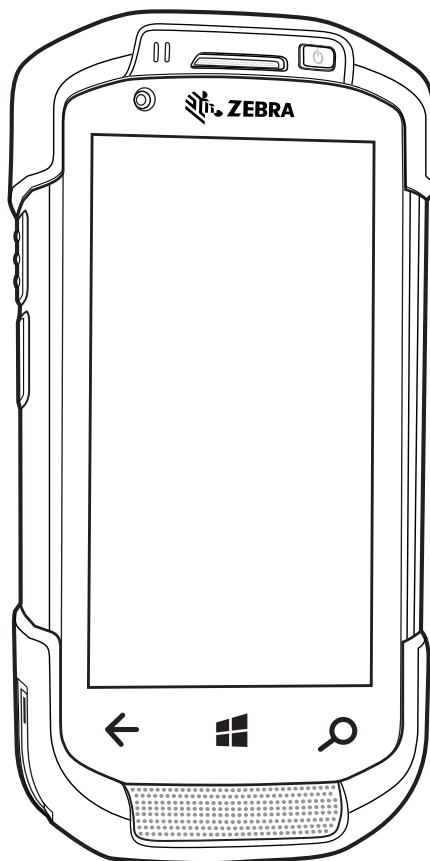




# TC70x



## Touch Computer

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**User Guide  
with Windows 10 IoT Mobile  
Enterprise**





# **TC70X TOUCH COMPUTER USER GUIDE WITH WINDOWS 10 IOT MOBILE ENTERPRISE**

MN-002668-01

Rev. A

September 2016

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## Warranty

For the complete Zebra hardware warranty statement, go to: <http://www.zebra.com/warranty>.



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## Revision History

Changes to the original guide are listed below:

Change	Date	Description
-01 Rev A	9/2016	Initial release.



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# ABOUT THIS GUIDE

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## Introduction

This guide provides information about using the TC70x touch computer running Microsoft Windows 10 IoT Mobile Enterprise and accessories.



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

---

## Documentation Set

The documentation set for the TC70x provides information for specific user needs, and includes:

- *TC70x Quick Start Guide for Windows 10 IOT Mobile Enterprise* - describes how to get the TC70x up and running.
- *TC70x User Guide for Windows 10 IOT Mobile Enterprise* - describes how to use the TC70x.
- *TC70x Integrator Guide for Windows 10 IOT Mobile Enterprise* - describes how to set up the TC70x and accessories.

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## Configurations



This guide covers the following configurations:

Configuration	Radios	Display	Memory	Data Capture Options	Operating System
TC700J	WLAN: 802.11 a/b/g/n/d/h/i/k/ac WPAN: Bluetooth v4.0 Low Energy	4.7" High Definition (1280 x 720) LCD	2 GB RAM / 16 GB Flash (SLC High Reliability Flash)	2D imager and integrated NFC	Windows 10 IoT Mobile Enterprise

---

## Software Versions

To determine the current software versions:

1. Swipe down from the top of the screen, and touch  **All settings** >  **System** > **About**.
2. Touch **More Info** button.
  - **Model** - Displays the model number.
  - **Software** - Displays the operating system type.
  - **Version** - Displays the software version number.
  - **Firmware Version Number** - Displays the Microsoft firmware version number.

---

## Chapter Descriptions

Topics covered in this guide are as follows:

- [Chapter 1, Getting Started](#) provides information on getting the TC70x up and running for the first time.
- [Chapter 2, Using the TC70x](#) provides information for operating the TC70x.
- [Chapter 3, Applications](#) provides information on using applications installed on the TC70x.
- [Chapter 4, Data Capture](#) provides information for capturing bar code data using the imager.
- [Chapter 5, Wireless](#) provides information on the various wireless options.
- [Chapter 6, Accessories](#) provides information for using the accessories for the TC70x.
- [Chapter 7, Maintenance and Troubleshooting](#) includes instructions on cleaning and provides troubleshooting solutions for potential problems during TC70x operation.
- [Appendix A, Technical Specifications](#) provides the technical specifications for the TC70x.

---

## Notational Conventions

The following conventions are used in this document:

- *Italics* are used to highlight the following:
  - Chapters and sections in this and related documents
  - Icons on a screen.
- **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
  - Button names on a screen.

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

---

## Icon Conventions

The documentation set is designed to give the reader more visual clues. The following graphic icons are used throughout the documentation set. These icons and their associated meanings are described below.



**WARNING!** The word **WARNING** with the associated safety icon implies information that, if disregarded, could result in death or serious injury, or serious product damage.



**CAUTION** The word **CAUTION** with the associated safety icon implies information that, if disregarded, may result in minor or moderate injury, or serious product damage.



**NOTE** NOTE contains information more important than the surrounding text, such as exceptions or preconditions. They also refer the reader elsewhere for additional information, remind the reader how to complete an action (when it is not part of the current procedure, for instance), or tell the reader where something is located on the screen. There is no warning level associated with a note.

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## Related Documents

- *TC70x Quick Start Guide for Windows 10 IoT Mobile Enterprise*, p/n MN-002827-xx.
- *TC70x Regulatory Guide for Windows 10 IoT Mobile Enterprise*, p/n MN-002884-xx.
- *TC70x Integrator Guide for Windows 10 IoT Mobile Enterprise*, p/n MN-002885-xx.

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

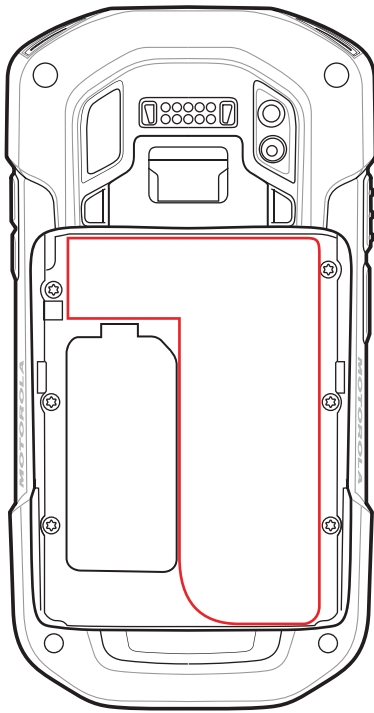
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## Service Information

If you have a problem with the equipment, contact Customer Support in the 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 (found on manufacturing label)
- Model number or product name (found on manufacturing label)
- Software type and version number



**Figure iii-1** *Manufacturing Label*

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.

# CHAPTER 1 GETTING STARTED

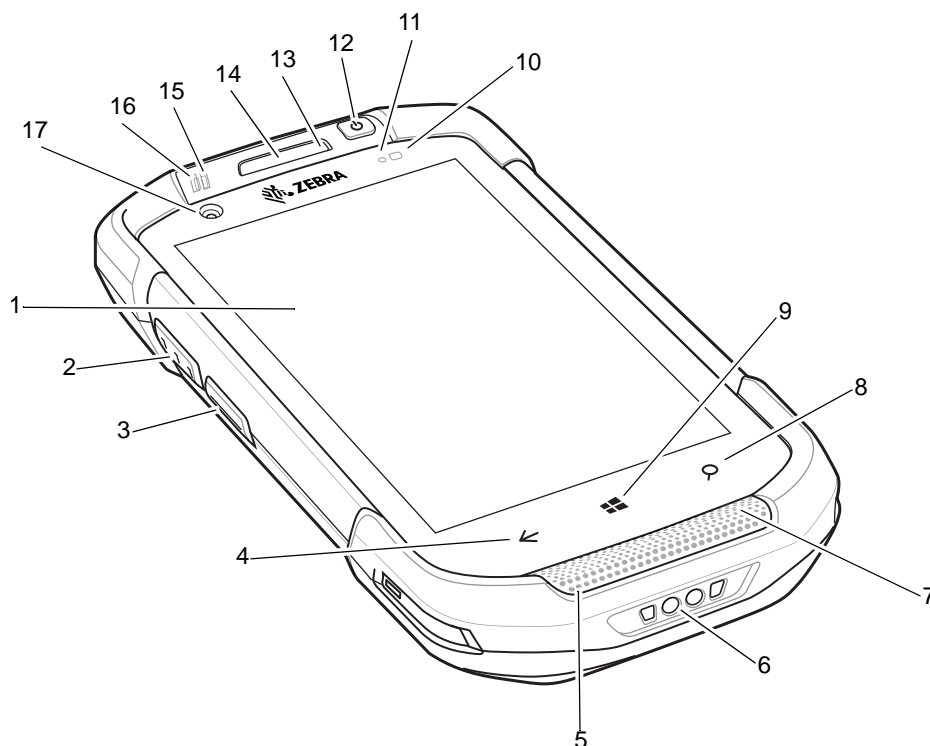
This chapter provides information for getting the device up and running for the first time.

---

## Unpacking

1. Carefully remove all protective material from the TC70x and save the shipping container for later storage and shipping.
2. Verify that the following were received:
  - TC70x touch computer
  - 4,620 mAh 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 TC70x for the first time, remove the protective shipping film that covers the scan window, display and camera window.

## Features



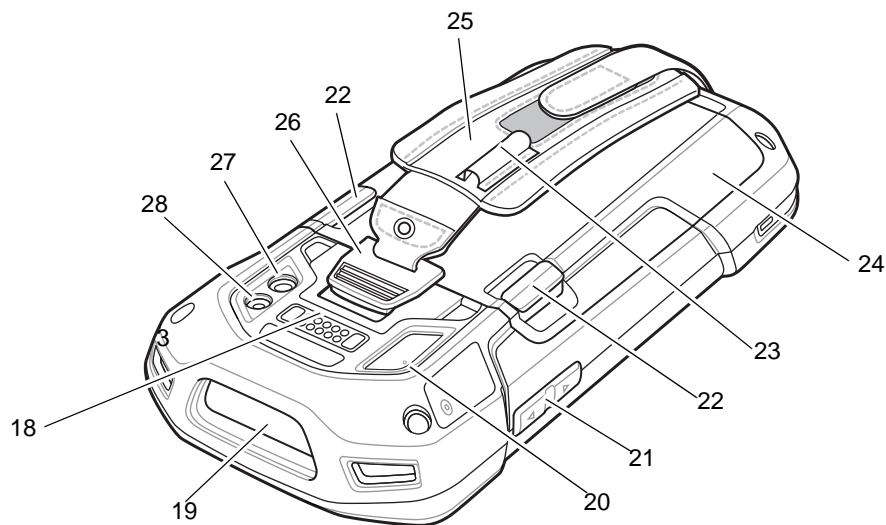
**Figure 1-1** TC70x Front View

**Table 1-1** Front View Features

Number	Item	Function
1	Touch Screen	Displays all information needed to operate the TC70x.
2	Scan Button	Initiates data capture when using a scanning application.
3	Programmable Button	Application dependent.
4	Back Button	Displays the previous screen.
5	Microphone	Use for communications in Handset mode.
6	Charging Contacts	Provides power to the device from cables and cradles.
7	Speaker	Provides audio output for video and music playback. Provides audio in speakerphone mode.
8	Search Button	Opens the search application.
9	Start Button	Displays the Home screen with a single press.
10	Light Sensor	Determines ambient light for controlling display backlight intensity.
11	Proximity Sensor	Determines proximity for turning off display when in handset mode.

**Table 1-1** Front View Features (Continued)

Number	Item	Function
12	Power Button	Turns the display on and off. Press and hold to reset the device or power off.
13	Microphone	Use for communications in Speakerphone mode.
14	Receiver	Use for audio playback in Handset mode.
15	Charging/Notification LED	Indicates battery charging status while charging and application generated notifications.
16	Data Capture LED	Indicates data capture status.
17	Front Facing Camera	Use to take photos and videos.

**Figure 1-2** TC70x Rear View**Table 1-2** Back View Features

Number	Item	Function
18	Interface Connector	Provides USB host and client communications, audio and device charging via cables and accessories.
19	Exit Window	Provides data capture using the imager.
20	Microphone	Use during video recording and for noise cancellation.
21	Volume Up/Down Button	Increase and decrease audio volume.
22	Battery Release Latches	Press to remove the battery.
23	Elastic Sleeve	Use to hold optional stylus.
24	Battery	Provides power to the device.

**Table 1-2** Back View Features (Continued)

Number	Item	Function
25	Hand strap	Use to securely hold the device in your hand.
26	Hand strap Mounting Point	Provides latching point for the hand strap.
27	Camera	Takes photos and videos.
28	Camera Flash	Provides illumination for the camera.

## Setup

Perform these procedures to start using the TC70x for the first time.

1. Install a micro secure digital (SD) card (optional).
2. Install hand strap (optional).
3. Install the battery.
4. Charge the TC70x.
5. Power on the TC70x.

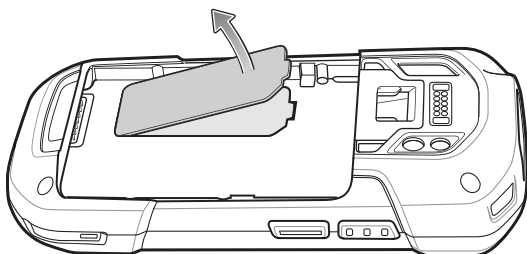
### Installing a microSD Card

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.



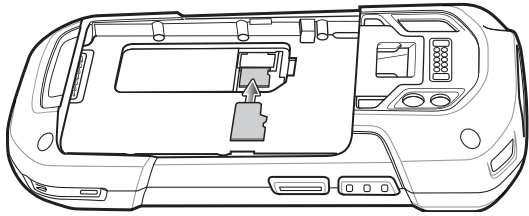
**CAUTION** Follow proper electrostatic discharge (ESD) precautions to avoid damaging the microSD card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring that the operator is properly grounded.

1. Remove the hand strap, if installed.
2. Lift the access door.

**Figure 1-3** Lift Access Door

3. 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 1-4** *Insert microSD Card in Holder*

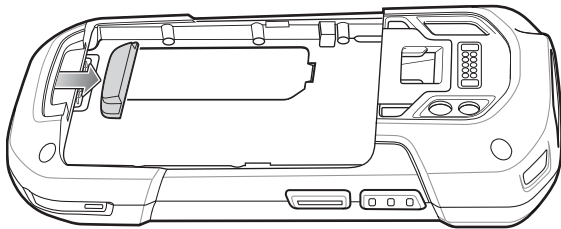
4. Re-install the access door.

## Installing the Hand Strap and Battery



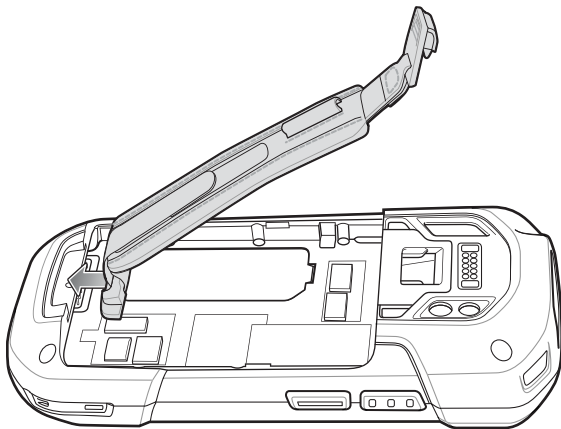
**NOTE** Installation of the hand strap is optional. Skip this section if not installing the hand strap.

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



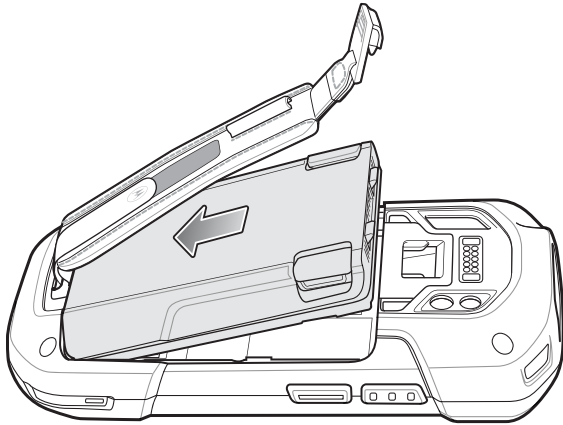
**Figure 1-5** *Remove Filler*

2. Insert the hand strap plate into the hand strap slot.



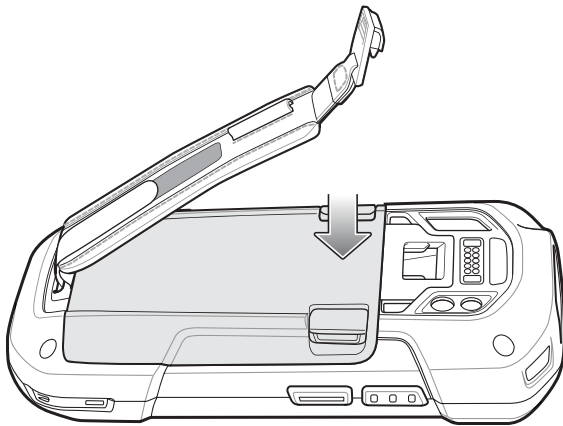
**Figure 1-6** *Insert Hand Strap*

3. Insert the battery, bottom first, into the battery compartment in the back of the TC70x.



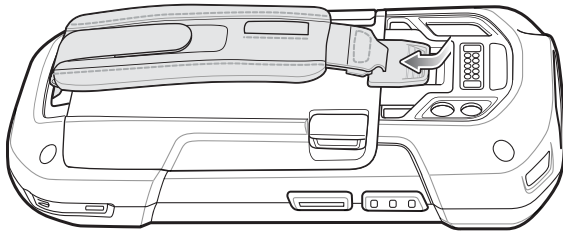
**Figure 1-7** *Insert Bottom of Battery into Battery Compartment*

4. Rotate the top of the battery into the battery compartment.
5. Press the battery down into the battery compartment until the battery release latches snap into place.



**Figure 1-8** *Press Down on Battery*

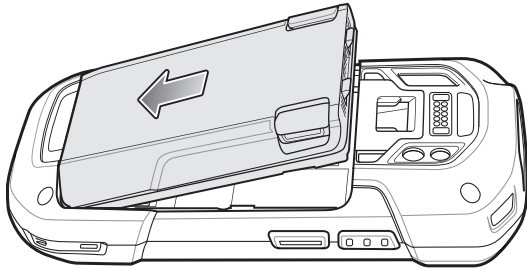
6. Place hand strap clip into hand strap mounting slot and pull down until it snaps into place.



**Figure 1-9** *Secure Hand Strap Clip*

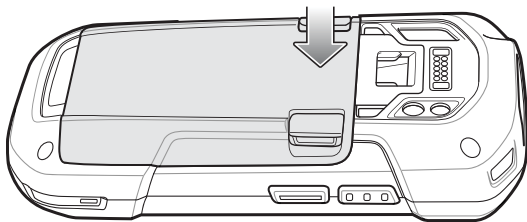
## Installing the Battery

1. Insert the battery, bottom first, into the battery compartment in the back of the TC70x.



**Figure 1-10** *Insert Bottom of Battery into Battery Compartment*

2. Rotate the top of the battery into the battery compartment.
3. Press the battery down into the battery compartment until the battery release latches snap into place.



**Figure 1-11** *Press Down on Battery*

## Charging the Battery

Before using the TC70x for the first time, charge the main battery until the green Charging/Notification light emitting diode (LED) remains lit. To charge the TC70x, use a cable or a cradle with the appropriate power supply. For information about the accessories available for the TC70x, see [Chapter 6, Accessories](#) for more information.

- Snap-On USB Cable
- Charging Cable Cup
- 2-Slot Charge Only Cradle
- 2-Slot USB/Ethernet Cradle
- 5-Slot Charge Only Cradle
- 5-Slot Ethernet Cradle
- Charge Only Vehicle Cradle
- TC7X Vehicle Communication Cradle
- Auto Charging Cable Cup.
- Serial Cable Cup

The 4,620 mAh fully depleted battery fully charges in less than 4.5 hours at room temperature.

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). The TC70x or accessory always performs battery charging in a safe and intelligent manner. At higher temperatures (e.g. approximately +37°C (+98°F)) the TC70x or accessory may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The TC70x or accessory indicates when charging is disabled due to abnormal temperatures via its LED.

1. To charge the main battery, connect the charging accessory to the appropriate power source.
2. Insert the TC70x into a cradle or attach to a cable. The TC70x turns on and begins charging. The Charging/Notification LED blinks amber while charging, then turns solid green when fully charged.

## Charging Indicators

**Table 1-3** Charging/Notification LED Charging Indicators

State	Indication
Off	TC70x is not charging. TC70x is not inserted correctly in the cradle or connected to a power source. Charger/cradle is not powered.
Slow Blinking Amber (1 blink every 2 seconds)	TC70x is charging.
Solid Green	Charging complete.
Fast Blinking Amber (2 blinks/second)	Charging error, e.g.: <ul style="list-style-type: none"> <li>• Temperature is too low or too high.</li> <li>• Charging has gone on too long without completion (typically eight hours).</li> </ul>
Slow Blinking Red (1 blink every 2 seconds)	TC70x is charging but the battery is at end of useful life.
Solid Red	Charging complete but the battery is at end of useful life.
Fast Blinking Red (2 blinks/second)	Charging error but the battery is at end of useful life., e.g.: <ul style="list-style-type: none"> <li>• Temperature is too low or too high.</li> <li>• Charging has gone on too long without completion (typically eight hours).</li> </ul>

## Microsoft Account Setup



**NOTE** The TC70x has to be connected to the internet, through Wi-Fi, in-order to set up a Microsoft account.

User can skip account set up and enter information at a later time.

The first time the TC70x starts, the Setup Wizard displays. Follow the on-screen instructions to set up a Windows account, configure Store for purchasing items from the Windows Store, entering your personal information, and enabling backup/restore features.

---

## Turn On the Device

Press the power key for about five seconds until the boot screen appears.

---

## Turn Off the Device

To turn off the device:

1. Press and hold the power key.

2. Drag the lock screen down toward the bottom of the screen. The word **Goodbye** appears on the screen as the TC70x turns off.

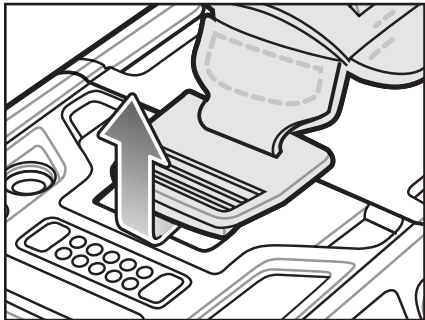
---

## Replacing the Battery



**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 power down screen appears.
5. Drag the lock screen down toward the bottom of the screen. The word **Goodbye** appears on the screen as the TC70x turns off.
6. If hand strap is attached, slide the hand strap clip up toward the top of the TC70x and then lift.



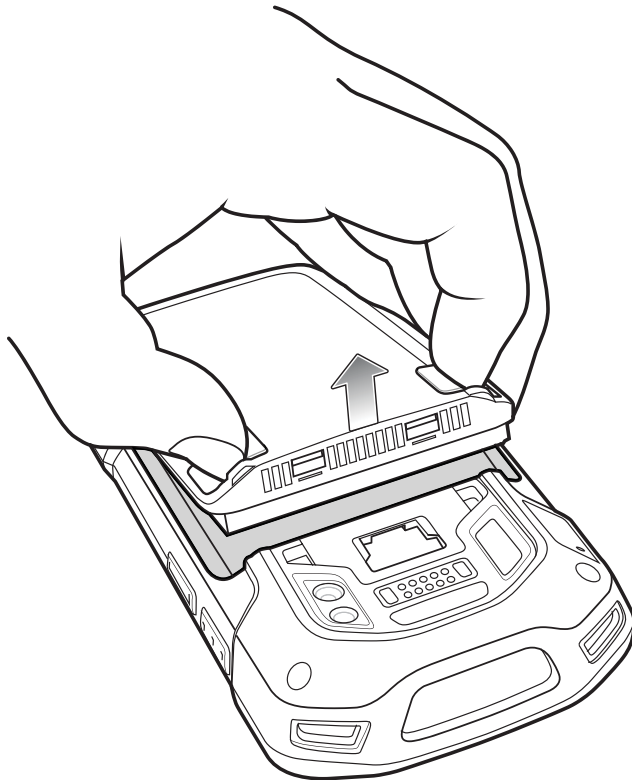
**Figure 1-12** Remove Hand Strap Clip

7. Press the two battery latches in.



**Figure 1-13** Press Battery Latches

8. Lift the battery from the TC70x.



**Figure 1-14** *Lift the Battery*



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

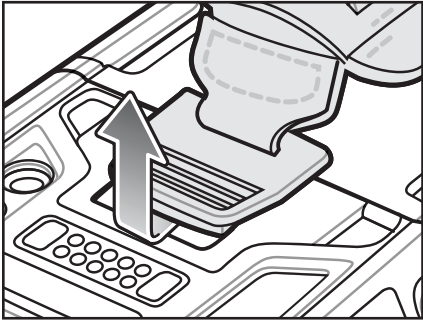
9. Insert the replacement battery, bottom first, into the battery compartment in the back of the TC70x.
10. Press the battery down until the battery release latch snaps into place.
11. Replace the hand strap, if required.
12. Press and hold the Power button to turn on the TC70x.

---

## Replacing the microSD Card

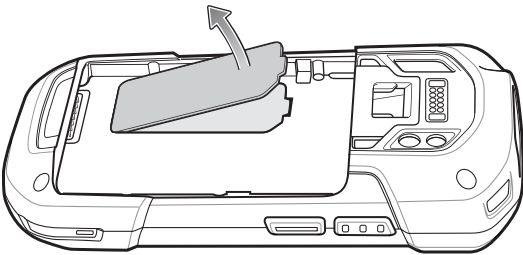
To replace the microSD card:

1. Press the Power button until the power down screen appears.
2. Drag the lock screen down toward the bottom of the screen. The word **Goodbye** appears on the screen as the TC70x turns off.
3. If hand strap is attached, slide the hand strap clip up toward the top of the TC70x and then lift.



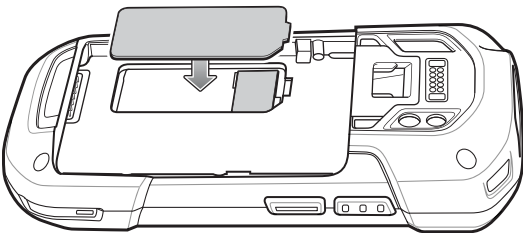
**Figure 1-15** *Remove Hand Strap Clip*

4. Press the two battery latches in.
5. Lift the battery from the TC70x.
6. Lift the access door.



**Figure 1-16** *Remove Access Door*

7. Remove microSD card from holder.
8. Press the access door down and ensure that it is properly seated.
9. Insert the replacement microSD card.
10. Replace the access door.




**Figure 1-17** *Replace Access Door*

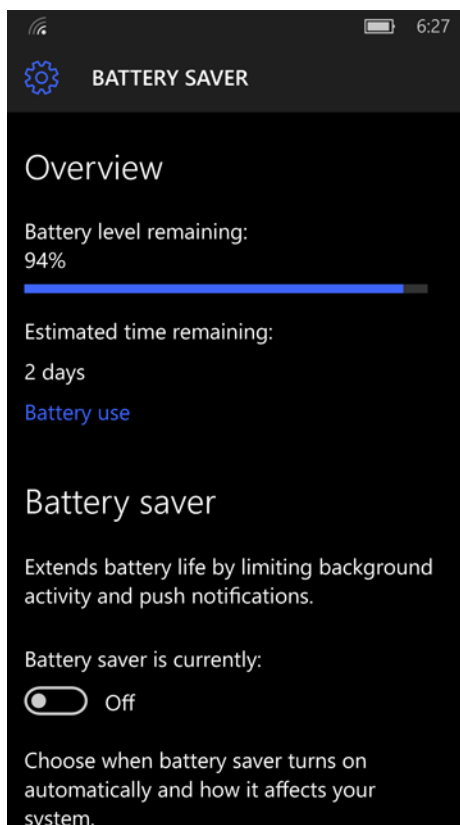
11. Insert the battery, bottom first, into the battery compartment in the back of the TC70x.
12. Press the battery down until the battery release latch snaps into place.
13. Replace the hand strap, if required.
14. Press and hold the Power button to turn on the TC70x.

## Battery Management

✓ **NOTE** Prior to checking the battery charge level, remove the TC70x from any AC power source (cradle or cable).

