

code



Code Reader™ 2300

Manual Version 01 Release

Date: October 2013



Statement of Agency Compliance



The Code Reader™ 2300 (CR2300) has been tested for compliance with FCC regulations and was found to be compliant with all applicable FCC Rules and Regulations.

IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, this device must not be co-located or operate in conjunction with any other antenna or transmitter.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



The CR2300 has been tested for compliance to CE standards and guidelines and was found to conform to applicable CE standards, specifically the EMC requirements EN 55024, ESD EN 61000-4-2, Radiated RF Immunity EN 61000-4-3, ENV 50204, EFT EN 61000-4-4, Conducted RF Immunity EN 61000-4-6, EN 55022, Class B Radiated Emissions, and Class B Conducted Emissions.



The CR2300 has been tested and certified in compliance with the Technical Regulations Conformity Certification of Specified Radio Equipment (ordinance of MPT N°.37. 1981), Article 2, Paragraph 1, Item 19.

Code voids product warranty if the hard case has been opened or tampered with in any way.

The CR2300 meets all safety and quality standards in accordance to EN 60950-1:2006/A11:2009/A1:2010.

CR2300 CodeXML® Modem FCC and ICES 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.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada licence-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.

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.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.



Code Reader™ 2300 User Manual

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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.

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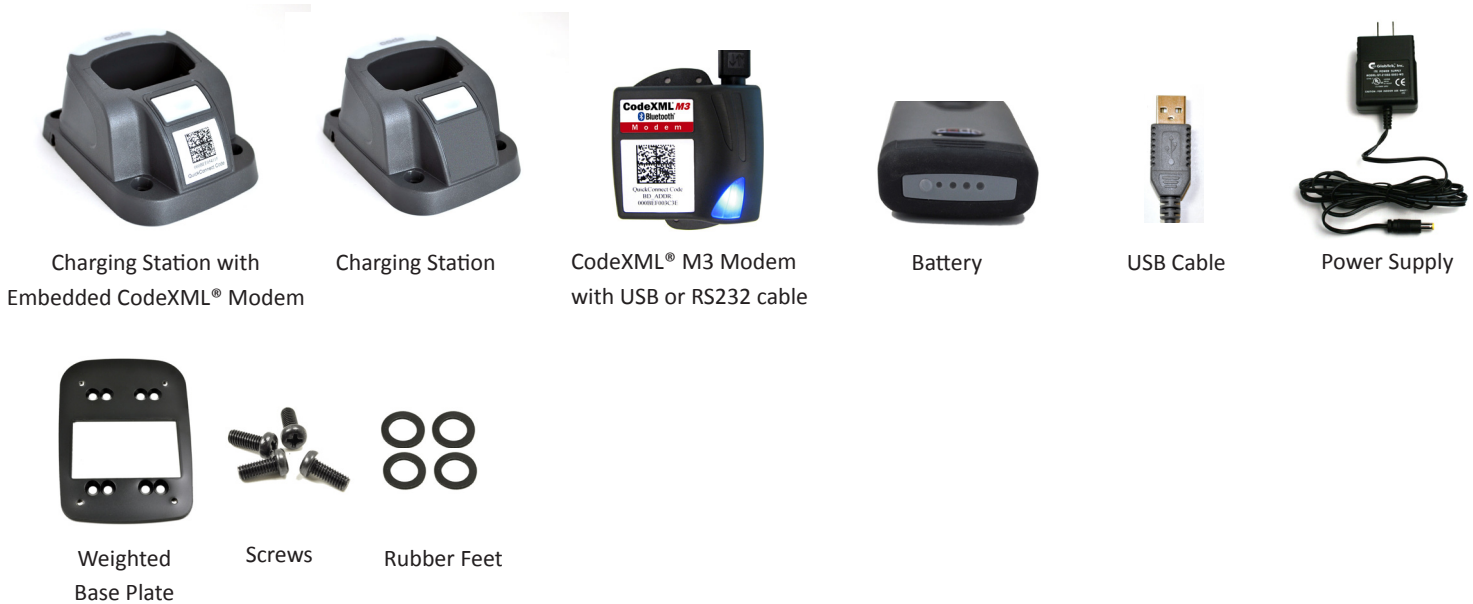
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1.0 - Unpacking

Remove the CR2300 from its packing and inspect it for damage. If the reader was damaged during shipping, please call Code at (801) 495-2200.

