# TC53e-RFID

## Touch Computer

## Quick Start Guide

# Terms of Use

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## Model Number

This guide applies to the model number: TC530R.

## Unpacking the Device

Unpacking the device from the box.

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

2. Verify that the following were received:

   - Touch computer

   - ≥17.7 Watt hours (min) / ≥4,680 mAh PowerPrecision+ Lithium-ion battery

   - Regulatory guide

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

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

## Features

This section lists the features of the TC53e-RFID touch computer.

The TC53e-RFID features a built-in encoder/reader, including:

- RFID tag read range of 1.5 - 2.0 m.

- RFID read speed of 20 tags per second.

- An omnidirectional antenna.

**NOTE:** When using the device for Voice over Internet Protocol (VoIP) calls near the head (for example, the user is holding the device to their ear), RFID power will be disabled. Hands-free or wireless VoIP calls (for example, with earphones or Bluetooth) will not disable RFID power.
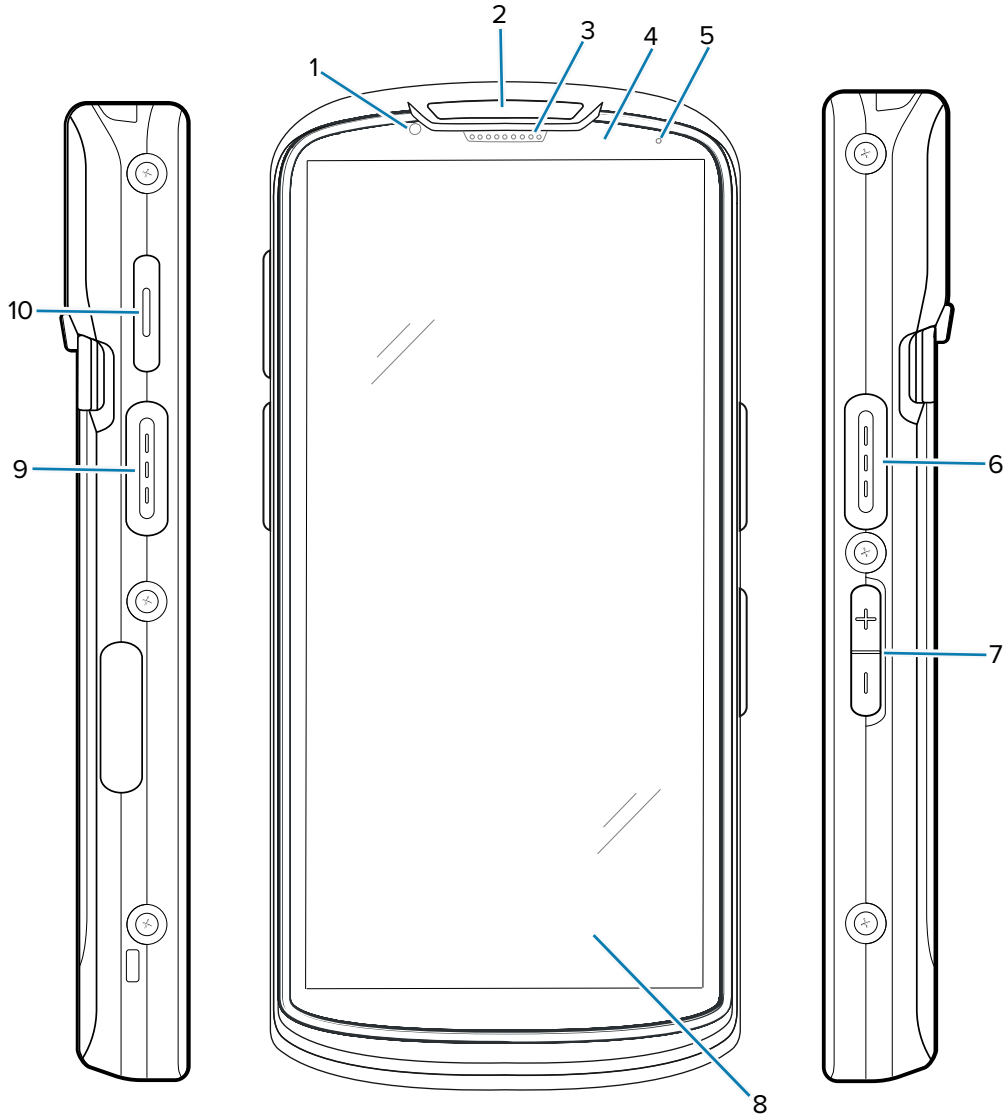
**Figure 1**    Front and Side Views



**Table 1**    TC53e-RFID Front and Side Features

| Number | Item | Description |
|---|---|---|
| 1 | Front camera (8MP) | Takes photos and videos. |
| 2 | Scan LED | Indicates data capture status. |
| 3 | Receiver | Use for audio playback in Handset mode. |
| 4 | Proximity/light sensor | Determines proximity and ambient light for controlling display backlight intensity. |
| 5 | Battery status LED | Indicates battery charging status while charging and application-generated notifications. |
| 6, 9 | Scan button | Initiates data capture (programmable). |

