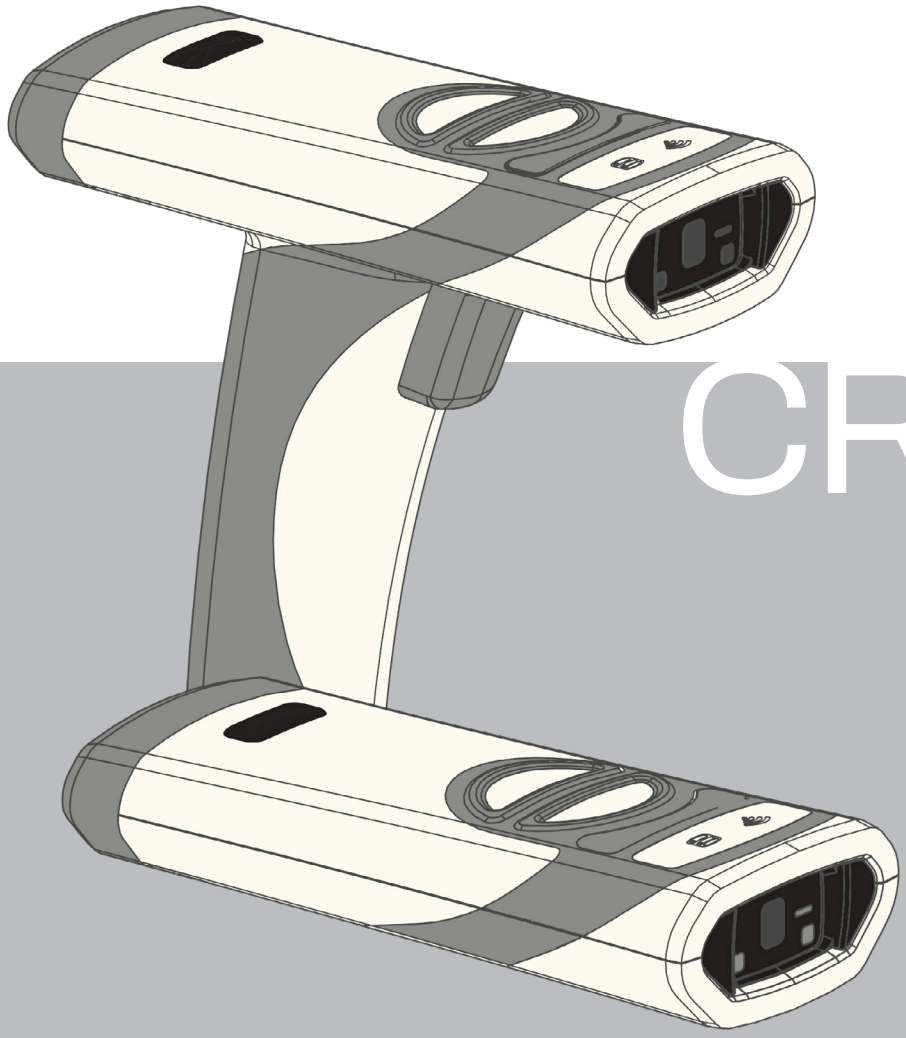
USER MANUAL



CR2700

MANUAL VERSION 03
UPDATED: OCTOBER 2022

code

Statement of Agency Compliance

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada (IC)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Industrie Canada (IC)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Code Reader™ 2700 User Manual Legal Disclaimer

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The Code Reader software uses the Mozilla SpiderMonkey JavaScript engine, which is distributed under the terms of the Mozilla Public License Version 1.1.

The Code Reader software is based in part on the work of the Independent JPEG Group.

Code Corporation, 434 W. Ascension Way, Ste. 300, Murray, Utah 84123

codecorp.com

Table of Contents

1. Introduction

Introduction

Code's CR2700 is an advanced wireless 2D barcode reader. It features inductive charging, the latest Bluetooth® Low Energy standards, and a lightweight and ergonomic design in combination with superior barcode scanning performance.

2. Useful Configuration Codes

2.1 Scanning the Reset Bluetooth® Reader to Factory Defaults barcode below (M20390) will erase all custom configurations and reset the device to default settings. This will also erase any pairing information. This, however, will not erase any user settings preprogrammed at factory or any JavaScript files loaded at factory or by the user.

M20390_01

2.2 Scanning the Reboot Reader barcode below (M20345) will power cycle the device. ***Note***: *any settings that are not saved will be erased.*

M20345_01

2.3 The CR2700 supports direct connection as a Bluetooth® Keyboard device with third party hosts that support Bluetooth Low Energy (such as PCs, mobile phones and tablets). Scan the BT HID Keyboard barcode below (M20381) to set the reader as a Bluetooth Keyboard device, then connect using host's device manager (on PC) or Bluetooth settings (on mobile devices). ***Note***: *this mode is not applicable when using a Code charger with embedded Bluetooth radio (CRA-A271).*

M20381_01

3. CR2700 Readers & Accessories

3.1 Readers

Part Number	Description
CR2701-100	CR2700 (Bluetooth®, palm, light gray, CodeShield®), battery
CR2702-100	CR2700 (Bluetooth, handled, light gray, CodeShield), battery
CR2701-200	CR2700 (Bluetooth, palm, dark gray, CodeShield), battery
CR2702-200	CR2700 (Bluetooth, handled, dark gray, CodeShield), battery

3.2 Charging Stations

Part Number	Description
CRA-A270-P4	Inductive charging station, 3-ft USB cable, US power supply
CRA-A271	Bluetooth® inductive charging station, light gray (cable sold seperately)
CRA-A272	Bluetooth inductive charging station, dark gray (cable sold seperately)
CRA-A273-P4	Inductive charging station, dark gray, 3-ft USB cable, US power supply
CRA-A274-P1	Quad-bay battery charger, US power supply
CRA-A274-P2	Quad-bay battery charger, EU power supply

3.3 Cables

Part Number	Description
CRA-C31	3-ft straight cable, USB-A to Mini-USB
CRA-C34	3-ft straight cable, USB-A to Micro-USB
CRA-C35	6-ft straight cable, USB-A to Mini-USB
CRA-C36	6-ft straight cable, USB-A to Micro-USB
CRA-C310	10-ft straight cable, USB-A to Micro-USB
CRA-C42	2m M12 plug to flying lead power cable
CRA-C43	5m M12 plug to flying lead power cable
CRA-C44	10m M12 plug to flying lead power cable

3.4 Accessories

Part Number	Description
CRA-B27	Battery, light gray
CRA-B27DK	Battery, dark gray
CRA-BTDG27	Bluetooth® dongle for CR2700
CRA-MB6	Desktop base for inductive charging station
CRA-MB7	Monitor mount bracket for inductive charging station
CRA-MB7DK	Monitor mount bracket for inductive charging station, dark gray
CRA-MB8	CRA-WMB1 adapter plate to convert mount for CR2700 charger
CRA-WMB4	Wall mount bracket for inductive charging station
CRA-WMB4DK	Wall mount bracket for inductive charging station, dark gray
CR2AG-P1	US power supply for Quad-Bay Charging Station CRA-A274
CR2AG-P2	EU & South American power supply for Quad-Bay Charging Station CRA-A274
CRA-CR27-01	Optional metal thumb screws, set of ten; for mounting five charging stations
CRA-CR27-02	Precut adhesive tape for CRA-MB6, set of two; for mounting one CRA-MB6
CRA-CR27-10	Precut adhesive tape for CRA-MB6, set of ten; for mounting five CRA-MB6s
CRA-MB11	Desktop mounting bracket for industrial protocol inductive charging station
CRA-MB12	Presentation mode mounting bracket for industrial protocol inductive charging station
CRA-WMB5	Wall mounting bracket for industrial protocol inductive charging station

4. Supporting Documents & Resources

4.1 Quick Start Guide, D004533, includes general instructions on setting up and operating CR2700 readers and charging stations. (Available on the Documentation section of the CR2700 product page at codecorp.com.)

4.2 Interface Control Document, D026166, specifies the communication protocol between Code Reader hardware and application software that runs on the host computer, specific reader commands, and examples of a variety of ways to communicate and send data to the reader and command/ communication types.

4.3 Configuration Control Document, D027153, specifies the reader configuration commands.

Note: *D026166 and D027153 are for application developers that want to integrate scan data directly into their application and control configuration of the barcode reader. These documents are available from Code Support upon request. Customers using a keyboard interface won't need these documents and should reference the Device Configuration page on codecorp.com.*

The following tools and resources are also available for configuring the CR2700 Reader:

4.4 CortexTools3 is a PC software tool to configure, update, customize and manage Code Readers. It is available to download from the CR2700 product page on the Code website.

4.5 Device Configuration is an online tool to quickly generate a configuration guide using configuration manual codes for every application. It is available on codecorp.com under "Support".

4.6 JavaScript Programming Guide, D028868, describes the JavaScript application programming interface for the Code Readers. It is available from Code Support upon request (see section 15).

5. Unpacking & Installation

Please note: *CR2700 readers can only be charged by CRA-A270 series chargers. They are incompatible with any other chargers.*

5.1 CR2700 Features

Figure 1: CR2701 Reader Features

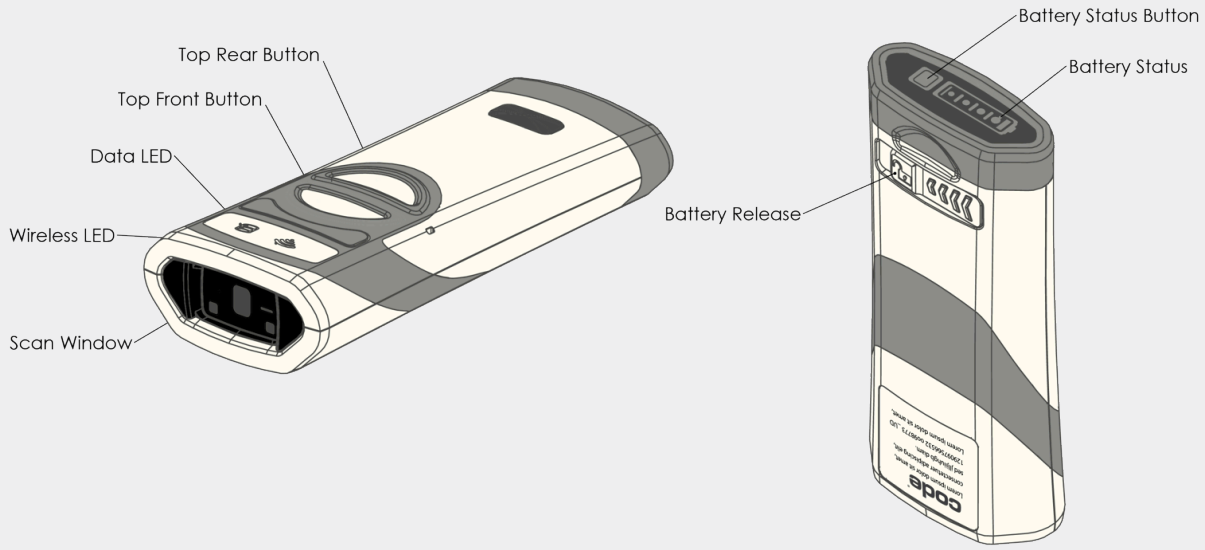
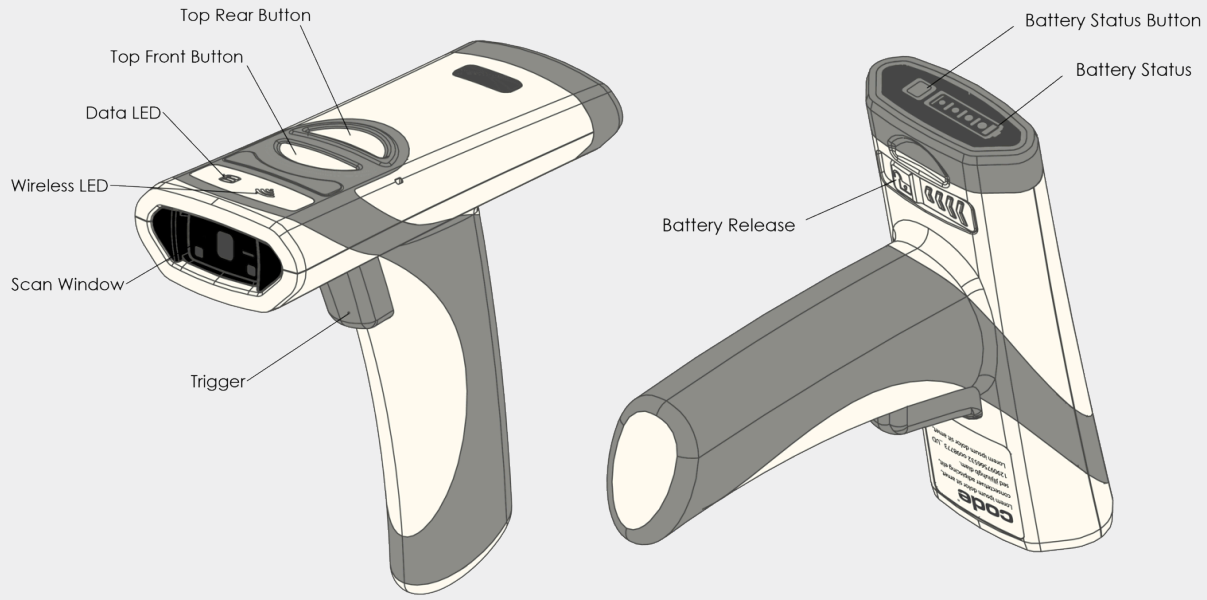
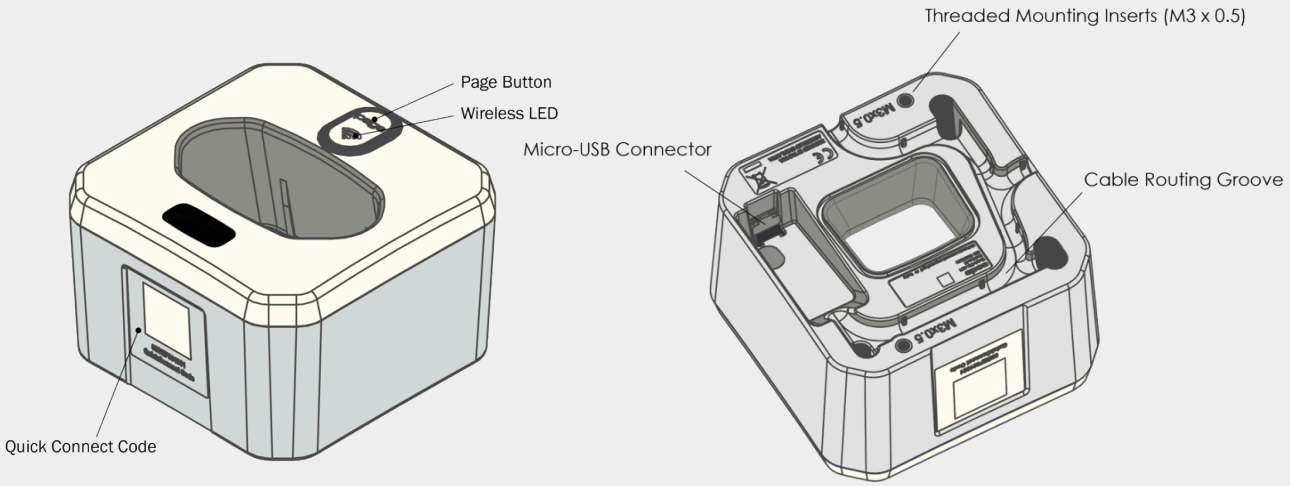