Based on the kit purchased, a combination of the following components will be included with the CR2300:



2.0 - Charging Station Assembly Instructions

1. Plug the barrel side of the USB charge cable or power supply (depending on which you ordered) into the charger. (Figure 2)
2. (Optional) Attach the weighted base. Place the 'This Side Down' (Figure 3) side of the weighted base onto the surface, and place the Charging Station on top of it. (Figure 1) and secure with the screws provided. (Figure 4)



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

3. Rubber feet can be placed on the corners of the weighted base (Figure 5) or directly onto the Charging Station (Figure 6) to prevent slipping from a surface.
4. (Optional) Mounting the Charging Station to a Surface. Place the 'This Side Down' (Figure 3) side of the weighted base onto the surface, and secure with screws. Note: Because surface types differ, screws are not included to mount a Charging Station to a surface.
5. Place the Charging Station on top of the weighted base (Figure 1) and secure the Charging Station to the base with the screws provided (Figure 4)

Note: The weighted base has the same pre-drilled mounting holes as the ECS-H and UMC Chargers.



3.0 - Battery Installation and Removal

Place the battery into the reader as shown below. Once in place, the battery will snap and lock to indicate proper installation. For battery removal, slide the latch (Figure 8), to unlock and release the battery.



Figure 7



Figure 8

4.0 - Charging the CR2300

1. Plug the USB cable into the computer's USB port (Figure 9) or the power adapter into the wall outlet (Figure 10).



Figure 9



Figure 10

Note: Batteries ships with approximately 50% battery life and should be completely charged before initial use. Approximate time to charge a depleted battery is 4 hours via USB cable, and 2 1/2 hours via AC power supply.

2. Remove the plastic 'Remove Before Use' cap (Figure 11), and place the reader into the Charging Station (Figure 12).



Figure 11



Figure 12



5.0 - Fuel Gauge Battery Status Indicators

Check the Battery Life

Press the fuel gauge button(Figure 13) to determine remaining battery life. If the battery has less then 10% capacity, the first LED will flash rapidly. For 25% or greater capacity, the LEDs will flash ON for 4 seconds.



Figure 13

Battery Life	Fuel Gauge Indicators
<10%	<div><div></div></div> (Flashes Rapidly)
<25%	<div><div></div></div>
25-50%	<div><div></div><div></div></div>
50-75%	<div><div></div><div></div><div></div></div>
75%+	<div><div></div><div></div><div></div><div></div></div>

Figure 14

Fuel Gauge Status Indicator While Charging

If the battery has less then 10% capacity, the first LED will flash rapidly while charging. For 25% or greater capacity, the LEDs will flash ON for 4 seconds.

6.0 - Powering On/Off the Reader

Press and hold either the buttons (Figures 15), for one second, to power on reader. The CR2300 will beep the LEDs will flash to indicate it is on and ready for use.



Figure 15

7.0 - Targeting the CR2300

Press and hold one of the buttons or trigger on the CR2300, the two blue bars emitting from the reader (Figure 16) are used for targeting. Center the blue bars in the middle of a bar code. The optimal reading distance from reader to bar code is approximately 4.0" (10 cm). Once the reader is at the optimal distance, the reader will automatically read the bar code.



Figure 16

The CR2300 will beep and the good read indicator (Figure 22) will flash green to indicate a 'good read' has occurred.



8.0 - Communication Mode Switch

Charging Stations with an embedded modem feature a Communication Modem Switch (Figure 17). The Communication Mode Switch allows the reader to transmit data through either the modem or wired connection.