**Table 1**    TC53e-RFID Front and Side Features (Continued)

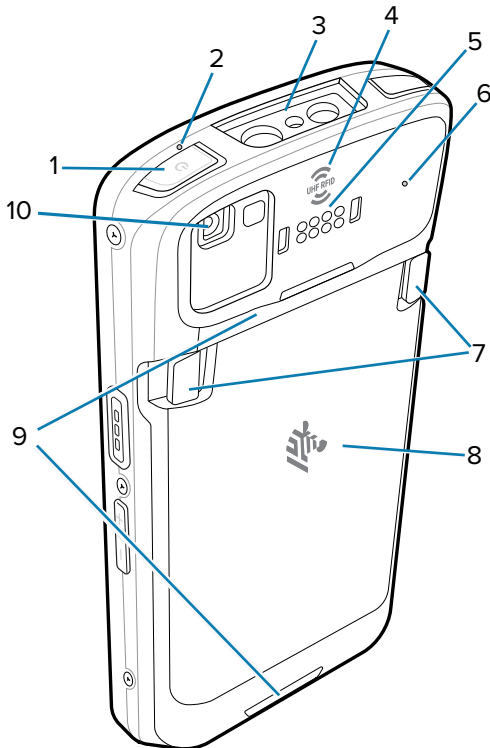| Number | Item | Description |
|--------|------|-------------|
| 7 | Volume up/down button | Increase and decrease audio volume (programmable). |
| 8 | 6 in. LCD touch screen | Displays all information needed to operate the device. |
| 10 | PTT button | Typically used for PTT communications. |

**Figure 2**    Back and Top Views



**Table 2**    Back and Top Features

| Number | Item | Description |
|--------|------|-------------|
| 1 | Power button | Turns the display on and off. Press and hold to power off, restart, or lock the device. |
| 2, 6 | Microphone | Use for communications in Handset/Handsfree mode, audio recording, and noise cancellation. |
| 3 | Exit window | Provides data capture using the imager. |
| 4 | UHF RFID | Integrated RFID.<br><br>**NOTE:** If an RFD40 or RFD90 sled is connected to the device, it overrides the integrated RFID. |

**Table 2**   Back and Top Features (Continued)

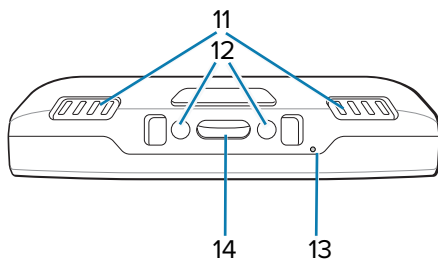| Number | Item | Description |
|---|---|---|
| 5 | Back common I/O 8 pins | Provides host communications, audio, and device charging via cables and accessories. |
| 7 | Battery release latches | Pinch both latches in and lift up to remove the battery. |
| 8 | Battery | Provides power to the device. |
| 9 | Hand strap points | Attachment points for the hand strap. |
| 10 | Rear camera (16MP) with flash | Takes photos and videos with flash to provide illumination for the camera. |

**Figure 3**   Bottom Views



**Table 3**   Bottom Features

| Number | Item | Description |
|---|---|---|
| 11 | Speaker | Provides audio output for video and music playback. Provides audio in speakerphone mode. |
| 12 | DC input pins | Power/ground for charging (5V through 9V). |
| 13 | Microphone | Use for communications in Handset/Handsfree mode, audio recording, and noise cancellation. |
| 14 | USB Type C and 2 charge pins | Provides power and communications to the device using an I/O USB-C interface with 2 charge pins. |

# 123RFID App

123RFID app demonstrates the device's tag operation functionality.

This app is available on the Google Play store. For more information on installing the 123RFID app, go to the Zebra 123RFID Mobile Support page.

# 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.
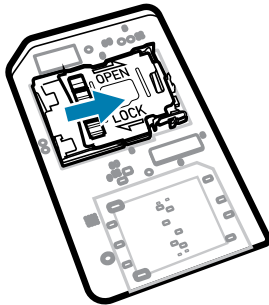
**CAUTION—ESD:** Follow proper electrostatic discharge (ESD) precautions to avoid damaging the MicroSD card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring the operator is properly grounded.
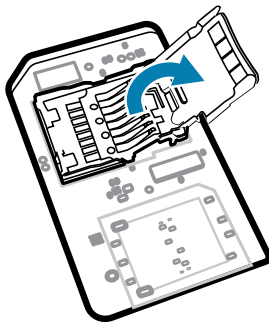
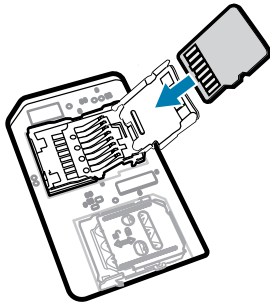1.  Lift the access door.
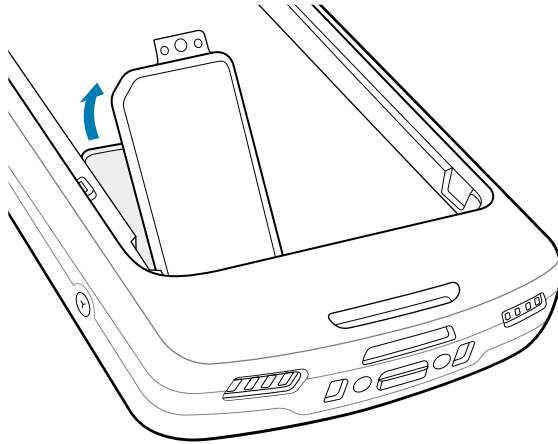


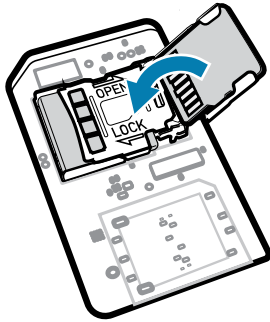2.  Slide the microSD card holder to the Open position.



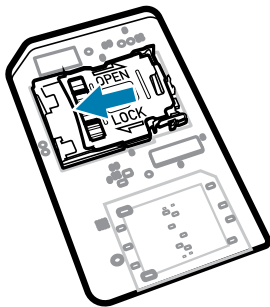3.  Lift the microSD card holder door.