Figure 2: CR2702 Reader Features



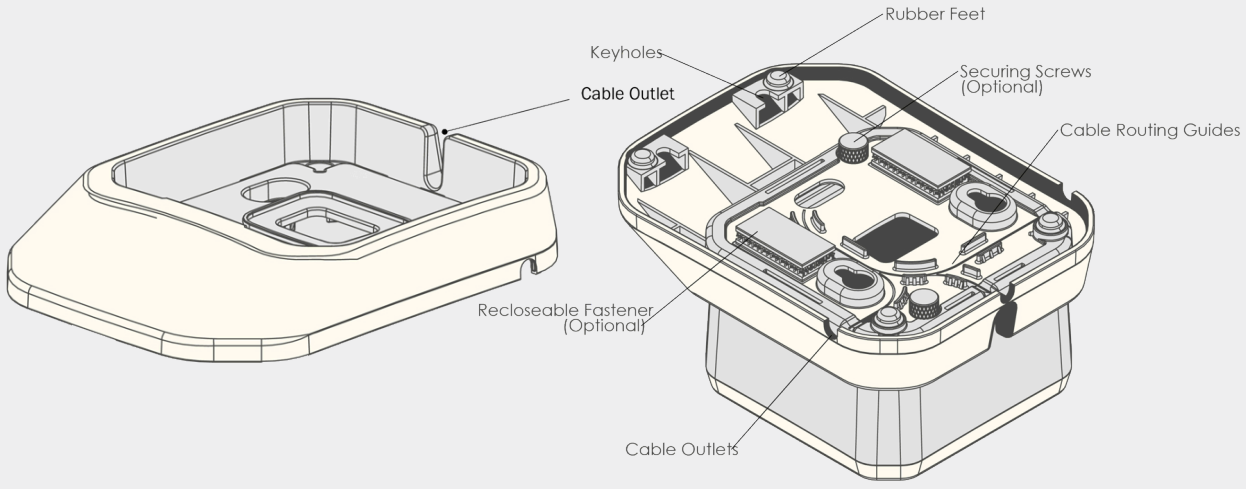
5.2 Charging Station Features

Figure 3: Charging Station Features for the CRA-A270, CRA-A271, CRA-A272 & CRA-A273



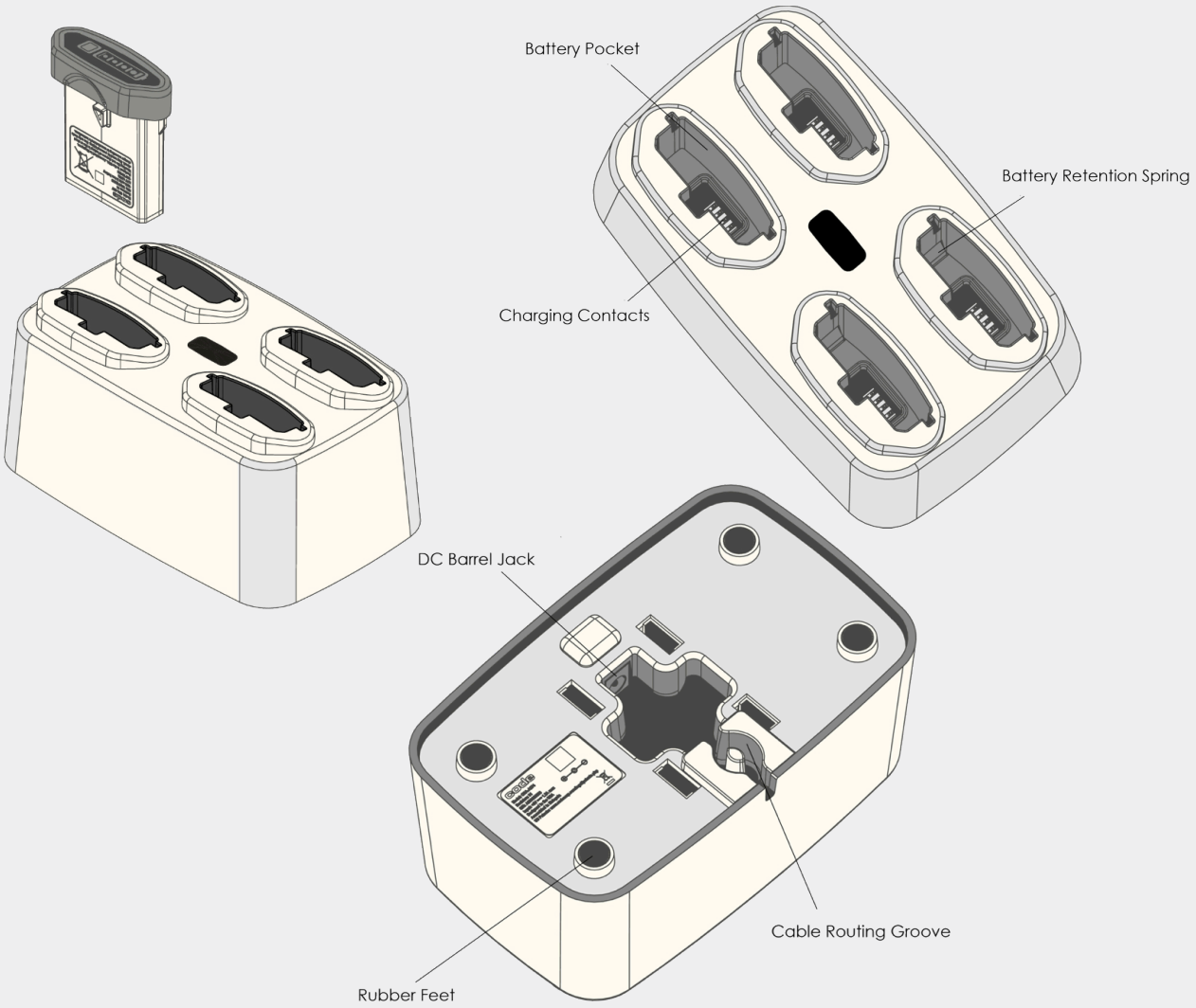
5.3 Desktop Base Features

Figure 4: CRA-MB6 Desktop Base Features



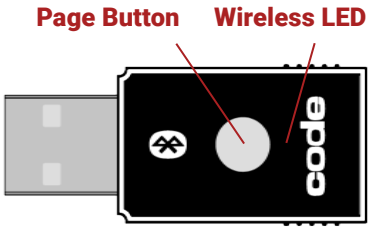
5.4 Quad-Bay Charger Features

Figure 5: CRA-A274 Quad-Bay Battery Charger Features



5.5 Bluetooth® Dongle

The Code Bluetooth Dongle provides an easy setup and reliable communication to a host PC while allowing the CR2700 to be charged in a separate location. The Bluetooth Dongle can be Page Button Wireless LED 10 used with either the CR2700 Inductive Charger (CRA-A270 or CRA-A273 or the CR2700 Quad-Bay Battery Charger (CRA-A274) to complete the solution.



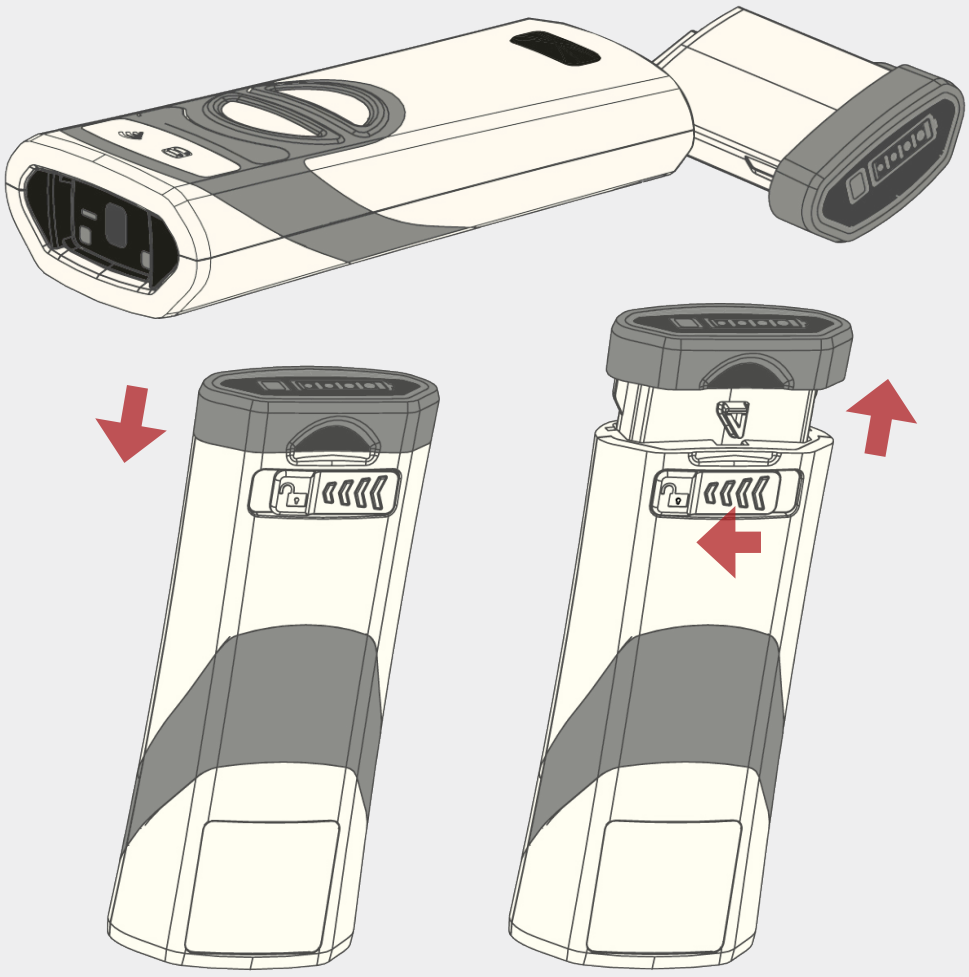
5.6 Unpacking

Open the box that contains the product, remove the reader and included accessories. Inspect for damage. If the product is damaged, please do not proceed to installation. Contact Code Support (see section 15 for information). Retain the original packaging material for potential return shipment.