When the Communication Mode Switch is moved to the right, in the direction of the arrow, the reader will communicate via the modem. The QuickConnect code located on the front of the Charging Station must be scanned to establish a Bluetooth connection. Scanned data will then be transmitted to the host device wirelessly.

If a wired connection is needed, move the Communication Mode Switch to the left. For USB Downloader or Keyboard mode, the Batch Mode Enable code must be scanned (refer to Section 10). To transmit scanned data while in wired mode, the reader must be placed into the Charging Station before data can be transmitted to the host device.



Figure 17

Communication
Mode Switch

9.0 - Communicating in USB Downloader (HID) Mode

CR2300 firmware and configuration settings can be managed via USB Downloader (HID) Mode using Code's CortexTools™. To communicate in USB Downloader (HID) Mode with a CR2300 and Charging Station, skip step 1 and proceed to step 2.

For the CR2300 to communicate in wired, USB Downloader (HID) Mode with a Charging Station with embedded CodeXML® modem:

1. Move the Communication Mode Switch to the left (opposite direction of the arrow) on the Charging Station (Figure 17).
2. Open CortexTools™. (Contact appeng@codecorp.com for a CR2300 compatible version)
3. Scan the USB Downloader (HID) Mode configuration bar code.
4. Dock the reader into the Charging Station.
5. Follow the instructions detailed in the CortexTools™ User Manual, available from www.codecorp.com.

USB Downloader (HID) Mode
configuration code



M10004_02

10.0 - Communicating in Batch Mode via USB Communication Mode

The CR2300 can be configured for Batch Mode to capture and transmit data via USB Communication Modes. To communicate in USB Downloader (HID) Mode with a CR2300 and Charging Station, skip step 1 and proceed to step 2.

For the CR2300 to communicate in wired, USB Downloader (HID) Mode with a Charging Station with embedded CodeXML® modem:

1. Move the Communication Mode Switch to the left (opposite direction of the arrow) on the Charging Station (Figure 17).



2. Scan the preferred Batch Mode configuration bar code:



M10186_02

Batch Mode Enable
- Send and Log



M10188_02

Batch Mode Enable
- Log Only

3. Scan the preferred Communication Mode settings:



M10004_02

USB Downloader Mode



M10200_01

USB Keyboard Mode



M10201_01

USB Virtual Comm Mode

4. To transmit the captured data to CortexTools™ on your host device, place reader into charging station. The reader will wait 5 seconds before transmitting data. The 5 second delay allows the host device to prepare to receive the data.

11.0 - Batch Mode Indicators

When the CR2300 is in batch mode, the storage icon (Figure 15) will remain solid to indicate data has been stored. The storage icon will flash every 10 seconds to indicate data is stored when in sleep mode.

Note: The storage icon will only flash if data has been stored.

12.0 - Attaching the CodeXML® M3 Modem

1. Attach the 8-pin DIN end of the USB or RS232 cable provided to the CodeXML® M3 Modem (Figure 18).



USB Cable

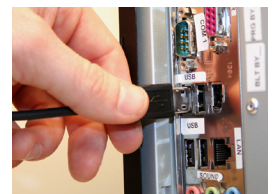


RS232 Cable



Figure 18

2. Plug the USB connector into the USB port on the computer, or RS232 (Serial) cable to a serial port on the computer. Once plugged in, the modem's blue LED light will flash (Figure 18).