To check the charge status of the main battery:

1. Swipe down from the top of the screen.
2. Touch **All settings** >  **System** > **Battery saver**.



**Figure 1-18** *Battery Saver Screen*

**Battery level remaining** indicates the battery charge (as a percentage of fully charged).

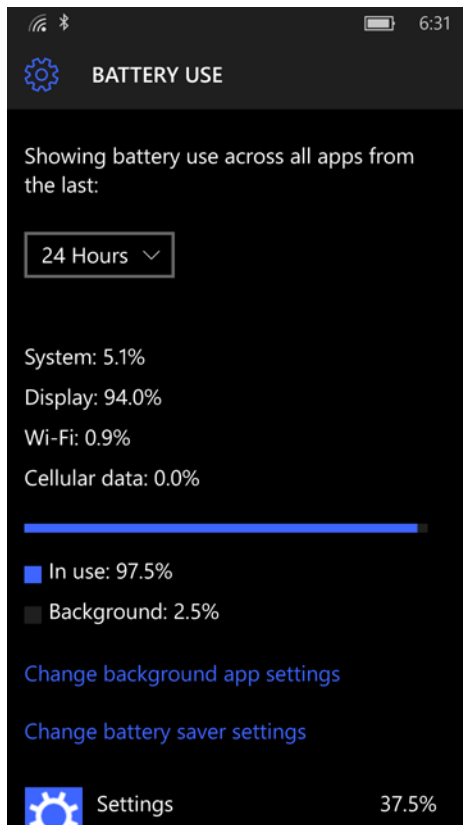
**Estimated time remaining** indicates the amount of time the charge

Touch **Battery use** to view the **Battery Use** screen.

## Monitor Battery Usage

The **Battery Use** screen lists which applications consume the most battery power. Also use it to turn off applications that were downloaded if they are consuming too much power.





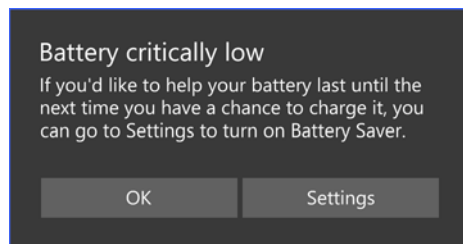
**Figure 1-19** *Battery Use Screen*

The **Battery Use** screen lists the applications using the battery.

Touch an application in **Battery Use** then **Details** to display details about its power consumption. Different applications display different information. Some applications include buttons that open screens with settings to adjust power use.

## Low Battery Notification

When the battery charge level drops below 20%, the TC70x displays a notice to connect the TC70x to power. The user should charge the battery using one of the charging accessories.



**Figure 1-20** *Low Battery Notification*

When the battery charge drops below 10%, the TC70x displays a notice to connect the TC70x to power. The user must charge the battery using one of the charging accessories.

When the battery charge drops below 4%, the TC70x turns off.


The user must charge the TC70x using one of the charging accessories.

### Battery Optimization

Observe the following battery saving tips:

- Enable Battery Saver mode.
- Remove Snap-on accessories when not in use.
- Set the screen to turn off after a short period of non-use. See [Setting Screen Timeout Setting on page 1-15](#).
- Reduce screen brightness. See [Setting the Screen Brightness on page 1-14](#).
- Turn off automatic syncing for Email, Calendar, Contacts and other applications.
- Minimize use of applications that keep the TC70x from suspending, for example, music and video applications.






### Turning Off the Radios

To turn off all the radios and place the TC70x into Airplane mode, swipe down from the top of the screen, and touch **Airplane mode**.  appears in the status bar.

---

## Setting the Date and Time

The date and time is automatically updates. To set the date and time manually:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Time & language** > **Date & time**.
2. Touch the **Set date and time automatically** switch to turn off and edit the time and date.
3. Touch the **Time zone** drop-down list and select a time zone.
4. Touch the **Date** option.
5. Select the current month, day and year.
6. Touch .
7. Touch the **Time** option.
8. Select the current hour, minutes and time of day.
9. Touch .
10. Touch .



---

## Display Setting

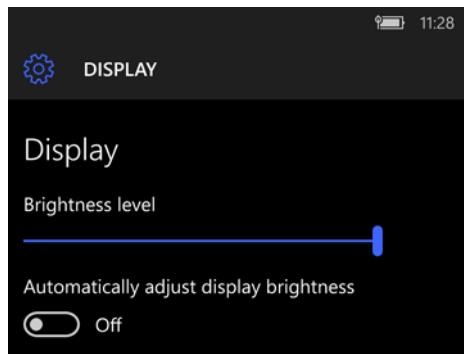
Use Display settings to change the screen brightness, change the background image, enable screen rotation, set sleep time and change font size.

### Setting the Screen Brightness


To set the screen brightness:

1. Swipe down from the top of the screen, and touch  **All settings** >  **System** > **Display**.

2. Touch the **Automatically adjust display brightness** switch to turn off.





**Figure 1-21** *Brightness Dialog Box*

3. Drag the **Brightness level** slider to adjust the brightness level.
4. Touch .

## Setting Screen Rotation




✓ **NOTE** The Start screen does not rotate to the horizontal position.

By default, screen rotation is enabled. To disable screen rotation:

1. Rotate the device vertically or horizontally.
2. Swipe down from the top of the screen, and touch  **Rotation lock**.
3. Touch .



## Setting Screen Timeout Setting

To set the screen sleep time:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Personalization** > **Lock screen**.
2. Touch the **Screen timeout after** drop-down list.
3. Select one of the timeout values.
  - **30 seconds**
  - **1 minute** (default)
  - **3 minutes**
  - **5 minutes**
  - **15 minutes**
  - **30 minutes**
  - **Never.**
4. Touch .


## Setting Font Size

To set the size of the font in system applications:

1. Swipe down from the top of the screen, and touch  **All settings** >  **System** > **Display**.
2. Drag the **Size of text, app, and items on the display** slider.
3. Touch **Apply**.
4. Touch **Restart Now**.

## Changing Accent Color

To change the device color scheme:

1. Swipe down from the top of the screen, and touch **All settings** >  **Personalization** > **Colors**.

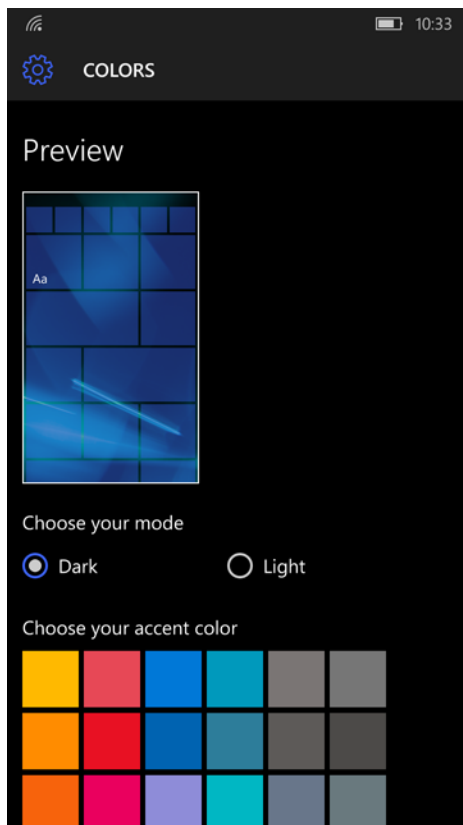





Figure 1-22 Colors Screen

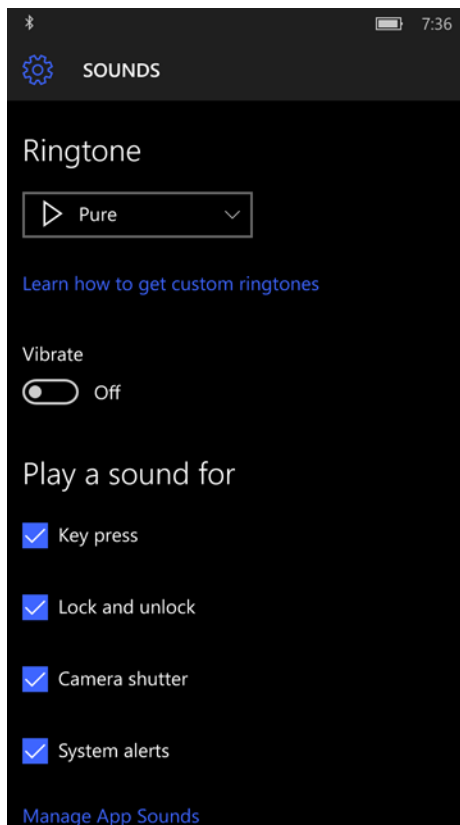
2. Under **Choose your mode**, select Dark or Light radio button.
3. Under **Choose your accent color**, select a color tile.
4. Touch . The tile accent colors change to the new color.

---

## General Sound Setting

Use the Sounds settings to configure media and alarm volumes.

1. Swipe down from the top of the screen, and touch  **All settings** >  **Personalization** > **Sounds**.



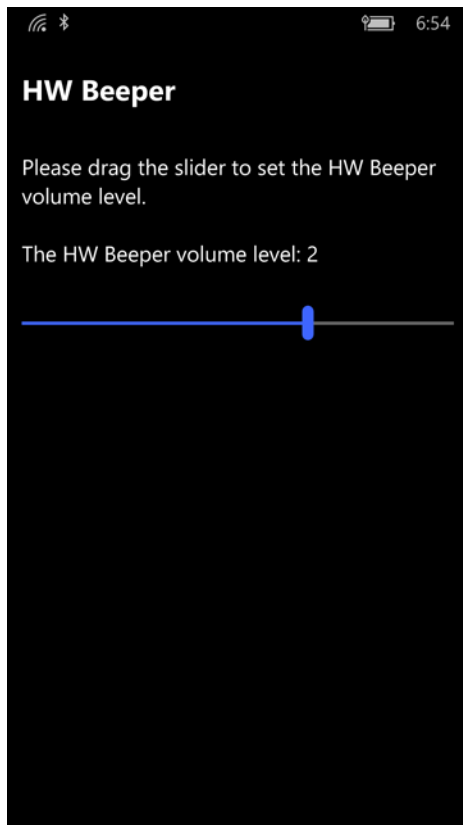
**Figure 1-23** Sounds Screen

- **Ringtone** – Touch to select a ringtone to sound when an incoming call is received.
- **Vibrate** - Check to make the device vibrate when a call is received (default – enabled).
- **Play a sound for**
  - **Key press** - Check to play a sound when a keyboard key is touched (default – enabled).
  - **Lock and unlock** - Check to play a sound when locking and unlocking the screen (default – disabled).
  - **Camera shutter** - Check to play a sound when taking photos.
  - **System alerts** - Places all sounds in sound mode.

## Hardware Beeper Volume

The Hardware Beeper Volume controls the volume of the scan beep when a bar code is decoded. To change the beeper volume:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Extra** > **Zebra TC700J Settings**.
2. Touch **HW Beeper Setting**.





**Figure 1-24** *HW Beeper Screen*

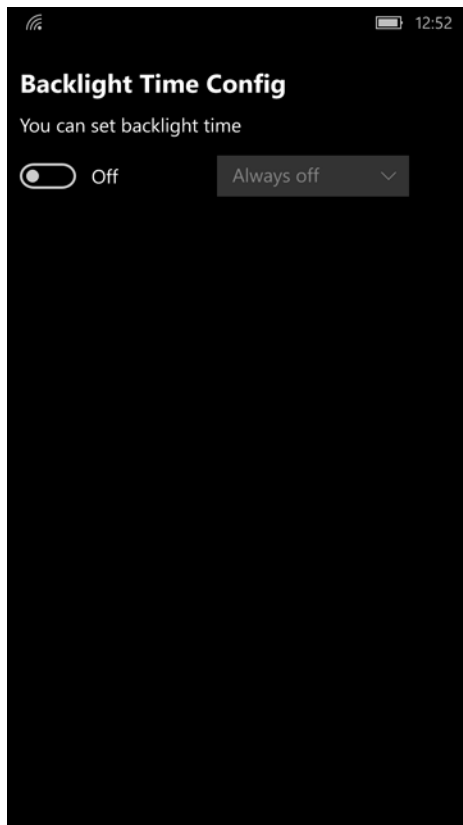
3. Drag the slider to change the volume level.  
Volume level 0 = off.

---


## Setting Touch Key Light

The three touch keys under the screen are backlit. Configure the touch key light to save battery power.

1. Swipe down from the top of the screen, and touch  **All settings** >  **Extra** > **MoreSettings**.
2. Touch **Touch Configuration**.



**Figure 1-25** *Touch Panel Modes*

3. Touch the switch to turn on backlight control.
4. In the drop-down list, select time.
  - Always off
  - 6 seconds (default)
  - 10 seconds
  - 15 seconds
  - 30 seconds
  - 1 minute
  - Always on.
5. Touch .





# CHAPTER 2 USING THE TC70X

---

## Introduction

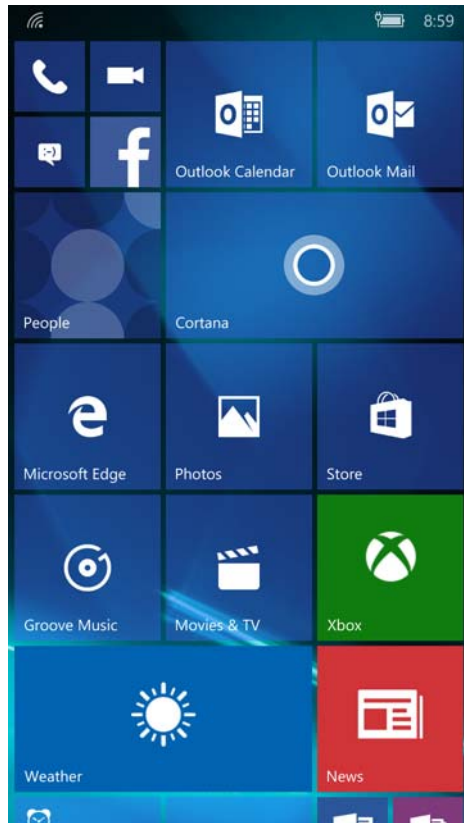
This chapter explains the buttons, status icons, and controls on the TC70x, and provides basic instructions for using the TC70x, including resetting the TC70x and entering data.

---

## Start Screen

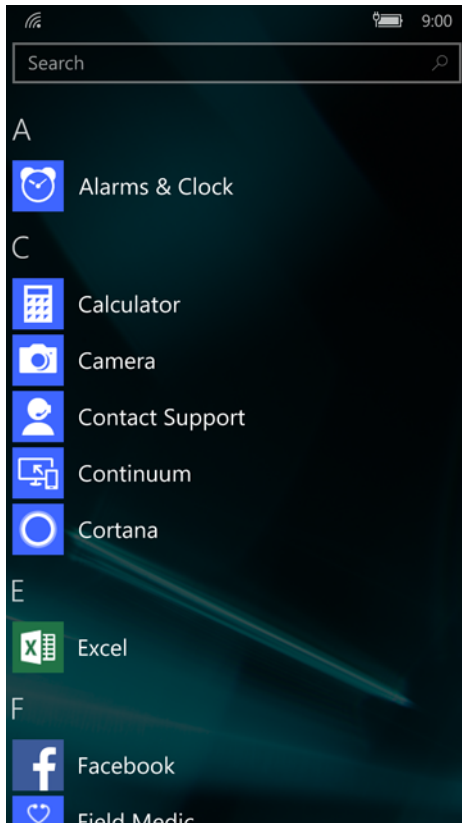
The Start screen displays when the TC70x turns on and after the lock screen, if applicable. Depending upon the configuration, the Start screen might appear different. Contact your system administrator for more information.

The animated live tiles display messages, news and other information based on the application.



**Figure 2-1** *Start Screen*

Not all apps are on the Start screen. Swipe the Start screen to the left to display all the All Apps screen. To return to the Start screen, swipe to the right.



**Figure 2-2** App Screen

All apps list alphabetically. If there are a lot of apps, touch the search bar at the top of the screen and enter the first letter or character for the app.

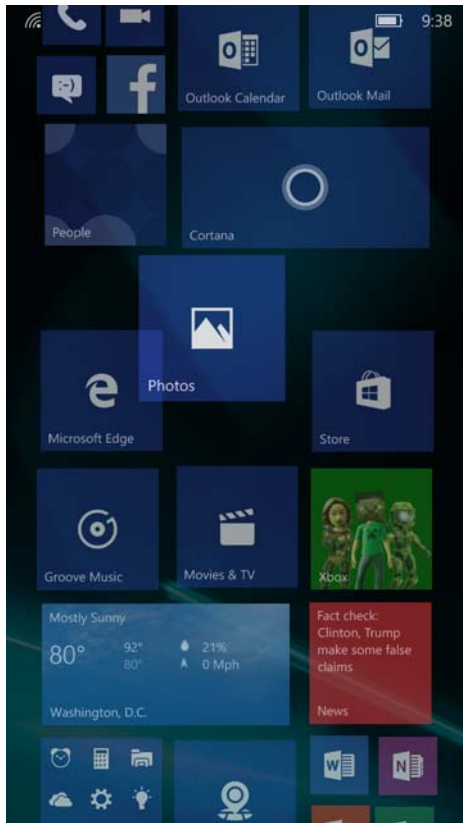
## Customizing the Start Screen

Choose a background photo and pin a favorite app to the Start screen. Live tiles allows the user to see updates on news, weather, finance, etc., immediately on the Start screen without opening the app.

### Moving Tiles

The user can rearrange tiles on the Start screen. To move a tile to a different location:

1. Touch and hold a tile. The tiles float on the screen.
2. Drag the tile to a new location. Other tiles move as the floating tile move over them.




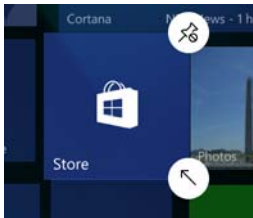
**Figure 2-3** *Moving Tiles*

3. Lift finger and drop the tile.
4. Touch the screen.


### Resize a Tile

The user can change the size of tiles on the Start screen. To resize a tile:

1. Touch and hold the tile.
2. Touch  to make it smaller.



**Figure 2-4** *Size Tile Smaller*


3. Touch  to make it larger.

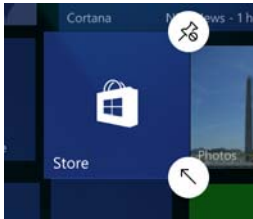


4. Size Tile Larger

## Unpin a Tile

To unpin the tile and remove it from the Start screen:

1. Touch and hold the tile.
2. Touch .



**Figure 2-5** *Unpin Tile*

3. The Tile no longer appears in the Start screen.

## Grouping Tiles

The user can group app tiles into groups or folders:

1. Touch and hold a tile.
2. Drag and drop it on top of another tile or folder.
3. Touch **Name folder** to provide a name for the new folder.
4. In the text box, enter a name for the folder.
5. Touch Enter key.
6. Touch the folder tile to close the folder.

To open an app from a folder:

1. Touch the folder.



**Figure 2-6** *Group Folder*

2. The folder expands to show the apps in the folder.



**Figure 2-7** *Expanded Folder*

3. Touch the app icon to open the app.

To change the name of the folder:

1. Touch the folder to open it.
2. Touch and hold the name. A text box appears.
3. In the text box, enter a new name for the folder.
4. Touch the Enter key.
5. Touch the folder tile to close the folder.

To remove a folder:

1. Touch the folder to open it.
2. Touch and hold each app tile.
3. Touch the unpin icon.
4. Repeat for each tile in the folder.




## Pinning an App on the Start Screen

To pin an app onto the Start screen:

1. Swipe left to go to the All Apps screen.
2. Touch and hold the app until the menu appears.
3. Touch **Pin to Start**. The app tile appears on the Start screen.




## Changing Start Screen Background

To change the Start screen background images:

1. Swipe down from the top of the screen, and touch **All settings** >  **Personalization** > **Start**.
2. In the Background drop-down list, select **My pictures**, **Sample images** or **None**.
3. Touch **Browse**.
4. Select a photo and crop accordingly.
5. Touch .
6. In **Choose style** section, select either **Tile picture** or **Full screen picture** radio button.
7. Slide the **Transparency** slider to increase the transparency of the tiles. A lower number, the tiles are more solid and a higher number, the tiles are more transparent.
8. Touch .

## Change the Background Photo

To change a background photo:

1. Swipe down from the top of the screen, and touch **All settings** >  **Personalization** > **Lock screen**.
2. Touch **Browse**.
3. Select a photo and crop.
4. Touch .
5. Touch .

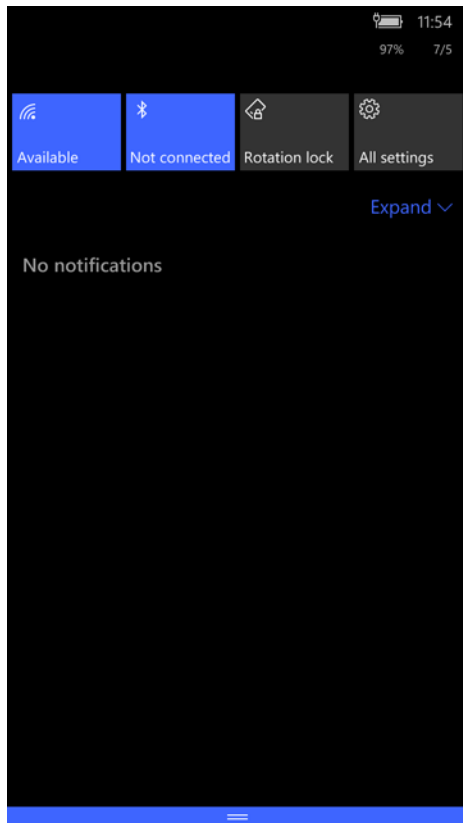


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## Action Center

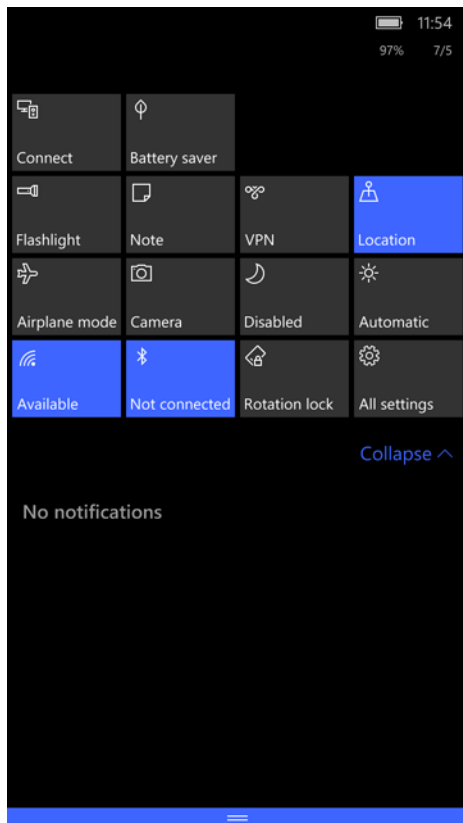
The Action Center provides easy access to some frequently used settings and notifications.

To open the Action Center, swipe down from the top of the screen. The first row of setting option boxes display and any notifications.



**Figure 2-8** *Action Center*

Touch **Expand** to view all setting option boxes.

















**Figure 2-9** Action Center Expanded

The Action Center settings:



**NOTE** Highlighted titles indicate that the setting is enabled.

-  **Connect** - Connects the device to Bluetooth audio devices and wireless displays.
-  **Battery Saver** - Places the device in battery saver mode.
-  **Flashlight** - Turns the rear camera flash LED on or off.
-  **Note** - Opens the OneNote application, if installed.
-  **VPN** - Opens the VPN settings screen to add or connect to a VPN.
-  **Location** - Displays the current state of the Location settings. Touch to enables or disables locationing. Default - Enabled.
-  **Airplane Mode** - Displays the Airplane mode status. Touch to toggle Airplane mode on and off. Turn on Airplane mode to turn off all the radios.
-  **Camera** - Opens the Camera application.
-  **Quiet hours** - Enable to hide notifications. Requires Contana to set quiet hours.
-  **Screen Brightness** - Touch to change the screen brightness settings. Options: **Automatic** (default), **25%**, **50%**, **75%** or **100%**.

-  **Wi-Fi** - Indicates Wi-Fi network connection status. Touch to turn Wi-Fi on or off.
-  **Bluetooth** – Displays the current state of the Bluetooth radio. Touch to turn Bluetooth on or off.
-  **Rotation lock** - Touch to lock the screen in the current orientation.
-  **All settings** - Opens the Settings screen.

To close the Action Center, drag the bottom to the top of the screen or touch .

## Notifications

Notification icons report the arrival of new messages, calendar events, and alarms. When a notification occurs, an icon appears in the Status bar. See [Notification Icons on page 2-17](#) for a list of possible notification icons and their descriptions. Open the Action Center to view a list of all the notifications.


To respond to a notification, open the Action Center and then touch a notification. The Action Center closes and the subsequent activity is dependent on the notification.

To delete a notification, swipe the notification to the right.

To close the Action Center, drag the bottom of the Action Center to the top of the screen or touch .

## Personalize the Action Center

To change the Action Center:

1. Swipe down from the top of the screen.
2. Touch **All settings** >  **System** > **Notifications & actions**.
3. To change a shortcut, touch the shortcut and select the new app from the list.












To select which notifications to receive and how:

In the **Notification** section, touch the switches to turn off or on the particular notification.













## Applications

The **All apps** screen displays a list of all installed applications. The table below lists the applications installed on the TC70x by default. Refer to the *TC70x Integrator Guide for Windows 10 IoT Mobile Enterprise* for information on installing and uninstalling application.













**Table 2-1** *Applications*

Icon	Description
	<b>Alarms &amp; Clock</b> – Use to schedule alarms for appointments or as a wake-up.
	<b>Calculator</b> - Provides the basic and scientific arithmetic functions.
	<b>Camera</b> - Take photos or record videos. For more information see
	<b>Contact Support</b> - Provides access to Windows help information.
	<b>Continuum</b> - Connect the TC70x to a Continuum-compatible monitor, mouse or keyboard.
	<b>Cortana</b> - Voice assistant. Microsoft account required.
	<b>Excel</b> - Review, update and create spreadsheets. First use, installed application on device. Internet access required. Microsoft account required.
	<b>Facebook</b> - Use to communication with Facebook users.
	<b>Field Medic</b> - Use to gather Event Tracing for Windows (ETW) log files for selected information categories. See <i>TC70x Integrator Guide</i> for more information.
	<b>File Explorer</b> - Organize and manage files on the TC70x. See <a href="#">File Explorer on page 3-37</a> for more information.
	<b>Get Started</b> - Use to get information on using Windows 10.



**Table 2-1** *Applications (Continued)*

Icon	Description
	<b>Groove Music</b> - Plays music installed on the TC70x.
	<b>Maps</b> - 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 and traffic-avoidance and alternate routes, for drivers, cyclist, walkers and users of public transportation.
	<b>Messaging</b> - Send SMS and MMS messages. Messaging for more information. Microsoft account is required.
	<b>Microsoft Edge</b> - Use to access the Internet or intranet.
	<b>Movies &amp; TV</b> - View movies and video on the device.
	<b>News</b> - Provides access to current news articles. First use, installed application on device. Internet access required.
	<b>OneDrive</b> - Provides access to files in the cloud. Internet access required. Microsoft account required.
	<b>OneNote</b> - Use to keep notes and ideas. First use, installs application on device. Internet access required.
	<b>Outlook Calendar</b> - Use to manage events and appointments. Microsoft account required.
	<b>Outlook Mail</b> - Use to send and receive email using a Microsoft email account. Microsoft account required.
	<b>People</b> - Use to manage contact information.
	<b>Phone</b> - Not applicable.

**Table 2-1** *Applications (Continued)*

Icon	Description
	<b>Photos</b> - Use to view, share and edit photos.
	<b>Podcasts</b> - Use to listen to podcasts. Internet access required.
	<b>PowerPoint</b> - Use to view and create presentations. First use, installs application on device. Internet access required.
	<b>Settings</b> - Opens the settings window.
	<b>Skype</b> - Communicate with other Skype users. First use, installs application on device. Internet access required.
	<b>Skype Video</b> - First use, installs application on device. Internet access required.
	<b>Storage</b> - View the amount of data stored on the device and external storage card.
	<b>Store</b> - Use to purchase and install Microsoft applications. Microsoft account required.
	<b>Voice Recorder</b> - Use to record sounds, lectures, interviews and other events. First use, installs application on device. Internet access required.
	<b>Wallet</b> - Not applicable.
	<b>Weather</b> - View current weather conditions. First use, installs application on device. Internet access required.
	<b>Windows Feedback</b> - Use to provide feedback to Microsoft. Microsoft account required.

