# RFD40

## RFID Standard Sled



# Product Reference Guide

ZEBRA

# Terms of Use

## Proprietary Statement

This manual contains proprietary information of Zebra Technologies Corporation and its subsidiaries ("Zebra Technologies"). It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the express, written permission of Zebra Technologies.

## Product Improvements

Continuous improvement of products is a policy of Zebra Technologies. All specifications and designs are subject to change without notice.

## Liability Disclaimer

Zebra Technologies takes steps to ensure that its published Engineering specifications and manuals are correct; however, errors do occur. Zebra Technologies reserves the right to correct any such errors and disclaims liability resulting therefrom.

## Limitation of Liability

In no event shall Zebra Technologies or anyone else involved in the creation, production, or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, consequential damages including loss of business profits, business interruption, or loss of business information) arising out of the use of, the results of use of, or inability to use such product, even if Zebra Technologies has been advised of the possibility of such damages. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

# Contents

# About This Guide

The table below describes the configuration of the RFD40 RFID Standard sled.

**NOTE:** In the SKU below, XX indicates the country code for a specific country.

**Table 1**  RFD40 RFID Standard Sled Configurations

| SKU | Description |
|---|---|
| RFD4030-G00B700-XX | RFD40, Standard, Standard Range Circular Polarized Antenna, UHF RFID Only, Gun, No Imager, 7000mAh Battery, Midnight Black |

## Service Information

If you have a problem using the equipment, contact your facility's technical or systems support. If there is a problem with the equipment, they will contact the Zebra Global Customer Support Center at: zebra.com/support.

When contacting Zebra support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software type and version number

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

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

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

# Getting Started

## Unpacking

This chapter provides information on RFD40 RFID Standard sled parts, battery installation, mobile device attachment, LED indications, and charging. Carefully remove all protective material from the RFD40 RFID Standard sled and save the shipping container for later storage and shipping.

Verify the following items are in the box:

- RFD40 RFID Standard sled
- Battery
- Lanyard
- Quick Start Guide

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

For a full list of accessories that can be used with the RFD40 RFID Standard sled, refer to the product specific Technical Accessory Guide available at: zebra.com/support.

## Setting up the RFD40 RFID Standard Sled

The RFD40 UHF RFID Standard sled provides RAIN Radio Frequency Identification (RFID) tag reading, writing, and locating capability to supported Zebra mobile computers.

To use the sled for the first time with a mobile computer:

1. Insert the battery into the sled
2. Charge the sled in the charging cradle, charging cup, or by USB-C cable.
3. Replace the standard cover that comes with the sled with the adaptor that is specific to the mobile computer being used with the sled.
4. Place the mobile computer into the adaptor headfirst.
5. Attach the mobile computer on the sled.
6. Set the region using 123RFID Desktop or 123RFID Mobile. For more information visit zebra.com/123RFID.

For the latest versions of guides and software, go to: zebra.com/support.

For detailed information, refer to the Product Reference Guide at: zebra.com/support.

# Features

The RFD40 RFID Standard sled adds a RFID gun-style handle with a scanning trigger to the mobile computer or Windows PC. Used for all RFID operations, the sled increases comfort when using the mobile computer in scan-intensive applications for extended periods of time.