5.7 Installing & Removing Battery

Only the CRA-B27 battery is compatible with the CR2700 readers. The battery is keyed so it can only be inserted one way. Insert a B27 battery into the cavity of the reader (Figure 6) until it clicks. Hold any button on the reader (except the Power Gauge button on the battery) for half a second and the reader will start its booting sequence. When the reader successfully completes its booting sequence (in about 2 seconds), the LEDs will flash, and the reader will beep and vibrate once.

Figure 6: Insert & Remove Battery



To remove the battery, push the battery compartment latch in the direction indicated by the arrow (Figure 6) until the battery pops up slightly. Pull the battery out of the reader cavity.

5.8 Charging Station Setup

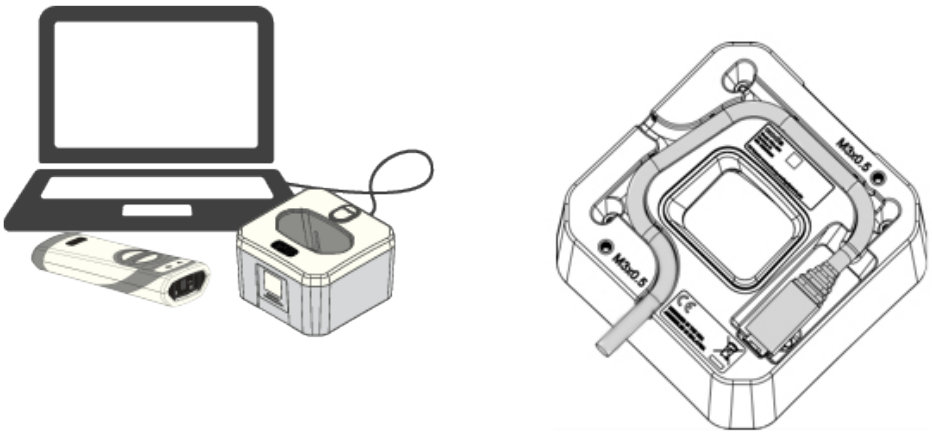
Use only cables or power supplies provided by Code to ensure proper communication with the host and to provide adequate voltage to charge the reader.

5.8.1 Insert the micro USB connector of the cable to the micro USB port on the bottom of the charging station (Figure 7).

5.8.2 Run the cable along the cable routing guides on the bottom of the charging station. If the charging station will be placed into a desktop base (CRA-MB6), the cable should exit through the opening in the back of the charging station (see Figure 8). If the charging station will be mounted on a wall mount bracket (CRA-WMB4) or a VESA mount bracket (CRA-MB7), thread the cable through one of the two cable exit holes on the bracket (see Figure 9 or 10).

Please note: *the charging station may not charge consistently or at all when connected to a USB hub, even if the hub is powered.*

Figure 7: Connect Charging Station



5.9 Mounting the Charging Station

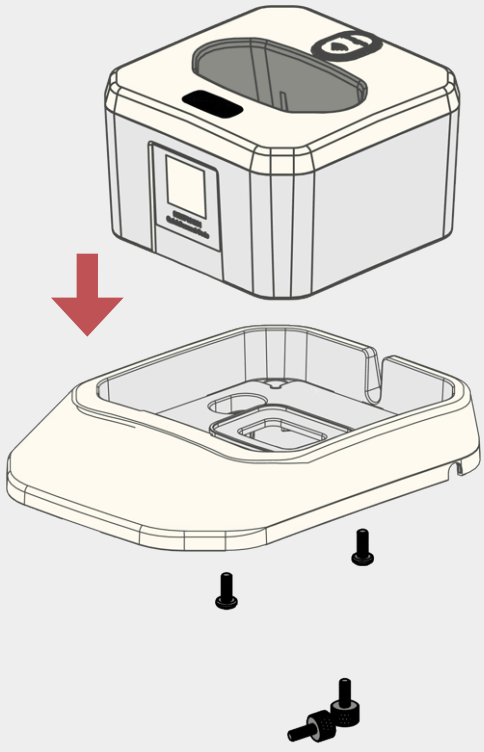
There are several mounting configurations to meet different application requirements. Choose the one suitable for your workflow.

5.9.1 Desktop Mount

The Desktop Mount provides extra charger stability when the charger is free standing on a counter or desk. Place the charging station into a desktop base (CRA-MB6) (Figure 8). The charging station can be secured onto the base using two pan head screws supplied with the desktop base. The desktop base can be fastened onto a flat surface using included multi-use adhesive tape, if desired (see Figure 4 for locations to attach the tape). Additional adhesive tape (CRA-CR27-02 or CRA-CR27-10) is available as an accessory.

Optional thumb screws (CRA-CR27-01) can also be used to fasten the charging station to the base.

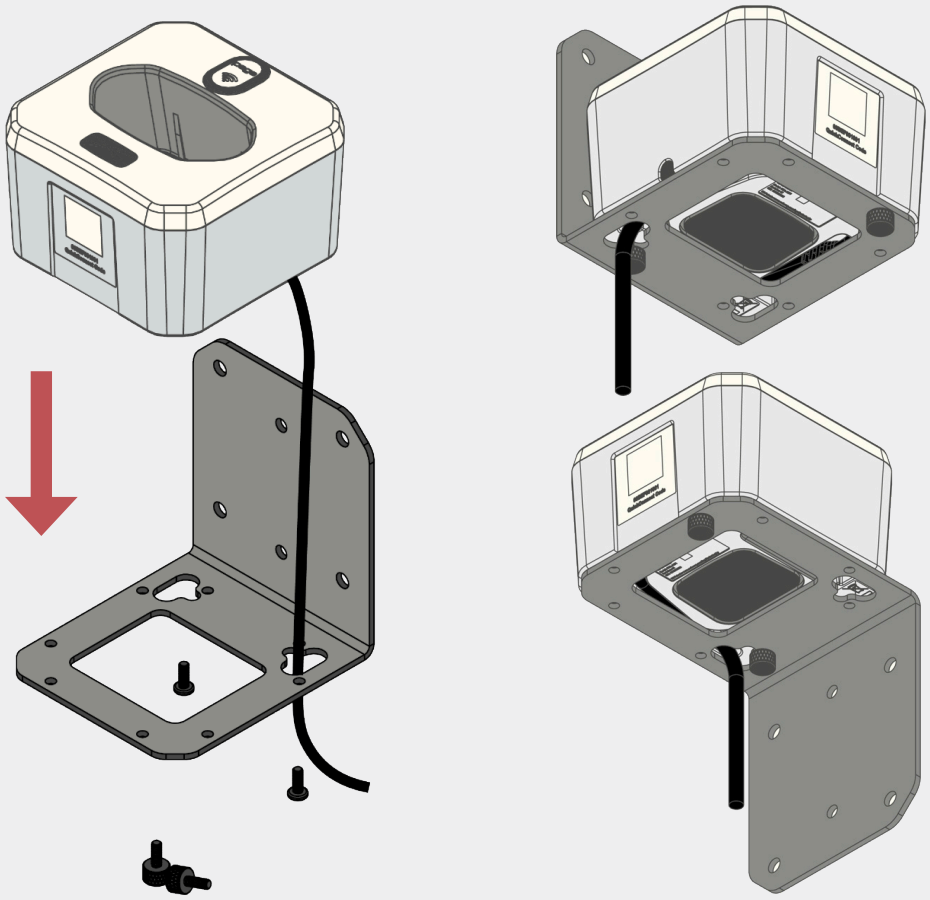
Figure 8: Install & Secure Desktop Base CRA-MB6 (thumb screws are optional and sold seperately)



5.9.2 Wall Mount

The charging station can be mounted onto a wall using the wall mount bracket (CRA-WMB4). Mount the bracket to a wall using four #10 (M4 or M5) size screws (not provided). The wall mount bracket can be mounted in upward or downward position depending on application (Figure 9). There are three positions that the charging station can be affixed onto the bracket. Choose a position suitable for your workflow, thread the USB cable through one of the two cable exit holes on the bracket, and attach the charging station onto the bracket using two screws supplied with the wall mount bracket. Optional thumb screws (CRA-CR27-01) are available to mount the charging station without using a screwdriver.

Figure 9: Install Charging Station with Wall Mount Bracket CRA-WMB4 (thumb screws are optional & sold seperately)

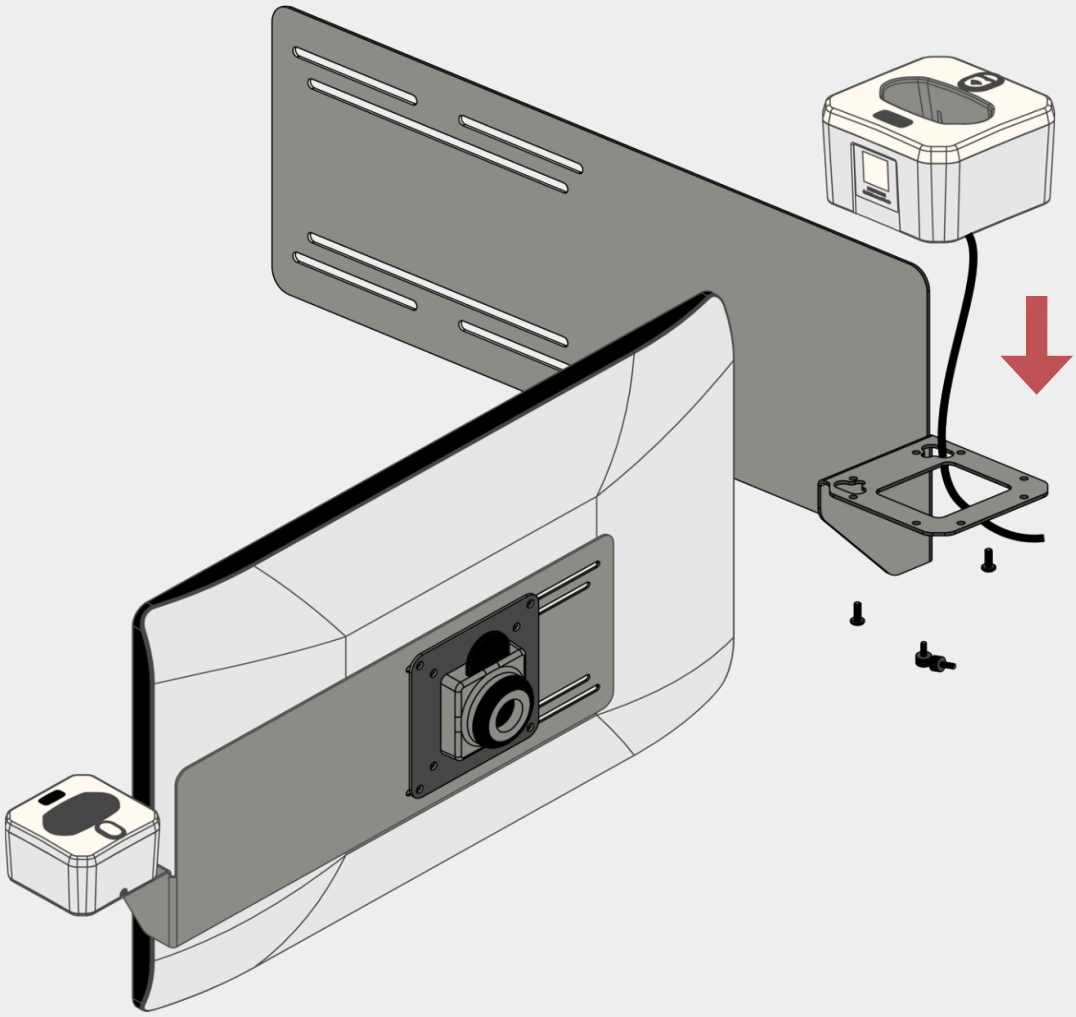


5.9.3 VESA Mount

To mount the charging station next to a monitor on a medical cart, secure the cart VESA mount bracket (CRA-MB7) to the monitor support beam on the cart first. The CRA-MB7 is compatible with monitor size up to 27” (69 cm). It can be mounted with the bracket on either the left or right side of the monitor. Thread the USB cable through one of the two cable exit holes on the bracket, and attach the charging station onto the bracket using two screws supplied with the mounting bracket (Figure 10). Optional thumb screws (CRA-CR27-01) are available to attach the charging station without using a screwdriver.