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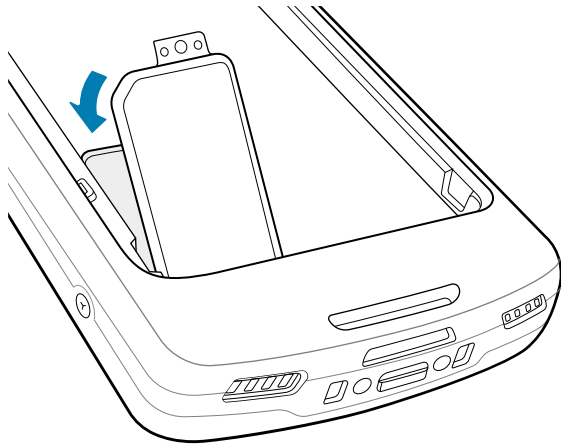


5. Close the microSD card holder.



6. Slide the microSD card holder to the Lock position.



(!) **IMPORTANT:** The access cover must be replaced and securely seated to ensure proper device sealing.

**7.** Reinstall the access door.



# Installing the Battery

This section describes how to install a battery into the device.

**NOTE:** Do not put any labels, asset tags, engravings, stickers, or other objects in the battery well. Doing so may compromise the intended performance of the device or accessories. Performance levels, such as sealing [Ingress Protection (IP)], impact performance (drop and tumble), functionality, or temperature resistance, could be affected.

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

**2.** Press the battery down until it snaps into place.
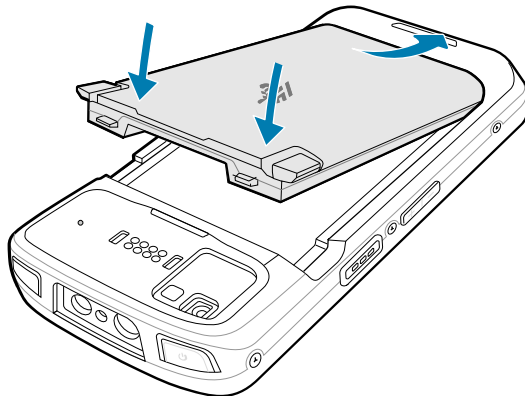


## Using the Rechargeable Li-Ion Battery with BLE Beacon

This device utilizes a rechargeable Li-Ion battery to facilitate Bluetooth Low Energy (BLE) Beacon. When enabled, the battery transmits a BLE signal for up to seven days while the device is powered off due to battery depletion.

**NOTE:** The device transmits a Bluetooth beacon only when it is powered off or in airplane mode.

For additional information on configuring the Secondary BLE settings, see techdocs.zebra.com/emdk-for-android/13-0/mx/beaconmgr/.

# Charging the Device

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

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

A battery charges from fully depleted to 90% in approximately 2 hours. In many cases, a 90% charge provides enough charge for daily use. Depending on the usage profile, a full 100% charge may last for approximately 14 hours of use.

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

| Temperature | Battery Charging Behavior |
|---|---|
| 20 to 45°C (68 to 113°F) | Optimal charging range. |
| 0 to 20°C (32 to 68°F) / 45 to 50°C (113 to 122°F) | Charging slows to optimize the JEITA requirements of the cell. |
| Below 0°C (32°F) / Above 50°C (122°F) | Charging stops. |
| Above 55°C (131°F) | The device shuts down. |

To charge the main battery:

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

2. Insert the device into a cradle or attach to a power cable (minimum 9 volts / 2 amps).

   The device turns on and begins charging. The Charging/Notification LED blinks amber while charging, then turns solid green when fully charged.

## Charging Indicators

The charging/notification LED indicates charging status.

**Table 4**    Charging/Notification LED Charging Indicators

| State | LED Color | Indications |
|---|---|---|
| Off | ◯ | The device is not charging.<br><br>• The device is not inserted correctly in the cradle or connected to a power source.<br><br>• The charger/cradle is not powered. |
| Slow Blinking Amber<br>(1 blink every 4 seconds) | 🟠 | The device is charging. |

**Table 4**    Charging/Notification LED Charging Indicators (Continued)

| State | LED Color | Indications |
|---|---|---|
| Slow Blinking Red (1 blink every 4 seconds) | 🔴 | The device is charging, but the battery is at the end of its useful life. |
| Solid Green | 🟢 | Charging is complete. |
| Solid Red | 🔴 | Charging is complete, but the battery is at the end of its useful life. |
| Fast Blinking Amber (2 blinks/second) | 🟠 | Charging error. For example:<br>• Temperature is too low or too high.<br>• Charging has gone on too long without completion (typically 12 hours). |
| Fast Blinking Red (2 blinks/second) | 🔴 | Charging error, and the battery is at the end of its useful life. For example:<br>• The temperature is too low or too high.<br>• Charging has gone on too long without completion (typically 12 hours). |

## Charging the Spare Battery

This section provides information on charging a spare battery. To achieve optimal charging results, use only Zebra charging accessories and batteries.

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

2. Ensure the battery is seated properly.

    The Spare Battery Charging LED blinks, indicating charging.

The battery charges from fully depleted to 90% in approximately 2.5 hours. In many cases, the 90% charge provides plenty of charge for daily use. Depending on the usage profile, a full 100% charge may last for approximately 14 hours of use.

## Accessories for Charging

Use one of the following accessories to charge the device and/or spare battery.

**Charging and Communication**

| Description | Part Number | Charging | | Communication | |
|---|---|---|---|---|---|
| | | Battery (In device) | Spare Battery | USB | Ethernet |
| 1-Slot Charge Only Cradle | CRD-NGTC5-2SC1B | Yes | Yes | No | No |
| 1-Slot USB/Ethernet Cradle | CRD-NGTC5-2SE1B | Yes | Yes | Yes | Yes |

| Description | Part Number | Charging | | Communication | |
|---|---|---|---|---|---|
| | | Battery (In device) | Spare Battery | USB | Ethernet |
| 5-Slot Charge Only Cradle with Battery | CRD-NGTC5-5SC4B | Yes | Yes | No | No |
| 5-Slot Charge Only Cradle | CRD-NGTC5-5SC5D | Yes | No | No | No |
| 5-Slot Ethernet Cradle | CRD-NGTC5-5SE5D | Yes | No | No | Yes |
| Charge/USB Cable | CBL-TC5X-USBC2A-01 | Yes | No | Yes | No |

## 1-Slot Charge Only Cradle

This USB cradle provides power and host communications.