**Figure 1**    RFD40 RFID Standard Sled Features
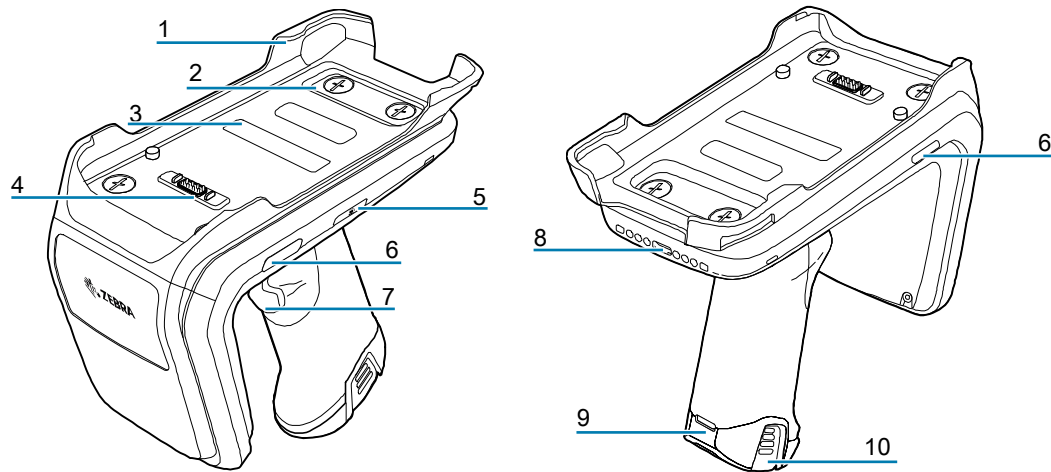


| | |
|---|---|
| 1 | Adaptor (Sold Separately) |
| 2 | Coin Screws (4) |
| 3 | Adaptor Label |
| 4 | eConnex$^{TM}$ Communication Port |
| 5 | Battery Status LED |
| 6 | Decode LED |
| 7 | Tri-Function Trigger |
| 8 | Charging Contact and USB-C Port |
| 9 | Tethering Point for Handstrap |
| 10 | Rubber Foot |

# Adaptor Installation

To install the adaptor,

1. Remove the cover by pulling up on the lip.

2. Secure the adaptor onto the sled by fastening the four coin screws into the sled.

**Figure 2**   Adapter Installation
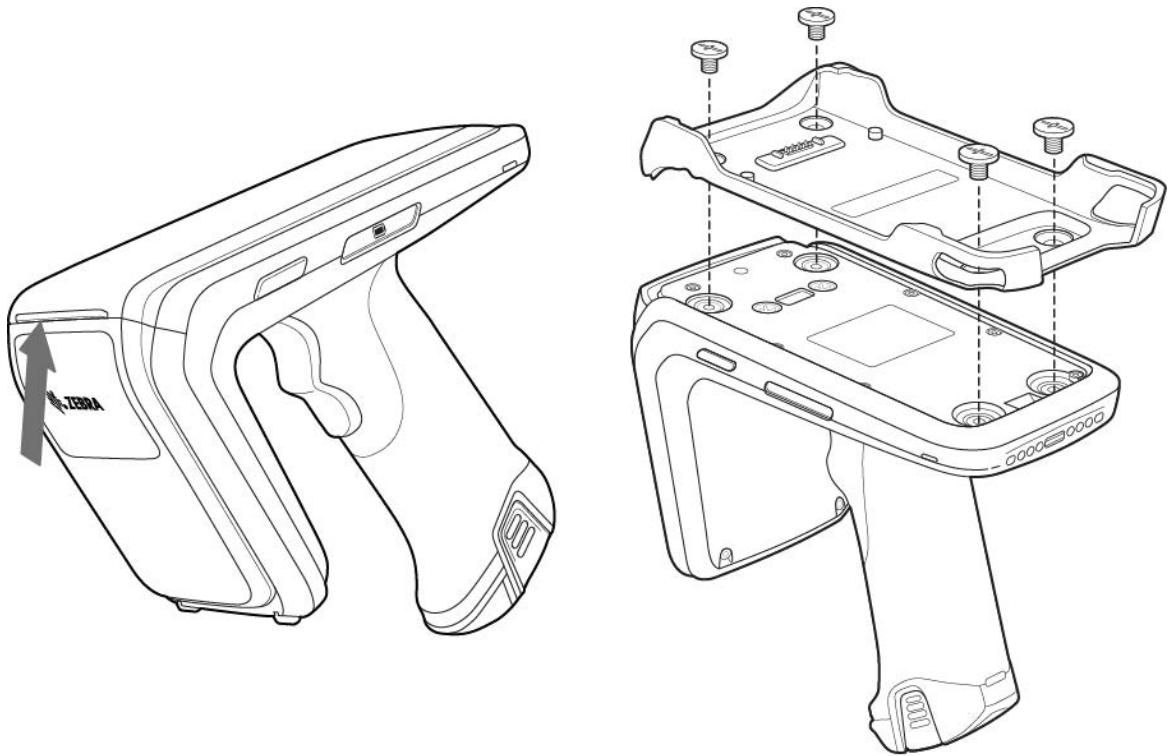
# Installing the Mobile Computer into the Sled

To secure the mobile computer to the RFD40 Standard RFID sled, place the top of the device fully forward into the sled adaptor and push down on the bottom of the mobile computer.

**NOTE:** Depending on the mobile computer being used with the sled, the mobile computer may be inserted into the adaptor tail-end first.