Please note: *screws holding monitor in place may loosen over time and monitor may tilt to one side. If that occurs, adjust the monitor position and tighten those screws.*

Figure 10: Install Charging Station with a VESA Mount CRA-MB7 (thumb screws are optional & sold seperately)

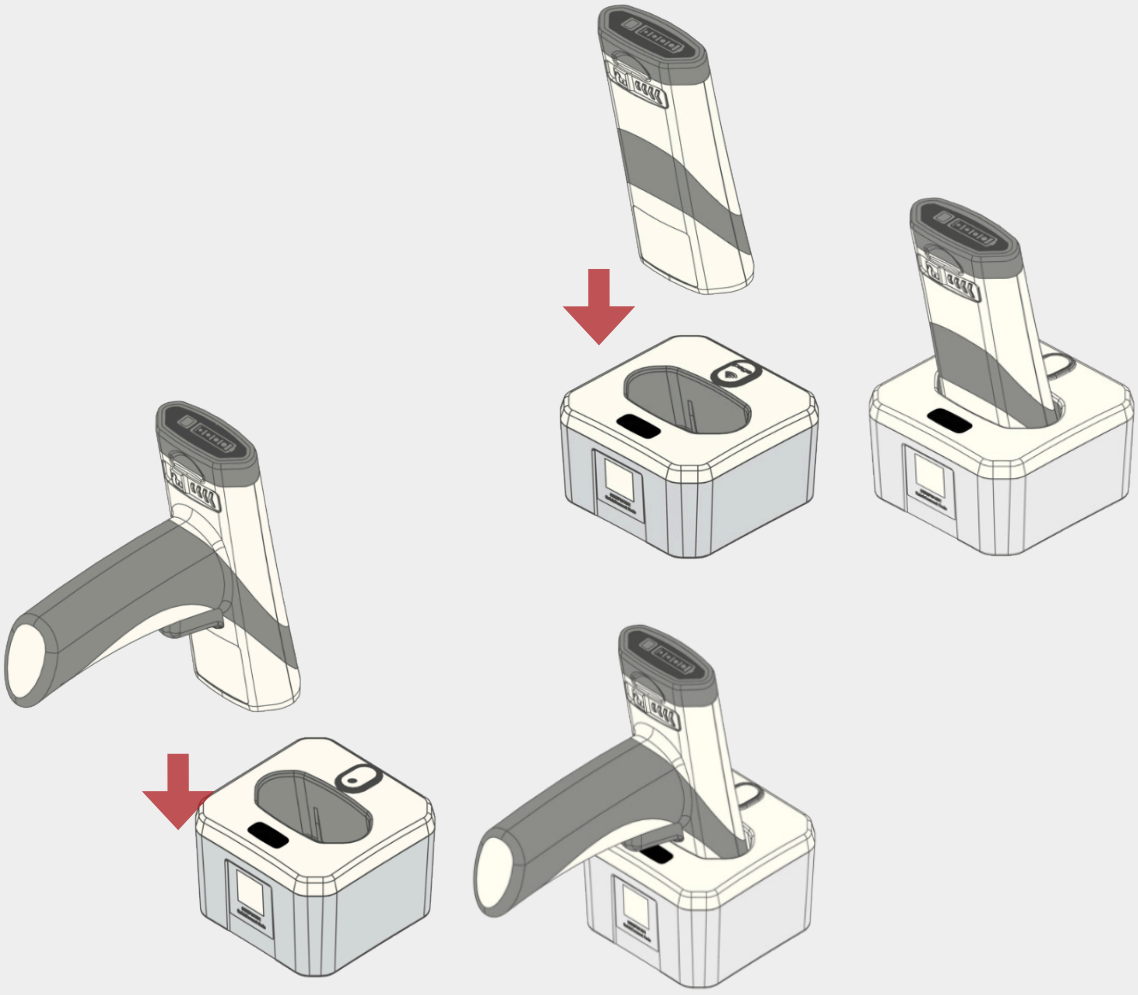


5.10 Charging the CRA-B27 Battery

It is recommended to fully charge the battery before deploying the reader for the first time, even though a new battery has a residual amount of battery power. To ensure adequate battery power to last through a shift, always place the reader back into a charger between activities. Constant charging will not shorten the life of the battery.

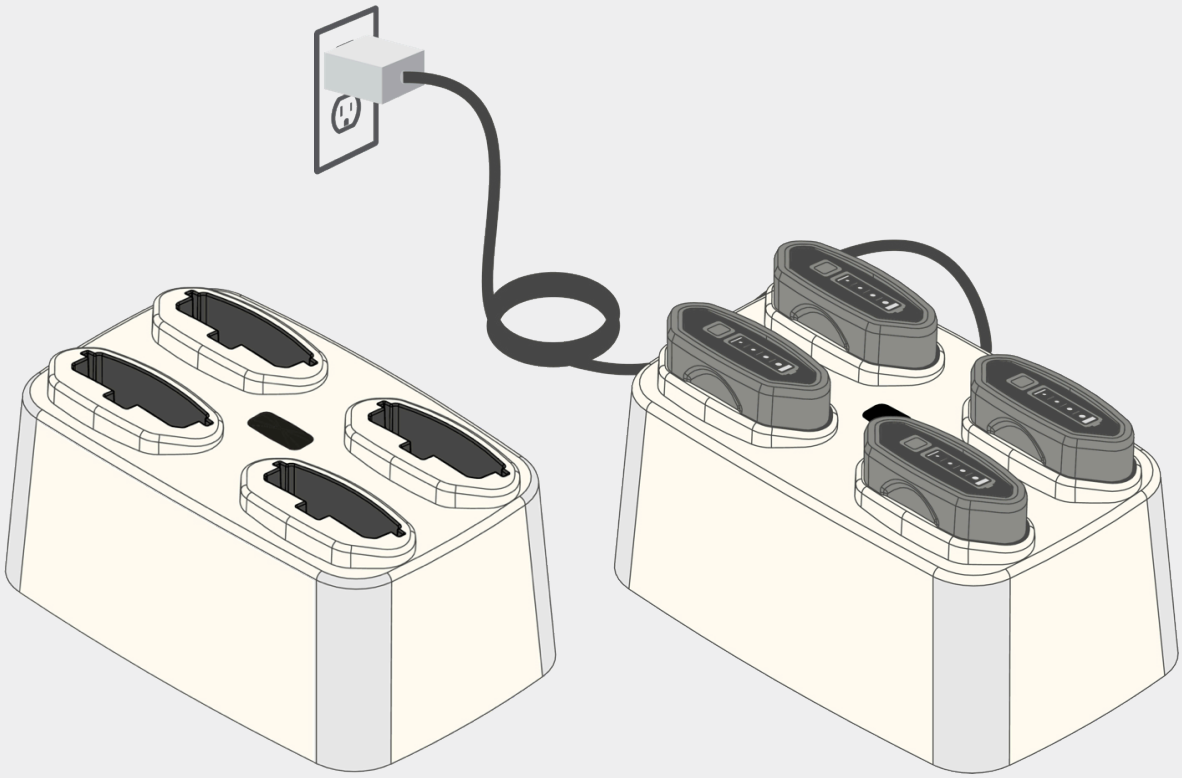
5.10.1 To charge the battery installed in the reader, place the reader in the charging station with the scan window facing down (Figure 11). The reader will beep once if the reader is powered off and wakes up, another beep if the reader has been paired with the charger and reconnects. The Power Gauge LEDs on the battery will start flashing 4 seconds on and 1 second off alternately. Once the battery is fully charged, the Power Gauge LEDs will stay on solid. The battery will be fully charged in approximately 3.5 hrs when using the charging station with an external power supply. Charging time may vary if using another source.

Figure 11: Charging Reader in Charging Station



5.10.2 The batteries can also be charged using the Quad-Bay battery charger (CRA-A274). Connect the Quad-Bay charger to the power supply provided for the charger and plug the power supply to an AC power source. Insert batteries into the charger (Figure 12). The batteries will start charging as the Power Gauge LEDs start flashing 4 seconds on and 1 second off. The LEDs will stay solid on when a battery is fully charged. The battery will be fully charged in approximately 4 hrs when using the quad-bay battery charger.

Figure 12: Charging B27 Batteries in a Quad-Bay Charger



Please note: *the temperature range to charge the battery is 0°C – 40°C (32°F – 104°F). Although the reader will operate beyond this range, the battery may not charge properly. To avoid temperature related battery issues, always charge the battery and operate the reader between 0°C – 40°C (32°F – 104°F).*

Please note: *It is normal that the area around the serial label on the reader becomes warm during charging.*

For long-term storage or shipping, please remove the battery from the reader or the Quad-bay charger.

5.11 Pairing CR2700 with a Bluetooth® Device

The CR2700 reader operates in Bluetooth Low Energy (BLE) mode. It must be paired with another Bluetooth device or application that supports BLE for wireless data communication.

There are three QuickConnect methods:

1. The reader can pair with a CRA-A271 or CRA-A274 Bluetooth Inductive Charging Station
2. The reader can pair with a CRA-BTDG27 Dongle
3. The reader can connect directly to a host PC using the Code DirectConnect Desktop Application

5.11.1 Pairing with a Bluetooth® Inductive Charging Station or Bluetooth Dongle

The CR2700 reader can pair with a Bluetooth Inductive Charging Station, or the Code Bluetooth Dongle. The charging station or dongle will receive data wirelessly from the paired reader and send to the host PC via USB. It can receive commands, configurations, files, etc. from the host and send wirelessly to the paired reader.

To pair a CR2700 reader, simply scan the unique QuickConnect Code on the front of the Charging Station or the Bluetooth Dongle. A successful pairing is indicated by two short beeps followed by one normal beep and one vibration. Also, the wireless indicators on both the reader and inductive charging station will turn solid green; the dongle will turn solid blue. Alternatively, the QuickConnect code can be generated and displayed on a host PC using the DirectConnect application.

5.11.2 Connecting to a Host PC Using the Code DirectConnect Desktop Application

The CR2700 reader can connect directly to the host PC using the DirectConnect desktop application. This application can be found on the CR2700 product page on the Code website under the Software tab. Install the application on the host PC. The application will generate a QuickConnect code on the screen.

To connect a CR2700 reader, simply scan the unique QuickConnect Code on the host PC screen.

5.11.3 Pairing with a Host

The CR2700 reader can be paired with a third-party host such as a mobile phone, tablet or a PC that supports BLE as a Bluetooth® HID keyboard device. Scan the barcode below (M20381) to set the reader to Bluetooth HID keyboard mode. Open Bluetooth settings menu on the mobile device or Device Manager on the PC, find “Code CR2700” in available Bluetooth devices and connect. Successful connection is indicated by a beep sound and flashing of the BT indicator on the reader. Automatic reconnection can be set on the host.

M20381_01

5.11.4 Locking Device Links

The CR2700 reader supports locking the link between a reader and a Bluetooth® inductive charging station, or a Bluetooth dongle. Once locked, the charger can only connect with the paired reader. After pairing a reader, scan the barcode M20409 below to enable Link Lock. To unlock the link, scan the barcode M20410.