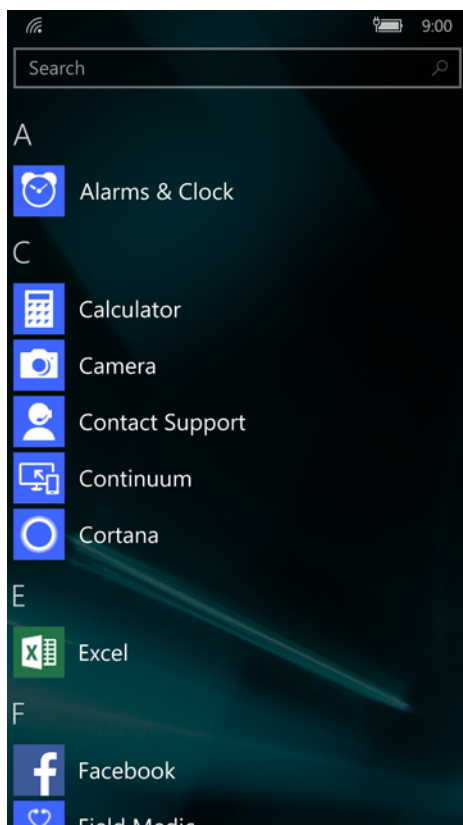
**Table 2-1** Applications (Continued)

Icon	Description
	<b>Word</b> - Use to view and create documents. First use, installs application on device. Internet access required.
	<b>Xbox</b> - Connect with friends, games and accomplishments across Xbox One and Windows 10 devices. First use, installs application on device. Internet access required.


## Accessing Applications

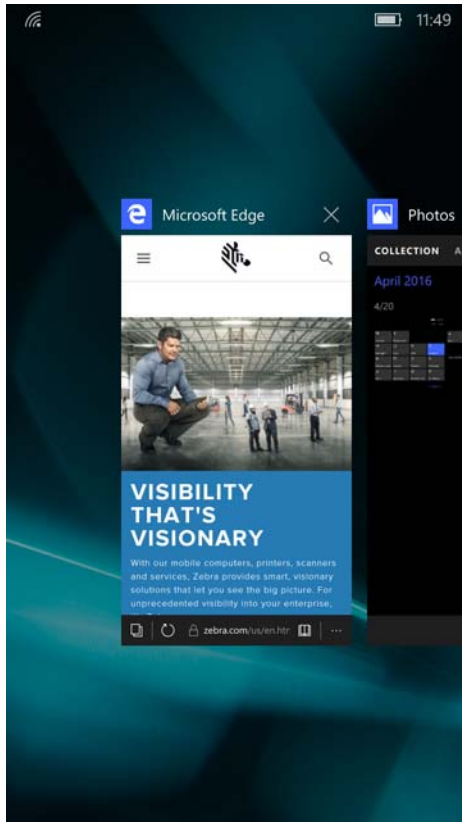
All applications installed on the TC70x are accessed using the Start screen or All Apps screen.

- On the Start screen touch the application tile.
- Swipe the Start screen to the left to view the All App screen. Touch the application name.


**Figure 2-10** All App Screen

## Switching Between Recent Applications

Touch and hold . A window appears on the screen with icons of recently used applications.



**Figure 2-11** *Recently Used Applications*

- Slide the window left and right to view all recently used applications.
- Swipe down or touch **X** to remove application from the list and force close the application.
- Touch an application to open it.
- Touch  to return to the current screen.

## Status Bar

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







**Figure 2-12** *Notification and Status Icons*










## Status Icons

**Table 2-2** *Status Icons*

Icon	Description
	Indicates the battery power level.
	Indicates the battery is charging.
	Indicates battery saver mode is on.
	Indicates the battery power or state of the battery is not currently known.

## Notification Icons

**Table 2-3** *Notification Icons*

Icon	Description
	Indicates that more notifications are available for viewing.
	Connected to a Wi-Fi network.
	Indicates that device is connected to a Bluetooth device.
	Indicates that the Airplane Mode is active. All radios are turned off.
	Indicates that all sounds except media and alarms are silenced.
	Indicates that all sounds except media and alarms are silenced and vibrate mode is active.
	Indicates an application or service is using locationing information.

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### Using the Touchscreen

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

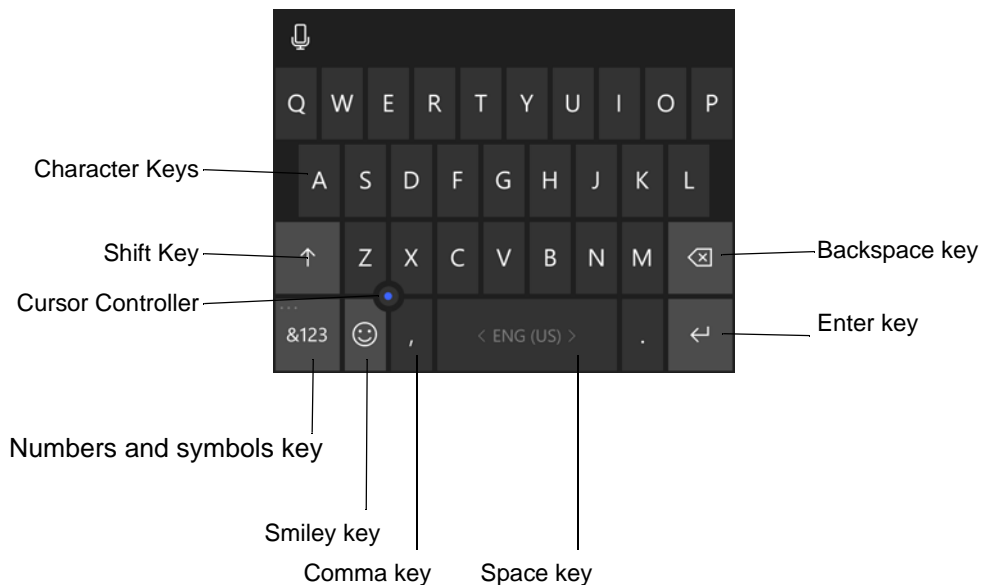
- **Touch** - Touch to:
  - select items on the screen
  - type letters and symbols using the on-screen keyboard
  - press on-screen buttons.
- **Touch and Hold** - Touch and hold:
  - an item on the Start screen to move it to a new location.
  - an item in All Apps to create a shortcut on the Start screen.
- **Drag** - Touch and hold an item for a moment and then move finger on the screen until reaching the new position.
- **Swipe**- Move finger up and down or left and right on the screen to:
  - unlock the screen
  - view Start and All Apps screens
  - view additional application icons in the All Apps screen
  - view more information on an application's screen.
- **Double-tap** - Tap twice on a web page, map, or other screen to zoom in and out.
- **Pinch** - In some applications, zoom in and out by placing two fingers on the screen and pinching them together (to zoom out) or spreading them apart (to zoom in).

---

### Using the On-screen Keyboard

Writing with the on-screen keyboard is easy. Use the keyboard when holding the device in portrait or landscape mode. Write messages by touching the letters or by swiping through them.

Touch in a text box. The keyboard automatically appears.



**Figure 2-13** Keyboard

✓ **NOTE** The keyboard layout can vary in different apps and languages.

## Editing Text



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

## Switch Between Upper and Lower Case Characters

Touch the shift key. To turn caps lock mode on, double-tap the shift key. To return to normal mode, tap the shift key again.

## Entering Numbers, Symbols and Special Characters

To enter numbers and symbols:

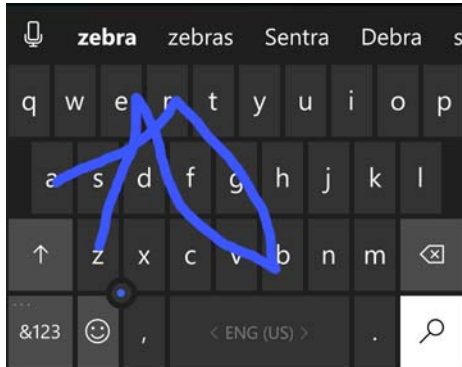
- Touch and hold one of the top-row keys until a menu appears then select a number.
- Touch and hold the Shift key with one finger, touch one or more capital letters or symbols to enter them, and then lift both fingers to return to the lowercase keyboard.
- Touch  to switch to the numbers and symbols 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. The menu expands to display additional symbols.

### Swiping

Touch the keyboard and slide finger from the first letter of the word, and draw a path from letter to letter. Lift finger after the last letter.

To continue, keep on swiping without tapping the space key. Spaces are added automatically.



**Figure 2-14** *Swipe on Keyboard*

### Copying or Pasting Text

To copy text:

1. Touch and hold on a word.
2. Drag the circles before and after the word to highlight the section to copy.
3. Touch **Copy**.

To paste text:

1. Touch and hold on a location where text will go.
2. Touch **Paste**.

### Switching Between the Writing Languages



**NOTE** To add additional keyboard languages, refer to the *TC70x Integrator Guide for Windows 10 IoT Mobile Enterprise* or your system administrator.

The keyboard can be configured for multiple languages. To select a different language swipe left or right on the space bar until the language appears.

### Using the Cursor Controller

To move the cursor from one character or line to another, touch and hold the cursor controller, and drag your finger to the direction you want.

### Word Suggestions

The TC70x suggests words as you write, to help you write quickly and more accurately.



**NOTE** Word suggestions may not be available in all languages.

When you start writing a word, the TC70x suggests possible words. When the word appears in the suggestion bar, select the word. To see more suggestions, swipe left.




**NOTE** If the suggested word is marked in bold, the TC70x automatically uses it to replace the word you wrote. If the word is wrong, tap it to see the original word and a few other suggestions.

## Correcting a Word

If you notice that you have misspelled a word, tap it to see suggestions for correcting the word.

## Turn Word Suggestions Off

To turn off word suggestions:

1. Swipe down from the top of the screen, and tap **All settings** >  **Time & language** > **Keyboard**.
2. Touch the language keyboard.
3. Deselect the **Suggest text** check box.

---


### Un-Locking the Screen

Use the Lock screen to protect access to data on the TC70x. Some email account require locking the screen. Refer to the *TC70x Integrator Guide for Windows 10 IoT Mobile Enterprise* for information on setting up the locking feature.

To lock the device press the power key.

### Set a PIN to Unlock Device

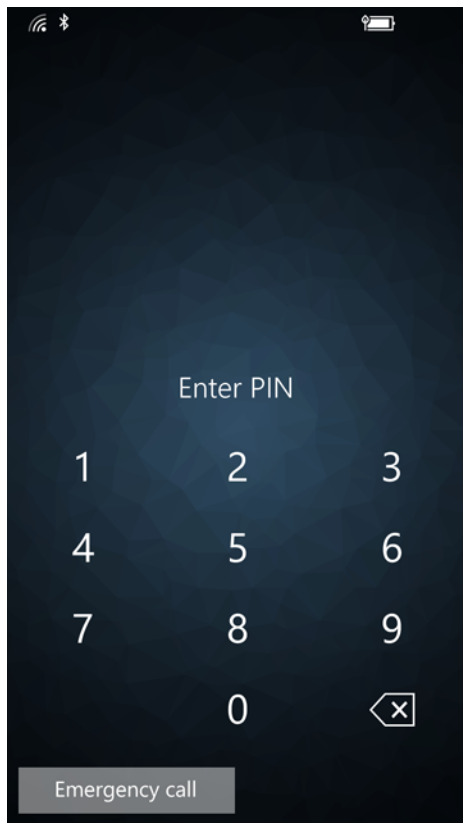
To require the user to enter a PIN when unlocking the screen:

1. Swipe down from the top of the screen, touch **All settings > Accounts > Sign-in options**.
2. Touch **Add**.
3. In the **New PIN** text box, enter a new PIN.
4. In the **Confirm PIN** text box, enter a new PIN again.
5. Touch **OK**.
6. In the **Require sign-in** drop-down list, select the amount of time before Windows requires the user to sign back in again.
7. Touch .

### Unlock the Screen

To unlock the screen:

1. Press the power, scan or programmable button to wake the device.
2. Drag the lock screen up.




**Figure 2-15** *Pin Lock Screen*

3. Enter the PIN. The device unlocks.

## Customizing Lock Screen

To change the background photo on the lock screen:

1. Swipe down from the top of the screen, and touch **All settings** >  **Personalization** > **Lock screen**.
2. Touch the **Background** drop-down list and select **My picture**, **Sample images** or **Bing**.
3. For **My picture** or **sample images**, touch **Browse**.
4. Select a photo.
5. For **My picture**, crop accordingly.
6. Touch ✓.

---

## Taking a Screenshot

To take a screenshot of the TC70x's screen, press the volume up key and the power key at the same time.

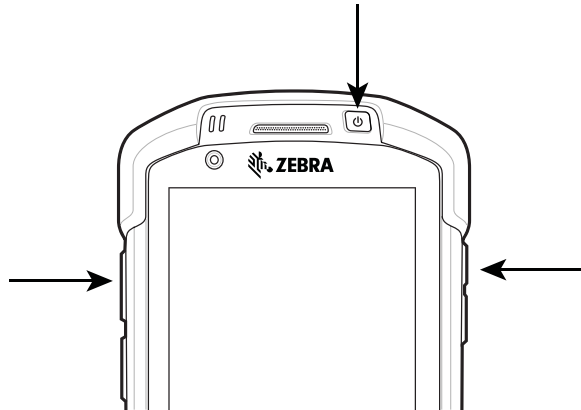
To view or manage the screenshots taken, touch **Photos** > **Albums** > **Screenshots**.

---

## Resetting the Device

Perform a hardware reset if applications stop responding.

1. Press and hold the Power button, volume up button and Scan button for at least four seconds.



**Figure 2-16** *Three Button Reset*

2. The device shuts down and then reboots.



**CAUTION** Performing a hard reset with a SD card installed in the TC70x may cause damage or data corruption to the SD card.



# CHAPTER 3 APPLICATIONS

This section describes the applications installed on the device.

---

## Store



**NOTE** A Microsoft account is required to use **Store**.

Use the **Store** to download applications and to update current applications.

Touch .

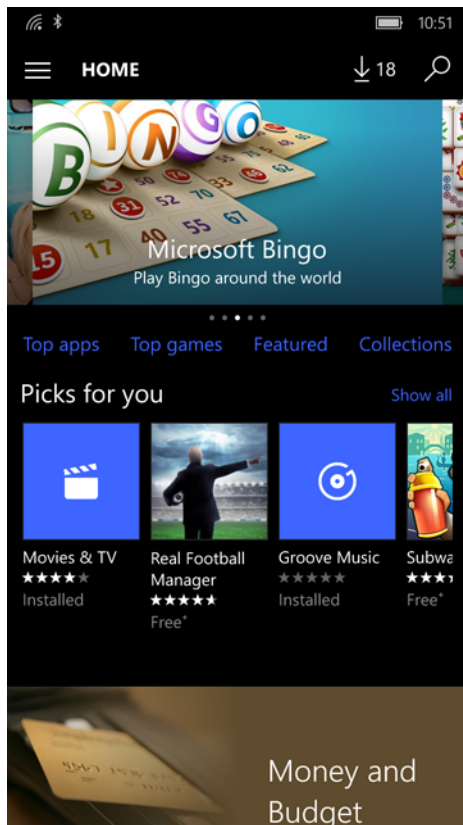




Figure 3-1 Store Screen

### Installing Applications

Use the Microsoft Store to install applications on the TC70x.

1. Touch  **Store**.
2. Touch  > **Apps**.
3. Search for an application.



**NOTE** The Store contains free applications and paid applications. An account set up with payment is required for downloading paid applications.

4. Follow the instructions for downloading and installing the application.
5. The application appears in the **All Apps** list.

### Updating Applications

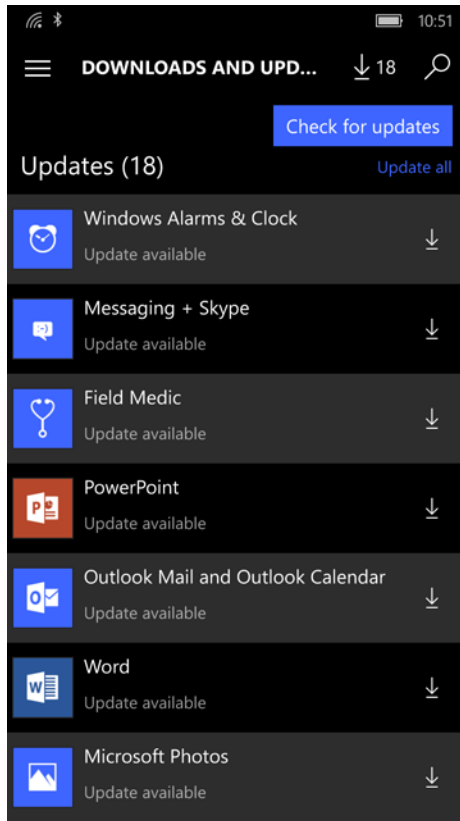
Application updates bring important bug fixes and new functionalities. To get the best out of the TC70x, make sure all applications are up to date.

1. Touch  **Store**.
2. Touch  > **Downloads and updates**.





**NOTE** By default, the device automatically updates the applications when connected to Wi-Fi.

3. Touch **Check for updates**.




**Figure 3-2** *Download Screen*

To turn off automatic updates:

1. Touch  **Store** >  > **Settings**.
2. Switch **Update apps automatically** to **Off**.

## People

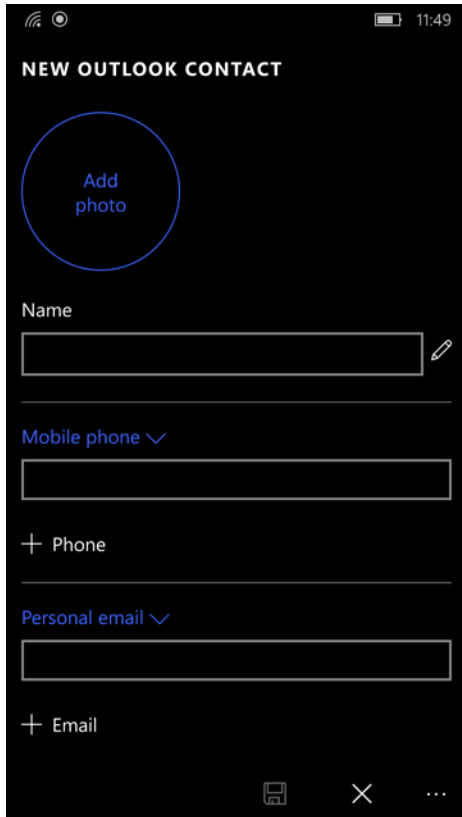
Use the **People** application to manage contacts.

From a Start or All Apps screen, touch . **People** opens to the main list of contacts. View contacts in three ways at the top of the screen: Contacts, What's New, and Groups. Touch the tabs to change how to view the contacts. Swipe up or down to scroll through the lists.

### Adding a Contact


To add a contact:

1. In the **People** application, touch +.




**Figure 3-3** *New Outlook Contact Screen*

2. In the **Name** text box, enter the person's name.
3. Touch the drop-down list, to select the type of phone. Options: **Mobile**, **Home**, **Work**, **Company**, **Pager**, **Home fax**, or **Work fax**.
4. In the text box, enter the person's phone number.
5. Touch **+ Phone** to add additional phone numbers. Repeat steps 3 and 4 for each additional phone number.
6. Touch the drop-down list, to select the type of email account. Options: **Personal**, **Home** or **Other**.
7. In the text box, enter the person's email address.
8. Touch **+ Email** to add additional email accounts. Repeat steps 3 and 4 for each additional email account.
9. Touch **+ Text tone** to select a sound to play when a text message is received from the contact.

10. Touch **+ Address** to add an address for the contact.
11. Touch **+ Other** to add other personal information Options: **Website, Company, Job Title, Office location, Significant other, Children, Birthday, Anniversary, or Notes.**
12. In the text box, enter the person's information.
13. Touch .

## Editing Contacts

1. In the **People** application, touch and hold a person's name.
2. Touch **Edit**.
3. Edit the contact information.
4. Touch .

## Deleting Contacts

1. In the **People** application, touch and hold a person's name.
2. Touch **Delete**.
3. Touch **Delete** to confirm.


### Camera

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

- ✓ **NOTE** If a microSD card is installed, The TC70x saves photos and videos on the microSD card. If a microSD card is not installed, the TC70x saves photos and videos on the internal storage.


### Taking Photos


- ✓ **NOTE** Camera settings are described in [Photo Settings on page 3-8](#).

1. Swipe down from the top of the screen.
2. Touch **Camera**.
3. If in video mode, touch .



**Figure 3-4** Camera Mode

4. To switch between the rear camera and front camera, touch .
5. Frame the subject on the screen.
6. To zoom in or out, press two fingers on the display and pinch or expand fingers.
7. Touch an area on the screen to focus.


8. Touch .

The camera takes a photo and a shutter sound plays.

The photo displays as a thumbnail in the upper right corner.




## Recording Videos

To record a video:

1. Swipe down from the top of the screen.
2. Touch **Camera**.
3. If in photo mode, touch .







**Figure 3-5** Video Mode








4. To switch between the rear camera and front camera, touch .
5. Point the camera and frame the scene.
6. To zoom in or out, press two fingers on the display and pinch or expand fingers.
7. Touch  to start recording.  
The device starts recording the video. The video time displays the recording time.
8. Touch  to end recording.  
The video displays as a thumbnail in the upper right corner.

### Photo Settings

When in Photo mode, photo settings display on screen.




-  **Switch** - Touch to switch between the front and rear camera.
- **Flash mode** - Touch to set 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.
  -  **Flash off** - Disable flash.
  -  **Flash auto** - Camera adjusts flash automatically depending upon light meter.
  -  **Flash on** - Enable flash upon taking a photo (default).
- **HDR** – Touch to enable High Dynamic Range (HDR) imaging. HDR adds more dynamic range to photographs (the ratio of light to dark). HDR uses three photos, taken at different exposures to create the photo (default - disabled).

Touch the down arrow to view additional Pro settings.

- **WB White balance** - Touch to select how Camera adjusts colors in different kinds of light, to achieve the most natural-looking colors. Drag the slider around the arc to select options.
  - **Auto** - Adjust the white balance automatically (default).
  -  **Cloudy** - Adjust the white balance for a cloudy environment.
  -  **Daylight** - Adjust the white balance for daylight.
  -  **Fluorescent** - Adjust the white balance for florescent lighting.
  -  **Incandescent** - Adjust the white balance for incandescent lighting.
-  **Focus Mode** - Touch to select the camera focus setting. Options: **Auto** (default), **M** (marco) or **Infinitely**.
- ISO Sensitivity - **Auto** (default), **100, 200, 400, 800, 1600 or 3200**.
-  Shutter speed - **Auto, 1/16000, 1/8000, 1/6400, 1/5000, 1/4000, 1/3200, ... 0.8s**.
-  **Brightness** - Touch to adjust the exposure settings. Options: **+2, +1.7, +1.3, +1, +0.7, +0.3, 0** (default), **-0.3, -0.7, -1, -1.3, -1.7, -2**.







### Video Settings

When in Video mode, video settings are displayed on screen.

-  **Switch** - Touch to switch between the front and rear camera.
- Video light - Turn flash on and off.
  -  On
  -  Off

Touch the down arrow to view additional Pro settings.



- **WB White balance** - Touch to select how Camera adjusts colors in different kinds of light, to achieve the most natural-looking colors.
  - **Auto** - Adjust the white balance automatically (default).
  -  **Cloudy** - Adjust the white balance for a cloudy environment.
  -  **Daylight** - Adjust the white balance for daylight.
  -  **Fluorescent** - Adjust the white balance for florescent lighting.
  -  **Incandescent** - Adjust the white balance for incandescent lighting.
-  **Focus Mode** - Touch to select the camera focus setting. Options: **Auto** (default), **M** (marco) or **Infinitely**.
-  **Brightness** - Touch to adjust the exposure settings. Options: **+2, +1.7, +1.3, +1, +0.7, +0.3, 0**(default), **-0.3, -0.7, -1, -1.3, -1.7, -2**.

## Camera Settings

For additional settings touch . . . in the lower right corner of the screen.

- **Lenses** - Add more features to the camera app using Lenses. Available using the **Store** application.
- **Photo Timer** - Use to set a timer to take a photo after a selected delay.
- **Settings**
  - **Press and hold camera button** - Select the operation when the user presses and holds the camera button.
    - **Video** - Records video until the user lifts finger off the camera button.
    - **Photo burst** - Continuously takes photos until the user lifts finger off the camera button.
    - **Disabled** - Normal camera operation. (default).
  - **Photos** - Select additional photo options.
    - **Aspect ration** - Select the aspect ratio of the photo. Options: **4:3** or **16:9** (default).
    - **Framing grid** - Adds a grid for aligning photos. Options: **Off** (default), **Rule of thirds**, **Golden ratio**, **Crosshairs** or **Square**.
    - **Focus light - Use flash settings** (default), **Auto** or **Always off**.
  - **Videos** - Select additional video options.
    - **Video recording** - Select video size and frame rate. Options: **1920x1080p/30 fps** (default), **1920x1080p/24 fps**, **1920x1080p/15 fps**, **1920x720p/30 fps**, **1920x720p/24 fps**, **1920x720p/15 fps**, **952x528p/30 fps**, **952x528p/24 fps** or **952x528p/15 fps**
    - **Digital video stabilization** - Options: **Auto** (default) or **Off**.

# Photos



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

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

Use **Photos** to:

- view photos and videos
- perform basic editing of photos.

## View Photos and Videos

To view photos and videos:

1. Touch **Photos**.



**Figure 3-6** *Photos App*





2. To view a photo or video, touch the photo or video.



**Figure 3-7** *View Photo*

3. To view the next photo or video, swipe left. To view the previous photo or video, swipe right.

✓ **NOTE** To zoom in or out, place two fingers on the screen, and slide fingers together or apart.

-  - Share photo - send photo to another person, application or device.
-  - Make photo a favorite
-  - Edit a photo
-  - Delete photo
- ... - More
  - Slideshow - display all photos in the display in sequence.
  - Set as - set photo as the lock screen, background or Photo tile.
  - Add to Album - add the photo to an album.
  - File Info - View information about the photo.

## Editing a Photo

To edit a photo:

1. Touch **Photos**.
2. Touch a photo to open it.

### 3. Touch .







**NOTE** If other photo editor apps were downloaded from the Store, they are listed as editing options.



**Figure 3-8** *Editing a Photo*

Touch one of the following basic editing features:

-  - Crop the photo to a new size.
-  - Enhance the resolution and clarity of the photo.
-  - Rotate the photo 90° clockwise.
-  - Save a copy of the photo.

1. To save the edited photo, Touch \*\*\* > **Save**.

## Continuum

With Continuum-compatible accessories, connect the TC70x to a monitor, mouse or keyboard to make the TC70x work like a laptop.

Continuum takes advantage of the Universal Windows application framework by allowing applications to optimize their appearance based on which display (such as the device screen, monitor, big screen television or conference room projector) they are opened on.

When connecting the TC70x to an external display such as a monitor, television or projector, Windows 10 Mobile launches a separate tailored experience on the external display while maintaining the expected experience on the TC70x. Additionally, a mouse or a keyboard may be used with the external display similar to how they would with a host computer.



**Figure 3-9** *Wireless Connection*

The TC70x and monitor are managed as separate independent displays; a cursor or application windows cannot be dragged between and the desktop cannot be extended across them. An application can be launched on either monitor, and applications can choose to have a companion experience on the internal screen when the app is running on the extended screen. When a keyboard and mouse are paired to the TC70x their input is targeted only to the external screen. If a keyboard and mouse is not connected, the TC70x can be used to provide input to the external screen.

In the desktop environment, you have:

- Traditional desktop experience with Start Menu
- Windows 10 apps scale to the external screen
- Full keyboard and mouse support

In the mobile environment, you have:

- Full mobile functionality including communication and apps
- Windows 10 apps scale to device screen size.



**NOTE** Zebra verified the ScreenBeam Mini2 Continuum edition dongle from Actiontec.

**Table 3-1** Continuum Wireless Dongle Requirements

Component	Minimum Requirements	Premium Requirements
Wi-Fi	Supports at least 802.11n.	802.11ac dual band recommended.
Miracast	Required.	Miracast UIBC (HID Commands mode) is recommended to enable keyboard and mouse input.
USB	USB and AC adapter recommended to power device.	
Audio/video latency	≤80 msec*	
Display resolution	Minimum 720P @60 fps, 1080P @ 30fps	
Display connector	HDMI 1.4	

## Cortana



**NOTE** A Microsoft account is required to use Cortana.

Cortana is a voice activated assistant.

Make sure that the device and speech language match and are supported by Cortana. If the Cortana language is not supported in your region, try changing the regional settings. For example, if the device and speech language is Italian, set Italy as the region.

Cortana can:

- Schedule a meeting
- Set a reminder for an important task
- Send automatic replies for callers when you don't want to be disturbed
- Send email
- Check your location
- Search the web and cloud storage
- Get up-to-date traffic and weather information.

### Set Up Cortana

Tell Cortana a little bit about yourself, so you can get better help and find what you're looking for.


1. Touch the search key.
2. Follow the instructions shown on the device.

To later change your settings

1. Touch .
2. Touch  > **Notebook** > **Settings**.

### Install a Speech Language



Depending on your region and Cortana version, you may need to download and install the appropriate speech language to use Cortana.

1. Swipe down from the top of the screen, and Touch **All settings** >  **Time & language** > **Speech**.
2. Touch **Add a language**, and follow the instructions to install the language.