**NOTE:** While installing the mobile computer into the adaptor, use caution and do not to collide with the eConnex$^{TM}$communication port pins on the RFD40.
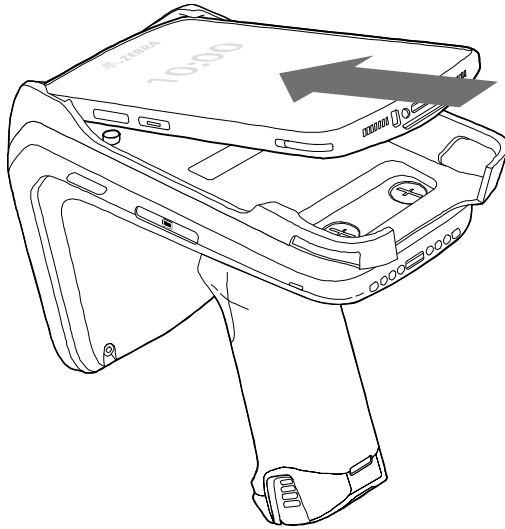
# Removing the Mobile Computer from the Sled

To remove the mobile computer from the RFD40 Standard RFID sled, firmly hold the sled handle, and lift the device off of the sled base.
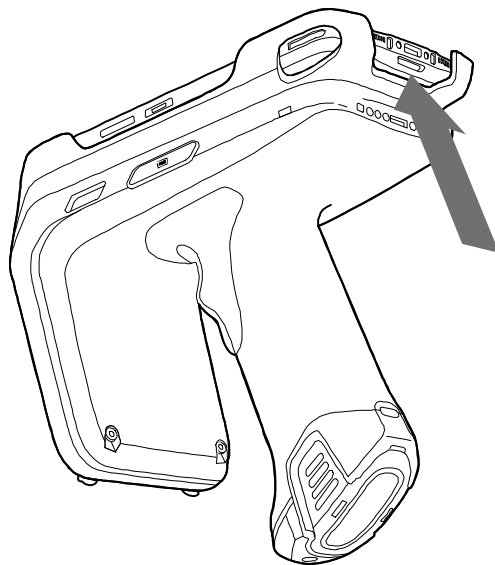
# Sled Battery Replacement

## Battery Installation

To install the battery:

1. Align the battery with the notch facing the back of the device.
2. Slide the battery into the handle of the device.
3. Snap the battery into place.
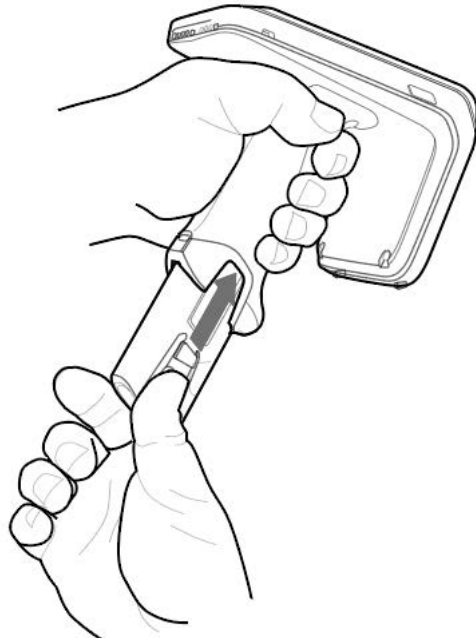


## Battery Removal

To remove the battery, pinch the clips to unlock the battery and slide downwards to release.

# Charging

Before using the RFD40 for the first time, fully charge the battery by placing it in the charging cradle until the LED Power/Charging Indicator turns solid green. The RFD40 RFID sled and mobile computer may be charged in the charging cradle individually or attached together.

When an RFD40 RFID sled is removed from a charging cradle, it is automatically powered on. If a reader is not used for a duration of 30 minutes, the reader enters low power mode.