M20409_01

(Enable link lock)

M20410_01

(Disable link lock)

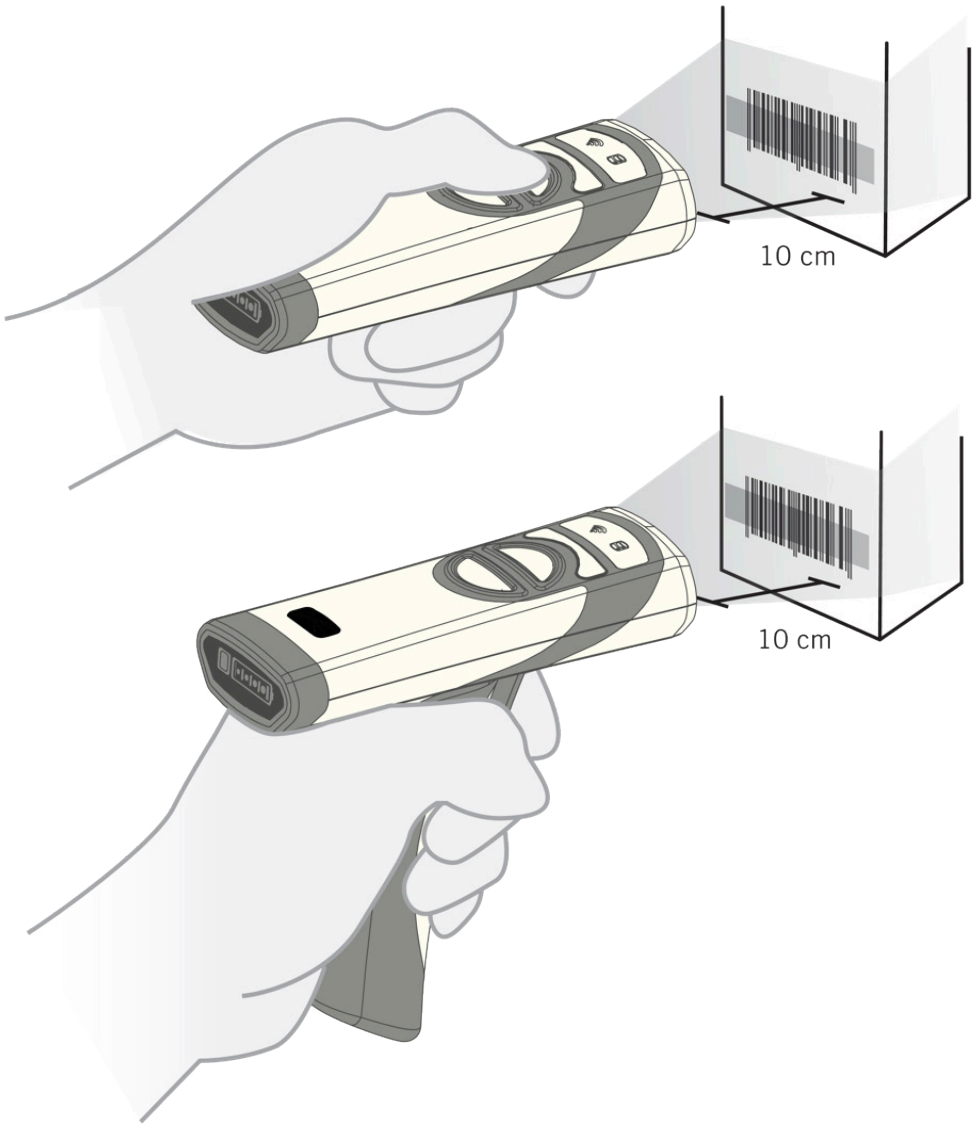
6. CR2700 Operation

The CR2700 provides red illumination and a blue targeting bar to facilitate barcode scanning.

6.1 Handheld Scanning

Target the CR2700 reader at a barcode at a distance about 10 cm (4”) (Figure 13). If you have a CR2701 (palm unit), press either of the two buttons to read the barcode (***Please note***: *one of the buttons may be programmed to perform other functions. In this case, press the other button to scan*). If you have a CR2702 (handle unit), pull the trigger to read the barcode until the barcode is successfully read; alternatively, press one of the buttons on the top of the device. Press the scan button or trigger until the reader emits a beep, flashes green in the indicator window and vibrates, which indicates a successful read. Depending on the size of the barcode, the user may need to vary the distance between the reader and the barcode. In general, high-density codes read better at shorter distances (close up) and large or wide barcodes read better at larger distances (farther away).

Figure 13: Manual Scanning



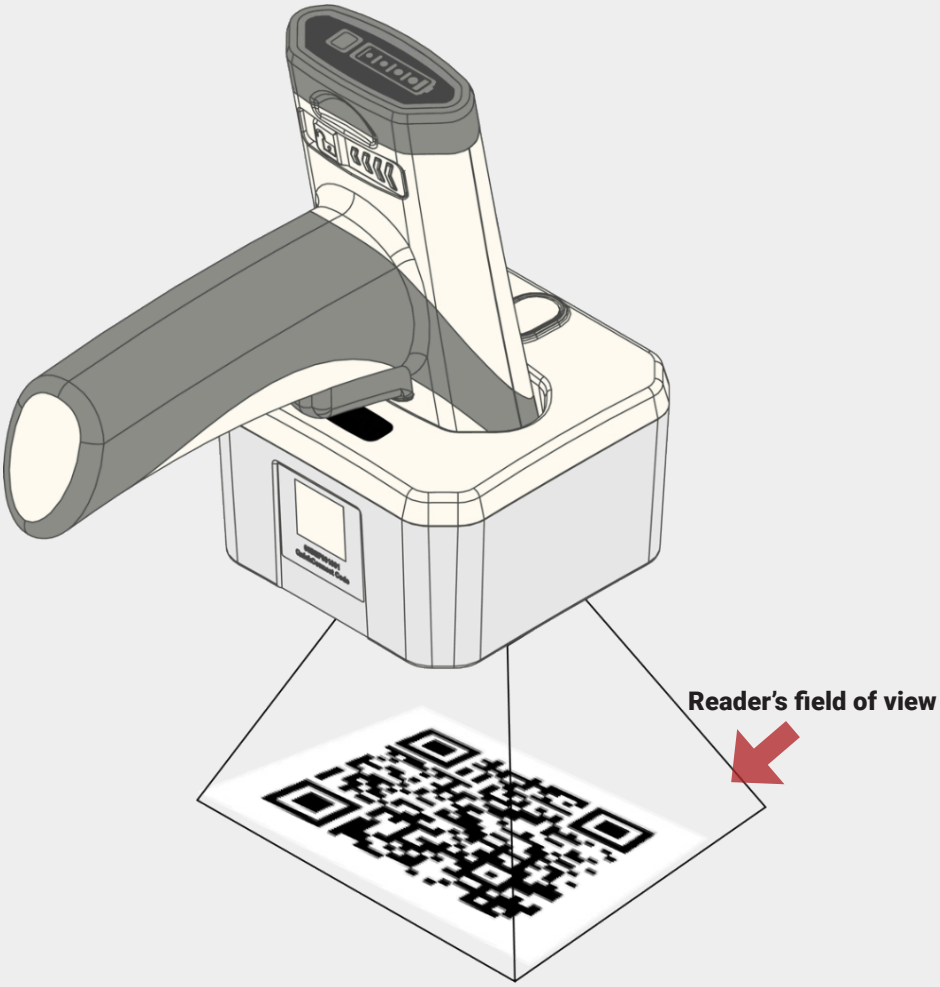
6.2 Targeting

The CR2700 reader emits a blue targeting bar to help capture the barcode within its field of view (Figure 13). For best performance, aim at the barcode with the targeting bar.

6.3 Presentation Scanning

The CR2700 supports presentation scanning in the charging station. This enables scanning without pressing a scan button or pulling the trigger. If this feature is enabled and the reader is placed into a charging station, the reader enters presentation scanning mode. A mounting bracket will be needed to hold the reader and base in a position for presentation scanning. When an object is presented in its field of view, the reader will automatically emit red illumination, turn on the targeting bar, and attempt to scan barcodes (Figure 14). A successful read will be indicated by a beep and flashing green in the indicator window. Normal reading distance is about 10 cm (4”) from the window of the reader or 9 cm (3.5”) from the bottom of the base but the user may need to move the barcode closer or farther away for best results depending on barcode size.

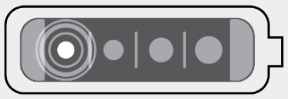
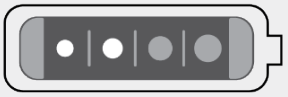
Figure 14: Presentation Scanning



6.4 Battery Use

The CRA-B27 battery has a Lithium-ion cell with advanced features to allow effective use and management of its life. Usually, a new battery is only charged partially and should be fully charged before initial use. The battery has a built-in power gauge status indicator that turns on when the power gauge button on the battery is pressed, when the trigger is pulled or when one of the scan buttons is pressed.

Figure 15: Interpreting the Battery Status Meter

No LED turns on	Power exhausted	
One LED flashes	<10% power left	
One LED turns on	<25% power left	
Two LEDs on	25-50% power	
Three LEDs on	50-75% power	
Four LEDs on	75-100% power	

When a battery is being charged either in a reader or in a quad-bay battery charger, the battery LEDs will flash. As power level increases, more LEDs will flash. Once it is fully charged, four LEDs will stay on solid.

The CRA-B27 battery has a built-in health check that tracks residual power capacity against a new cell. See section 13.3 for the M-Code to output battery health information as a percentage of a new cell. Depending on use intensity and workflow, replace the battery when the residual capacity drops below a predetermined level to ensure that the battery will always last through a full shift. Code recommends replacing the battery when residual capacity drops below 80%, which equates to about 500 charging cycles.

6.5 Paging the Reader

The paging button on the Bluetooth® Charging Station assists with locating a connected reader. When touched for more than 1 second, the connected reader will beep until:

1. Any button on the reader is pushed

2. The paging button is touched again for more than 1 second

3. The page function times out

The page function timer is set to 30 seconds by default but can be configured for any length between 1 and 60 seconds.

Please note: *the reader will beep when paged even if the reader is configured to turn off the beeper. If no reader is connected, the Paging LED on the charging station will flash 3 times quickly.*

6.6 Reader Power Modes

The CR2700 readers support 3 power modes:

Operating Mode

The reader attempts to decode barcodes either by a trigger pull (or button press) or in presentation mode if enabled. In this mode, illumination and targeting are flashing.

Idle Mode

The reader is on but not attempting to decode barcodes. In this mode, illumination and targeting are not on.

Power Off Mode

If the reader is out of its charger and in idle mode, it will power off after 2 hours by default. Idle mode duration before entering power off mode can be configured to between 1 and 10 hours. Pushing any button on a powered off reader or placing it in a powered charging station will wake it up within 2 seconds.

7. User Feedback

The CR2700 readers and accessories have built-in audio, visual and haptic indicators to provide status information to the user. Default indicator patterns are described below. These patterns can be customized for different user environments. For example, it may be desirable to turn off the beeper and only have the illuminating light and haptic feedback indicate that data was successfully read.

7.1 CR2700 Reader

Status	Visual	Audio	Haptic*
Successfully powers up	Reader LEDs flash once in sequence	One beep	One vibration
Attempts to connect to a host	Wireless LED flashes fast until time out	-	-
Successfully connects to a host	Wireless LED turns on solid	Two short beeps & one normal beep	One vibration
Connected to a host	Wireless LED stays on solid	-	-
Reconnects to a charger successfully	Wireless LED becomes solid	One beep	-
Fails to connect	-	Three beeps	-
Successfully decodes & transfers data to the host	Read indicator flashes green once & wireless LED flashes until transmission is complete	One beep	One vibration
Decodes but fails to transfer data	LED flashes red three times	Three beeps	-
Successfully decodes & processes configuration code	Read indicator flashes green once	Two beeps	Two vibrations
Successfully decodes but fails to process configuration code	Read indicator flashes green once	Four beeps	Four vibrations
In idle mode, out of stand	Wireless LED flashes once every 10 seconds	-	-
Scanner is paged	LED continues flashing & reader beeps until a button is pressed	Beeps until a button is pushed or paging times out	-
Downloading file/firmware	Read indicator flashes amber	-	-
Installing file/firmware	Read indicator turns on red	Three slow beeps upon completion	Three slow vibrations upon completion
Transmitting data	LED flashes rapidly multiple times	-	-

**Haptic feedback is turned off when the reader is in a charger.*

7.2 CRA-B27 Battery

Status	Visual
Power guage button pushed	LEDs turn on for 4 seconds
Scanner trigger is pulled or button is pushed	LEDs turn on for 4 seconds
Charging	LEDs alternate on for 4 seconds & off for 1 second
Fully charged while remaining in charger	LEDs stay on solid

7.3 CRA-A271 Bluetooth® Charging Station & CRA-BTDG27 Bluetooth Dongle

Status	Visual
Not powered	LED off
Powered but not connected to a reader	LED alternates 1 second on & 1 second off
Attempts to connect to a reader	LED flashes fast 7 times
Connected to a reader	LED stays on solid
Transmitting data	LED flashes rapidly multiple times
Page issued to a connected reader	LED flashes when reader starts beeping & continues flashing until a button is pressed
Page issued but no reader is connected	LED flashes 3 times

8. CR2700 Configuration

There are several ways to configure the reader to meet specific application requirements: for example, enabling and disabling certain symbologies, embedding a date code such as deployment date or warranty expiration date, adding a prefix or suffix to data output or even complex data manipulations.

8.1 Use the Device Configuration Tool

The Device Configuration tool on the Code website contains all manual configuration codes for the device. It can display an individual code to be scanned by a reader directly off the screen. It can easily generate a PDF file containing one or multiple codes.