**CAUTION:** Ensure that you follow the guidelines for battery safety described in the Product Reference Guide.
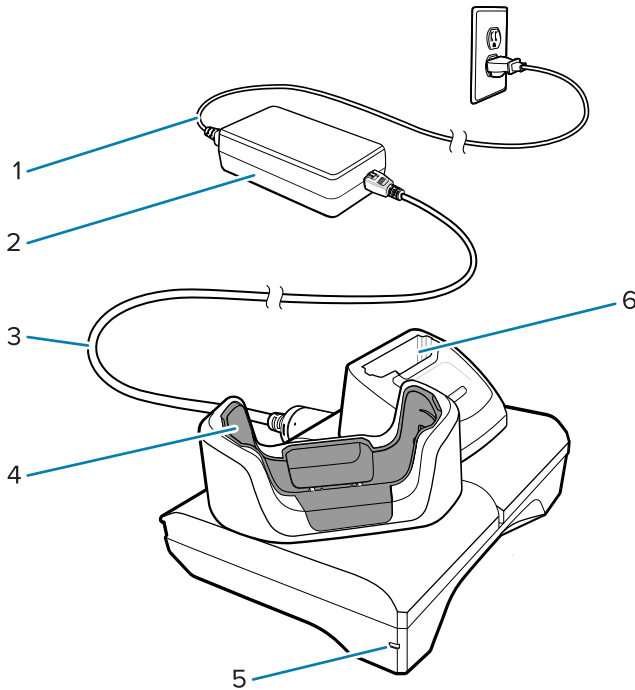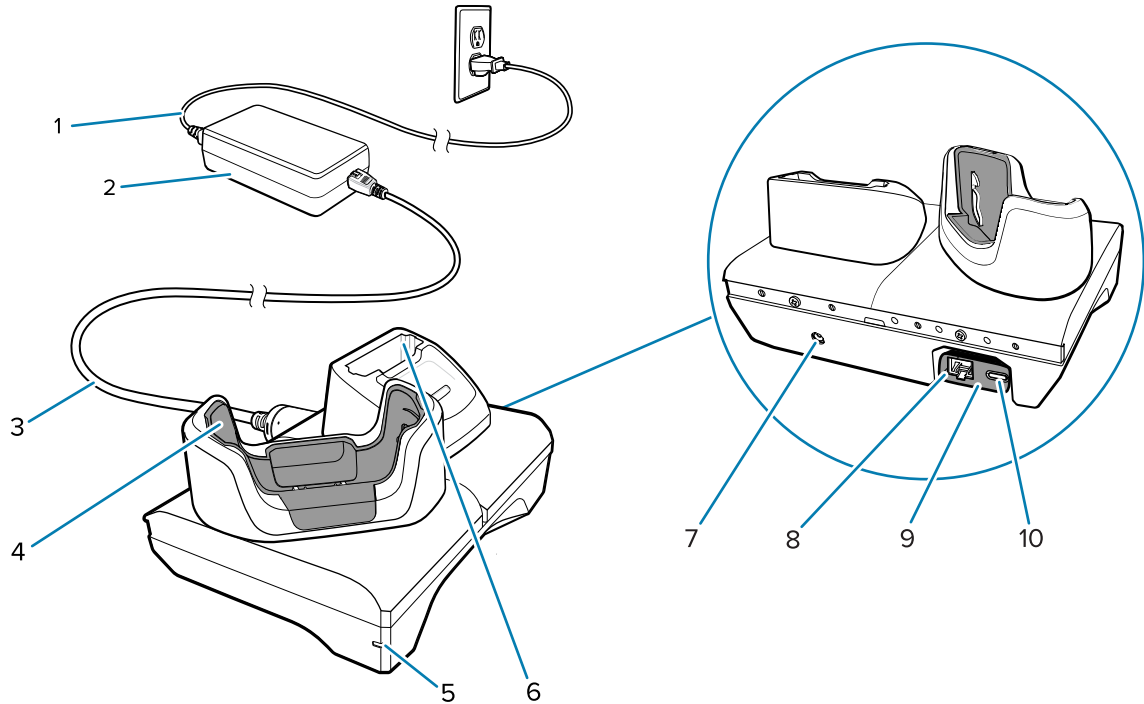


| 1 | AC line cord |
|---|---|
| 2 | Power supply |
| 3 | DC line cord |
| 4 | Device charging slot |
| 5 | Power LED |
| 6 | Spare battery charging slot |

## 1-Slot Ethernet USB Charge Cradle

This Ethernet cradle provides power and host communications.

⚠️ **CAUTION:** Ensure that you follow the guidelines for battery safety described in the Product Reference Guide.



| 1 | AC line cord |
|----|--------------|
| 2 | Power supply |
| 3 | DC line cord |
| 4 | Device charging slot |
| 5 | Power LED |
| 6 | Spare battery charging slot |
| 7 | DC line cord input |
| 8 | Ethernet port (on USB to Ethernet module kit) |
| 9 | USB to Ethernet module kit |
| 10 | USB port (on USB to Ethernet module kit) |