**Figure 3**    Single Slot Charging Cradle
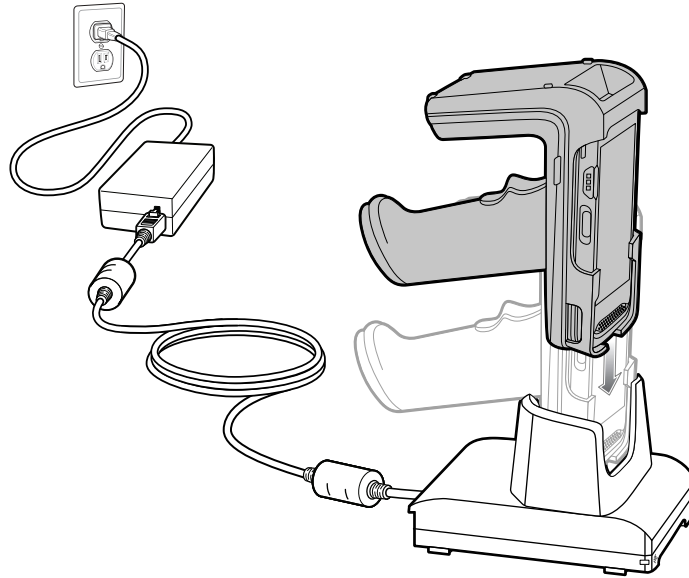
# UI Indicators

The RFD40 RFID Standard sled presents multiple modalities to inform the user of various device states. The sled provides LED definitions for decode and battery status as well as beeper indications to indicate the charge progress of the battery. The trigger on the sled is capable of carrying out various programmable tasks to decode and initiate a bootloader recovery.

## Decode LED Definitions

**Table 2**  RFD40 RFID Standard Sled Decode LED Indications

| Scan | LED Status |
|---|---|
| Good Scan | Green |
| Scan Error | Red |
| RFID Tag Read Indicator Enabled | Green |
| Read Error | Red |

## Battery LED Definitions

**Table 3**  RFD40 RFID Standard Sled LED Definitions While Charging

| Condition | Indication |
|---|---|
| Pre-charging | Amber (Fast, Fast, Slow) |
| Charging | Amber (Blinking) |
| Fully Charged | Green (Stays On) |
| Charging Error | Amber (Fast Blinking) |

## Battery Beeper Indications

**Table 4**  RFD40 RFID Standard Sled RFD40 Battery Beeper Indications

| Condition | Tone |
|---|---|
| Low Battery (20%) | Medium-length tones |
| Lower Battery (10%) | Short tones - repeat |
| Suspend | High/Medium/Low |
| Charging | Short tone when the charger is connected. |
| Fully Charged | One Beep |
| Charging Error | Three Beeps (single occurrence) |
| Power On | Low/Medium/High Beep |

# Trigger Modes

**NOTE:** By default, the device assumes the upper trigger as the RFID decode trigger and the lower trigger as the mobile computer decode trigger.

**Table 5** RFD40 RFID Standard Sled Default Trigger Functions

| Condition | Upper Trigger | Lower Trigger | Both Triggers | Description |
|---|---|---|---|---|
| RFID Start/Stop | X | - | - | User Programmable. |
| Barcode Start/Stop | - | X | - | User Programmable. |
| Start Bootloader Recovery | - | X | - | Press and hold the lower trigger for five seconds while inserting the battery. |
| Configurable/Signal Intent to Mobile Device | - | - | X | Feature support is determined by the mobile computer being used with the device. |

# Maintenance and Technical Specifications

This chapter provides suggested sled maintenance, troubleshooting, and technical specifications.

⚠️ **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 Zebra 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.

## Maintenance

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

[1] Ensure the following items are addressed when using sodium hypochlorite (bleach) based cleaners:

- For device only. Do not use on cradle.
- Always follow the manufacturer's recommended instructions: use gloves during application and remove the residue afterwards with a damp cloth to avoid prolonged skin contact while handling the device.
- Due to the powerful oxidizing nature of sodium hypochlorite, the metal surfaces, including electrical contacts on the device, are prone to oxidation (corrosion) when exposed to this chemical in the liquid form (including wipes) and should be avoided. In the event that these type of disinfectants come in contact with metal on the device, prompt removal with a dampened cloth after the cleaning step is critical.

🛈 **IMPORTANT** To avoid damage to the device, use only approved cleaning and disinfecting agents listed below. The use of non-approved cleaning or disinfecting agents may void the warranty.

### Known Harmful Ingredients

The following chemicals are known to damage the plastics on Zebra devices and should not come in contact with the device:

- Acetone

- Ammonia solutions

- Aqueous or alcoholic alkaline solutions

- Aromatic and chlorinated hydrocarbons

- Benzene

- Carbolic acid

13

- Compounds of amines or ammonia
- Ethanolamine
- Ethers
- Ketones
- TB-lysoform
- Toluene
- Trichloroethylene.

## Approved Cleaners

- Isopropyl alcohol 70% (including wipes)
- 10% Bleach (Sodium Hypochlorite 0.55%) and 90% Water solution
- 3% Hydrogen Peroxide and 97% Water solution
- Mild dish soap.

## Cleaning the Sled

Routinely cleaning the exit window is required. A dirty window may affect scanning accuracy. Do not allow any abrasive material to touch the window.