USB Cable



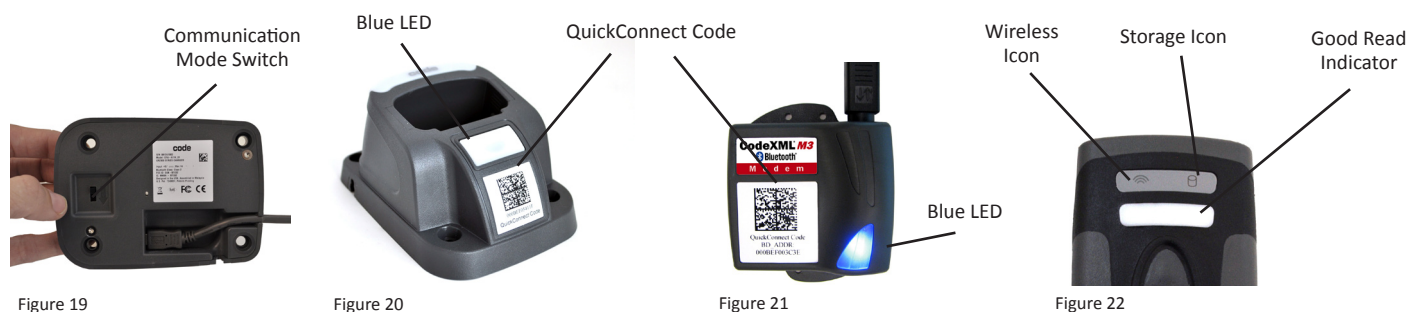
RS232 Cable



13.0 - Establishing a Bluetooth® Connection

1. If establishing a Bluetooth connection using the Charging Station with embedded CodeXML® Modem, slide the Communication Mode Switch on the Charger/Modem Station (Figure 19), to Bluetooth mode (the direction of the arrow).
2. Scan the *QuickConnect Code* located on the front of the Charging Station with embedded CodeXML® modem or on the external CodeXML® M3 Modem (Figures 20 and 21).
3. The wireless icon located at the top of the reader will flash as it attempts to make connection (Figure 22). The blue LED on the charging station or CodeXML® M3 Modem (Figures 20 and 21) will also flash as it attempts to connect. The blue LED will turn solid when connection is established, the CR2300 will beep once and the wireless icon will flash every 10 seconds.

For additional CodeXML® M3 Modem configuration information, please reference the CodeXML® M3 Modem QuickStart Guide.



Important Note If Using a non-Code Bluetooth Device:

To connect to a Bluetooth device not manufactured by Code, you will need the Bluetooth address (often referred to as the BD_ADDR) of that device. The 12-character Bluetooth address can be found on the device near the serial number. Then visit Code's website at: <http://www.codecorp.com/bdaddr.php> and enter the 12-character address to create the QuickConnect Code.

You will need to locate the Communications (COM) Port assigned to the Bluetooth serial port protocol before installing the Bluetooth Configuration Manager software that is included with your Bluetooth adapter (e.g., COM 10). This is the COM Port through which the CR2300 will connect.

14.0 - Reading Ranges

CR2300 Performance

Test Code	Min Inches (mm)	Max Inches (mm)
4 mil Code 39	1.6" (40 mm)	3.1" (78 mm)
7.5 mil Code 39	1.3" (34 mm)	7.2" (182 mm)
9.5 mil Code 128	0.6" (15 mm)	8.3" (212 mm)
10.5 mil UPC	0.8" (20 mm)	9.0" (228 mm)
13 mil UPC	1.1" (28 mm)	11.0" (280 mm)
4.2 mil DM*	1.9" (48 mm)	2.6" (66 mm)
5 mil DM*	1.7" (43 mm)	3.0" (76 mm)
6.3 mil DM*	1.3" (33 mm)	4.1" (104 mm)
10 mil DM*	0.8" (20 mm)	6.5" (165 mm)

Note: All samples were high quality codes and were read along a physical center line at a 10° angle. Default AGC settings were used. Accuracy= +/- 10%.



15.0 - Reader Feedback

Scenario	LEDs on Reader	Sound
CR2300 Successfully Powers Up	All LEDs Flash	1 Beep
CR2300 Successfully Connects with Host	Wireless Icon Flashes	1 Beep
Successful Decode and Data Transfer	Good Read Indicator will Flash	1 Beep
Configuration Code Successfully Decoded and Processed	Good Read Indicator will Flash	2 Beeps
Batch Mode Enabled and Data Stored	Batch Icon Flashes	No Sound
Memory Space for Batching is Full	Batch Icon Flashes 5 Time a Second	No Sound
Batch Mode Enabled and No Data is Stored	Batch Icon Off	No Sound

16.0 - Symbolologies Defaulted On

The following are symbolologies that have a default of ON. To turn symbolologies on or off, scan the symbology bar codes located in the CR2300 Configuration Guide located on our website at <http://www.codecorp.com>.