📝 **NOTE:** The USB to Ethernet module kit (KT-TC51-ETH1-01) connects via a single-slot USB charger.
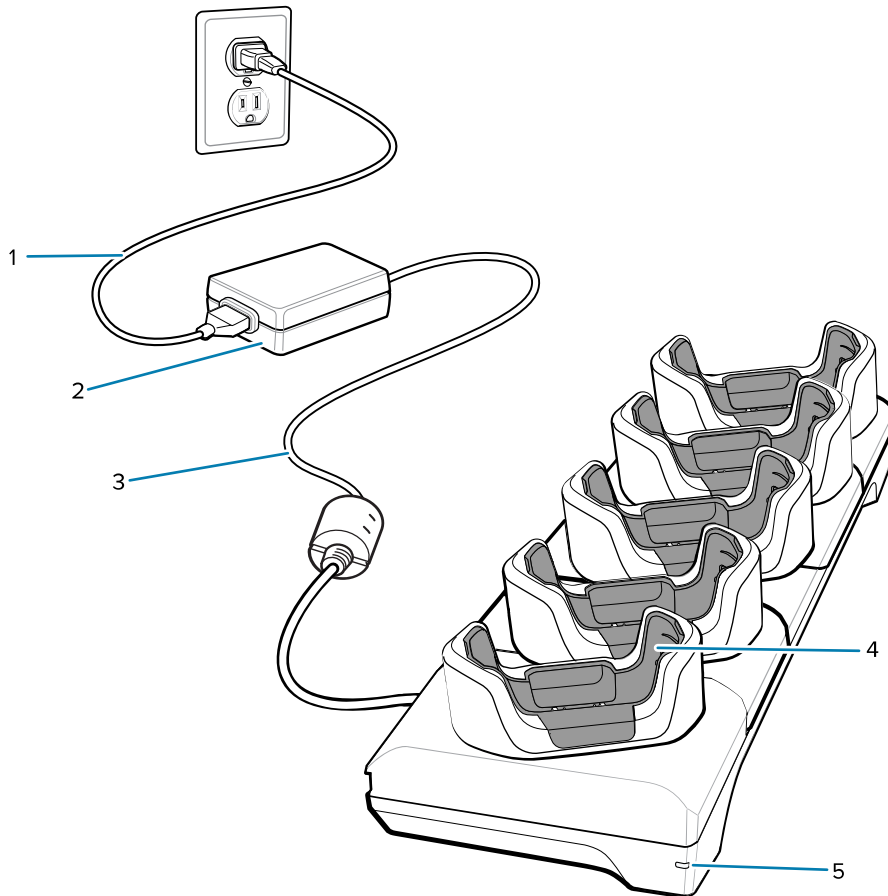
## 5-Slot Charge Only Cradle

⚠️ **CAUTION:** Ensure that you follow the guidelines for battery safety described in the Product Reference Guide.

The 5-Slot Charge Only Cradle:

- Provides 5.0 VDC power for operating the device.

- Simultaneously charges up to five devices or up to four devices and four batteries using the 4-slot battery charger adapter.

- Contains a cradle base and cups that can be configured for various charging requirements.



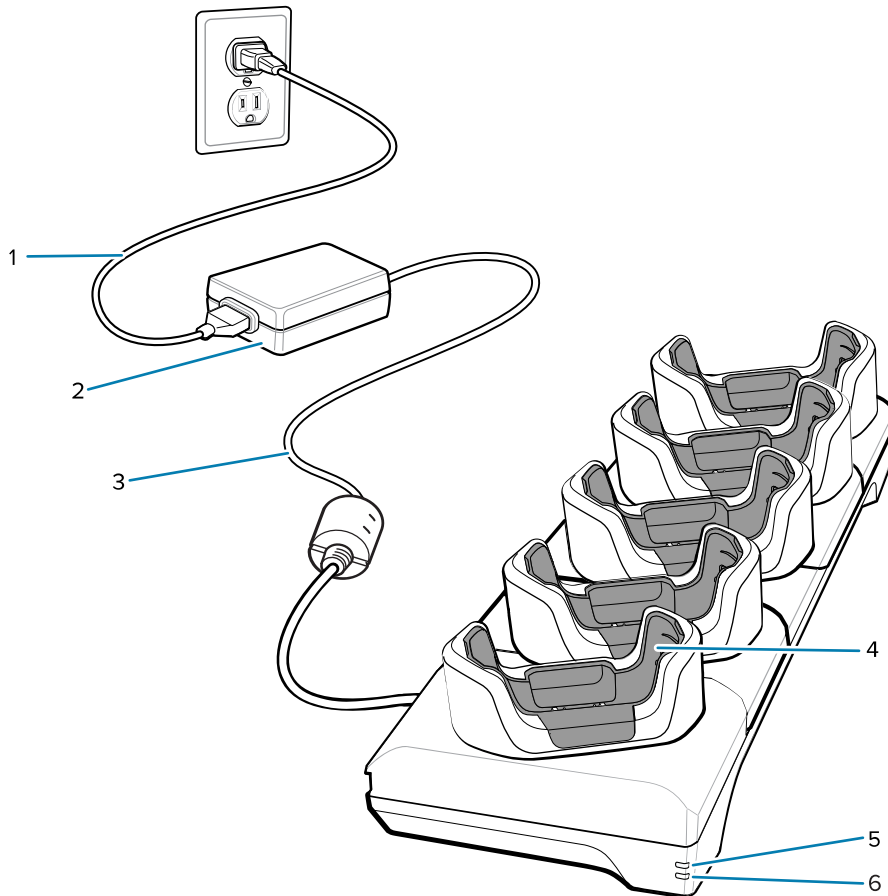| 1 | AC line cord |
|---|---|
| 2 | Power supply |
| 3 | DC line cord |
| 4 | Device charging slot with shim |
| 5 | Power LED |

## 5-Slot Ethernet Cradle

⚠️ **CAUTION:** Ensure that you follow the guidelines for battery safety described in the Product Reference Guide.

The 5-Slot Ethernet Cradle:

- Provides 5.0 VDC power for operating the device.
- Connects up to five devices to an Ethernet network.
- Simultaneously charges up to five devices or up to four devices and four batteries using the 4-slot battery charger adapter.

| 1 | AC line cord |
|---|---|
| 2 | Power supply |
| 3 | DC line cord |
| 4 | Device charging slot |
| 5 | 1000Base-T LED |
| 6 | 10/100Base-T LED |

## 5-Slot (4 Device/4 Spare Battery) Charge Only Cradle with Battery Charger

⚠️ **CAUTION:** Ensure that you follow the guidelines for battery safety described in the Product Reference Guide.