8.2 Use CortexTools3

CortexTools3 is a software tool to manage Code devices. It is available from the CR2700 product page of Code's website. Users can use it to:

- Download firmware, JavaScript and other files to Code devices
- Retrieve files or images from the devices
- Retrieve device information including model number, serial number, Bluetooth® MAC address, license numbers if loaded, custom date if programmed and battery health information
- Send commands (refer to device Interface Control Document and Configuration Control Document) directly to the devices
- Generate a QuickConnect Code for a Bluetooth charging station

Please note: *to ensure successful firmware updates, firmware download will not initiate if battery power level is low. If this occurs, charge the battery or swap with a charged spare battery.*

8.3 Use JavaScript

Selected Code devices, including the CR2700 readers, support JavaScript programming. This provides tremendous capabilities and flexibility for customization in order to meet various application requirements. From simply turning features on or off, to complex data manipulation, or even adding custom features, JavaScript gives you the capability. Code devices will retain JavaScript even after restoring factory settings.

Please contact Code Support (see section 15) for information on JavaScript application development for Code devices and to request the JavaScript Programmers Guide (D028868).

9. Bluetooth® Communications

9.1 Bluetooth® Radio Power

The CR2700 readers use Class 2 Bluetooth Radio. The default radio power level on the reader is 0 dBm. Bluetooth radio power levels can be reconfigured for the reader or for the charging stations. The default radio power level on the CRA-A271 charger and CRA-BTDG27 Bluetooth Dongle is -8 dBm. Reducing radio power output will restrict data transmission range. Refer to CCD for commands to change radio power level or contact Code Support.

9.2 Bluetooth® Auto-Reconnect

The CR2700 attempts to reconnect automatically when a connection is lost (for example, when the reader is moved out of range, loss of battery power, rebooting, or Bluetooth charging station or host powering down). This auto-reconnect feature is enabled by default but can be disabled. Default time out for auto-reconnect attempt is 5 minutes but can be configured for different durations.

9.3 Bluetooth® Security

By default, BLE communication in the CR2700 is AES-128 encrypted. For enhanced security requirements, please contact Code Support.

10. Interface Parameters

10.1 Bluetooth® Charging Station Interface

The CRA-A271 and CRA-A272 connect to a host via a USB cable. It automatically detects the USB hosts and connects as a HID keyboard device by default. To change to another interface type, scan the desired interface configuration code or use CortexTools3.

10.2 Bluetooth® Auto-Reconnect

If a CR2700 reader is connected directly to a host via BLE, it communicates as a Bluetooth HID keyboard device.

11. Programming Reader Buttons

The buttons on the readers can be programmed to change reader settings. For example, switch between “Day” and “Night” modes, or between “Regular” and “Continuous” scanning modes. Contact Code Support for details.

12. CR2700 Specifications

12.1 Typical Reading Ranges

Test Barcode	Minimum Distance	Maximum Distance
3 mil Code 39	3.5” (90 mm)	4.4” (112 mm)
7.5 mil Code 39	0.9” (23 mm)	6.8” (172 mm)
10.5 mil GS1 DataBar	0.4” (10 mm)	8.3” (210 mm)
13 mil UPC	0.7” (18 mm)	10.6” (270 mm)
5 mil Data Matrix	1.3” (33 mm)	4.1” (105 mm)
6.3 mil Data Matrix	0.9” (23 mm)	5.5” (140 mm)
10 mil Data Matrix	0.4” (10 mm)	6.7” (170 mm)
20.8 mil Data Matrix	0.7” (18 mm)	13.1” (333 mm)

Note: *Reading ranges are a combination of both the wide and high-density fields. All test barcodes were of high quality and read along a physical center line at a 10° angle. Default reader settings were used. Distance measured from the front of the reader in Metric units then converted to Imperial units.*

12.2 Supported Symbologies

Symbologies that can be decoded by the CR2700 are listed below. Common ones are turned on by default, but all can be turned on or off. To turn symbologies on or off, scan the symbology barcodes in the CR2700 Configuration Guide located on Code website at or use CortexTools3 software.

12.2.1 Symbologies Default On

- Aztec
- Codabar
- Code 39
- Code 93
- Code 128
- Data Matrix
- Data Matrix Rectangle
- GS1 DataBar, All
- Interleaved 2 of 5
- PDF417/Macro PDF417
- QR Code
- PDF417/Macro PDF417
- UPC-A/EAN/UPC-E

12.2.2 Symbologies Default Off

- Codablock F
- Code 11
- Code 32
- Composite
- Data Matrix Inverse
- Han Xin Code
- Hong Kong 2 of 5
- IATA 2 of 5
- Maxicode
- Matrix 2 of 5
- Micro PDF417
- MSI Plessey
- NEC 2 of 5
- Pharmacode
- Plessey
- Straight 2 of 5
- Telepen
- Trioptic
- Postal Codes

12.3 Product Dimensions

Figure 15: CR2701 Reader Dimensions

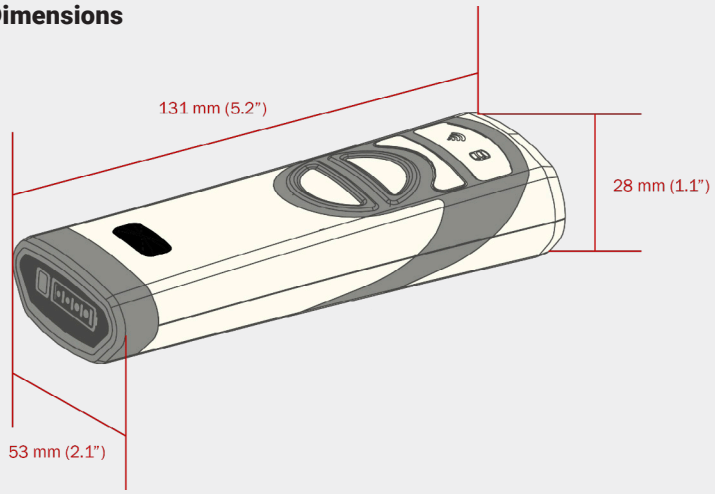
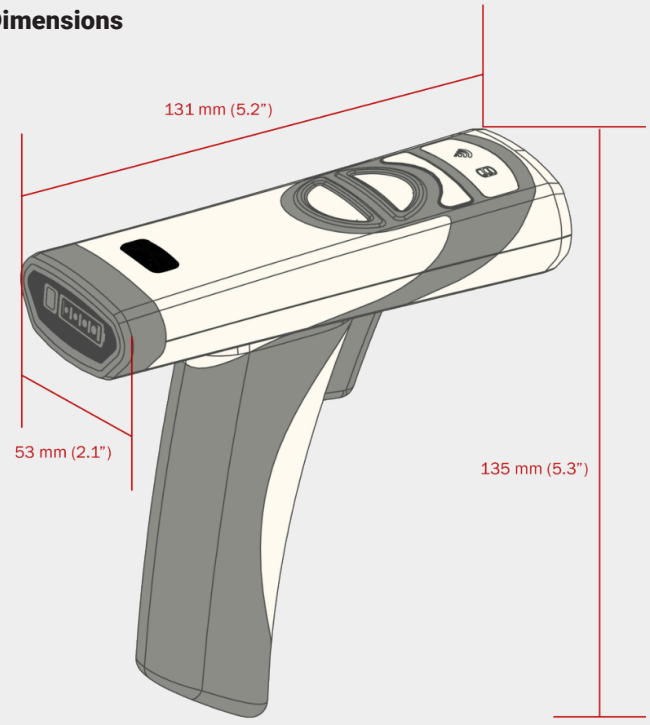


Figure 16: CR2702 Reader Dimensions



12.4 Charging Station Dimensions

Figure 17: CRA-A274 Quad-Bay Battery Charger Dimensions

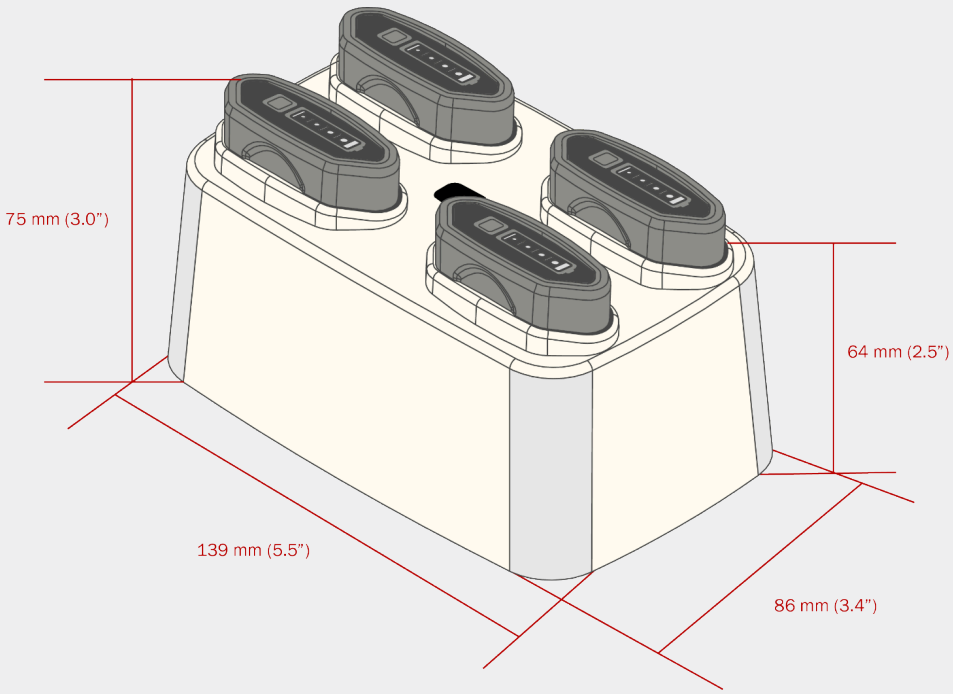
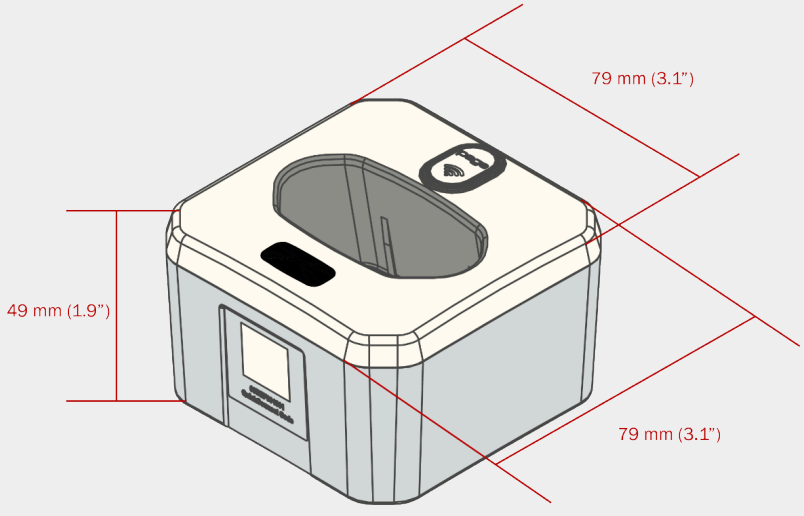


Figure 18: Charging Station Dimensions for the CRA-A270, CRA-A271, CRA-A272 & CRA-A273