Aztec	Data Matrix	QR Code
Codabar	Data Matrix Rectangle	UPC/EAN/JAN
Code 39	All GS1 DataBar	
Code 93	Interleaved 2 of 5	
Code 128	PDF417	

17.0 - Symbolologies Defaulted Off

The following are symbolologies that have a default of OFF. To turn symbolologies on or off, scan the symbology bar codes located in the CR2300 Configuration Guide located on our website at <http://www.codecorp.com>.

Aztec Inverse	Composite	Micro QR	Trioptic
Code 11	Data Matrix Inverse	MSI Plessey	UPC-E Expansion
Code 32	Han Xin	Plessey	UPC Supplemental
Code 39 Checksum	Matrix 2 of 5	QR Code Inverse	
Code 39 Extended Full ASCII	Micro PDF417	Straight 2 of 5	

18.0 - Suffix Enter

A Suffix Enter character is disabled by default. To enable Suffix Enter, please scan the following configuration code:

Suffix Enter



M10134_01

For more configuration options, download the CR2300 Configuration Guide from www.codecorp.com. For custom configurations, please contact appeng@codecorp.com



19.0 - Reader ID and Firmware Version

To find out the Reader ID and firmware version, open a text editor program (i.e., Notepad, Microsoft Word, etc.) and read the following code:

Reader ID and Firmware



You will see a text string indicating your firmware version and CR2300 ID number (see below):

iVVVVWWWWXXXXSSSSSSSSSAOODYYYYHHIIJJJKKKLLLL<TAB>Z...Z

i indicates 'I' string output;

VVVV is the application firmware version number;

WWWW is the core application firmware version number;

XXXX is reserved for the radio firmware version number;

SSSSSSSS is the Reader's serial number (ten digits);

A is the current execution state: "A" means core is running
"B" means undefined
"C" means undefined

OO is the OEM identifier;

D is the display type: "0" or "N" is no display device
"D" is the standard Keypad/Display

YYYY is the flash file system version number. Reserved;

HH is the hardware revision;

IIII is the hardware type identifier: 0009 indicates a CR2300

JJJJ is the boot application version;

KKKK is the operating system kernel version;

LLLL is the root file-system version;

<TAB> is the ASCII TAB character;

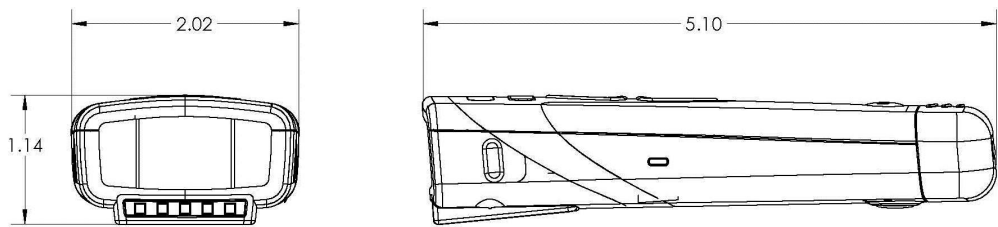
Z...Z is the decoder version: a null terminated string of printable ASCII characters. Without a decoder.ini file, the order of the decoders listed here indicates the order of use.