The 5-Slot Charge Only Cradle:

- Provides 5.0 VDC power for operating the device.
- Simultaneously charges up to four devices and four spare batteries.
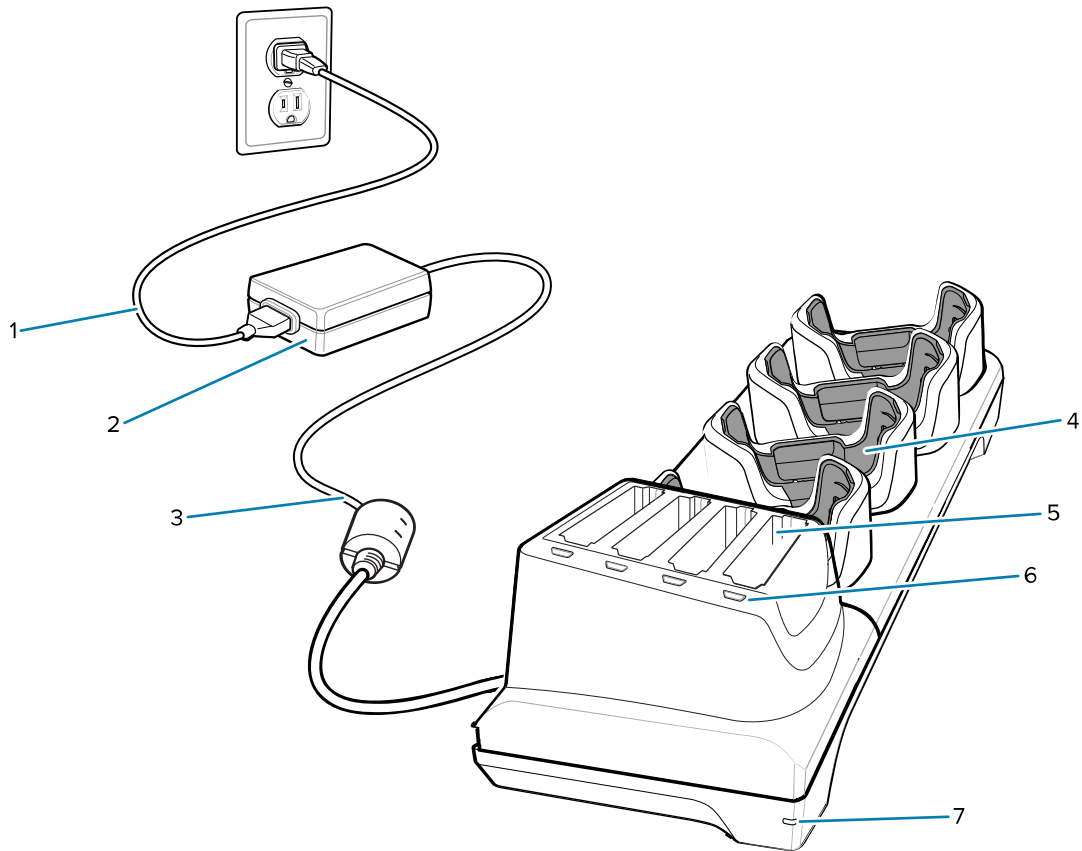


| 1 | AC line cord |
|---|---|
| 2 | Power supply |
| 3 | DC line cord |
| 4 | Device charging slot with shim |
| 5 | Spare battery charging slot |
| 6 | Spare battery charging LED |
| 7 | Power LED |

**Charge/USB-C Cable**

The USB-C Cable snaps onto the bottom of the device and removes easily when not in use.

**NOTE:** When attached to the device, it provides charging and allows the device to transfer data to a host computer.
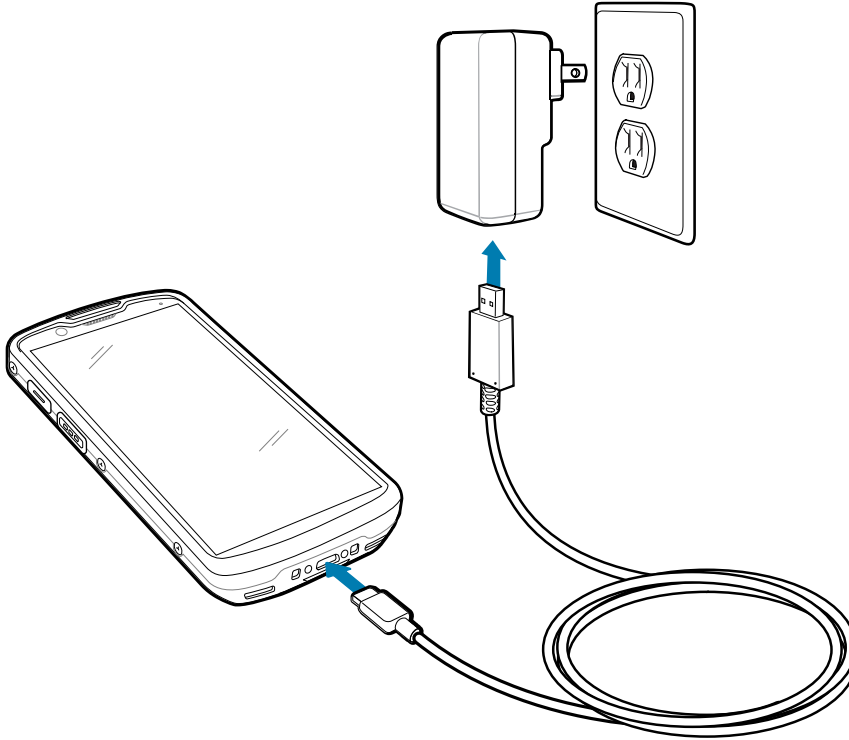
# Scanning with Internal Imager

Use the internal imager to capture barcode data.