12.5 Base & Wall Mount Dimensions

Figure 19: CRA-MB6 Desktop Base Dimensions

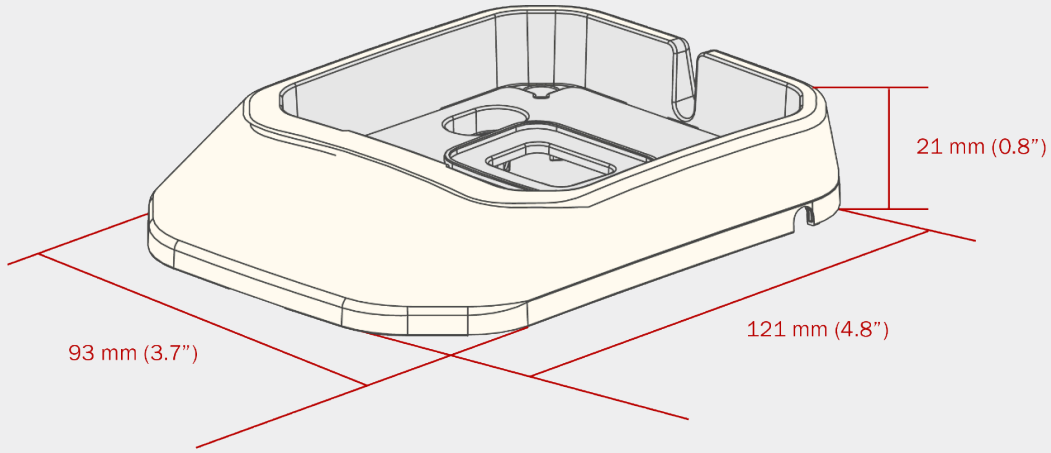
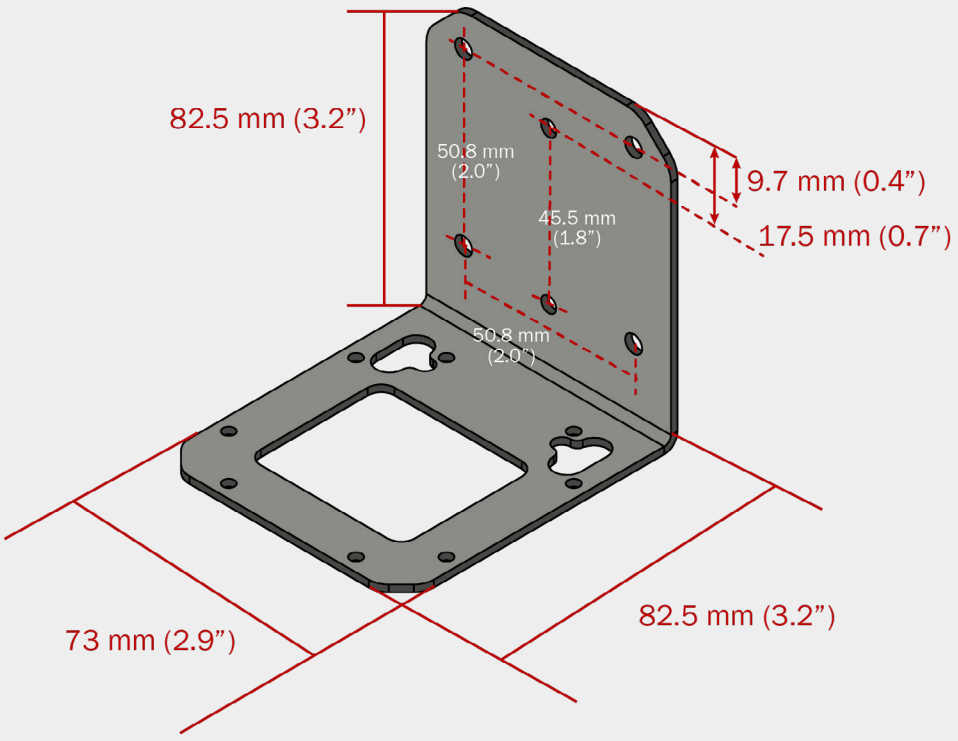


Figure 20: CRA-WMB4 Wall Mount Bracket Dimensions



12.6 Cart Mount Bracket & Bluetooth® Dongle Dimensions

Figure 21: CRA-MB7 Cart Mount Bracket Dimensions

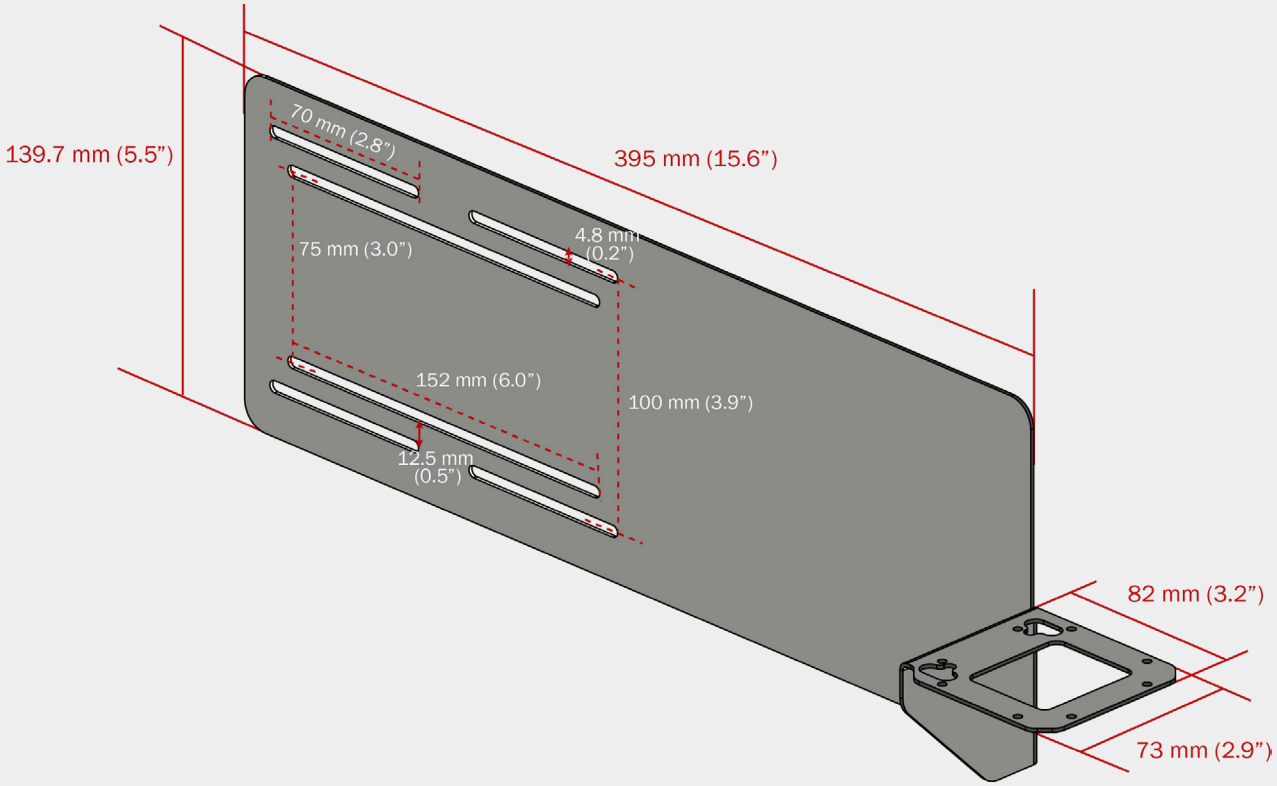
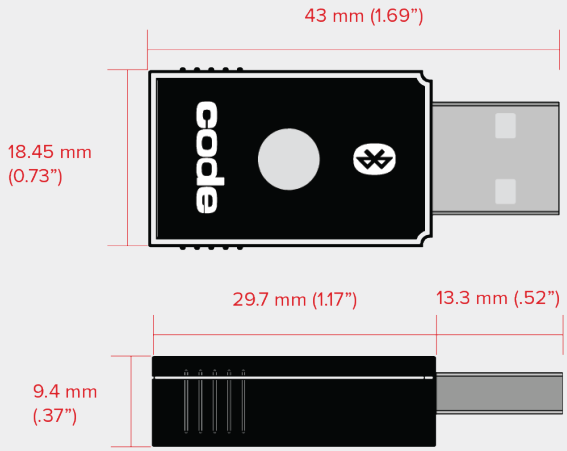


Figure 22: CRA-BTDG27 Bluetooth® Dongle Dimensions



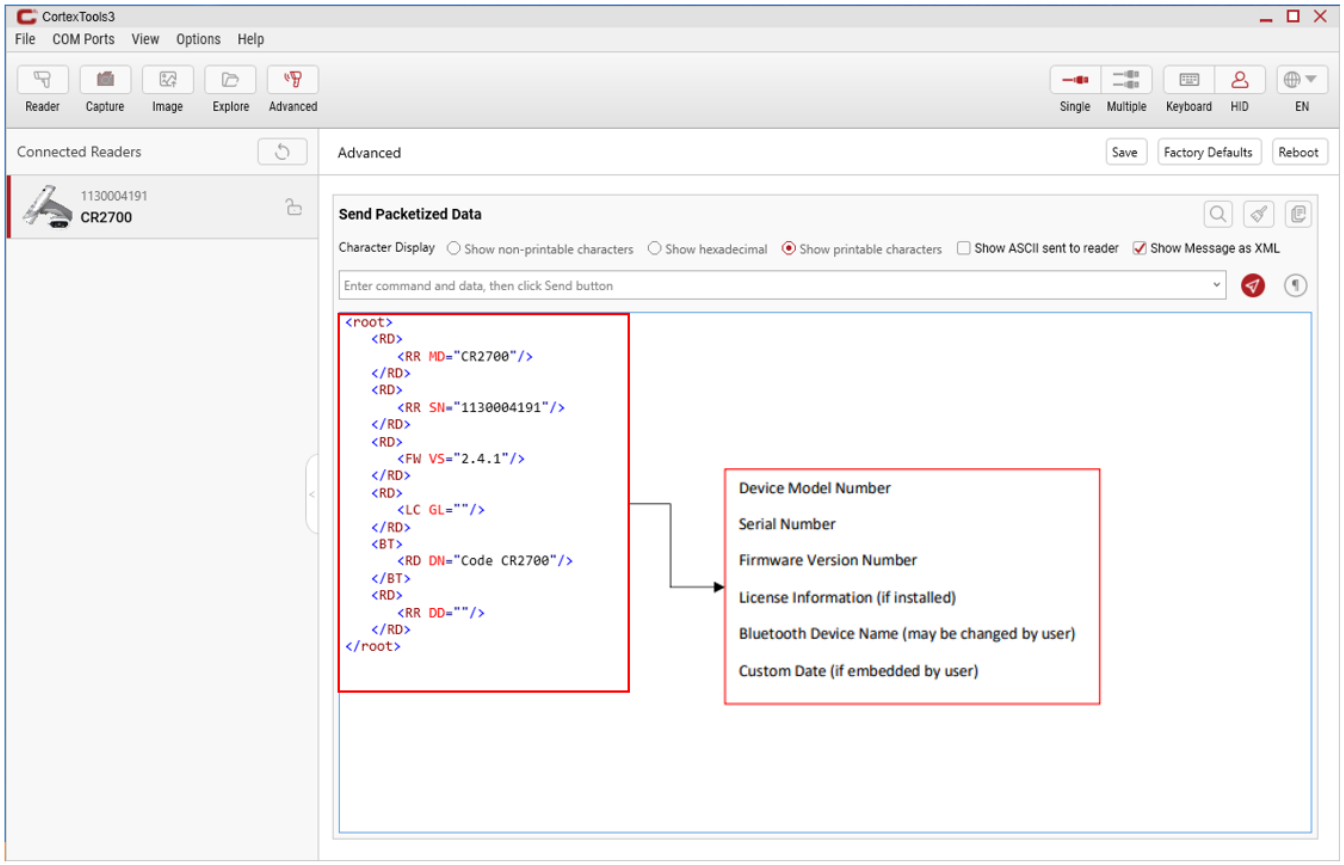
13. CR2700 Device Information

13.1 Reader Information

For device management and obtaining support from Code, reader information will be needed. To find out the reader model number, serial number, firmware version and optional licenses, run CortexTools3 software and connect the reader to the PC via a Bluetooth® inductive charging station. Once CortexTools3 indicates the reader is connected, go to the Advanced tab. Scan the barcode below (M20361).