After installation reboot may be required.

### Using Cortana

To use Cortana:

1. Touch .
2. Touch .
3. Speak a command and follow the instructions shown on the device.




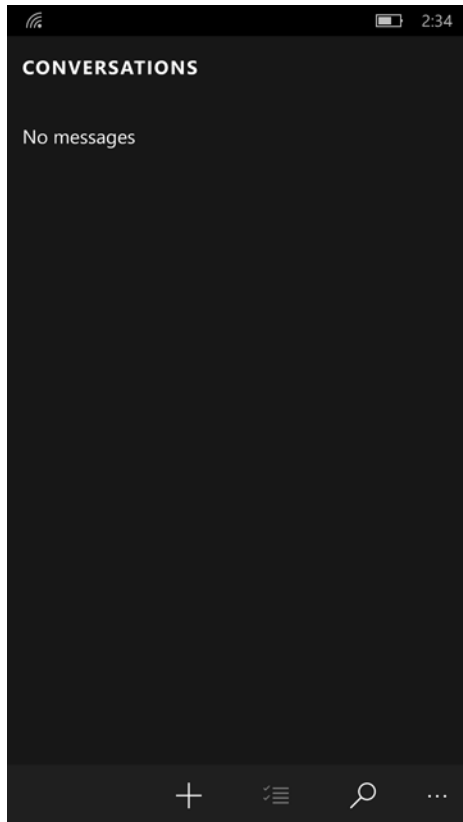
**NOTE** To open the Cortana voice assistant quickly, touch and hold . Example: Say “Make an appointment.”



---

## Messaging

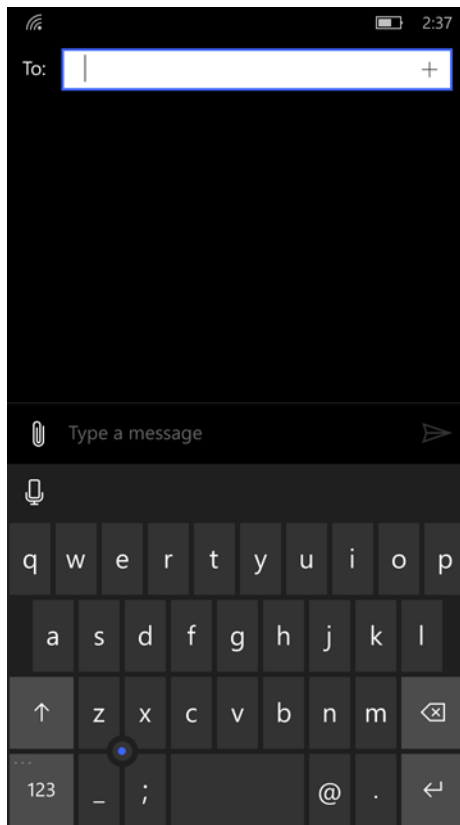
Use Messaging to send and receive messages using Skype. From the Start or All Apps screen, touch .




**Figure 3-10** *Messaging Screen*

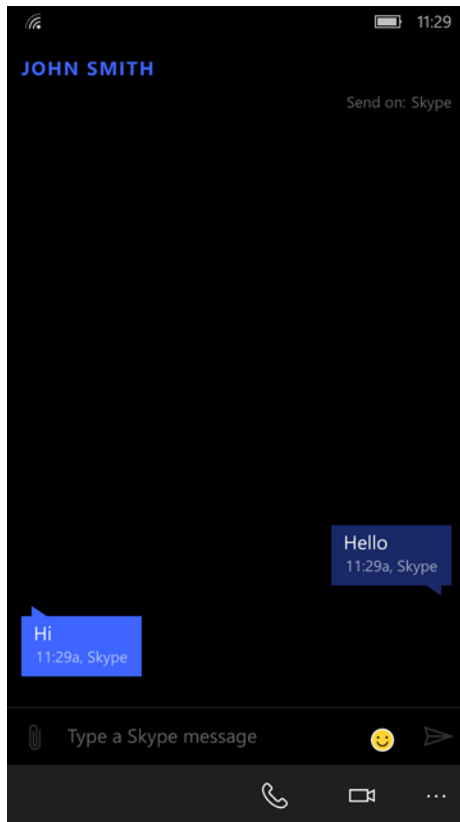
### Sending a Text Message

1. In the main Messaging screen, touch .



**Figure 3-11** *New Text Message Screen*

2. In the **To** field, enter a name from Contacts list.
3. In the **Type message** field, enter the text message.  
If the user presses the Back button while composing a message, it's saved as a draft in the Messaging screen.  
Touch the conversation to resume composing it.
4. Touch  to send the message.

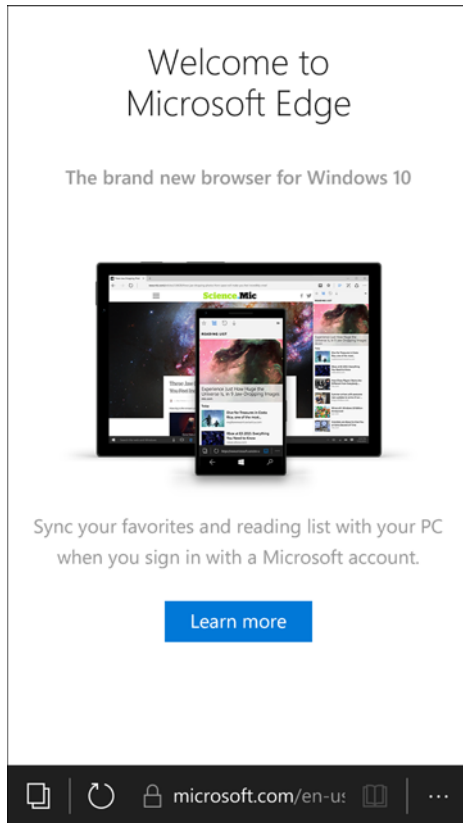


**Figure 3-12** *Skype Conversation Screen*

---

## Microsoft Edge


Use Microsoft Edge web browser to access web pages.

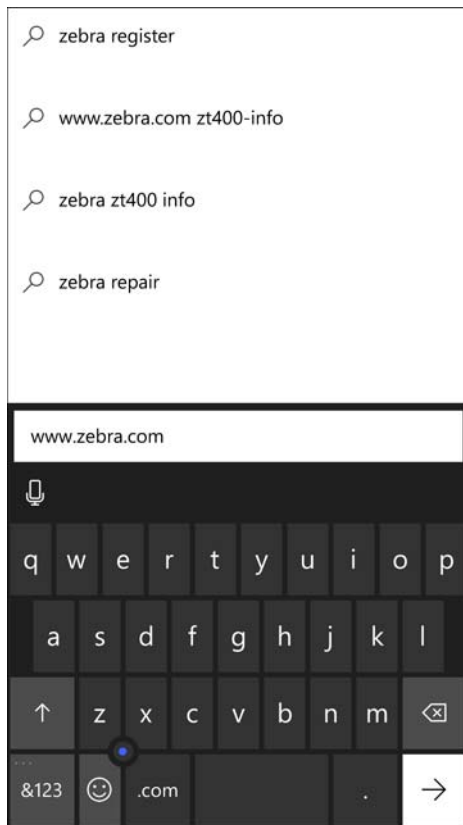


**Figure 3-13** *Microsoft Edge*

### Opening a Web Page

To open a web page:

1. Touch  Microsoft Edge.
2. Touch the address bar.
3. Enter a web address.



**Figure 3-14** *Enter Web Address*

4. Touch →.



**Figure 3-15** Web Page


## Opening a New Tab

When visiting several websites at the same time, open new browser tabs and switch between them.

1. Touch  > .



## Switching Between Tabs

To switch between open tabs:

1. Touch .
2. Touch the tab to view.

## Closing a Tab

To close open tabs:

1. Touch .
2. Touch  on the tab to close.

Tip: To close all tabs, Touch, and select if you want to close all tabs or only the ones you've opened for private browsing.

Make a website easier to read

Small text on a website can be hard to read. Use your browser in mobile or desktop mode, or switch certain web pages to the reading view and set the font size to your liking. To set the browser to always use the mode you want, Touch Microsoft Edge > > Settings, and change the setting for Website preference.

## Adding a Website to Favorites

To add a website to favorites:

1. Go to a website.
2. Touch **...** > **add to favorites**.
3. In the **Name** text box, edit the name of the website.
4. In the **Save location** drop-down list, select **Favorites** or **Favorites Bar**.
5. Touch **ADD**.



**NOTE** You can also pin your favorite websites to the start screen. While browsing a website, Touch > Pin this page to Start.

Found a website you want to read, but don't have time right now? Add it to your reading list. Touch > Add to reading list > ADD. If you're signed in to your Microsoft account, your reading list is synced to your account, so you can find your reading list on all your devices. To find the websites you have saved to your reading list, Touch > Reading list.

## Opening a Favorite Website

To open a favorite website:

1. Touch **...** > **Favorites**.
2. Touch a website from the list.

---


## OneDrive

✓ **NOTE** A Microsoft account is required to use OneDrive.


Use OneDrive to upload and save any file type including documents, photos, videos, and music files.

### Upload Files

To upload files:



1. In the folder where you want the photos added, tap **Add** .
2. At **Choose an app**, pick the source of the file to upload, such as **This Device** or **Photos** app.

✓ **NOTE** If the TC70x is set to save photos automatically to OneDrive, the **Photos** app shows photos from OneDrive as well as photos that have not been uploaded. Uploading a photo already in OneDrive creates a duplicate of the photo.

3. Find the file to upload.
4. Touch to select the photo.
5. Touch . The file uploads to OneDrive.

### Upload Photos Automatically

To automatically upload photos to OneDrive:


1. Touch  >  **Settings** > **Camera upload**.
2. Under **Camera upload**, turn the switch On.
3. To also automatically upload videos, turn On the **Include videos** switch.

✓ **NOTE** The user can upload videos automatically only if Camera upload is also turned on.

4. Under **Camera backup account**, open the list and select the OneDrive account that you want pictures uploading to.

### Add a Folder



Add folders in the Files view, or inside any other folder in OneDrive.

1. In the **All Files** view, tap **...** > **Create a new folder**.
2. Enter a name for the new folder.
3. Touch .

### Move Files to Another folder



To move files:



1. Touch .
2. Touch the check box of one or more files to move.
3. Touch **\*\*\* > Move**.
4. At **Move items to**, touch a folder.
5. Touch .



## Find Files


To search for file or folder names, text within files, and text and tags in photos.


1. Touch  in the top right corner of the screen.
2. In the **Search** text box, enter a phrase.
3. Touch .

## Download Files to the Device

To download files from OneDrive:

1. Touch .
2. Touch the check box of the files that you want.
3. Touch .
- 4.

 **NOTE** OneDrive currently does not support downloading folders or OneNote notebooks.


5. Find and open the folder on your device where you want the downloads.
6. Touch .


---


## OneNote


✓ **NOTE** A Microsoft account is required to use OneDrive.

Use OneNote to take notes. OneNote automatically syncs notes to OneDrive.

1. Touch **OneNote**.
2. Touch  to create a new note.
3. In the heading, enter a title for the note.
4. In the note body section, write notes.

✓ **NOTE** Touch  to use speak to text to write a note.

5. Use the toolbar above the keyboard to format text (text format, paragraph format, etc.).
6. Touch  to save the note.

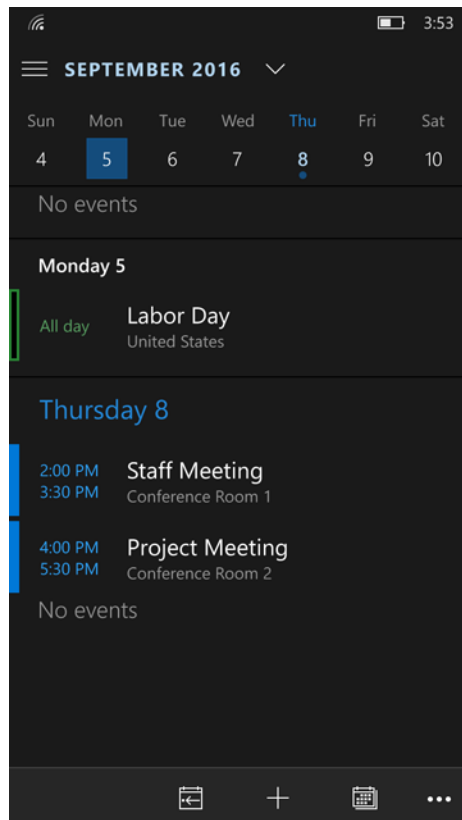
✓ **NOTE** To add an attachment, Touch .

## Outlook Calendar




Use Outlook Calendar to create appointment and events.

### Viewing Calendar

In the Start screen or All App screen, touch **Outlook Calendar**.





**Figure 3-16** Outlook Calendar

-  **Today** - Show today calendar.
-  **New** - Create new appointment.
-  **View** - Change calendar view: **Agenda**, **Day**, **Week**, **Month** or **Year** view.
- ...
  - **Manage accounts** - add and delete accounts associated with Outlook Calendar.
  - **Settings** - change Outlook Calendar settings.
  - **Feedback** - provide feedback to Microsoft about Outlook Calendar.



### Creating an Appointment

To create an appointment:

1. Touch .
2. In the **Details** tab, enter all the appointment information.
3. Touch . The appointment appears in the Calendar view.

### Sending a Meeting Invitation

To invite people to a meeting:




1. Touch .
2. In the **Details** tab, enter all the meeting information.
3. Touch **People** tab.
4. In the Invite someone text box, enter the name or email address of the attendees.
5. Touch .

## Outlook Mail

Use Outlook Mail to send and receive emails.

### Sending Emails

To send an email:

1. Touch **Outlook Mail**.
2. In the inbox, touch .
3. In the **To:** field, add a recipient from contacts list or write an email address.
4. In the **Subject** field, enter the subject.
5. In the message body, enter the email message.
6. To attach a photo or a file, touch .
6. Touch  to send the email.

### Reading Email



To read an email:

1. Touch Outlook Mail.
2. In the inbox, touch the email. Unread email is marked in a different color.

✓ **NOTE** To zoom in or out, place 2 fingers on the screen, and slide them together or apart.


### Deleting Mails

To delete multiple emails:

1. In your mailbox, touch .
2. Touch the check boxes that appear next to the emails.
3. Touch .

✓ **NOTE** All the selected emails are deleted. Depending on email account, the email may also be deleted from the email server.

To delete a single email:

1. Open the email.
2. Touch .

### Forwarding Mail

To send an email to another user:

1. Open the mail.
2. Touch > **Forward**.
3. In the To: field, enter an email address.
4. In the message body, enter a message.
5. Touch ➤ to forward the email.

### **Sending Automatic Replies**

If you are on vacation or otherwise out of the office, you can send automatic replies to the emails that arrive during your absence.

1. Open Outlook Mail.
2. Touch . . . > **Settings** > **Automatic replies**.
3. Switch **Send automatic replies** to **On**.
4. In the text box, enter a reply.
5. Touch ←.

---



## Skype

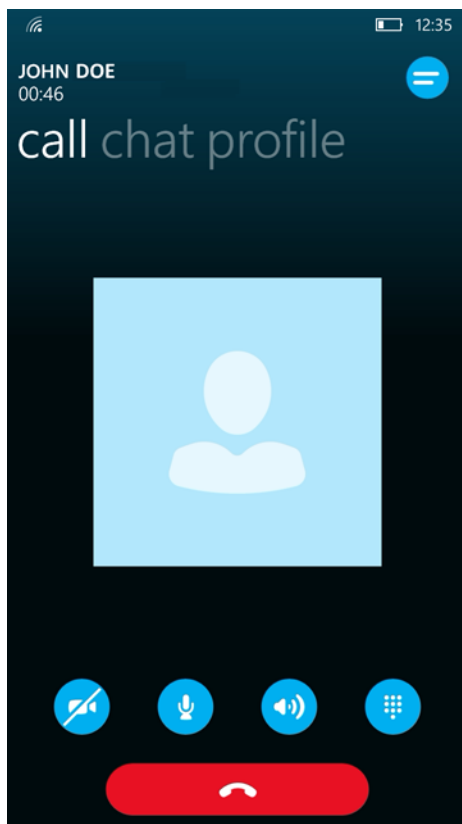
✓ **NOTE** A Microsoft account is required to use Skype.

Use the TC70x to make Skype-to-Skype calls and video calls over Wi-Fi.

### Making a Call

To make a call:

1. Touch  **Skype**.
2. Sign in with the your Microsoft account.
3. To call a Skype contact, touch **people**.
4. Touch the contact to call.
5. Touch .



**Figure 3-17** Skype Audio Screen

6. Talk to the other person.
7. Touch  to end the call.

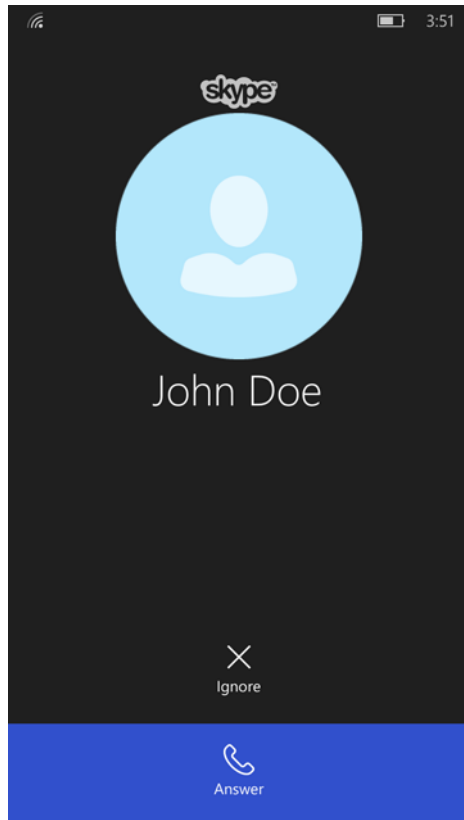
## Receiving a Call




**NOTE** When using a Bluetooth headset, press the headset button to answer the call. Do not press the on-screen button on the device.

To answer a Skype call:

1. When an incoming Skype call occurs, the following displays.





**Figure 3-18** *Incoming Skype Call*

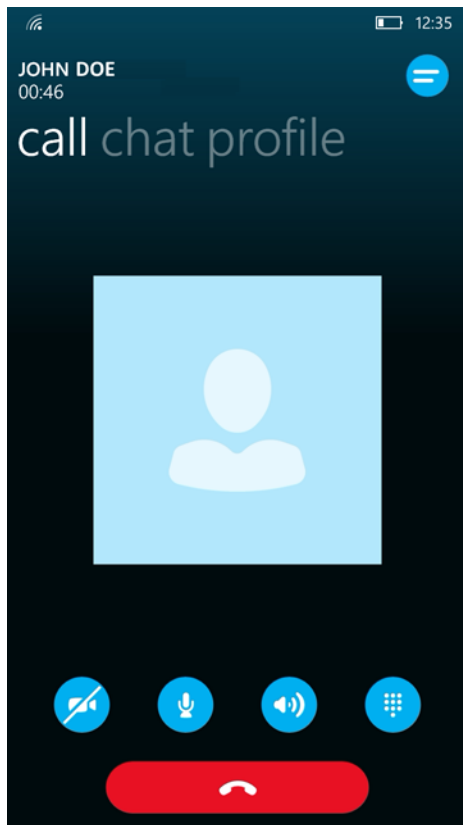
2. Touch **Answer** on the device or press the Bluetooth headset button to answer the call.  
Touch **Ignore** to not answer the call.
3. Touch  to end the call.

## Making a Video Call

To make a video call:

1. Touch  **Skype**.
2. Sign in with the your Microsoft account.
3. To call a Skype contact, touch **people**.
4. Touch the contact to call.
5. Touch .





**Figure 3-19** Skype Audio Screen

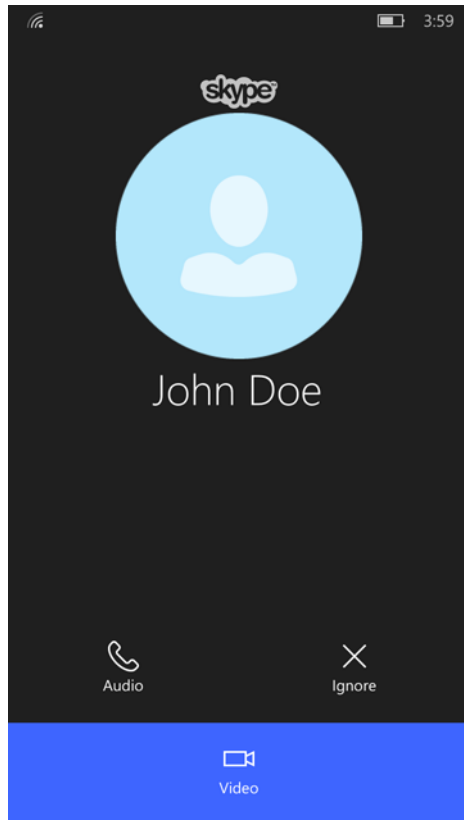
6. Talk to the other person.
7. Touch  to end the call.

## Receiving a Video Call


✓ **NOTE** When using a Bluetooth headset, press the headset button to answer the video call. Do not press the on-screen button on the device.

To answer a Skype video call:

1. When an incoming Skype video call occurs, the following displays.



**Figure 3-20** *Receive Video Call*


2. Touch **Video** on the device or press the Bluetooth headset button to answer the call.  
Touch **Audio** to answer as an audio call.  
Touch **Ignore** to not answer the video call.
3. Touch  to end the call.

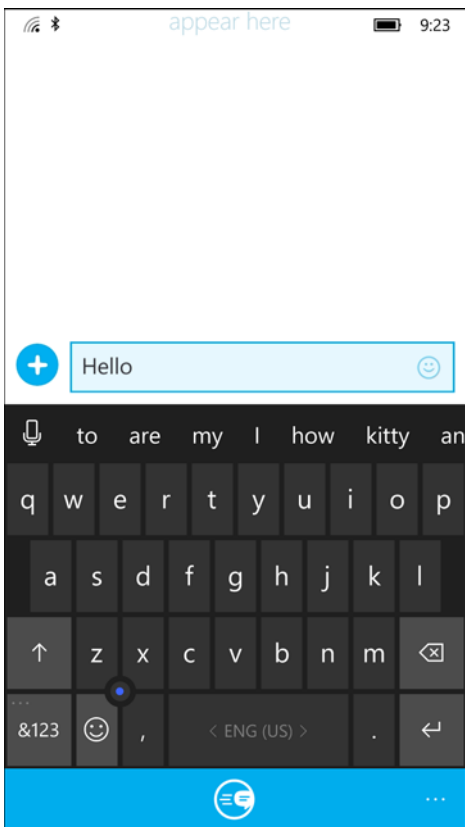
## Chat using Skype




**NOTE** A Microsoft account is required to send messages using Skype.

Use the TC70x to send Skype-to-Skype instant messages.

1. Touch  **Skype**.
2. Sign in with the your Microsoft account.
3. To send a message to a Skype contact, touch **people**.
4. Touch a contact.
5. In the message box, write a message.





**Figure 3-21** *Send Skype Message*

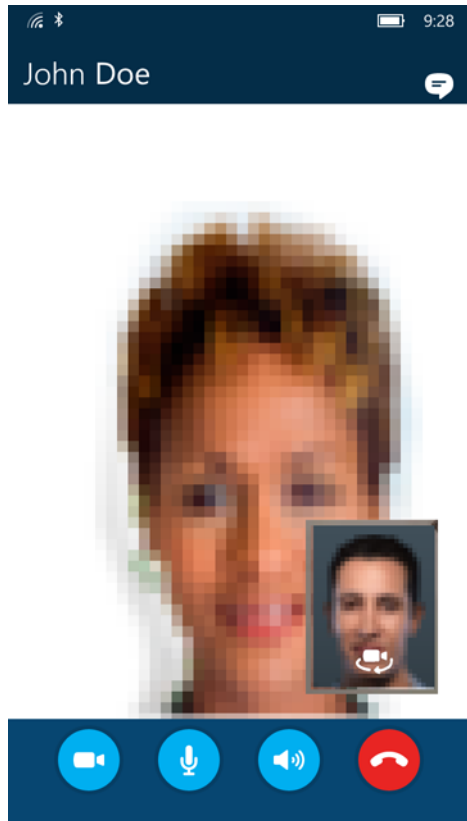
6. Touch  to send the message.

## Skype Video


✓ **NOTE** A Microsoft account is required to use Skype Video.

To make a video call using Skype Video:

1. Touch  **Skype Video**.
2. Touch  to view contact list.
3. Touch the contact to call.
4. Touch **Skype video**. When the video call connects, the receiptant appears in the main screen and the caller appears in the small box.




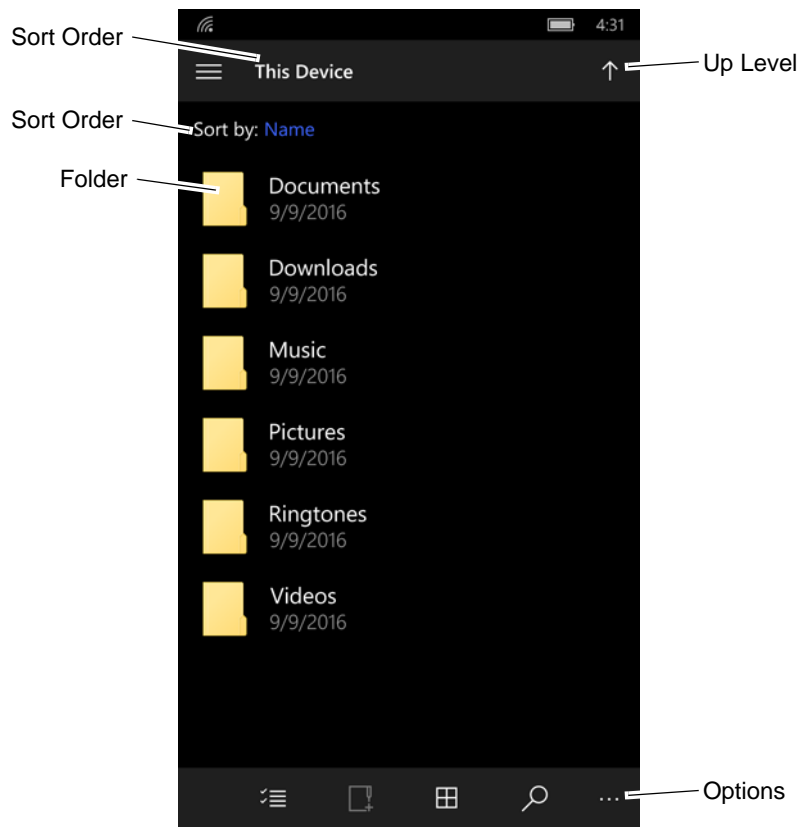
**Figure 3-22** *Skype Video*

5. Touch  to end the video call.

## File Explorer





Use **File Explorer** to view and manage files on the TC70x.

To open **File Explorer**, touch  **File Explorer**.

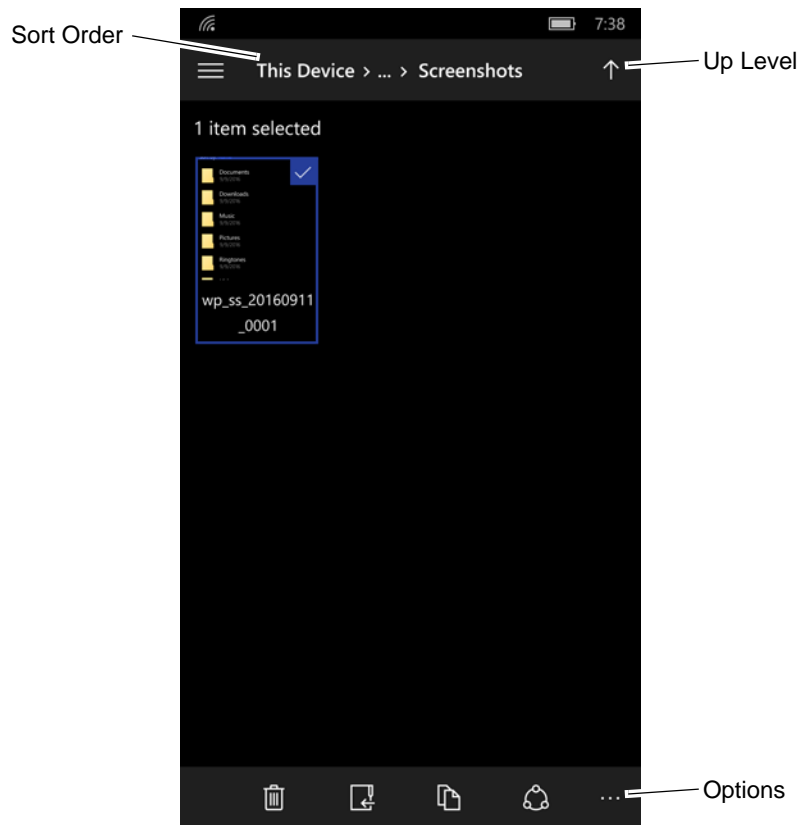


**Figure 3-23** *File Explorer*





Options:

-  **Select** - Select one or more files or folders.
-  **New Folder** - Create a new folder,
-  **Icons** - Display files or folders in list or grid.
-  **Search** - Search for files or folders on the device.
- ... **More**
  - **Refresh** - Refresh the current folder list.
  - **Select all** - Select all files or folders in the current folder.
  - **Rename** - Rename a file or folder.
  - **Clear selection** - Clear selected files.
  - **Properties** - View information about the selected folder or file.