Example: Xap/i3000300006040010002363A06D-CD+SQ

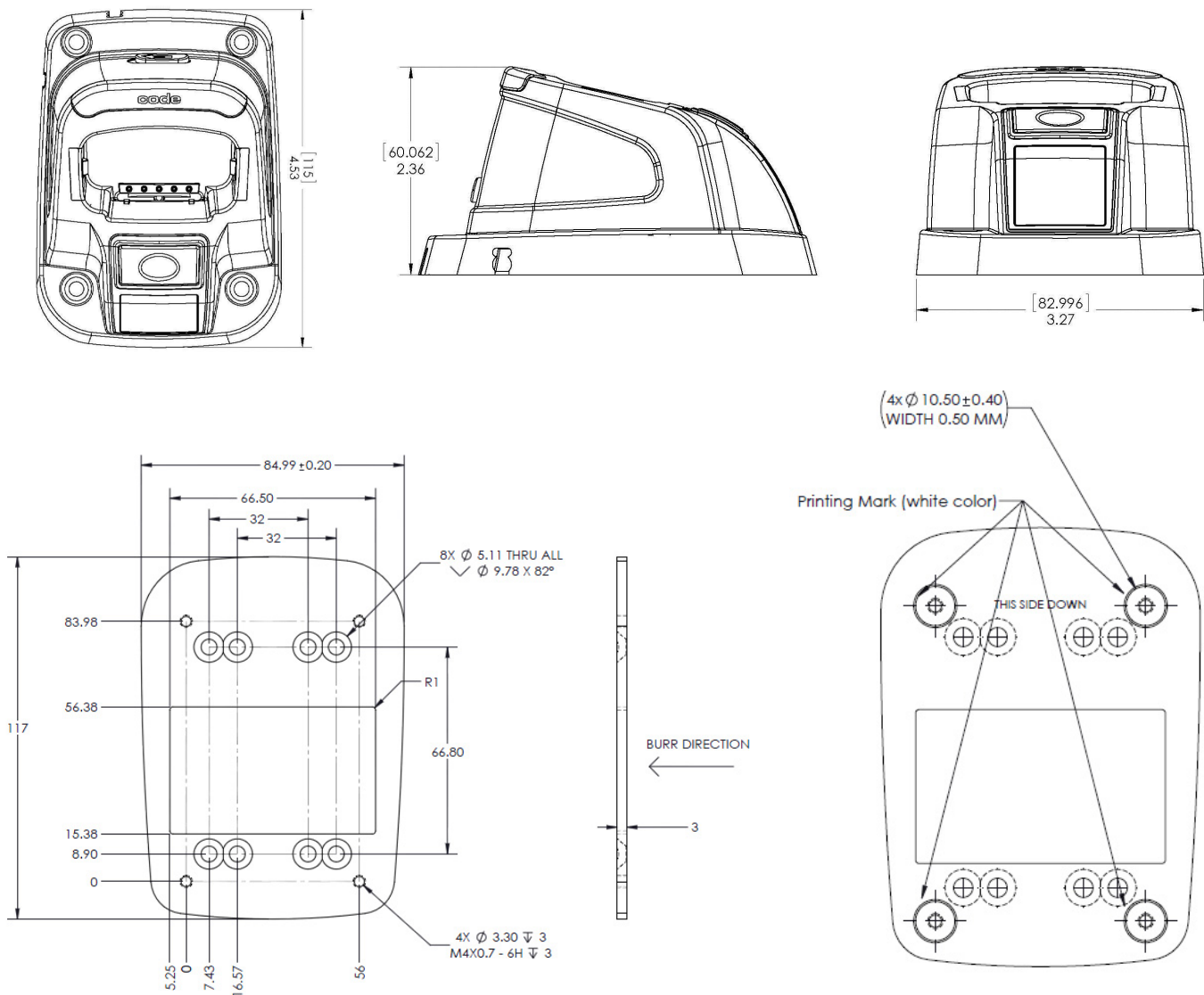
Note: Code will periodically release new firmware for CR2300 readers. For information on latest firmware versions, call Code at (801) 495-2200. To upgrade firmware, please visit our website at <http://www.codecorp.com/codesupport.php> and follow instructions provided.



20.0 - CR2300 Dimensions



20.1 - Charging Station Dimensions



21.0 - CR2300 Maintenance

The CR2300 needs only minimum maintenance to operate. The tips below for maintenance suggestions.

Cleaning the CR2300

The CR2300 window should be clean to allow the best performance of the device. The window is the clear plastic piece inside the head of the reader. Avoid touching the window. Your CR2300 uses CMOS technology that is much like a digital camera. A dirty window may stop the CR2300 from reading bar codes.