To read a barcode or QR code, a scan-enabled application is required. The device contains the DataWedge Demonstration (DWDemo) app, which allows you to enable the imager, decode the barcode/QR code data, and display barcode content.

**NOTE:** The SE4720 displays a red dot aimer.

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

**2.** Point the exit window on the top of the device at a barcode or QR code.
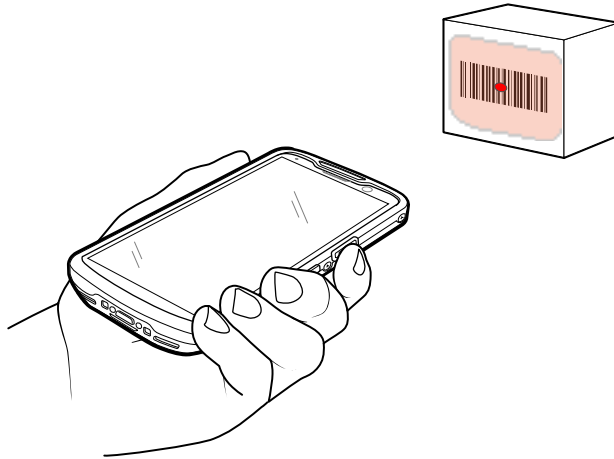


**3.** Press and hold the scan button.

The device projects the aiming pattern.

4. Ensure the barcode or QR code is within the area formed in the aiming pattern.
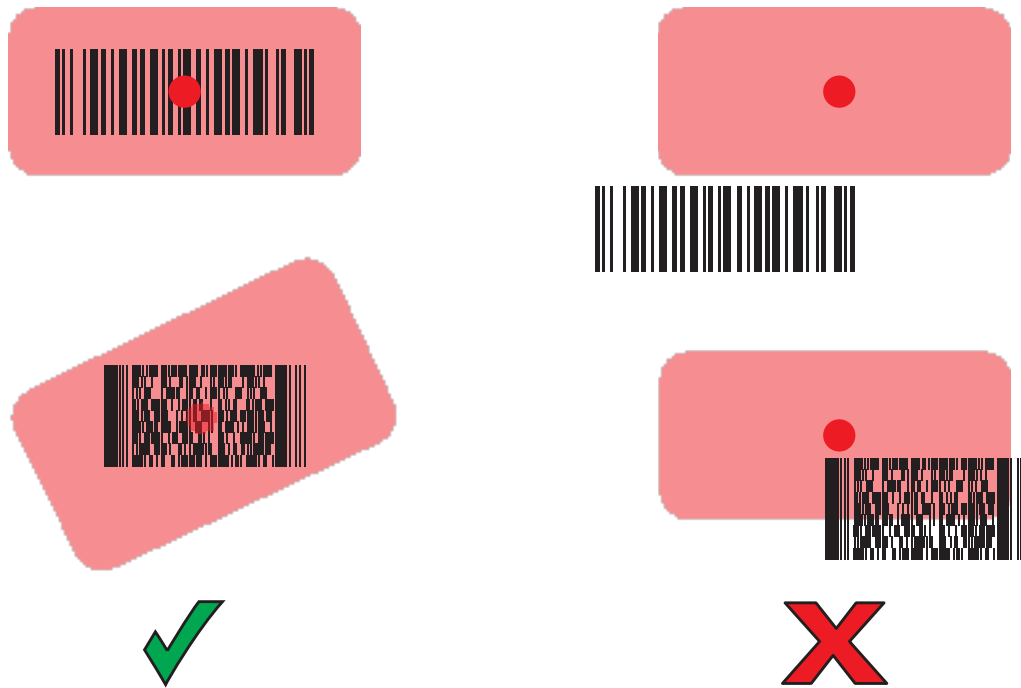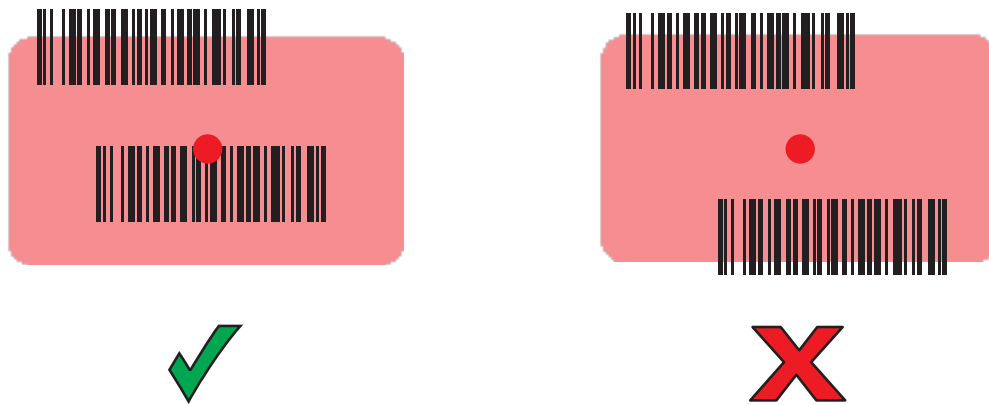
**Figure 4**    SE4720 Aiming Pattern



**Figure 5**    SE4720 Picklist Mode Aiming Patterns with Multiple Barcodes



**NOTE:** When the device is in Picklist mode, it does not decode the barcode/QR code until the center of the crosshair touches the barcode/QR code.

The Data Capture LED light turns on, and the device beeps, by default, to indicate that the barcode or QR code was decoded successfully.
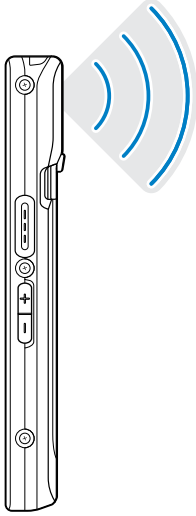
5. Release the scan button.