After selecting a file, performs any of the following options:



**Figure 3-24** *Selected File*

-  Delete - Delete the select files or folders.
-  Move - Move the select file to another folder.
-  Copy - Copy the select file to another folder.
-  Share - Share the selected file via Bluetooth, messaging or mail.
- ... More
  - **Select all** - Select all files or folders in the current folder.
  - **Clear selection** - Clear selected files.
  - **Rename** - Rename a file or folder.
  - **Properties** - View information about the selected folder or file.

---

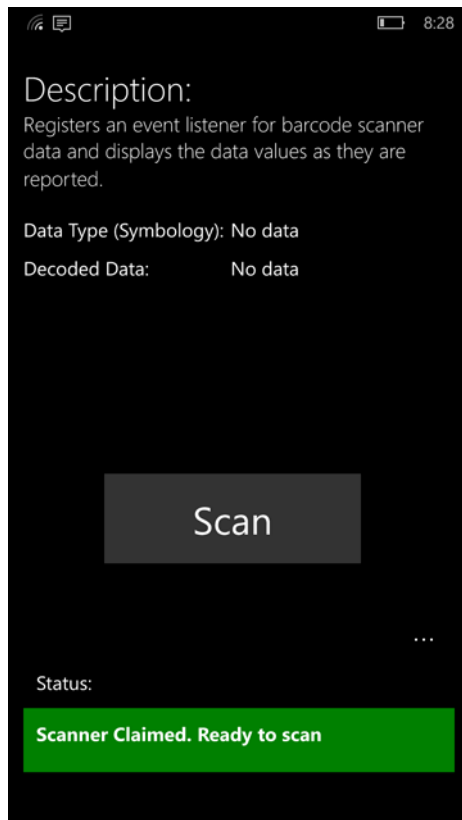
## Zebra Barcode Scanner

Use the Zebra Barcode Scanner app to demonstrate scan functionality of the TC70x.

Download the Zebra Barcode Scanner app from the Microsoft Store. See [Store on page 3-1](#).

To demonstrate bar code scanning:

1. Open the Zebra Barcode Scanner app.



**Figure 3-25** *Zebra Barcode Scanner App*

2. Point the exit window on the top of the TC70x at a bar code.
3. Press and hold the scan button.  
The red laser aiming pattern turns on to assist in aiming.
4. Ensure the bar code is within the area formed by the crosshairs in the aiming pattern. The aiming dot is used for increased visibility in bright lighting conditions.
5. The Data Capture LED lights green to indicate the bar code was decoded successfully.
6. Release the scan button. The decoded data displays on the screen.

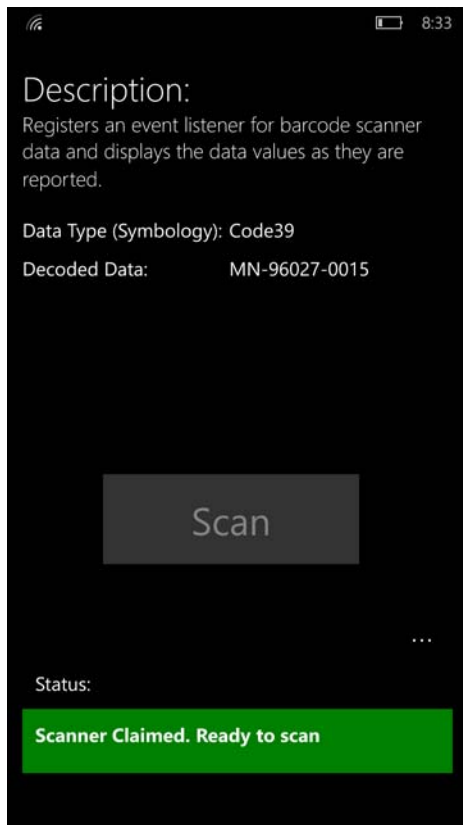


Figure 3-26 *Decoded Data*

## Settings



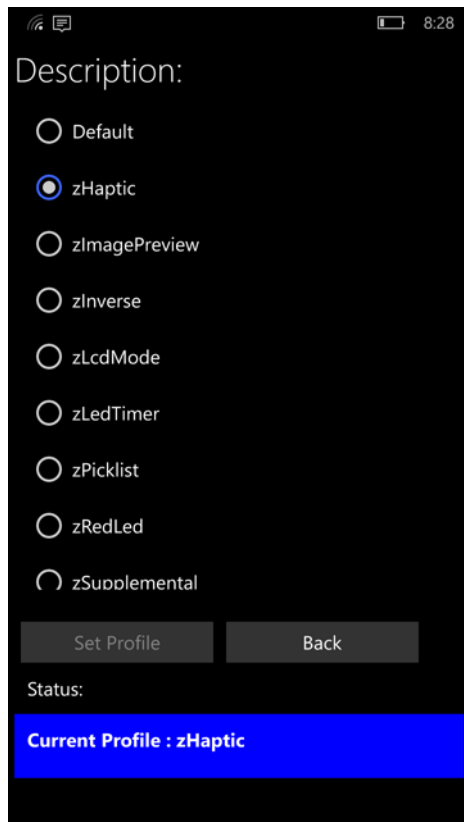
**NOTE** Before opening Settings menu, ensure that the Status is “Scanner claimed. Ready to scan.”

### Set Profiles

The Set Profiles option allows the user to select various scanner options.

1. Touch . . . .
2. Touch **Set Profiles**.





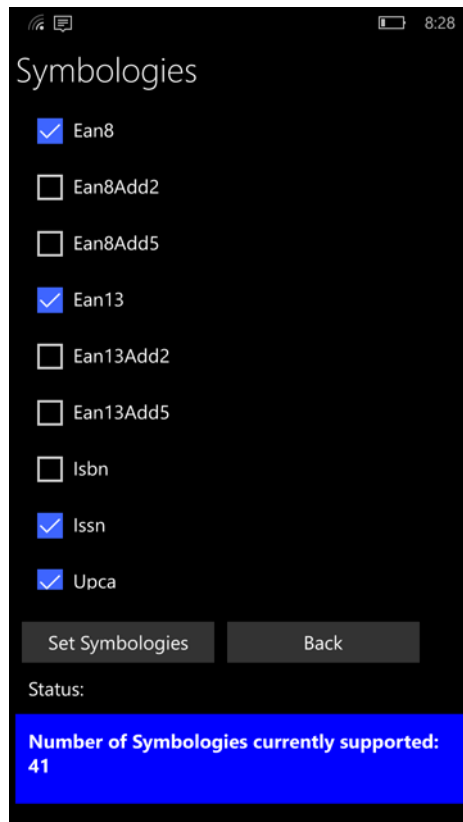
**Figure 3-27** *Set Profiles Screen*

3. Touch an option to select.
4. Touch **Set Profile** to enable the option.
5. Touch **Back**.

## Set Symbolologies

The Set Symbolologies option allows the user to enable or disable symbolologies that the app decodes.

1. Touch . . . .
2. Touch **Set Symbolologies**.



**Figure 3-28** *Set Symbologies Screen*

3. Touch a checkbox to enable or disable the symbology.
4. Touch **Set Symbologies** to enable the options.
5. Touch **Back**.

# CHAPTER 4 DATA CAPTURE

The TC70x offers data capture using the integrated imager.

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## Imaging

The TC70x with an integrated 2D imager has the following features:

- Omnidirectional reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- 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 bar code, stores the resulting image in its memory, and executes state-of-the-art software decoding algorithms to extract the bar code data from the image.

## Operational Modes

The TC70x with an integrated imager supports two modes of operation, listed below. Activate each mode by pressing the Scan button.

- **Decode Mode:** In this mode, the TC70x attempts to locate and decode enabled bar codes within its field of view. The imager remains in this mode as long as the user holds the scan button, or until it decodes a bar code.



**NOTE** To enable Pick List Mode, set in an application using a Microsoft API command. See <https://msdn.microsoft.com/en-us/library/windows/apps/windows.devices.pointofservice.barcodescanner.aspx>.

Application might not support Pick List Mode.

- **Pick List Mode:** This mode allows the user to selectively decode a bar code when more than one bar code is in the TC70x's field of view. To accomplish this, move the aiming crosshair or dot over the required bar code to decode only this bar code. This feature is ideal for pick lists containing multiple bar codes and manufacturing or transport labels containing more than one bar code type (either 1D or 2D).

---

### Scanning Considerations

Typically, scanning is a simple matter of aim, scan, and decode and a few quick trial efforts master it. However, consider the following to optimize scanning performance:

- **Range:** Any scanning device decodes well over a particular working range — minimum and maximum distances from the bar code. This range varies according to bar code density and scanning device optics. Scanning within range brings quick and constant decodes; scanning too close or too far away prevents decodes. Move the scanner closer and further away to find the right working range for the bar codes being scanned.
- **Angle:** Scanning angle is important for promoting quick decodes. When laser beams reflect directly back into the scanner from the bar code, this specular reflection can “blind” the scanner. To avoid this, scan the bar code so that the beam does not bounce directly back. But don’t 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 TC70x farther away for larger symbols
- Move the TC70x closer for symbols with bars that are close together.



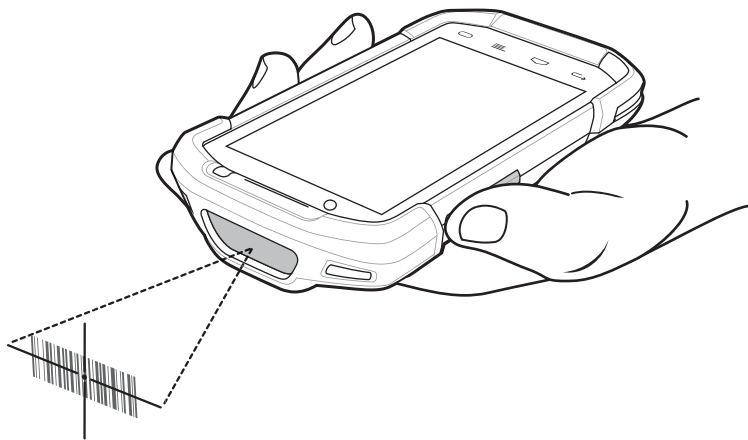
**NOTE** Scanning procedures depend on the application and TC70x configuration. An application may use different scanning procedures from the one listed above.

---

### Imager Scanning

To read a bar code, a scan-enabled application is required.

1. Ensure that an application is open on the TC70x and a text field is in focus (text cursor in text field).
2. Point the exit window on the top of the TC70x at a bar code.



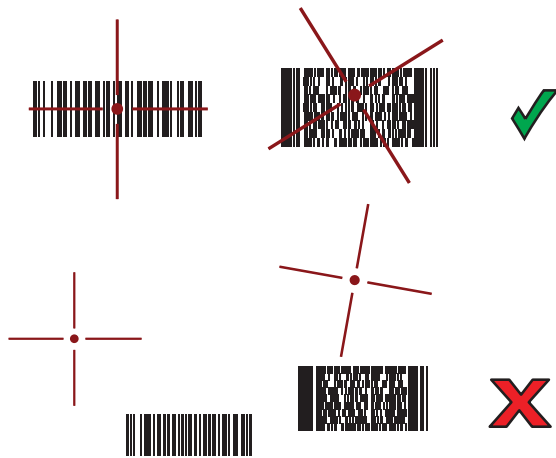
**Figure 4-1** Imager Scanning

3. Press and hold the scan button.  
The red laser aiming pattern turns on to assist in aiming.



**NOTE** When the TC70x is in Picklist mode, the imager does not decode the bar code until the crosshair or aiming dot touches the bar code.

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



**Figure 4-2** *Aiming Pattern*



**Figure 4-3** *Pick List Mode with Multiple Bar Codes in Aiming Pattern*

5. The Data Capture LED lights green and a beep sounds, by default, to indicate the bar code was decoded successfully.
6. Release the scan button.  
Imager decoding usually occurs instantaneously. The TC70x repeats the steps required to take a digital picture (image) of a poor or difficult bar code as long as the scan button remains pressed.
7. The bar code content data displays in the text field.



# CHAPTER 5 WIRELESS

This section provides information on the wireless features:

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

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## Wireless Local Area Networks

Wireless local area networks (WLANs) allow the TC70x to communicate wirelessly inside a building. Before using the TC70x 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 TC70x 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 TC70x to match the security scheme.

The TC70x supports the following WLAN security options:

- Open
- Wireless Equivalent Privacy (WEP).
- Wi-Fi Protected Access (WPA)/WPA2 Personal (PSK).
- 802.11x.



The **Status** bar displays icons that indicate Wi-Fi network availability and Wi-Fi status. See [Status Bar on page 2-16](#) for more information.



**NOTE** Turn off Wi-Fi when not using it, to extend the life of the battery.

## Scan and Connect to a Wi-Fi Network

To connect to a Wi-Fi network:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Network & wireless** > **Wi-Fi**.
2. Touch the **Wi-Fi networking** switch to turn on the Wi-Fi radio.
3. The TC70x searches for WLANs in the area and lists them.






**Figure 5-1** *Wi-Fi Screen*

4. Scroll through the list and select the desired WLAN network.
5. In the **Sign in** window, enter the network password.
6. Touch **Done**.
7. For open networks, touch profile once or for secure networks enter the required password or other credentials then touch **Done**. See the system administrator for more information.  

The TC70x obtains a network address and other required information from the network using the dynamic host configuration protocol (DHCP) protocol. To configure the TC70x with a fixed internet protocol (IP) address, Refer to the *TC70x Integrator Guide for Windows 10 IoT Mobile Enterprise* for more information.
8. In the Wi-Fi setting field, **Connected** appears indicating that the TC70x is connected to the WLAN.

### Remove a Wi-Fi Network

To remove a remembered or connected network:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Network & wireless** > **Wi-Fi**.
2. Under **Connected to**, touch and hold a network name until a menu appears.
3. Touch **Delete**.
4. Touch .



## Bluetooth

Bluetooth-equipped 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 meters (32.8 feet)) communication and low power consumption.

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

The TC70x support 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 meters (32.8 ft.). A definition of ranges based on power class is difficult to obtain due to power and device differences, and whether one measures 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 following Bluetooth services:

- Service Discovery Protocol (SDP) - Handles the search for known and specific services as well as general services.
- Serial Port Profile (SPP) - Allows use of RFCOMM protocol to emulate serial cable connection between two Bluetooth peer devices. For example, connecting the device to a printer.
- Object Push Profile (OPP) - Allows the device to push and pull objects to and from a push server.
- Advanced Audio Distribution Profile (A2DP) - Allows the device to stream stereo-quality audio to a wireless headset or wireless stereo speakers.
- Audio/Video Remote Control Profile (AVRCP) - Allows the device to control A/V equipment to which a user has access. It may be used in concert with A2DP.
- Personal Area Network (PAN) - Allows the use of Bluetooth Network Encapsulation Protocol to provide L3 networking capabilities over a Bluetooth link. Only PANU role is supported.
- Human Interface Device Profile (HID) - Allows Bluetooth keyboards, pointing devices, gaming devices and remote monitoring devices to connect to the device.
- Headset Profile (HSP) - Allows a hands-free device, such as a Bluetooth headset, to place and receive calls on the device.
- Hands-Free Profile (HFP) - Allows car hands-free kits to communicate with the device in the car.
- Out of Band (OOB) - Allows exchange of information used in the pairing process. Pairing is completed using the Bluetooth radio, but requires information from the OOB mechanism. Using OOB with NFC enables pairing when devices simply get close, rather than requiring a lengthy discovery process.
- Generic Attributes (GATT) - Provides profile discovery and description services for Bluetooth Low Energy protocol and defines how attributes are grouped together into sets to form services.

### Bluetooth Power States

The Bluetooth radio is off by default.

- **Connected Standby** - When the TC70x goes into connected standby mode, the Bluetooth radio stays on.
- **Airplane Mode** - When the TC70x 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 (e.g., an airplane). When the radio is off, other Bluetooth devices cannot see or connect to the device. Turn on the Bluetooth radio to exchange information with other Bluetooth devices (within range). Communicate only with Bluetooth radios in close proximity.






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

### Enabling Bluetooth



1. Swipe down from the top of the screen, and touch  **All settings** >  **Devices** > **Bluetooth**.
2. Touch the **Status** switch to turn Bluetooth on.
3. Touch .

### Disabling Bluetooth

1. Swipe down from the top of the screen, and touch  **All settings** >  **Devices** > **Bluetooth**.
2. Touch the **Status** switch to turn Bluetooth off.
3. Touch .




## Discovering Bluetooth Device(s)

The TC70x can receive information from discovered devices without pairing. However, once paired, the TC70x 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 top of the screen, and touch  **All settings** >  **Devices** > **Bluetooth**.
5. Touch the **Status** switch to turn Bluetooth on. The TC70x begins searching for discoverable Bluetooth devices in the area and displays them on the screen.
6. Scroll through the list and select a device. The **Bluetooth pairing request** dialog box appears.
7. Enter a PIN in the text box and touch **OK**. Enter the same PIN on the other device.
8. For Simple Pairing, touch **Pair** on both devices.
9. The Bluetooth device is added to the **Bluetooth devices** list and a trusted (“paired”) connection is established.




## Changing the Device Name

By default, the TC70x has a generic name that is visible to other devices when connected.

1. Swipe down from the top of the screen, and touch  **All settings** >  **System** > **About**.
2. Touch **Edit name**.
3. Enter a name and touch **Save**.
4. Touch .





## Connecting to a Bluetooth Device

Once paired, connect to a Bluetooth device.

1. Swipe down from the top of the screen, and touch  **All settings** >  **Devices** > **Bluetooth**.
2. Touch the **Status** switch to turn Bluetooth on.
3. Touch  **Bluetooth**.
4. If Bluetooth is not on, slide the switch to the **ON** position.
5. In the **PAIRED DEVICES** list, touch and hold on a unconnected Bluetooth device until a menu appears.
6. Touch **Connect**. When connected, the device is displayed as connected in the list.




### Selecting Profiles on the Bluetooth Device

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

1. Swipe down from the top of the screen, and touch  **All settings** >  **Devices** > **Bluetooth**.
2. In the **PAIRED DEVICES** list, touch  next to the device name.
3. Under **PROFILES**, check or uncheck a profile to allow the device to use that profile.
4. Touch .

### Unpairing a Bluetooth Device

To unpair a Bluetooth device and erase all pairing information:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Devices** > **Bluetooth**.
2. Touch and hold on a device name until a menu appears..
3. Touch **Delete**.
4. 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 TC70x support 3 operating modes:

- Reader mode
- Peer-to-Peer communication
- Card Emulation mode.

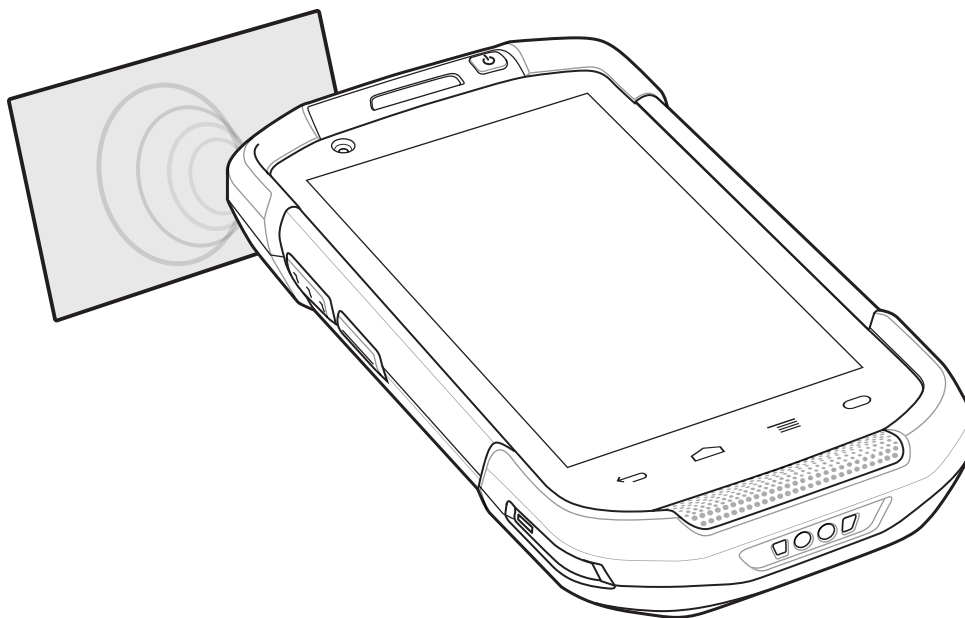
Using NFC, the TC70x can:

- 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 and headsets.
- Exchange data with another NFC device.
- Emulate contactless card such as payment, ticket or SmartPoster.

The TC70x NFC antenna is uniquely positioned to read NFC cards from the top of the device while being held in the user's hand.

### Reading NFC Cards

1. Launch an NFC enabled application.
2. Hold device as shown.



**Figure 5-2** *Reading Cards*

3. Move TC70x close to the NFC card until the TC70x detects the card.

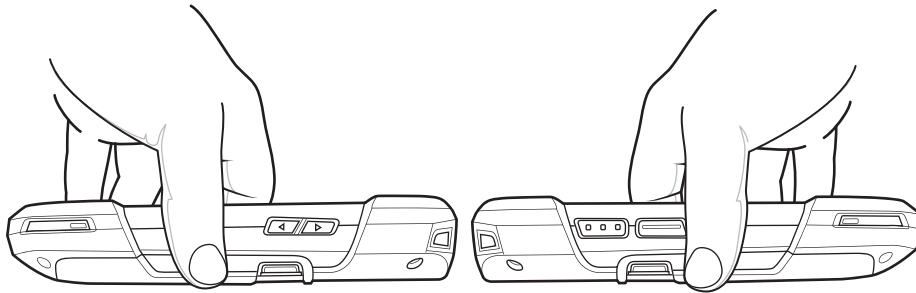
4. Hold the card steadily until the transaction is complete (usually indicated by the application).

### 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 top of the TC70x toward the top of the other device.





**Figure 5-3** *Sharing Data Using NFC*

When the devices connect, you hear a sound, the image on the screen reduces in size, the message **Touch to beam** appears.

3. Touch anywhere on the screen.  
The transfer begins.

### NFC Settings

To enable NFC:

1. Swipe down from the top of the screen, and touch  **All settings** >  **Devices** > **NFC**.
2. Touch the **Tap to share** switch to turn NFC to **On**.



**NOTE** Before using NFC, make sure the screen and keys are unlocked.

### Read NFC Tags

NFC tags can contain info, such as a web address, a phone number, or a business card.

Tap a tag with the NFC area of the TC70x.

# CHAPTER 6 ACCESSORIES

This chapter provides information for using the accessories for the device.

## Accessories

This table lists the accessories available for the TC70x.

Table 6-1 TC70x Accessories

Accessory	Part Number	Description
<b>Cradles</b>		
2-Slot Charge Only Cradle	CRD-TC7X-SEC2U1-01	Provides device and spare battery charging. Use with power supply, p/n PWRS-14000-148R.
2-Slot USB/Ethernet Cradle	CRD-TC7X-SE2EU1-01	Provides device and spare battery charging and USB communication with a host computer and Ethernet communication with a network. Use with power supply, p/n PWRS-14000-148R.
5-Slot Charge Only Cradle	CRD-TC7X-SE5C1-01	Charges up to five devices. Use with power supply, p/n PWRS-14000-241R and DC line cord, p/n 50-16002-029R. Can accommodate one 4-Slot Battery Charger using the Battery Adapter Cup.
5-Slot Ethernet Cradle	CRD-TC7X-SE5EU1-01	Provides device charging and provides Ethernet communication for up to five devices. Use with power supply, p/n PWRS-14000-241R and DC line cord, p/n 50-16002-029R. Can accommodate one 4-Slot Battery Charger using the Battery Adapter Cup.
Cradle Mount	BRKT-SCRD-SMRK-01	Mounts the 5-Slot Charge Only Cradle, 5-Slot Ethernet Cradle, and 4-Slot Battery Charger to a wall or rack.

**Table 6-1** TC70x Accessories (Continued)

Accessory	Part Number	Description
<b>Batteries and Chargers</b>		
4,620 mAh PowerPrecision battery	BTRY-TC7X-46MA2-01	Replacement battery (single pack).
	BTRY-TC7X-46MA2-10	Replacement battery (10-pack).
4-Slot Spare Battery Charger	SAC-TC7X-4BTYC1-01	Charges up to four battery packs. Use with power supply, p/n PWRS-14000-148R.
Battery Charger Adapter Cup	CUP-SE-BTYADP1-01	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).
<b>Vehicle Solutions</b>		
Charging Cable Cup	CHG-TC7X-CLA1-01	Provides power to the device from a cigarette lighter socket.
Charge Only Vehicle Cradle	CRD-TC7X-CVCD1-01	Charges and securely holds the device. Requires power cable CHG-AUTO-CLA1-01 or CHG-AUTO-HWIRE1-01, sold separately.
Cigarette Light Adapter Auto Charge Cable	CHG-AUTO-CLA1-01	Provides power to the Vehicle Cradle from a cigarette lighter socket.
Hard-wire Auto Charge Cable	CHG-AUTO-HWIRE1-01	Provides power to the Vehicle Cradle from the vehicle's power panel.
TC7X Vehicle Communication Charging Cradle	CRD-TC7X-DCVH-01	Provides power for operating the TC70x when connected to the optional USB I/O Hub and securely holds the device.
USB I/O Hub	SHARE-USBH-01	Provides power to the TC7X Vehicle Communication Charging Cradle, USB communication and Requires power cable CHG-AUTO-CLA1-01 or CHG-AUTO-HWIRE1-01, sold separately.
TC7X Data Communication Enabled Vehicle Cradle with Hub Kit	CRD-TC7X-VCD1-01	Contains the TC7X Vehicle Communication Charging Cradle and the IUSB I/O Hub.
RAM Mount	RAM-B-166U	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".
RAM Mount Base	RAM-B-238U	RAM 2.43" x 1.31" Diamond Ball base with 1" ball.
<b>Charge and Communication Cables</b>		
Charging Cable Cup	CHG-TC7X-CBL1-01	Provides power to the device. Use with power supply, p/n PWRS-14000-249R, sold separately.



**Table 6-1** TC70x Accessories (Continued)

Accessory	Part Number	Description
Snap-On USB Cable	CBL-TC7X-USB1-01	Provides power to the device and USB communication with a host computer. Use with power supply, p/n PWRS-14000-249R, sold separately.
Snap-On Serial Cable	CBL-TC7X-SERL1-01	Provides power and serial communication with a host computer. Use with power supply, p/n PWRS-14000-249R, sold separately.
<b>Audio Accessories</b>		
Premium Headset	RCH51	Premium Rugged headset.
3.5 mm Audio Adapter	KIT-TC7X-AUDL35-01	Snaps onto the device and provides audio to a wired headset with 3.5 mm plug.
3.5 mm Headset	HDST-35MM-PTVP-01	Use for VoIP calls.
3.5 mm Quick Disconnect Adapter Cable	ADP-35M-QDCBL1-01	Provides connection to the 3.5 mm Headset.
<b>Scanning</b>		
Trigger Handle	TRG-TC7X-SNP1-02	Adds gun-style handle with a scanner trigger for comfortable and productive scanning with tether.
<b>Carrying Solutions</b>		
Soft Holster	SG-TC7X-HLSTR1-02	TC7X soft holster.
Rigid Holster	SG-TC7X-RHLSTR1-01	TC7X rigid holster.
Hand Strap	SG-TC7X-HSTRP2-03	Replacement hand strap with hand strap mounting clip (3-pack).
Stylus and Coiled Tether	SG-TC7X-STYLUS-03	TC7X stylus with coiled tether (3-pack).
<b>Power Supplies</b>		
Power Supply	PWRS-14000-249R	Provides power to the device using the Snap-On USB Cable, Snap-on Serial Cable or Charging Cable Cup. Requires AC line cord.
Power Supply	PWRS-14000-148R	Provides power to the 2-Slot cradles and 4-Slot Spare Battery Charger. Requires AC line cord.
Power Supply	PWRS-14000-241R	Provides power to the 5-Slot Charge Only cradle and the 5-Slot Ethernet Cradle. Requires DC Line Cord, p/n 50-16002-029R and country specific three wire grounded AC line cord sold separately.
DC Line Cord	50-16002-029R	Provides power from the power supply to the 5-Slot Charge Only Cradle and 5-Slot Ethernet Cradle.