If the window becomes dirty, clean it with a soft, non-abrasive cloth or a facial tissue (no lotions or additives) that has been moistened with water. A mild detergent may be used to clean the window, but the window should be wiped with a water moistened cloth or tissue after using the detergent.

The following agents are approved to clean a Code bar code reader:

- 1) Alcohol Wipes
- 2) Clorox® Non-Bleach Disinfecting Wipes
- 3) Clorox Bleach Solution (10% Clorox bleach, 90% tap water)
- 4) Medical DiAirKem
- 5) Sani-Cloth® HB, Super Sani-Cloth® Germicidal, Sani-Cloth® Plus Germicidal Disposable Wipes
- 6) Virex® II Disinfectant Cleaner

Technical Support and Returns

To modify any default settings, download the CR2300 Configuration guide at www.codecorp.com/files.php and scan the appropriate code. For user specific configurations, contact Application Engineering at Code_appeng@codecorp.com.

For all returns Code will issue an RMA number which must be placed on the packing slip when the reader is returned.

Visit <http://www.codecorp.com/codesupport.php> for more information.

22.0 - Warranty

Code's CR2300 carries a standard one year limited warranty as described herein. Charging Stations follow the warranty of the reader. The CR2300 battery carries a one year limited warranty.

Customers may purchase either a one or two year CodeOne extended warranty plan. Please contact a Code representative for more information.

Limited Warranty

Code manufactures its hardware products in accordance with industry-standard practices. Code warrants its products will be free from defects in materials and workmanship, provided that the products are used under normal operating condition intended by the Manufacturer. This warranty is provided to the original owner only and is not transferable to any third party. This warranty is subject to any and all accompanying disclaimers, limitations and other terms of this section.

Warranty periods are not extendable beyond 5 years. CodeOne extended warranty programs are available and must be purchased within 90 days of purchase. Please refer the CodeOne Data Sheet for program pricing and terms and conditions.



Exclusions

No warranty herein contained or set out shall apply to any product (i) which has been repaired, altered or tampered with unless done or approved by Code, (ii) which has not been maintained in accordance with any operating or handling instructions supplied by Code, (iii) which has been subjected to unusual physical or electrical stress, immersion in fluids, puncture, crushing, misuse, abuse, power shortage, improper power supply such as incorrect voltage or wrong polarity, negligence or accident, or (iv) which has been used other than in accordance with the product operating and handling instructions. Preventive maintenance is the responsibility of the customer and is not covered under this warranty.

Warranty Coverage and Procedure

During the warranty period, Code will repair or replace defective products returned to Code's service center in the US. For worldwide warranty service, go to <http://www.codecorp.com/technical-support.php> and fill out a service request. Customer will be issued a case number. Case will be routed into the support queue within Code. Customer will be contacted within one business day of submission. Code representative will work with customer to troubleshoot solution and attempt to restore reader to proper functionality. If the Code representative determines that it cannot be restored programmatically and deems a hardware issue is found a Return Material Authorization (RMA) Number will be assigned and customer will be instructed to return the product to Code.

Products must be shipped in the original or comparable packaging, with shipping and insurance charges prepaid. Only parts listed in the original RMA should be sent and will be accepted. Code will pay for return shipping and insurance of repaired or replacement products worldwide. Code will use new or refurbished parts at its discretion and will own all parts removed from repaired products. Customer will pay for any pre-shipped replacement product in case it does not return the replaced product to Code within 7 days of receipt of the replacement product. The process for return and customer's charges will be in accordance with Code's Exchange Policy in effect at the time of the exchange. Customer accepts full responsibility for its software and data including the appropriate backup thereof. Repair or replacement of a product during warranty will not extend the original warranty term.

Return time frames are listed in the chart above. For RMA's not covered under warranty as outlined in the exclusion section, customer will be required to pay the non-covered warranty fee as listed in the chart above.

General

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