To clean the device:

1. Dampen a soft cloth with one of the approved cleaning agents listed above or use pre-moistened wipes.
2. Gently wipe all surfaces, including the front, back, sides, top and bottom. Never apply liquid directly to the device. Be careful not to let liquid pool around the device window, trigger, cable connector or any other area on the device.
3. Be sure to clean the trigger and in between the trigger and the housing (use a cotton-tipped applicator to reach tight or inaccessible areas).
4. Do not spray water or other cleaning liquids directly into the exit window.
5. Wipe the device exit window with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.
6. Immediately dry the device window after cleaning with a soft non-abrasive cloth to prevent streaking.
7. Allow the unit to air dry before use.
8. Connectors:
   a. Dip the cotton portion of a cotton-tipped applicator in isopropyl alcohol.
   b. Rub the cotton portion of the cotton-tipped applicator back-and-forth across the connector on the Zebra sled at least 3 times. Do not leave any cotton residue on the connector.
   c. Use the cotton-tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
   d. Use a dry cotton tipped applicator and rub the cotton portion of the cotton-tipped applicator back-and-forth across the connectors at least 3 times. Do not leave any cotton residue on the connectors.

# Technical Specifications

**Table 6**  RFD40 RFID Standard Sled Technical Specifications

| Item | Description |
|---|---|
| **Physical Characteristics** | |
| Dimensions | Height: 15.6 cm (5.94 in.) |
| | Width: 8.4 cm (3.3 in.) |
| | Length: 16.6 cm (6.5 in.) |
| Weight | ~19.1 oz./~541 grams (sled with battery) |
| Power | PowerPrecision+ 7000 mAh Li-Ion battery |
| Frequency Range/ RF Output | US: 902-928 MHz; 0 - 30 dBm (EIRP) |
| | EU: 865-868 MHz; 0 - 30 dBm (EIRP) |
| | Japan: 916-921 MHz (w LBT); 0 - 30 dBm (EIRP) |
| **User Environment** | |
| Operating Temperature | -10°C to 50°C (14°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) |
| Relative Humidity | Operating: 5 to 85% non-condensing |
| Sealing | IP54 |
| Drop Specification | Multiple 5 ft./1.8 m drops onto concrete |
| Tumble Specification | 500 1/2 meter tumble cycles (1000 drops) at 20°C |
| Electrostatic Discharge (ESD) | ± 15 kV air discharge |
| | ± 8 kV direct discharge |
| | ± 8 kV indirect discharge |

# Troubleshooting

## Troubleshooting

**Table 7**   Troubleshooting the RFD40 RFID Standard Sled

| Symptom | Possible Cause | Action |
|---|---|---|
| The RFID sled does not read tags. | The RF region configuration is not set. | Use the 123RFID Desktop or 123RFID Mobile application to set the regulatory region or country operation per the application instructions. |
| RFID sled is attached to mobile device and it is not responsive to a RFID application, even after the trigger is pressed. | Battery is too low and not able to power the RFID sled. | Press the trigger for a couple of seconds to power the RFID sled On. The RFID sled LED blinks amber when it is turned On. (By default, pressing the trigger turns On the RFID sled if it is in Off mode. However, the RFID sled can be disabled in which case this step is not necessary.) Place the RFID sled in the charging cradle. The RFID sled blinks amber LEDs indicating charging commenced. |
| | Zebra supported mobile computer is not properly inserted in the RFID Sled. | Reinsert the Zebra supported mobile device securely in the RFID sled and ensure that the USB cable is correctly inserted. |
| | Damaged battery. | If the RFD40 RFID sled LED does not blink amber after sitting on charging cradle for a while, request service to replace battery. |
| RFID sled is responsive but cannot read tags. | Battery is critically low. | Place the RFID sled in the charging cradle. The RFID Sled LED blinks amber. The RFID sled can be used when its LED turns on momentarily amber or green upon removal from charging cradle. |
| The RFD40 RFID sled LED blinks fast amber when in the cradle. | Charging error. | Restart charging by removing the RFID sled from the cradle and inserting it back in the cradle. If issue persists, request service to replace battery. |

**Table 7**  Troubleshooting the RFD40 RFID Standard Sled

| Symptom | Possible Cause | Action |
|---|---|---|
| RFID sled LED blinks red, or LED blinks red alternating with green or amber while in use (not while charging). | Battery end of life indication. | Request service to replace battery. |
| Zebra supported mobile computer battery is not charging. | Charging cradle was unplugged from AC power. | Ensure the charging cradle is receiving power. |
| | The Zebra supported mobile computer is not fully seated in the cradle. | Remove and re-insert the zebra supported mobile computer into the cradle, ensuring it is firmly seated in the charging cradle. |