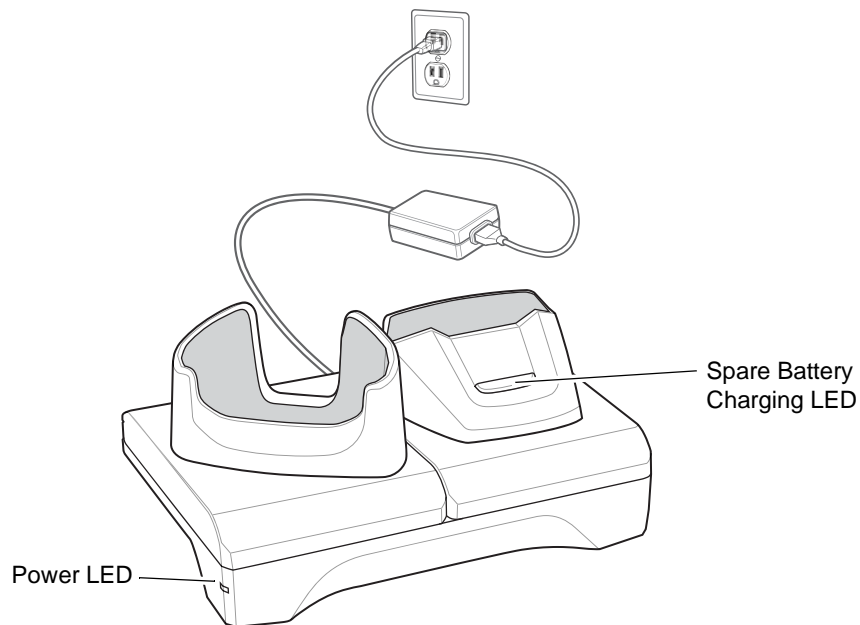
## 2-Slot Charge Only Cradle



**CAUTION** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines* on page 7-1.

The 2-Slot Charge Only Cradle:

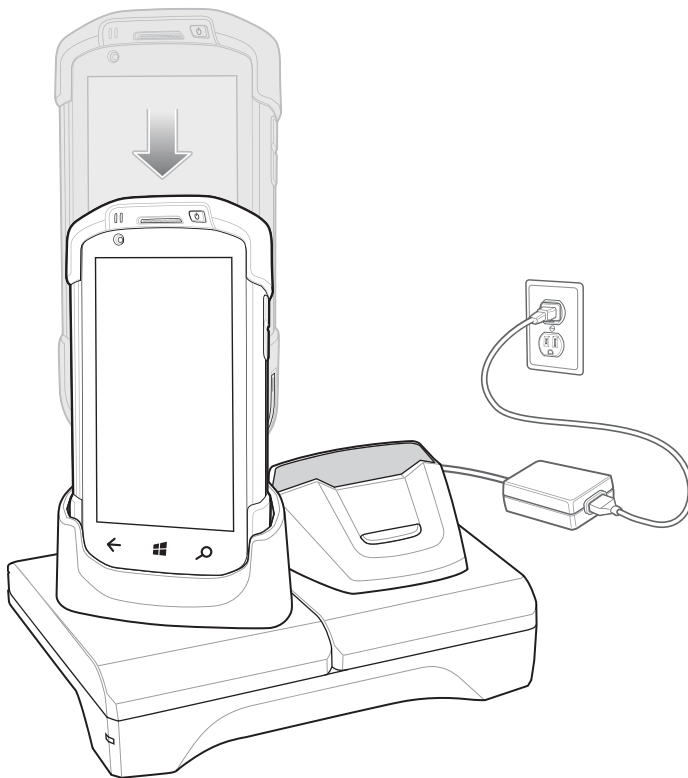
- Provides 5 VDC power for operating the device.
- Charges the device's battery.
- Charges a spare battery.



**Figure 6-1** 2-Slot Charge Only Cradle

### Charging the Device

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

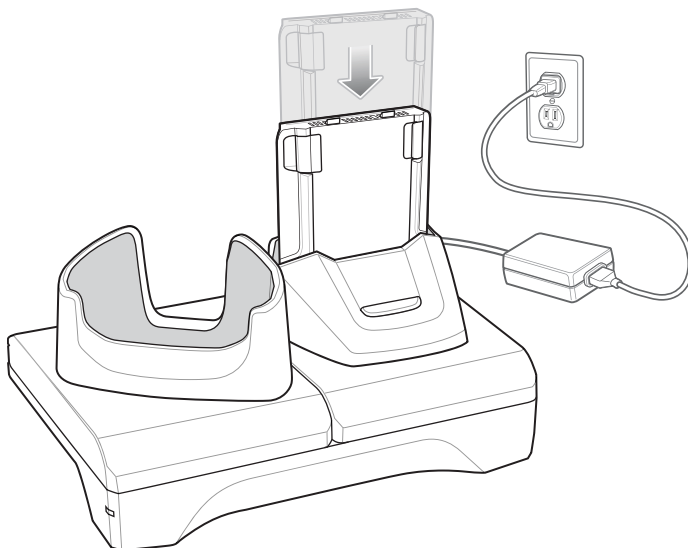


**Figure 6-2** *Battery Charging*

2. Ensure the device is seated properly.

## Charging the Spare Battery

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



**Figure 6-3** *Spare Battery Charging*

2. Ensure the battery is seated properly.

## 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 fully depleted 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 fully depleted battery fully charges in less than five hours at room temperature.

**Table 6-2** Spare Battery Charging LED Indicators

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

### 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.

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## 2-Slot USB/Ethernet Cradle



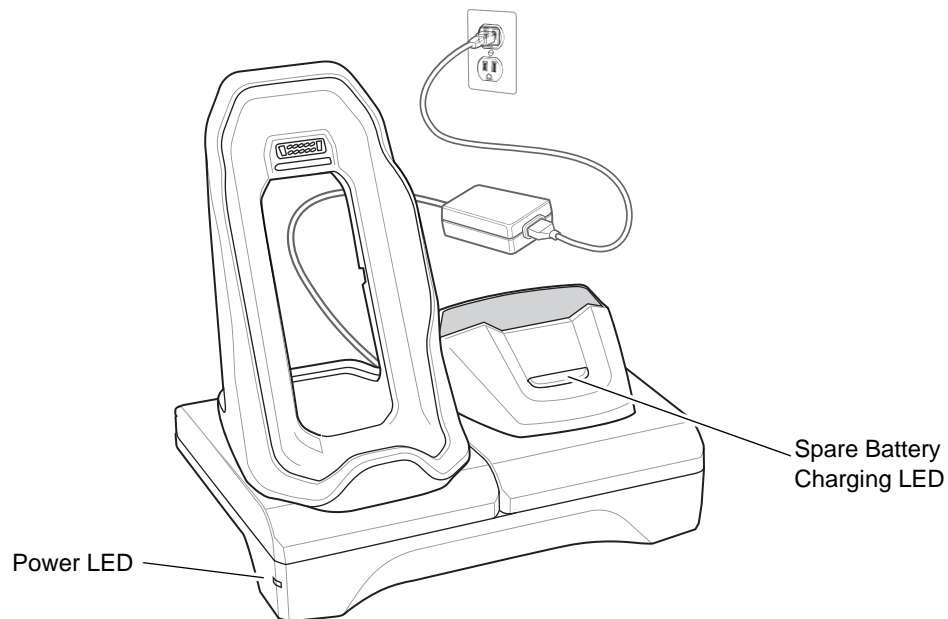
**CAUTION** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines* on page 7-1.

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.



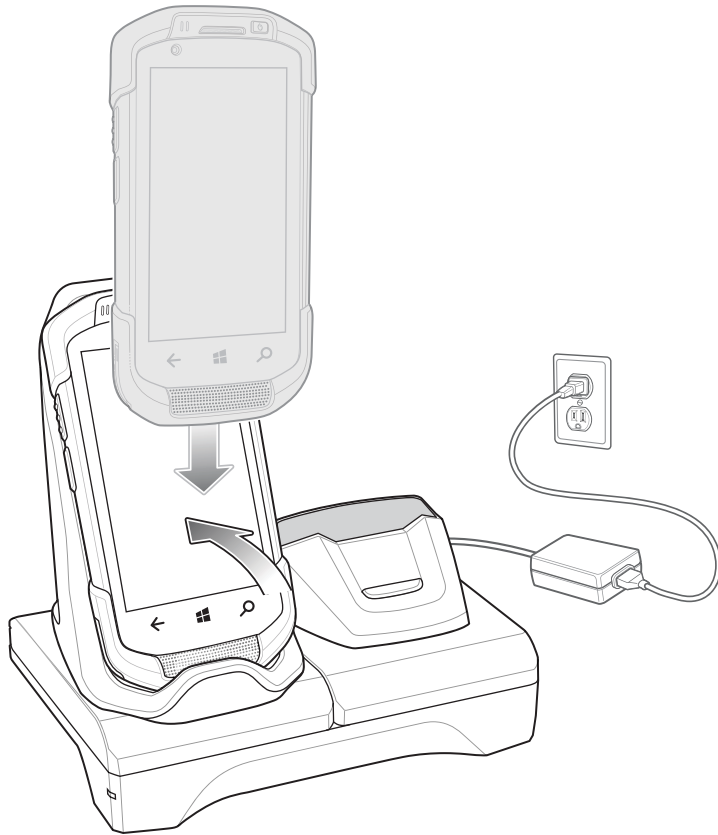
**NOTE** Remove all attachments on the device, except the hand strap, before place onto the cradle.



**Figure 6-4** 2-Slot USB/Ethernet Cradle

### Charging the Device

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

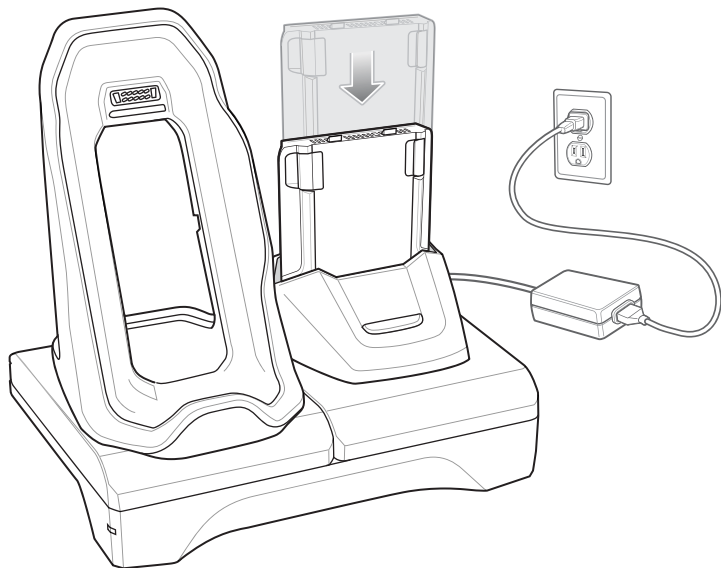


**Figure 6-5** *Battery Charging*

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 6-6** Spare Battery Charging

2. Ensure the battery is seated properly.

## 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 fully depleted 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 fully depleted battery fully charges in less than five hours at room temperature.

**Table 6-3** Spare Battery Charging LED Indicators

LED	Indication
Slow Blinking Amber	Spare battery is charging.
Solid Green	Charging complete.
Fast Blinking Amber	Error in charging; check placement of spare battery.
Slow Blinking Red	Spare battery is charging and battery is at the end of useful life.
Solid Red	Charging complete and battery is at the end of useful life.

**Table 6-3** Spare Battery Charging LED Indicators (Continued)

LED	Indication
Fast Blinking Red	Error in charging; check placement of spare battery and battery is at the end of useful life.
Off	No spare battery in slot; spare battery not placed correctly; cradle is not powered.

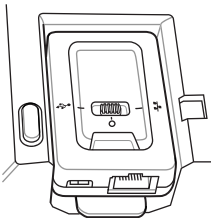
**Charging Temperature**

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.

**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 6-7** 2–Slot USB/Ethernet Cradle Module Switch

For Ethernet communication, slide the switch to the  position.

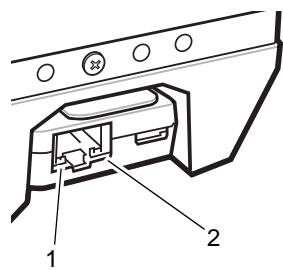
For USB communication, slide the switch to the  position.

Place the switch in the center position  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.





**Figure 6-8** LED Indicators

**Table 6-4** USB/Ethernet Module LED Data Rate Indicators

Data Rate	(1) Yellow LED	(2) Green LED
100 Mbps	On/Blink	On
10 Mbps	On/Blink	Off

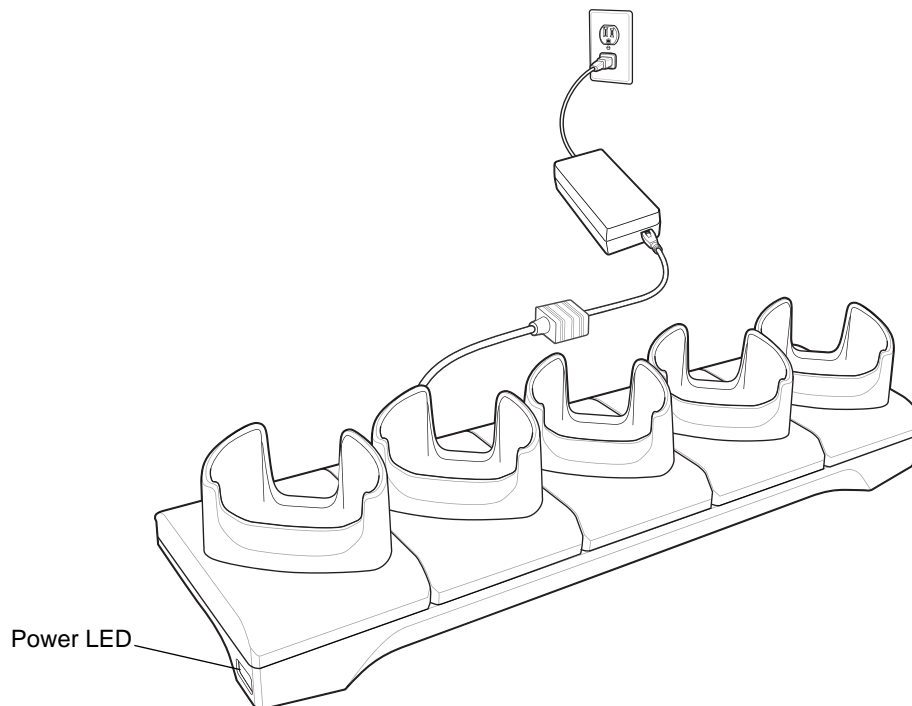
## 5-Slot Charge Only Cradle



**CAUTION** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines* on page 7-1.

The 5-Slot Charge Only Cradle:

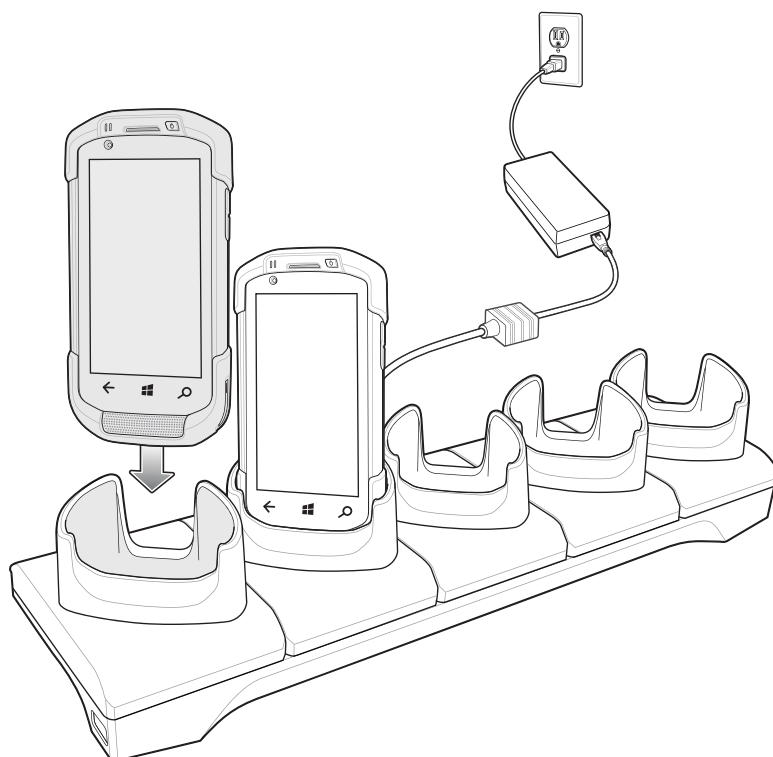
- Provides 5 VDC power for operating the TC70x.
- Simultaneously charges up to five TC70x devices and up to four TC70x devices and on 4-Slot Battery Charger using the Battery Charger Adapter. See the *TC70x Integrator Guide* for information on installing the 4-Slot Battery Charger onto the cradle.
- Consists of a cradle base and cups that can be configured for various charging requirements.



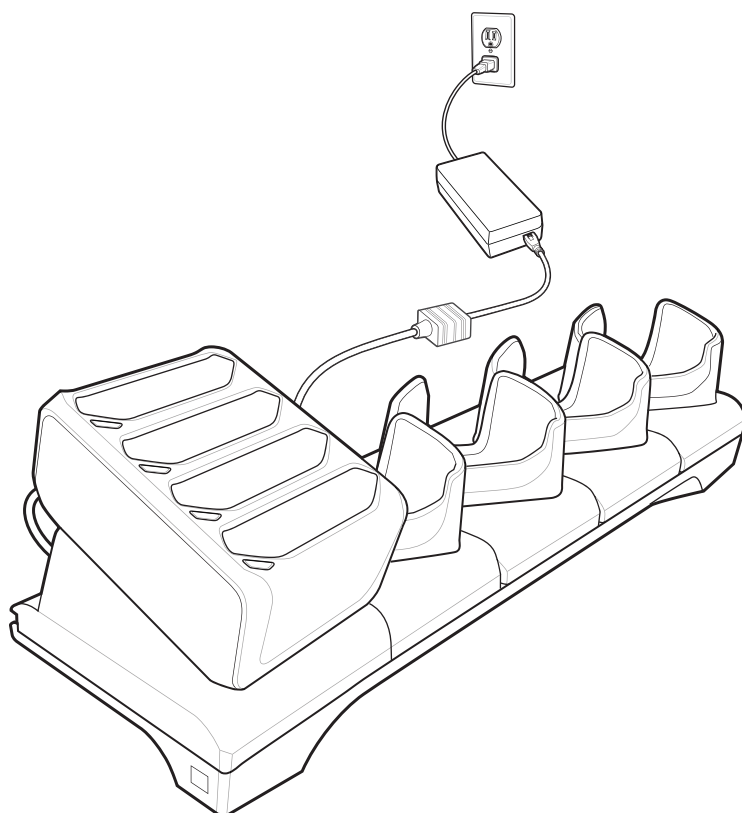
**Figure 6-9** 5-Slot Charge Only Cradle

### Charging the TC70x

1. Insert the TC70x into a slot to begin charging.



**Figure 6-10** *TC70x Battery Charging*



**Figure 6-11** *5-Slot Charge Only Cradle with Four Slot Battery Charger*

2. Ensure the TC70x is seated properly.

See the *TC70x Integrator Guide* for information on installing the 4-Slot Battery Charger onto the cradle.

## 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 fully depleted 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 fully depleted battery fully charges in less than five hours at room temperature.

**Table 6-5** *Spare Battery Charging LED Indicators*

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

### Charging Temperature

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

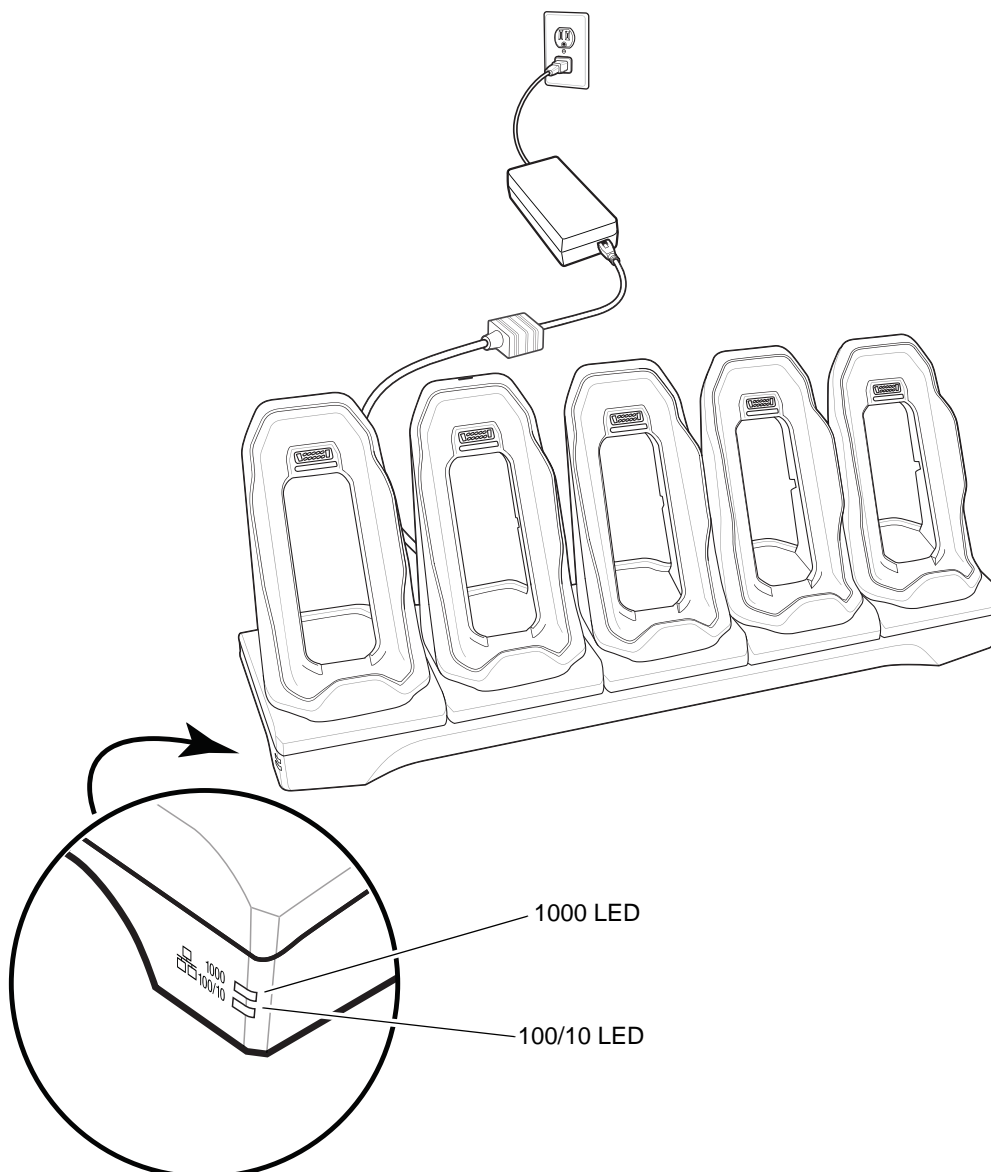
## 5-Slot Ethernet Cradle



**CAUTION** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines* on page 7-1.

The 5-Slot Ethernet Cradle:

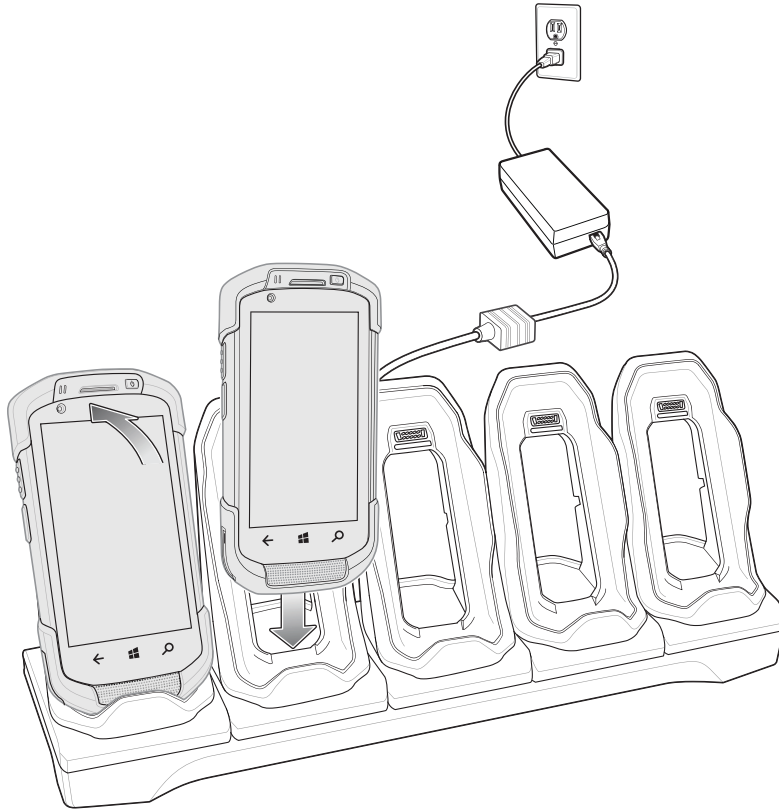
- Provides 5.0 VDC power for operating the device.
- Connects the device (up to five) to an Ethernet network.
- Simultaneously charges up to five TC70x devices and up to four TC70x devices and on 4-Slot Battery Charger using the Battery Charger Adapter. See the *TC70x Integrator Guide* for information on installing the 4-Slot Battery Charger onto the cradle.



**Figure 6-12** 5-Slot Ethernet Cradle

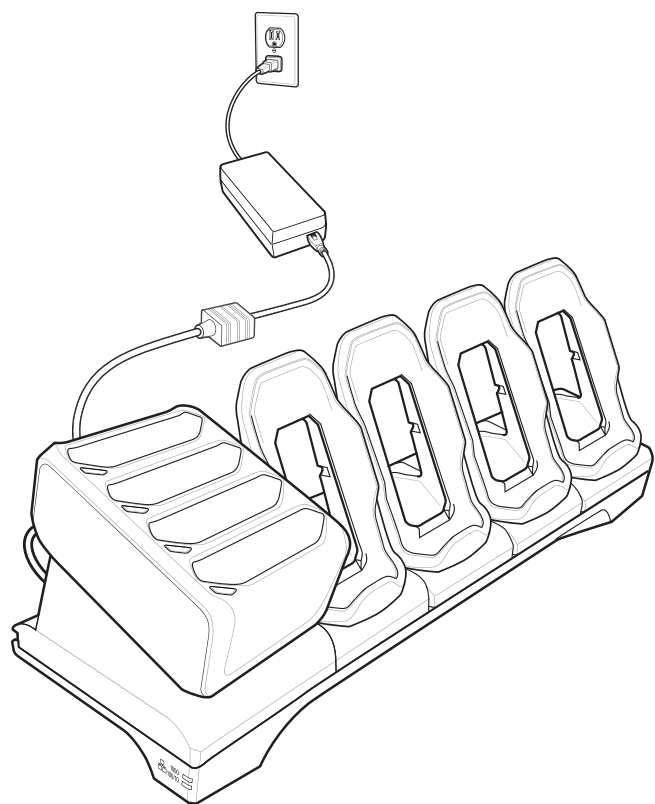
## Charging the TC70x

1. Insert the TC70x into a slot to begin charging.



**Figure 6-13** *TC70x Battery Charging*

2. Ensure the TC70x is seated properly.



**Figure 6-14** 5-Slot Ethernet Cradle with 4-Slot Battery Charger



**NOTE** See the *TC70x Integrator Guide* for information on installing the 4-Slot Battery Charger onto the cradle.

## 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 fully depleted 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 fully depleted battery fully charges in less than five hours at room temperature.

**Table 6-6** Spare Battery Charging LED Indicators

LED	Indication
Slow Blinking Amber	Spare battery is charging.
Solid Green	Charging complete.
Fast Blinking Amber	Error in charging; check placement of spare battery.

**Table 6-6** Spare Battery Charging LED Indicators (Continued)

LED	Indication
Slow Blinking Red	Spare battery is charging and battery is at the end of useful life.
Solid Red	Charging complete and battery is at the end of useful life.
Fast Blinking Red	Error in charging; check placement of spare battery and battery is at the end of useful life.
Off	No spare battery in slot; spare battery not placed correctly; cradle is not powered.

