 g (19.4 oz)
Input Voltage	12 VDC
Power Consumption	60 watts
Operating Temperature	0°C to 40°C (32°F to 104°F)
Humidity	5% to 90% non-condensing
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 4 kV contact

Rugged Communication and Charging Cradle

Table 14 *Rugged Communication and Charging Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 7.9 cm (3.1 in.) Width: 14.2 cm (5.6 in.) Depth: 11.9 cm (4.7 in.)
Weight	550 g (19.4 oz)
Input Voltage	12 VDC
Power Consumption	60 watts
Operating Temperature	0°C to 40°C (32°F to 104°F)
Humidity	5% to 90% non-condensing
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 4 kV contact

Expansion Backs

Table 15 *8.4" Expansion Back Technical Specifications*

Feature	Description
Dimensions	Height: 137 mm (5.4 in.) Width: 157.5 mm (6.2 in.) Depth: 54 mm (2.1 in.)
Weight	246 g (8.7 oz)
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 60°C (-40°F to 158°F)
Humidity	5% to 95% non-condensing
Drop	1.2 m (4 ft) drop to plywood over concrete per MIL-STD 810G across operating temperatures with rugged frame.
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 4 kV contact

Table 16 8.4" SE4710 Expansion Back Technical Specifications

Feature	Description
Dimensions	Height: 137 mm (5.4 in.) Width: 157.5 mm (6.2 in.) Depth: 54 mm (2.1 in.)
Weight	273 g (9.6 oz)
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 60°C (-40°F to 158°F)
Humidity	5% to 95% non-condensing
Drop	1.2 m (4 ft) drop to plywood over concrete per MIL-STD 810G across operating temperatures with rugged frame.
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 4 kV contact

Table 17 8.4" SE4750 Expansion Back Technical Specifications

Feature	Description
Dimensions	Height: 137 mm (5.4 in.) Width: 157.5 mm (6.2 in.) Depth: 54 mm (2.1 in.)
Weight	273 g (9.6 oz)
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 60°C (-40°F to 158°F)
Humidity	5% to 95% non-condensing
Drop	1.0 m (3.28 ft) drop to plywood over concrete per MIL-STD 810G across operating temperatures with rugged frame.
Electrostatic Discharge (ESD)	+/- 8 kV air +/- 4 kV contact

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