The device displays the barcode or QR code data in the text field.

# RFID Scanning Considerations

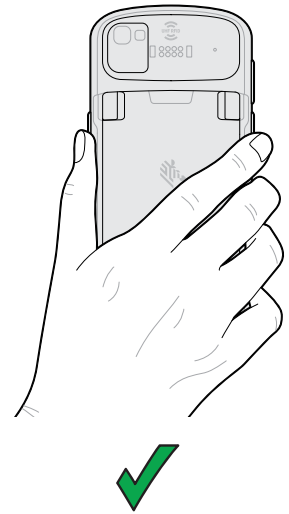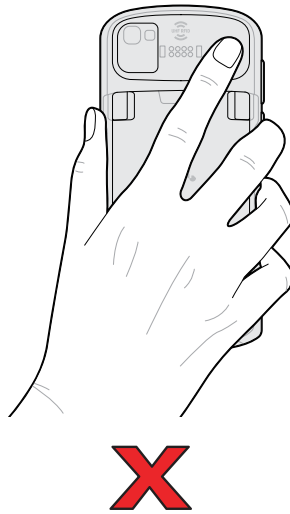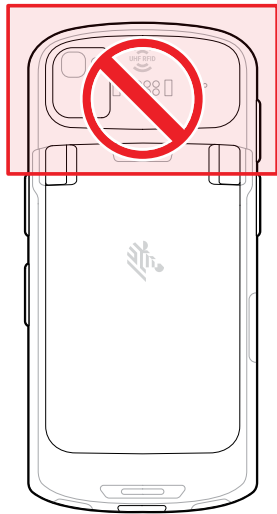The following hand grips are recommended to ensure the RFID function works properly.

**RFID Scanning Orientation**
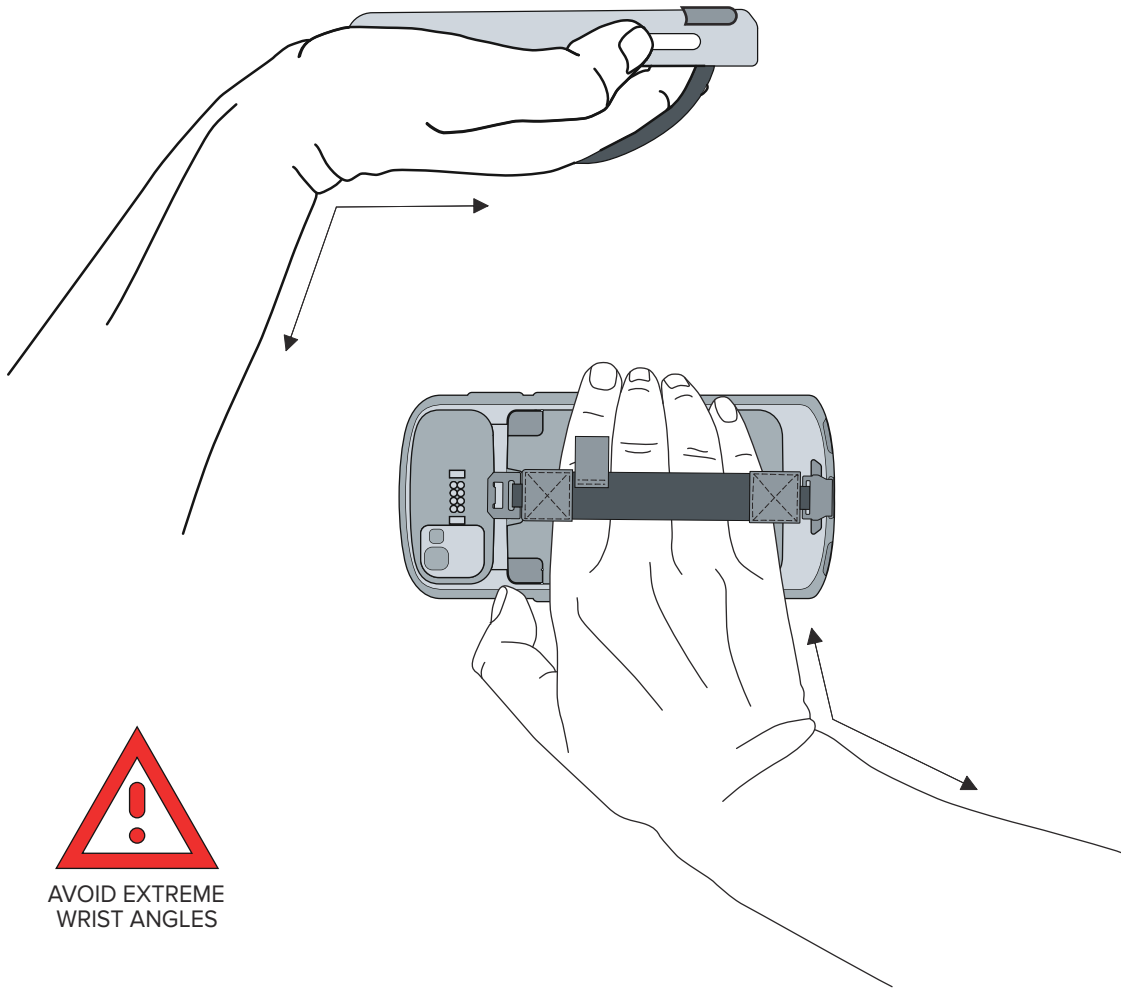


**Optimal Hand Grips**

**IMPORTANT:** When holding the device, ensure that your hand is below the hand strap (towel) bar and the scan buttons.

# Ergonomic Considerations

Avoid extreme wrist angles when using the device.



AVOID EXTREME
WRIST ANGLES

# Service Information

Repair services using Zebra-qualified parts are available for at least three years after the end of production and can be requested at zebra.com/support.