### 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.

### 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 6-7** LED Data Rate Indicators

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



## 4-Slot Battery Charger

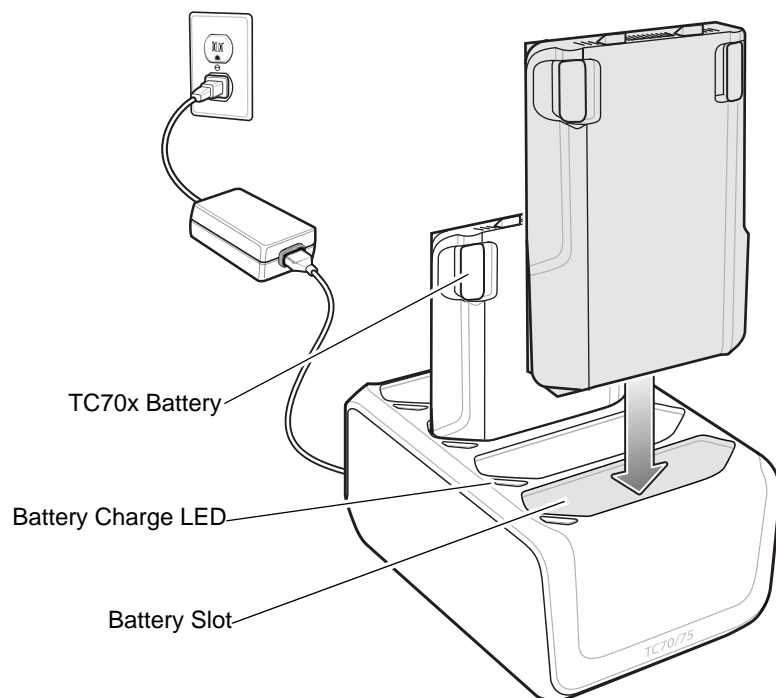


**CAUTION** Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines* on page 7-1.

This section describes how to use the 4-Slot Battery Charger to charge up to four TC70x batteries.

### 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 6-15** 4-Slot Battery Charger

### Battery Charging

#### Spare Battery Charging

Each Battery Charging LED indicates the status of the battery charging in each slot. The table below describes the Battery Charging LED status.

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

**Table 6-8** *Battery LED Charging Indicators*

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

### Charging Temperature

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

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## 3.5 mm Audio Adapter

The 3.5 mm Audio Adapter snaps onto the back of the TC70x and removes easily when not in use. When attached to the TC70x, the 3.5 mm Audio Adapter allows a user to connect a wired headset to the TC70x.

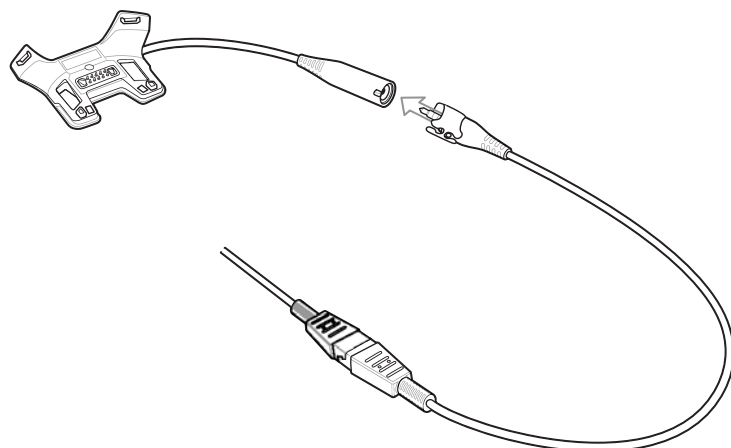
### Connecting a Headset to the 3.5 mm Audio Adapter

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



**Figure 6-16** *Connect Headset to Adapter Cable*

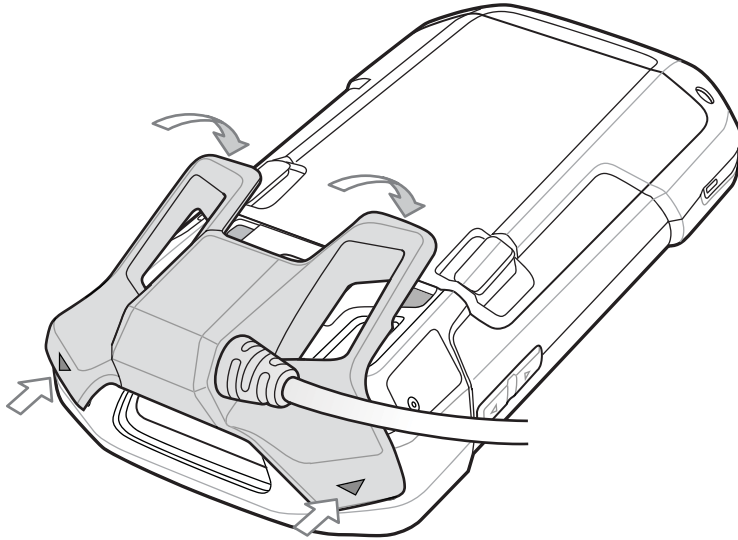
2. Connect the audio jack of the 3.5 mm Quick Disconnect Adapter Cable to the 3.5 mm Audio Adapter.



**Figure 6-17** *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 TC70x.

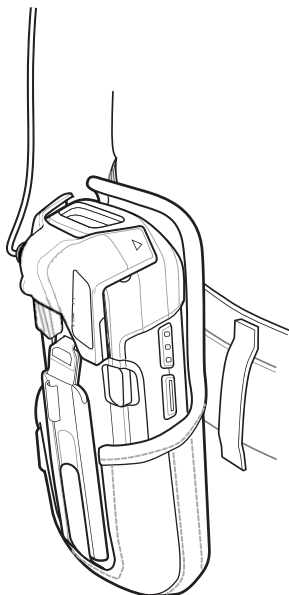


**Figure 6-18** *Audio Adapter Installation*

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 TC70x and the audio adapter in a holster, ensure that the display faces in and the headset cable is securely attached to the audio adapter.

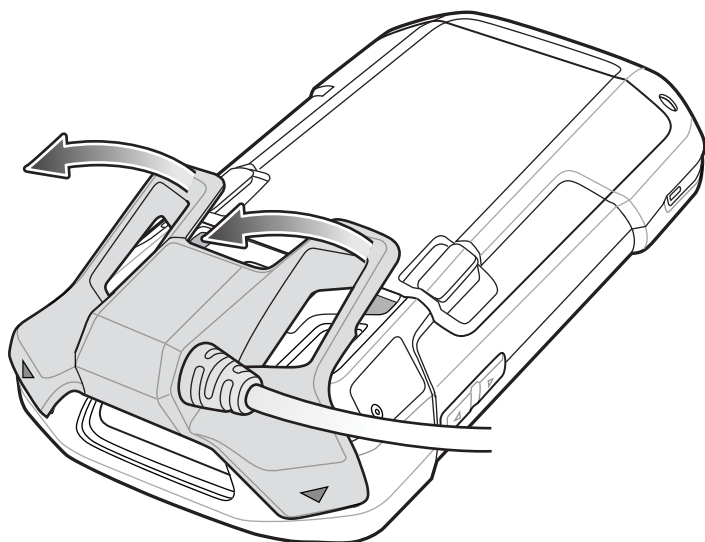


**Figure 6-19** *Device with 3.5 mm Audio Adapter in Holster*

## 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 TC70x.



**Figure 6-20** *Remove Audio Adapter from TC70x*

3. Remove Audio Adapter from the TC70x.

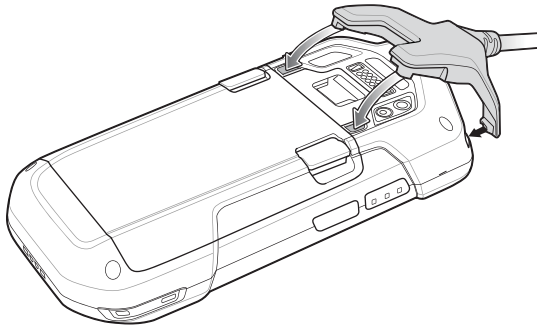
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## Snap-On USB Cable

The Snap-On USB Cable snaps on to the back of the TC70x and removes easily when not in use. When attached to the TC70x, the Snap-On USB Cable allows the TC70x to transfer data to a host computer and provide power for charging the TC70x.

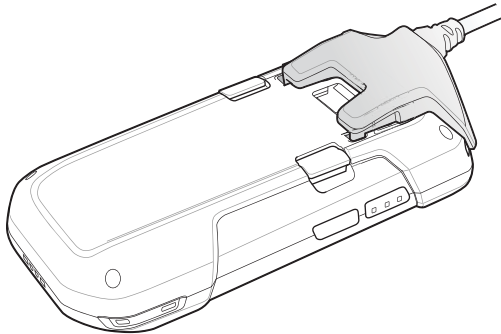
### Connecting to TC70x

1. Align the top mounting points on the cable with the mounting slots on the TC70x.



**Figure 6-21** Cable Installation

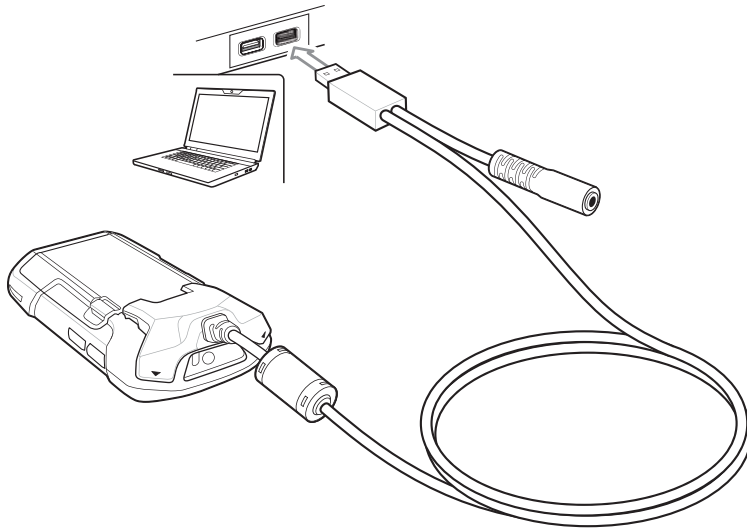
2. Rotate the cable down and press until it snaps into place. Magnetics hold the cable to the TC70x.



**Figure 6-22** Cable Attached to TC70x

### USB Communication

1. Connect the Snap-On USB Cable to the TC70x.

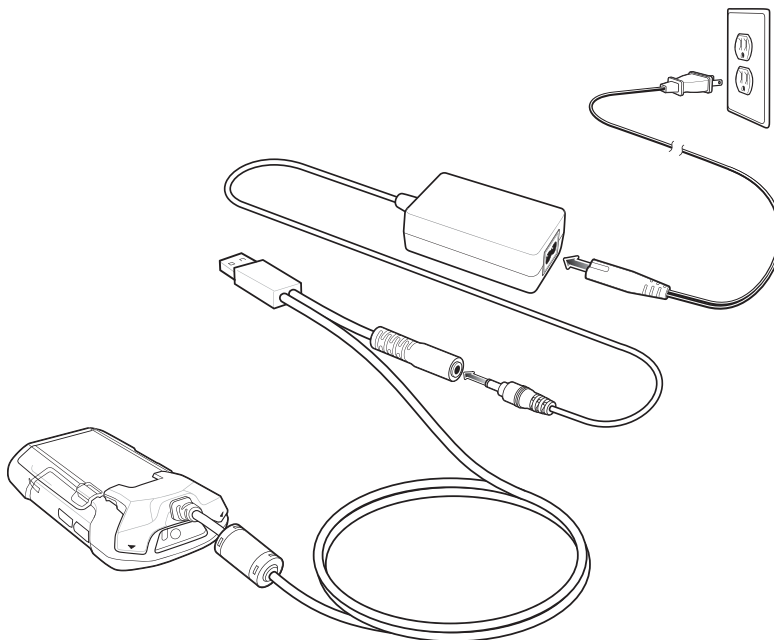


**Figure 6-23** *Cable Removed from TC70x*

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

## Charging the TC70x

1. Connect the Snap-On USB Cable to the TC70x.
2. Connect the power supply to the Snap-On USB Cable

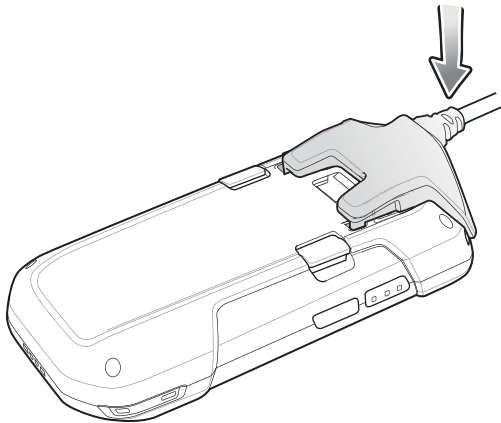


**Figure 6-24** *Power Setup*

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

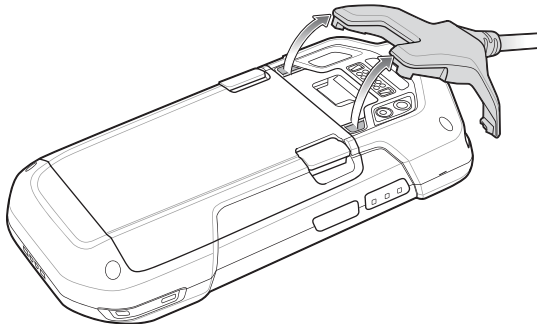
## Disconnecting from TC70x

1. Press down on the cable.



**Figure 6-25** *Press Down on Cable*

2. Rotate away from the TC70x. The magnetics release the cable from the TC70x.



**Figure 6-26** *Remove Cable from TC70x*

## 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 fully depleted battery fully charges in less than 4.5 hours at room temperature.

### Charging Temperature

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



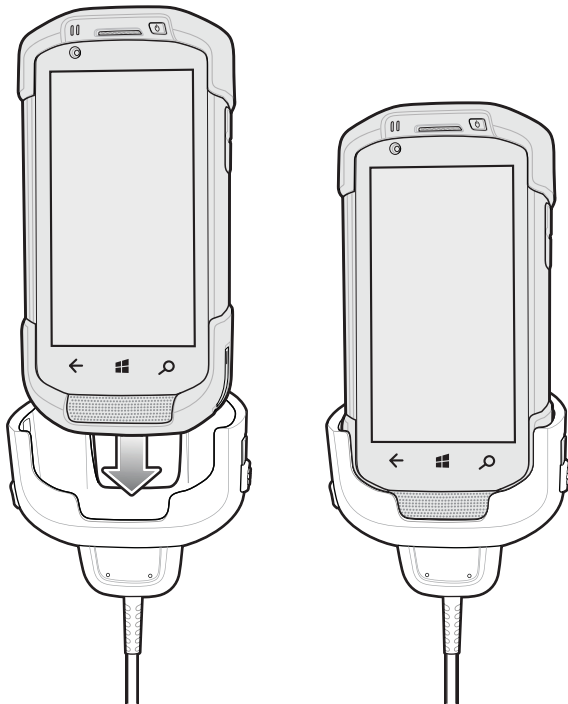
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## Charging Cable Cup

This section describes how to use the Charging Cable Cup to charge the TC70x.

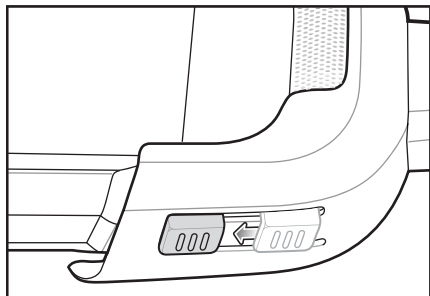
### Charging the TC70x

1. Insert the TC70x into the cup of the Charging Cable Cup.



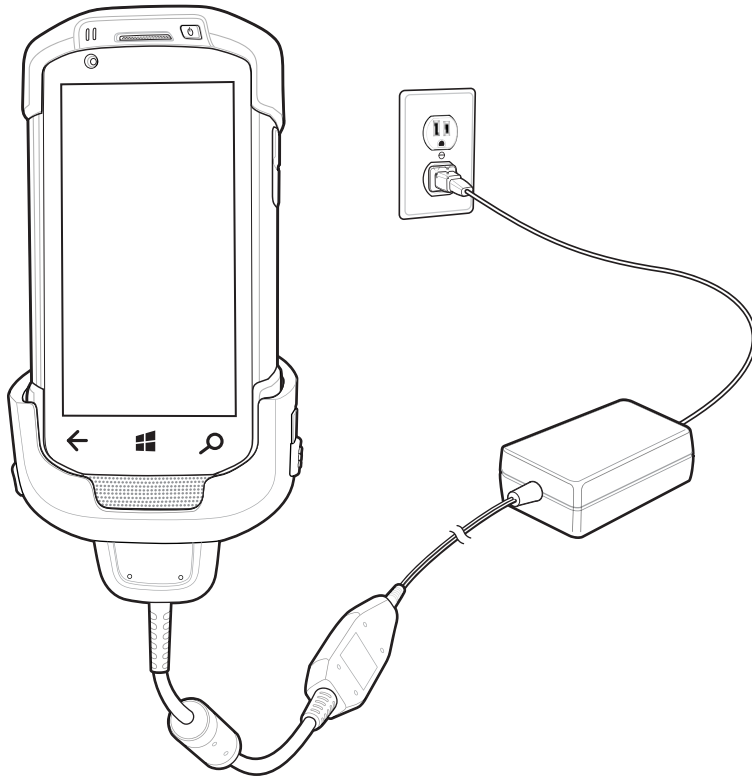
**Figure 6-27** *TC70x Charging*

2. Ensure the TC70x is seated properly.
3. Slide the two yellow locking tabs up to lock the cable to the TC70x.



**Figure 6-28** *Lock Cable Cup*

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



**Figure 6-29** *Connect Cable to Power Supply*

## Battery Charging

### Main Battery Charging

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

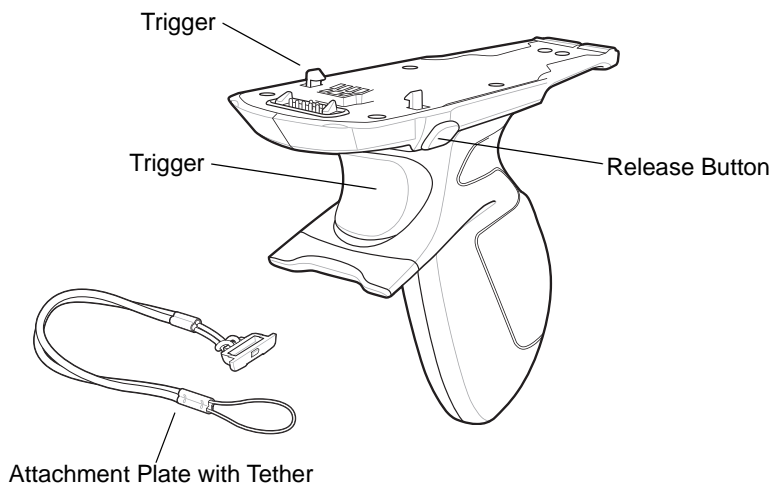
The 4,620 mAh fully depleted battery fully charges in less than 4.5 hours at room temperature.

### Charging Temperature

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

## Trigger Handle

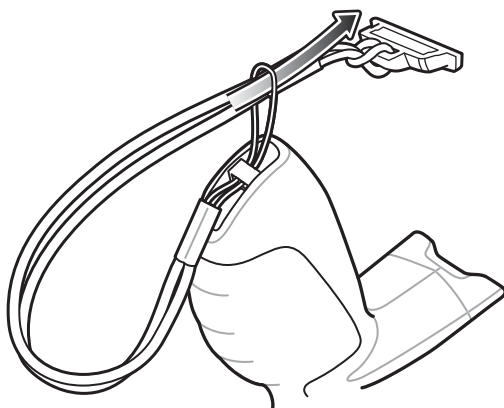
The Trigger Handle adds a gun-style handle with a scanning trigger to the device. It increases comfort when using the device in scan-intensive applications for extended periods of time.



**Figure 6-30** *Trigger Handle*

### Installing the Attachment Plate with Tether

1. Feed the loop end of the tether through the mounting slot on the bottom of the handle.
2. Feed the Attachment Plate through the loop.



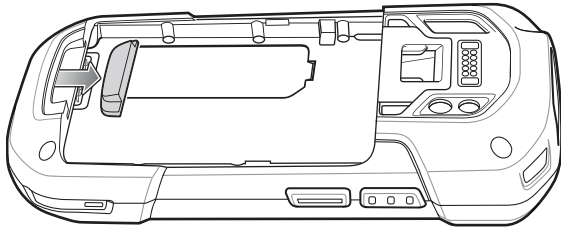
**Figure 6-31** *Tether Installation*

3. Pull the attachment plate until the tether is tight.

### Installing the Trigger Handle Plate

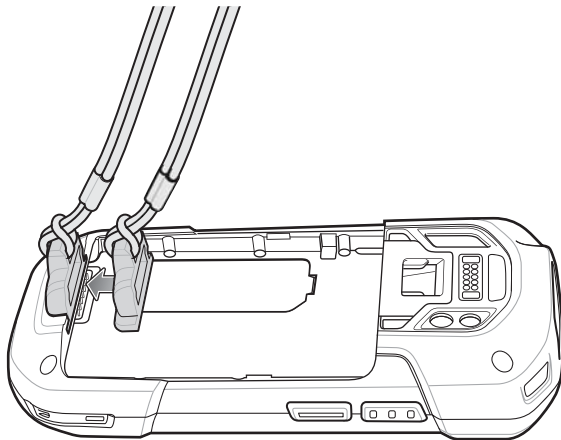
1. Press and hold the **Power** button until the menu appears.
2. Touch **Power off**.
3. Touch **OK**.

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 6-32** *Remove Hand Strap Plate*

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

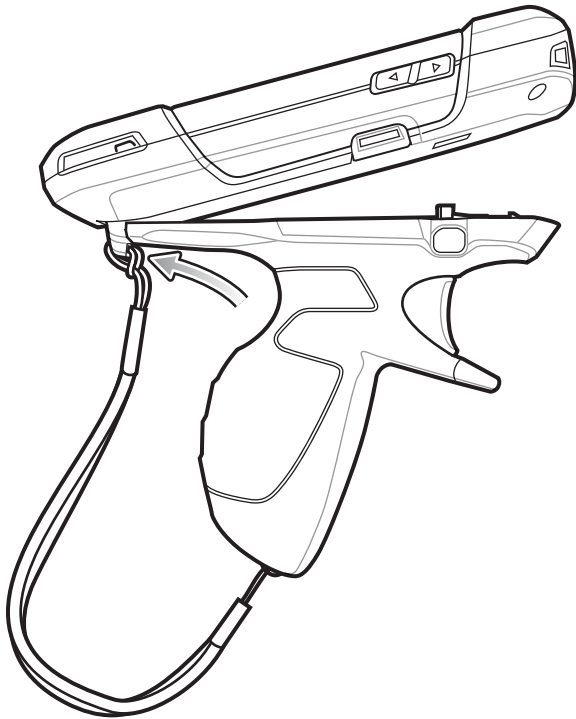


**Figure 6-33** *Insert Trigger Handle Attachment Plate*

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.

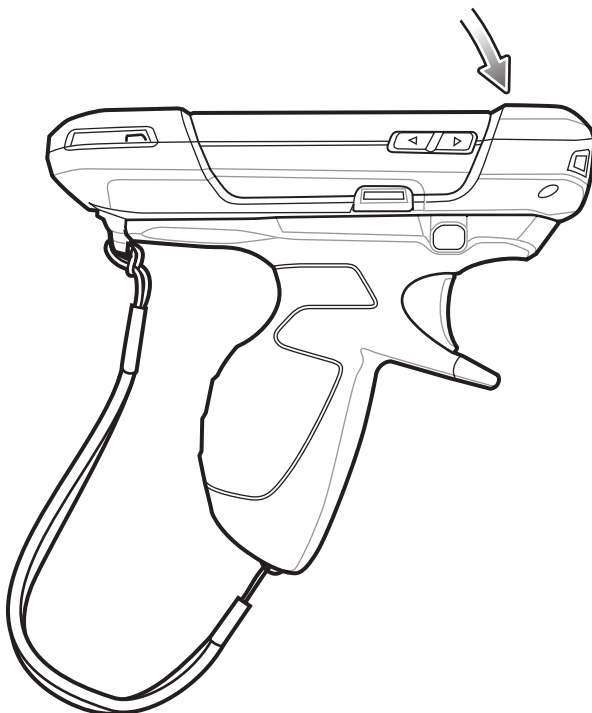
## Inserting the Device into the Trigger Handle

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



**Figure 6-34** *Connect Device to Trigger Handle*

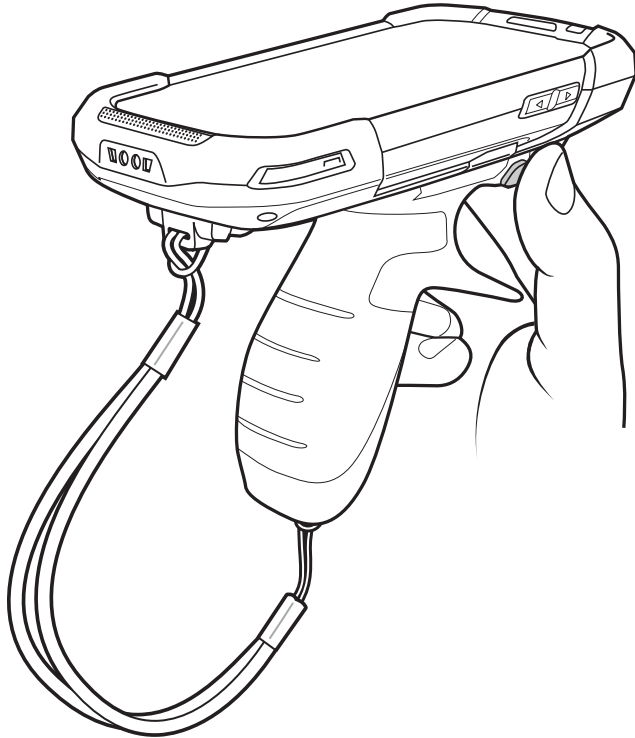
2. Press the two release latches.
3. Rotate the device down and press down until it snaps into place.



**Figure 6-35** *Rotate Device onto Trigger Handle*

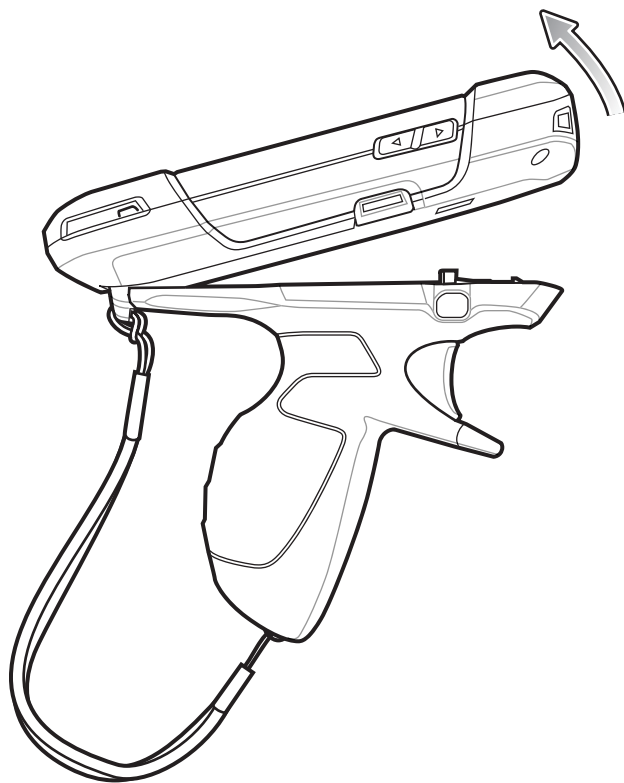
## Removing the Device from the Trigger Handle

1. Press both Trigger Handle release latches.



**Figure 6-36** *Press Release Latches*

2. Rotate the device up and remove from the Trigger handle.
3. Rotate the device down and press down until it snaps into place.