M20361_02

The following data will be displayed:



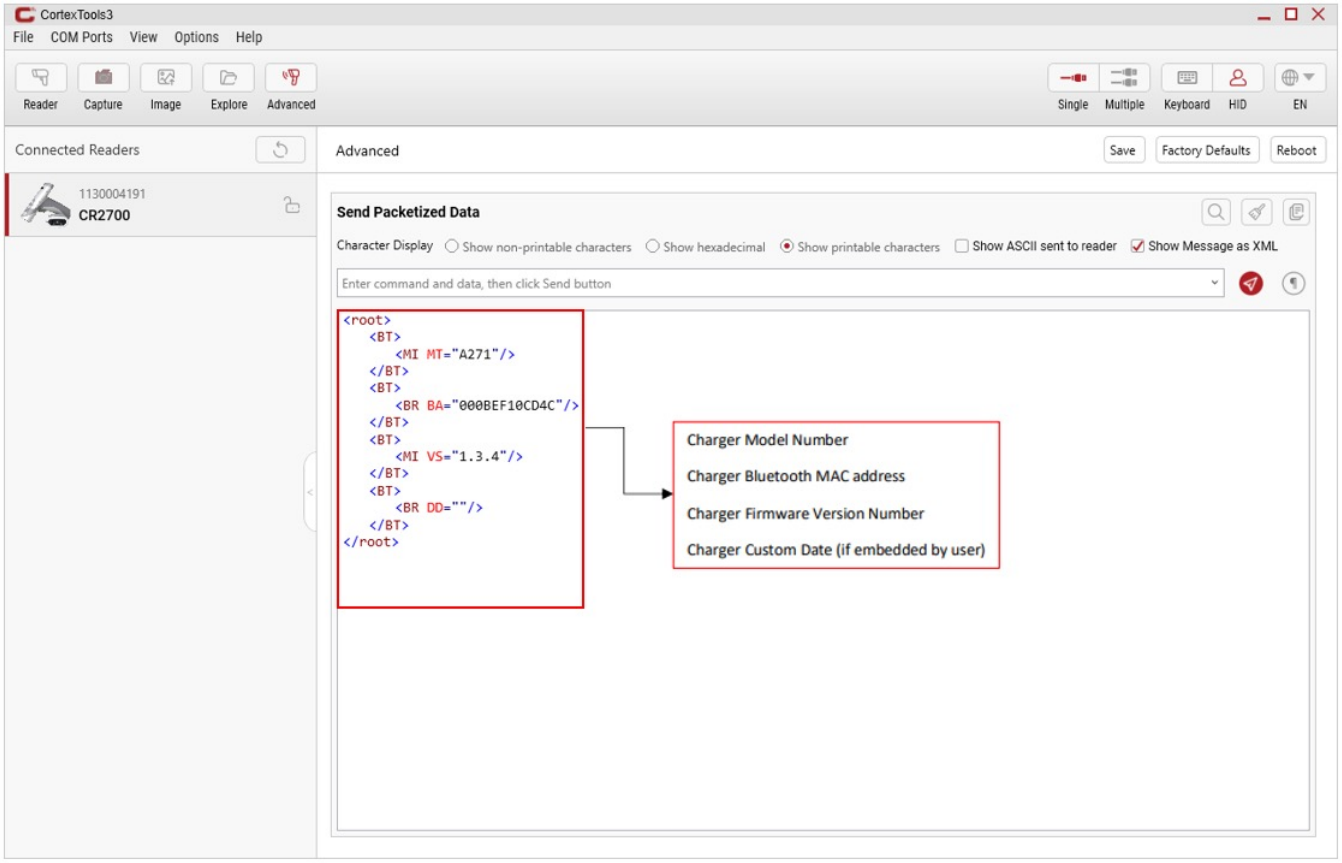
***Note**: Above information can also be output to a text application such as Notepad.*

13.2 Bluetooth® Inductive Charging Station Information

Scan the barcode below (M20408) to obtain Bluetooth charger information.

M20408_02

The following data will be displayed:



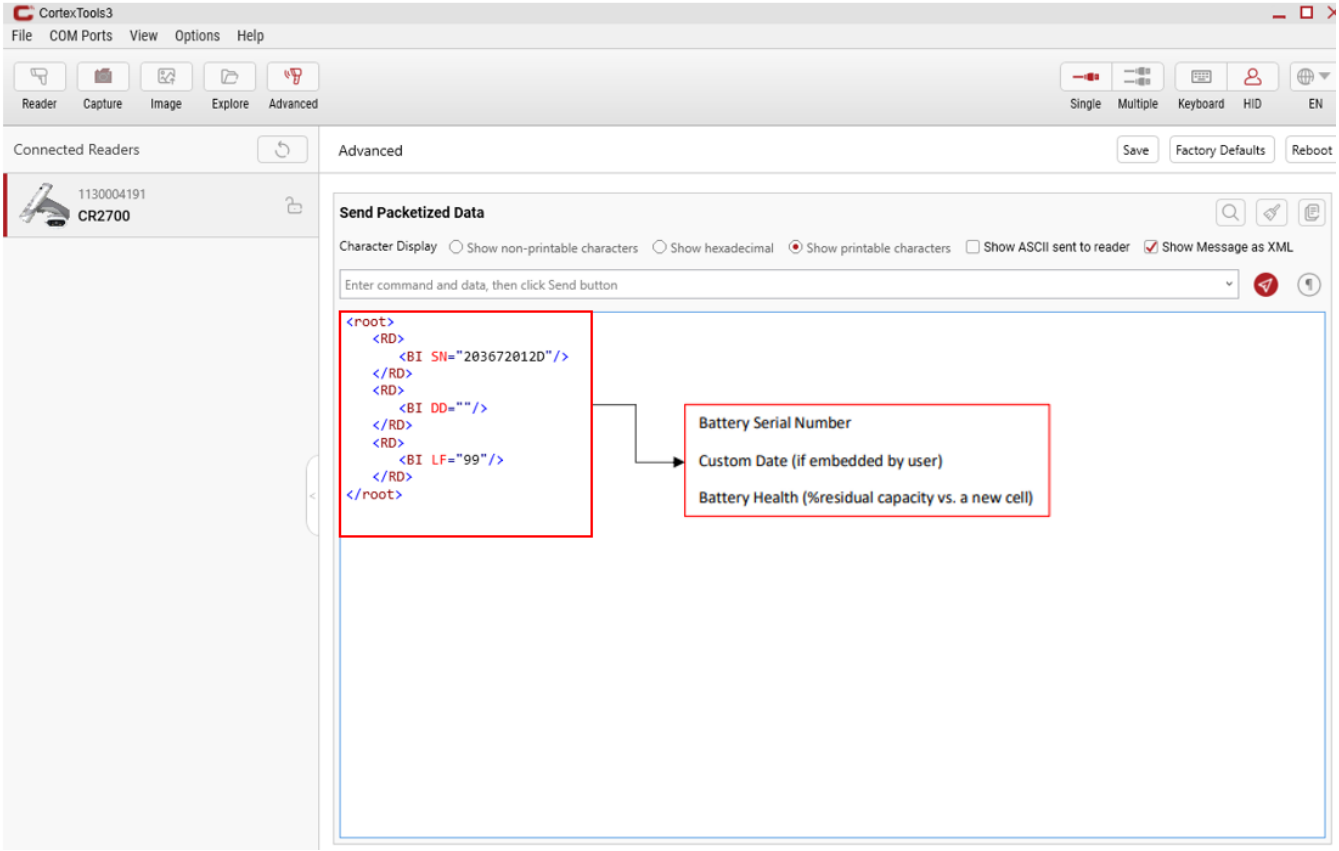
Note: *Above information can also be output to a text application such as Notepad.*

13.3 Battery Information

Scan the barcode below (M20402) to obtain battery information.

M20402_01

The following data will be displayed:



Note: *Above information can also be output to a text application such as Notepad.*

Note: *Code will periodically release new firmware for hardware. For information on the latest firmware, visit the product's specific product page at codecorp.com.*

14. Maintenance & Troubleshooting

14.1 Approved Disinfectants for the CR2700 Readers:

- Clorox® Non-Bleach Disinfecting Wipes
- Oxivir® Tb Wipes
- 3% Hydrogen Peroxide Solution
- Sani-Cloth® Plus Germicidal Wipes
- 91 % Isopropyl Alcohol Solution
- MetriCide® 28 Day Solution (2.5% Glutaraldehyde)
- CaviWipes® Disinfecting Towlettes
- Virex® II 256 Disinfectant Cleaner
- Cidex® OPA
- Sani-Cloth® HB Germicidal Wipes
- Sani-Cloth® POI AF3 Wipes
- Super Sani-Cloth® Wipes
- Windex® Original
- Windex® Multi-Surface Anti-Bacterial Spray
- Formula 409® Glass and Surface
- Hepacide Quat® II
- Dispatch® Wipes

Please note: *mixed disinfectants have not been tested or approved to use with any Code devices and may result in damage and void the warranty. Please avoid using mixed disinfectants or alternating use of different disinfectants, even of approved disinfectants.*

Please note: *Hand sanitizers are not approved disinfectants or cleaners and should not be used on the devices. Follow the instructions of hand sanitizer use and always rub hands dry or put on gloves before using Code devices.*

14.2 Resistance to Other Chemicals

The Dark Gray CR2700 also withstands transmission fluid and motor oil.

14.3 Routine Cleaning & Disinfection

To maintain the highest performance of Code products, please follow the steps described below for routine maintenance and cleaning. Failure to follow proper cleaning procedures or using unapproved cleaners may result in the product warranty being voided.

Use only approved disinfectants and follow the instructions provided by the disinfectant manufacturers to clean and disinfect the devices. To prevent electric shock, always disconnect the charger from its power source before cleaning. Gently wipe plastic cases of the reader with battery installed and charging station with approved disinfectants. Never pour or spread liquid directly on the device. Do not remove the battery to clean the metal contacts on the battery or inside the battery compartment.

A dirty scan window will impact scanning performance. Never use any abrasive material to clean the window. Should the window become dirty, use a damp lint/dust free (or microfiber) cloth to wipe the window clean and allow air dry before use. Never spray any liquid directly on to the window. Never allow any liquid to pool around the window. Avoid using any liquid which may leave a residue or streaks on the window as it may impact scan performance.

14.4 Troubleshooting Guide

Problem	Possible Causes	Potential Solutions
Illumination or targeting does not appear when a scan button or the trigger is pressed	Battery is out of power	Charge the battery or replace it with a freshly charged one. When charging, make sure LEDs on the battery are blinking.
	Imager failure with the top LED on the scanner blinking red	Contact support
Illumination is on but the reader does not scan the barcode	Some symbologies are enabled by default, but some are not	Make sure the symbology you are scanning is enabled. Symbologies can be enabled or disabled using configuration codes (M-Codes) on Code's website.
The reader scans the barcode but fails to transmit the data to the host	Incorrect communication mode	Set the scanner to the correct communication mode using appropriate M-code available on Code's website (**Note**: USB keyboard is the most common mode).
	CortexTools3 is open	CortexTools3 takes ownership of the scanner, and data will be sent only to CortexTools3. Close CortexTools3.
The host receives incorrect data or misses characters	Incorrect keyboard language	Use M-code to set the keyboard language to correspond to your system settings.
	Incorrect communication protocol	Find and scan the M-Code to set raw data or package data.
	Incorrect setting for intercharacter delay	Use M-code to set the intercharacter delay to match your system settings.
When power gauge on battery is pressed, no LEDs on the battery turn on	Battery may be out of power	Charge the battery or replace with a freshly charged one. When charging, make sure battery LEDs are blinking.
	Battery is malfunctioning	Replace the battery with a functioning one.
The reader beeps three times	Reader failed to connect to a Bluetooth® charging base	Make sure the charger is powered up (Wireless logo on the charger is lit or blinking) and scan the QuickConnect Code again.
	Decodes but fails to transfer data	Make sure scanner is connected to charger base by scanning the QuickConnect code.
Cannot connect with my Bluetooth device	Device does not support BLE connection	Use a compatible device that supports BLE.
The reader beeps and vibrates four times after scanning configuration code	Reader successfully decodes but fails to process configuration code	Make sure to use the correct configuration codes for the reader.
Wireless LED on reader flashing one time per second	Reader is not connected to a charger or host (PC, tablet, mobile phone that supports BLE)	Move the reader into the Bluetooth range of a charger/host. Scan the QuickConnect Code on the charger to pair and connect. Use Device Manager on the host to pair and connect with the reader.
Wireless LED flashes once every 10 seconds	Reader is in sleep mode and out of charger	Place reader in charger or press any button to wake the reader up.
Scanner beeps until a button is pressed	Paging has been turned on	Beeps until a reader button is pushed, paging button on the charger is touched for more than 1 second, or paging times out (30 seconds by default).
Page button does not work	No reader is connected or reader is out of range. Paging LED flashes 3 times when touched for more than 1 second	Scan QuickConnect code to pair the scanner with the charger or bring the reader in range of the charger.
Wireless LED Flashes fast 7 times, no data can be sent	Base is attempting to connect to a reader	Make sure scanner is on and in range.
Reader scans PDF code on driver's license but does not parse the data	Reader may require a parsing license	Contact sales rep. to purchase a DL parsing license, which can be installed by scanning a barcode provided by Code.
	Reader is not correctly configured for driver's license parsing	Make sure the correct parsing file/JavaScript has been loaded to the reader.

15. Contact Code for Support

If any problem is encountered when using a Code device, contact your facility's technical support first. If they determine the problem lies with the Code device, they should contact the Code Support department at codecorp.com. To obtain support, please provide the following information:

- Device model number
- Device serial number
- Firmware version

Code Support will respond by telephone or email.

If it is deemed necessary to return the device to Code for repair, Code Support will provide a Return Authorization (RMA) Number and shipping instructions. Packaging or shipping improperly may result in damage to the device and void the warranty.

16. Warranty

For complete warranty and RMA information, go to codecorp.com.