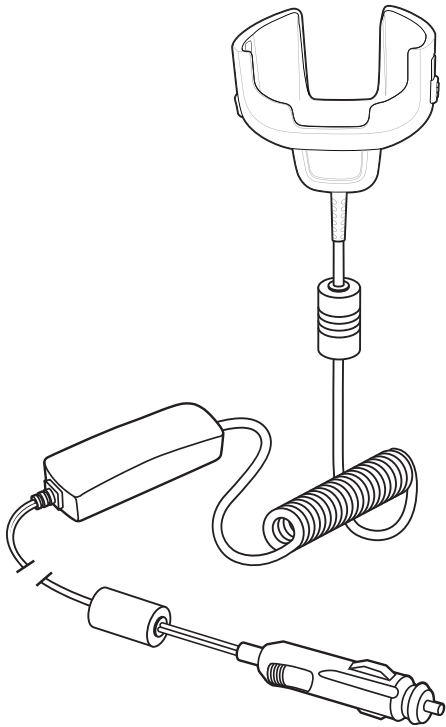


**Figure 6-37** *Rotate Device onto Trigger Handle*

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## Vehicle Charging Cable Cup

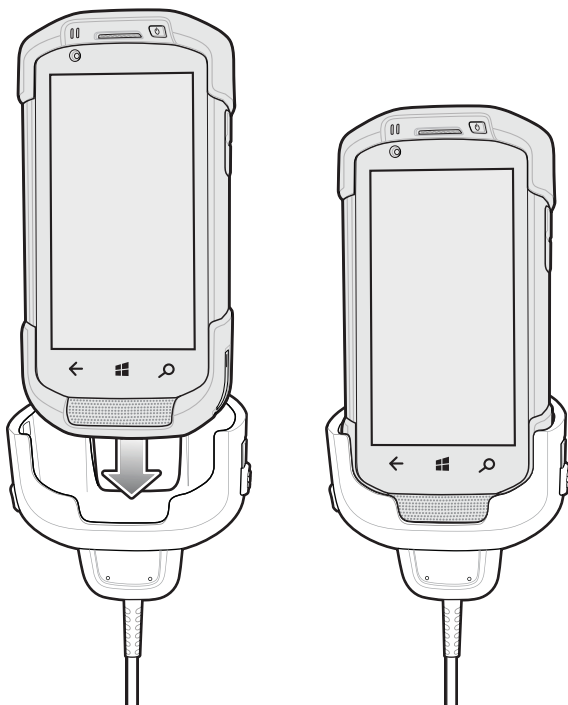
This section describes how to use the Vehicle Charging Cable Cup to charge the TC70x.



**Figure 6-38** *Vehicle Charging Cable Cup*

## Charging the TC70x

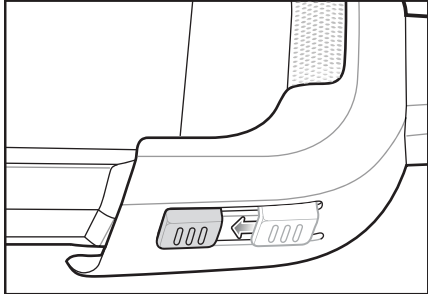
1. Insert the TC70x into the cup of the Vehicle Charging Cable.



**Figure 6-39** *TC70x Charging*

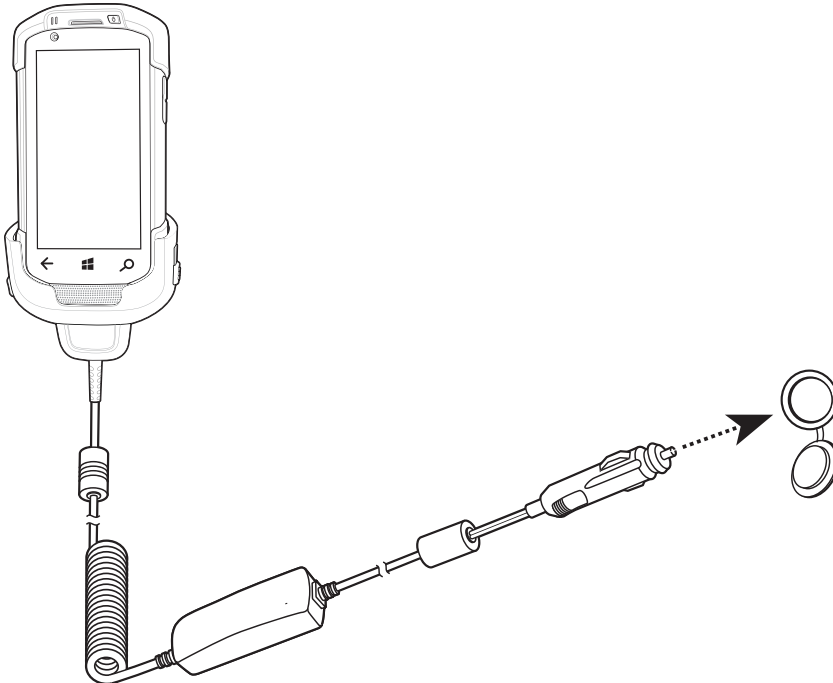


2. Ensure the TC70x is seated properly.
3. Slide the two yellow locking tabs up to lock the cable to the TC70x.



**Figure 6-40** *Lock Cable Cup*

4. Insert the Cigarette Lighter plug into the vehicle cigarette lighter socket.



**Figure 6-41** *Connect Cable to Vehicle Power Source*

## 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 fully depleted battery fully charges in less than 4.5 hours at room temperature.

### Charging Temperature

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

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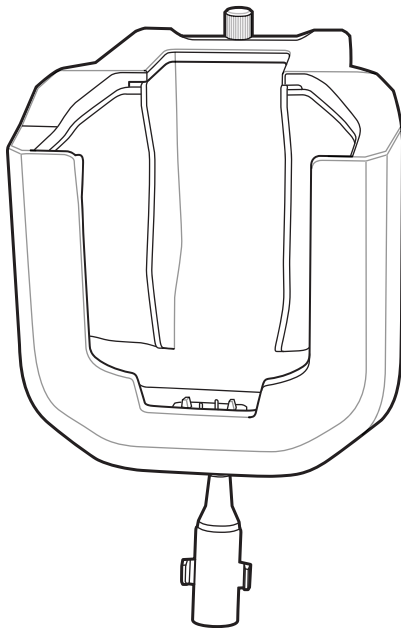
## Vehicle Cradle

Refer to the *TC70x Integrator Guide* for information on installing the Vehicle Cradle.

The cradle:

- holds the TC70x securely in place
- provides power for operating the TC70x
- re-charges the battery in the TC70x.

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.



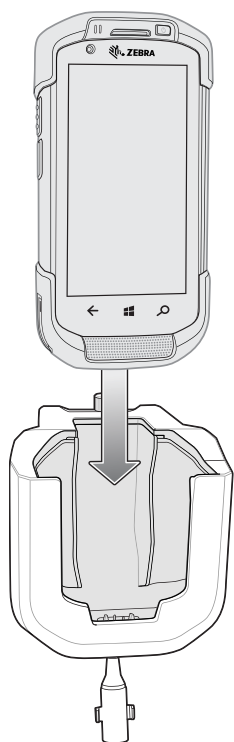
**Figure 6-42** Vehicle Cradle

## TC70x Insertion and Removal



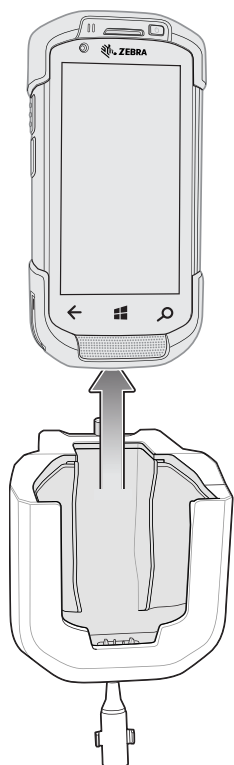
**CAUTION** Ensure that the TC70x is fully inserted into the cradle. Lack of proper insertion may result in property damage or personal injury. Zebra Technologies Corporation is not responsible for any loss resulting from the use of the products while driving.

To ensure the TC70x was inserted correctly, listen for the audible click that signifies that the TC70x locking mechanism was enabled and the TC70x was locked into place.



**Figure 6-43** *Install TC70x into Vehicle Cradle*

To remove the TC70x from the cradle, grasp the TC70x and lift out of the cradle.



**Figure 6-44** *Remove TC70x from Vehicle Cradle*

## Battery Charging

Ensure the cradle is connected to a power source.

Insert the TC70x into the cradle. The TC70x 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.



**NOTE** The Vehicle Cradle operating temperature is -40°C to +85°C. When in the cradle, the TC70x will only charge when its temperature is between 0°C to +40°C.

**Table 6-9** LED Indicators

LED	Indication
<b>TC70x Battery Charging (LED is on TC70x)</b>	
Off	TC70x is not in cradle, TC70x is not placed correctly, or cradle is not powered.
Fast Blinking Red (twice a second)	Error in charging (not within battery charging temperature or charging for too long without completion). Check placement of TC70x.
Slow Blinking Amber (once every two seconds)	TC70x is charging.
Solid Green	Charging is complete.

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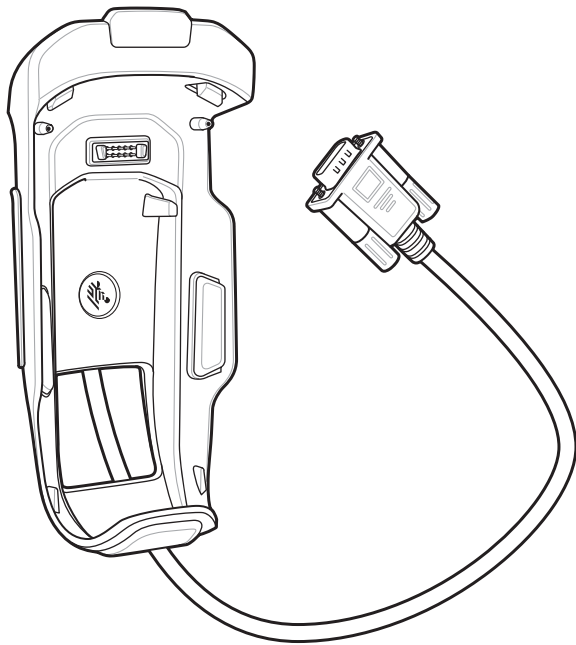
## TC7X Vehicle Communication Charging Cradle

The Vehicle Communication Charging Cradle:

- holds the TC70x securely in place
- provides power for operating the TC70x
- re-charges the battery in the TC70x.

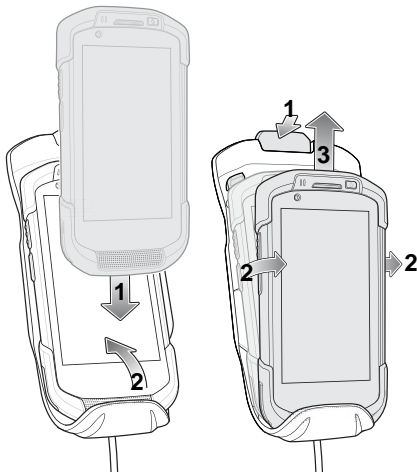
The cradle is powered by the USB I/O Hub.

Refer to the *TC70x Touch Computer Integrator Guide with Windows 10 IoT Mobile Enterprise* for information on installing the TC7X Vehicle Communication Charging Cradle.



**Figure 6-45** TC7X Vehicle Communication Charging Cradle

## TC70x Insertion and Removal



**Figure 6-46** *Insert and Remove TC70x into Cradle*

To ensure the TC70x was inserted correctly, listen for the audible click that signifies that the TC70x locking mechanism was enabled and the TC70x was locked into place.



**CAUTION** Ensure that the TC70x 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 TC70x from the cradle, press the release latch, grasp the TC70x and lift out of the vehicle cradle.

## TC70x Battery Charging

Insert the TC70x into the cradle. The TC70x 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 1-3 on page 1-8](#) for all charging indications.

### Charging Note

The Vehicle Cradle operating temperature is -40°C to +85°C. When in the cradle, the TC70x will only charge when its temperature is between 0°C to +40°C.

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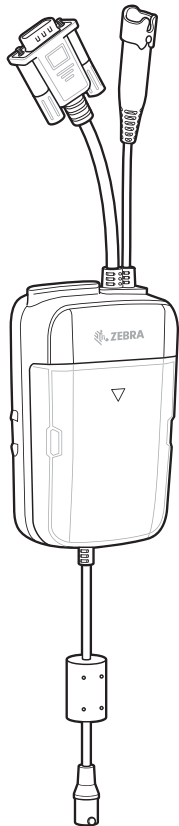
## USB I/O Hub

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 *TC70x Touch Computer Integrator Guide with Windows 10 IoT Mobile Enterprise* for information on installing the USB I/O Hub.

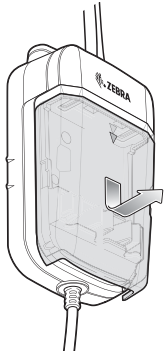


**Figure 6-47** USB I/O Hub

### Connect USB Cables

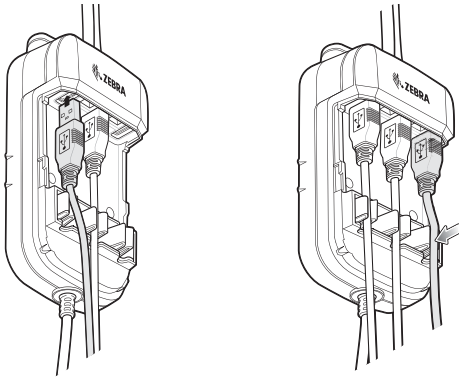
The USB I/O Hub provides three USB ports for connecting devices such as printers to a device in the vehicle cradle. To connect USB cables:

1. Slide the cable cover down and remove.



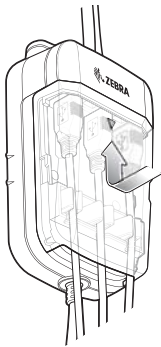
**Figure 6-48** *Remove Cover*

2. Insert the USB cable connector into one of the USB ports.
3. Place each cable into the cable holder.



**Figure 6-49** *Connect USB Cable*

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



**Figure 6-50** *Replace Cover*

5. Slide cable cover up to lock into place.

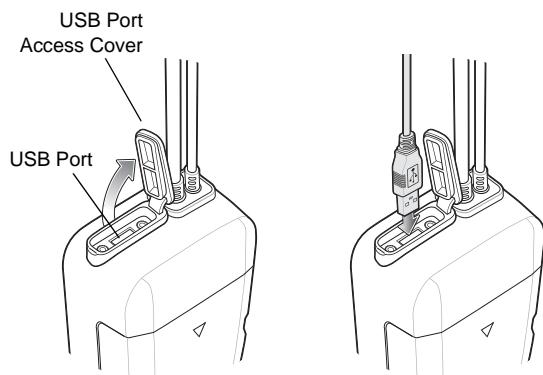
## External USB Cable

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.

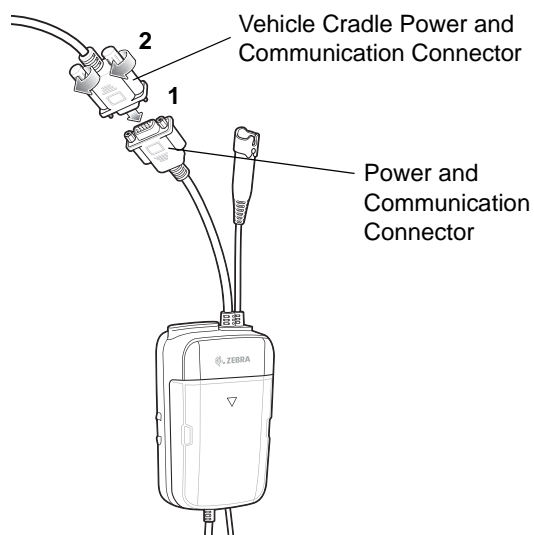


**Figure 6-51** *Insert External USB Cable*

## 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.

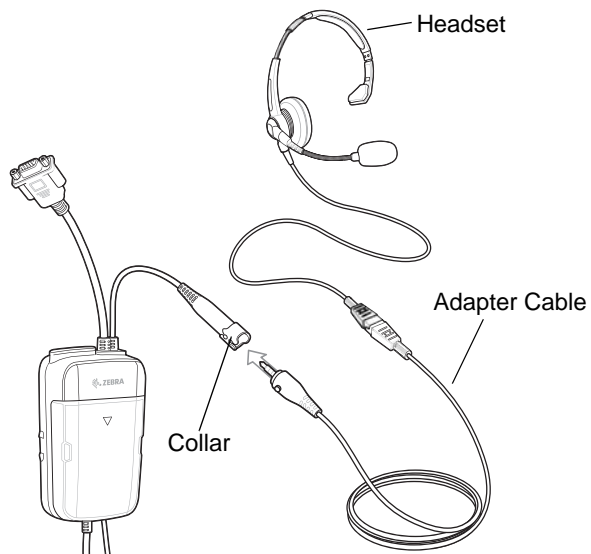


**Figure 6-52** *Connect Power to Vehicle Cradle*

## Audio Headset Connection

The USB I/O Hub provides audio connection to the device in a vehicle cradle.

Depending upon, headset, connect the headset and audio adapter to the Headset connector.



**Figure 6-53** *Connect Audio Headset*

# CHAPTER 7 MAINTENANCE AND TROUBLESHOOTING

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

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## Maintaining the TC70x

For trouble-free service, observe the following tips when using the TC70x:

- Do not scratch the screen of the TC70x. When working with the TC70x, 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 TC70x screen.
- The touch-sensitive screen of the TC70x is glass. Do not drop the TC70x or subject it to strong impact.
- Protect the TC70x 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 or use the TC70x in any location that is dusty, damp, or wet.
- Use a soft lens cloth to clean the TC70x. If the surface of the TC70x screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution.
- 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)
- To charge the mobile device battery, the battery and charger temperatures must be between 0°C and +45°C (+32°F and +113°F)

- Do not use incompatible batteries and chargers. Use of an incompatible battery or charger may present a risk of fire, explosion, leakage, or other hazard. If you have any questions about the compatibility of a battery or a charger, contact the Global Customer Support Center.
- For devices that utilize a USB port as a charging source, the device shall only be connected to products that bear the USB-IF logo or have completed the USB-IF compliance program.
- To enable authentication of an approved battery, as required by IEEE1725 clause 10.2.1, all batteries will carry a hologram. Do not fit any battery without checking it has the authentication hologram.
- Do not disassemble or open, crush, bend or deform, puncture, or shred.
- 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 large amounts of water and seek medical advice.
- If you suspect damage to your equipment or battery, contact the Customer Support to arrange for inspection.

---

## Cleaning Instructions



**CAUTION** Always wear eye protection.

Read warning label on compressed air and 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, hydrogen peroxide or mild dish soap.

## Harmful Ingredients

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

## 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.

## Special Cleaning Notes

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. 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 plastics.

## 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 up to the customer's discretion due to the varied environments in which the mobile devices are used. They may be cleaned as frequently as required, but it is advisable to clean the camera window periodically when used in dirty environments to ensure optimum performance.

## Cleaning the TC70

### Housing

Using the alcohol wipes, wipe the housing including buttons.

### Display

The display can be wiped down with the alcohol wipes, 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.

### Connector Cleaning

To clean the connectors:

1. Remove the main battery from mobile computer.
2. Dip the cotton portion of the cotton-tipped applicator in isopropyl alcohol.

3. Rub the cotton portion of the cotton-tipped applicator back-and-forth across the connector. Do not leave any cotton residue on the connector.
4. Repeat at least three times.
5. Use the cotton-tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
6. Use a dry cotton-tipped applicator and repeat steps 4 through 6.



**CAUTION** Do not point nozzle at yourself and others, ensure the nozzle or tube is away from your face.

7. Spray compressed air on the connector area by pointing the tube/nozzle about ½ inch away from the surface.
8. Inspect the area for any grease or dirt, repeat if required.

### 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.



**CAUTION** Do not point nozzle at yourself and others, ensure the nozzle or tube is pointed away from your face.

5. Spray compressed air in the connector area by pointing the tube/nozzle about ½ inch away from the surface.
6. Remove any lint left by the cotton-tipped applicator.
7. If grease and other dirt can be found on other areas of the cradle, use a lint-free cloth and alcohol to remove.
8. 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 dry humidity requires less drying time.

## Troubleshooting

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

### TC70x

**Table 7-1** *Troubleshooting the TC70x*

Problem	Cause	Solution
When pressing the power button the TC70x does not turn on.	Battery not charged.	Charge or replace the battery in the TC70x.
	Battery not installed properly.	Install the battery properly.
	System crash.	Perform a reset.
When pressing the power button the TC70x does not turn on but two LEDs blink.	Battery charge is at a level where data is maintained but battery should be re-charged.	Charge or replace the battery in the TC70x.
Battery did not charge.	Battery failed.	Replace battery. If the TC70x still does not operate, perform a reset.
	TC70x removed from cradle while battery was charging.	Insert TC70x in cradle. The 4,620 mAh fully depleted battery fully charges in less than 4.5 hours at room temperature.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0°C (32°F) or above 40°C (104°F).
Cannot see characters on display.	TC70x not powered on.	Press the <b>Power</b> button.
During data communication with a host computer, no data transmitted, or transmitted data was incomplete.	TC70x removed from cradle or disconnected from host computer during communication.	Replace the TC70x in the cradle, or reattach the communication cable and re-transmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software was incorrectly installed or configured.	Perform setup.
During data communication over Wi-Fi, no data transmitted, or transmitted data was incomplete.	Wi-Fi radio is not on.	Turn on the Wi-Fi radio.
	You moved out of range of an access point.	Move closer to an access point.

**Table 7-1** Troubleshooting the TC70x (Continued)

Problem	Cause	Solution
During data communication over Bluetooth, no data transmitted, or transmitted data was incomplete.	Bluetooth radio is not on.	Turn on the Bluetooth radio.
	You moved out of range of another Bluetooth device.	Move within 10 meters (32.8 feet) of the other device.
No sound.	Volume setting is low or turned off.	Adjust the volume.
TC70x shuts off.	TC70x is inactive.	The display turns off after a period of inactivity. Set this period to 15 seconds, 30 seconds, 1, 2, 5, 10 or 30 minutes.
	Battery is depleted.	Replace the battery.
Tapping the window buttons or icons does not activate the corresponding feature.	The device is not responding.	Reset the device.
A message appears stating that the TC70x memory is full.	Too many files stored on the TC70x.	Delete unused memos and records. If necessary, save these records on the host computer (or use an SD card for additional memory).
	Too many applications installed on the TC70x.	Remove user-installed applications on the TC70x to recover memory.
The TC70x does not decode with reading bar code.	Scanning application is not loaded.	Load a scanning application on the TC70x. See the system administrator.
	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Place the TC70x within proper scanning range.
	TC70x is not programmed for the bar code.	See system administrator.
	TC70x is not programmed to generate a beep.	If the TC70x does not beep on a good decode, set the application to generate a beep on good decode.
	Battery is low.	If the scanner stops emitting a laser beam upon a trigger press, check the battery level. When the battery is low, the scanner shuts off before the TC70x low battery condition notification. Note: If the scanner is still not reading symbols, contact the distributor or the Global Customer Support Center.



**Table 7-1** *Troubleshooting the TC70x (Continued)*

Problem	Cause	Solution
TC70x cannot find any Bluetooth devices nearby.	Too far from other Bluetooth devices.	Move closer to the other Bluetooth device(s), within a range of 10 meters (32.8 feet).
	The Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) to find.
	The Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode. If needed, refer to the device's user documentation for help.
Cannot unlock TC70x.	User enters incorrect password.	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.



# APPENDIX A TECHNICAL SPECIFICATIONS

The following sections provide technical specification for the device.

## TC70x

Table A-1 TC70x Technical Specifications

Item	Description
Physical Characteristics	
Dimensions	Height: 161 mm (6.3 in.) Width: 84 mm (3.3 in.) Depth: 28 mm (1.1 in.)
Weight	376 g (13.3 oz)
Display	4.7 in. High Definition (1280 x 720); exceptionally bright, outdoor viewable; optically bonded to touch panel
Imager Window	Corning Gorilla Glass
Touch Panel	Dual mode capacitive touch with stylus or bare fingertip input (conductive stylus sold separately); Corning Gorilla Glass
Backlight	Light Emitting Diode (LED) backlight
Battery Pack	PowerPrecision/PowerPrecision+: Improved battery technology for longer cycle times and real-time visibility into battery metrics for better battery management Li-Ion 3.7 V, 4620 mAh typical
Expansion Slot	User accessible microSD up to 32 GB SDHC and up to 32 GB SDXC support
Connection Interface	Universal Serial Bus (USB) 2.0 High Speed (host and client)
Notification	Audible tone plus multi-color LEDs, vibration
Voice and Audio	Three microphone support with noise cancellation; vibrate alert; speaker; Bluetooth wireless headset support.

**Table A-1** TC70x Technical Specifications (Continued)

Item	Description
<b>Performance Characteristics</b>	
CPU	1.7 GHz hex core 64 bit processor (QC 8092).
Operating System	Windows 10 IoT Mobile Enterprise
Memory	2 GB RAM/16 GB Flash pSLC
Output Power	USB - 5 VDC @ 500 mA max
<b>User Environment</b>	
Operating Temperature	-20°C to 50°C (-4°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 85% non-condensing
Drop Specification	8 ft./2.4 m to concrete at room temperature per MIL-STD 810G 6 ft./1.8 m drop to concrete across full operating temperature range
Tumble	2,000 3.2 ft./1.0 m tumbles; meets and exceeds IEC tumble specifications
Electrostatic Discharge (ESD)	+/-15kVdc air discharge, +/-8kVdc direct discharge, +/-8kVdc indirect discharge
Sealing	IP65 and IP67 per applicable IEC sealing specifications
Vibration	4 g's PK Sine (5 Hz to 2 kHz); 0.04g2/Hz Random (20 Hz to 2 kHz); 60 minute duration per axis, 3 axis
Thermal Shock	-40° C to 70° C (-40° F to 158° F) rapid transition
<b>Interactive Sensor Technology (IST)</b>	
Motion Sensor	3-axis accelerometer provides motion-sensing for dynamic screen orientation and power management
Light Sensor	Ambient light sensor to auto adjust display backlight brightness
<b>Wireless LAN Data and Voice Communications</b>	
Radio	IEEE® 802.11a/b/g/n/d/h/i/w/ac
Data Rates Supported	5GHz: 802.11a/n/ac - up to 866.7 Mbps 2.4GHz: 802.11b/g/n - up to 144 Mbps
Operating Channels	Chan 1 - 11 (2412 - 2422 MHz) - North America (FCC and IC) Chan 1 - 13 (2412 - 2472 MHz) - Rest of the World Chan 36 - 165 (5180 - 5825 MHz) Chan 138, Chan 142, Chan 144 Channel Bandwidth: 20, 40, 80 MHz Actual operating channels/frequencies depend on regulatory rules and certification agency

**Table A-1** TC70x Technical Specifications (Continued)

Item	Description
Security	WEP (40 or 104 bit) WPA/WPA2 Personal (TKIP, and AES) WPA/WPA2 Enterprise (TKIP, and AES) — EAPTTLS (PAP, MSCHAP, MSCHAPv2), EAP-TLS, PE APv0-MSCHAPv2, PE APv1-EAP-GTC, EAP Fast and LEAP FIPS DIM4
Voice Communications	Voice-over-IP ready, Wi-Fi™-certified, IEEE 802.11a/b/g/n direct sequence wireless LAN, Wi-Fi Multimedia™ (WMM)
<b>Wireless PAN Data and Voice Communications</b>	
Bluetooth	Bluetooth v4.1 Low Energy
<b>Data Capture Specifications</b>	
2D Imager	SE4750-SR – 1D and 2D bar codes.
Camera	<b>Rear:</b> 8 Mega pixel auto focus; f/2.4 aperture <b>Front:</b> 1.3 Mega pixel fixed focus
Near Field Communications (NFC)	ISO 14443 Type A, B and F, FeliCa, and ISO 15963 cards. Secure NFC via SAM supporting Mifare, Calypso and FeliCa. P2P mode and Card Emulation via UICC and Host.
<b>2D Imager Engine (SE4750-SR) Specifications</b>	
Field of View	Horizontal - 48.0° Vertical - 36.7°
Image Resolution	1280 horizontal X 960 vertical pixels
Roll	360°
Pitch Angle	+/- 60° from normal
Skew Tolerance	+/- 60° from normal
Ambient Light	Sunlight: 10,000 ft. candles (107,639 lux)
Focal Distance	From front of engine: 17.7 cm (7.0 in.)
Laser Aiming Element	Visible Laser Diode (VLD): 655 nm +/- 10 nm Central Dot Optical Power: 0.6 mW (typical) Pattern Angle: 48.0° horizontal, 38.0° vertical
Illumination System	LEDs: Warm white LED Pattern Angle: 80° at 505 intensity

**Table A-2** *Data Capture Supported Symbologies*

Item	Description
1D Bar Codes	Code 128, EAN-8, EAN-13, GS1 DataBar Expanded, GS1 128, GS1 DataBar Coupon, UPCA, Interleaved 2 of 5, UPC Coupon Code
2D Bar Codes	PDF-417, QR Code

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