



# CR5000 & CR5000RTC

## Application Firmware Read Me

### Version 1294

Associated firmware file versions CR5000 & CR5000RTC	
System install	1294
Firmware	1294
Boot/Core	1294
Kernel	0078
Uboot	0023
Decoder	CD 16.1.35
JS Engine	0095

**\*\*\*\*\* PLEASE NOTE: \*\*\*\*\***

- This readme file contains information about the latest version of the firmware for the CR5000 and CR5000RTC hardware.
- Support for all Code products is available from Code website at: [www.codecorp.com](http://www.codecorp.com) or by contacting Code Technical Support at support@codecorp.com.
- More information is available for applications developed by Code at <http://www.codecorp.com/knowledge-database.php>

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## 1. NEW FEATURES IN THIS RELEASE

- None

## 2. ENHANCEMENTS/IMPROVEMENTS/FIXES

### Version 1294

- Resolved AGC issue which improves decode performance on barcodes printed on reflective material
- Fixed an issue with the AGC initialization after power on, and before a button press, for Revision 3 hardware

### Version 1292

- Changes to cell phone mode
- Fixed an issue with AIM identifier duplicating
- Reverted back to CD 16.1.35

### Version 1290

- Simplified cell phone mode
- CD 17.1.12
  - Improved low contrast 1D decoding
  - Added new features via registers 24F,2EF,309,30A,30B
  - Fixed Ohio DL parser
  - Created new data fields for British Columbia DL and Colombia DL/ID

### Version 1268

- Added Shift-JIS support
- Added support for GS1, HIBC and UDI parsing in decoder
- Added latest decoder CD 16.1.35
  - Various improvement for 1D symbologies and QR Code
  - Decode 3-bar Pharmacode
  - Allowed no checksum for Code 11
  - Added min length checking for IATA 2 of 5
- Do Simple Age Verification when G(2B4)= 9 and no DL license in the unit
- Updated AGC functionality
- Fixed an issue where the reader did not apply character delays to CodeXML Keystrokes
- Fixed issue with NCR Bioptic Aux Port POS Configuration that prevented data from being sent to the host

### Version 1236

- Fixed an issue where trigger mode in a dark environment was not getting initialized with the correct exposure starting point. This could cause hand-triggered reads in dark environments to fail.

### Version 1234

- CortexDecoder updated to CD 16.1.4
  - Added decoding of light on dark Grid Matrix and mirror Grid Matrix
  - Added decoding of mirror GoCode
  - Fixed issue outputting format control code for Australia Post

- Allowed Code 11 checksum to be configurable for 1-digit or 2-digit checksum. Previously the 1 or 2-digit checksum was internally determined based on spec but this rule is not always followed in customer applications
- Fixed DL Parsing to output the full Canadian postal code
- Enhanced DPM algorithms to allow more than 1 DPM barcode to be decoded in the same image
- Improved Laser DPM algorithm for Data Matrix and Grid Matrix
- Improved decoding of poorly printed PDF417
- Added the ability to read barcodes printed in red
- Added a new cellphone-only mode with no illumination
- Added support for CDC mode
- Added handling for multi-byte prefix/suffix values Fixed an issue where USB enumeration was requesting the wrong power value
- Improved ability of the reader to read barcodes at long distances
- Improved motion detection
- Fixed an issue where reader.processCommand("C", "(suffix or suffix)) in JavaScript required a reboot
- Fixed an issue where the first image was always dark when using AGC bypass

## Version 1206

- Improved the speed of some characters that were output slowly using the German Windows Language file

## Version 1204

- CortexDecoder updated to CD 15.2.1
  - Improved decoding of high density Data Matrix on curved surface.
  - Improved multi-code decoding in one image and further ensured the same barcode will not be decoded more than once.
  - Improved decoding of low contrast 1D barcodes.
    - Added two 1D barcode security levels 11 and 12 to reject misdecode due to low module size and poor image resolution
- Internal changes to improve manufacturability

## Version 1200

- More comprehensive lock function to increase the security of settings on the readers.
- CortexDecoder updated to CD 15.1.22
  - Improved reading of low resolution and damaged barcodes.
  - Added military CAC ID parsing to DL parser.
  - Improved decoding of non-high density Data Matrix and DPM with border damage.
  - For Age Verification, DL parser now outputs the string "00000000" for expiration date when it is not encoded in the driver license.
  - Improved Illinois DL parsing to correct parse a 2003 DL with out of spec fields. Supported DL Parsing of an old out of spec Ohio DL. The JSON formatted output no longer contains data for header and subFile fields to avoid outputting non-printable characters.
  - Added option to output the Royal Mail check char using P(24F)20000.
  - Appended error correction codewords to Australia Post output by default. The additional codewords can be removed by P(24F)40000.
  - Improved DL parsing to output correct JSON string label for out of spec DL.
- Fixed an issue with reader.onDecodeAttempt preventing further reads (Rules files)

- Fixed some internal reporting issues in iOS communications
- Fixed issue where the reader would reboot with an invalid license file
- Fixed performance issues with German-Win keyboard map

#### CR5000RTC only:

- Fixed an issue where CR5000 with RTC would beep once for non-DL barcodes even if the beep suppression (setting 0x93) was turned on

#### Version 1178

- Fixed an issue where a rules file containing rules\_OnDecodeAttempt could prevent decode output.
- Added the ability to receive a Good Read indication on the RTS line of an RS-232 connected CR5000 or CR5000RTC

#### For the CR5000RTC Only:

- Fixed an issue where an occasional extra beep would occur with non-Driver License barcodes.
- Fixed an issue where the reader could mistakenly trigger a good read on a cached image in Simple Age Verification (SAV).
- Improved the performance of SAV when a Driver License is read multiple times.

#### Version 1160

- CortexDecoder 15.1.3 (build 314)
  - Decode high density QR/DM with severe distortion and/or finder damage
  - Decode 144x144 DM and PDF417 with encoding issue
  - Decode PDF417 with out of spec Numeric Mode
  - Improved JSON output compliance
- Fixed character delay keycode (/ ,)
- Fixed suppress response output – removing some extra responses
- Fixed issue with storage limit to bring it on par with other readers
- Made CR5000 ignore Quick Connect barcodes
- Fixed an issue where a JavaScript event could cause the reader to miss some trigger presses
- Limited the prefix or suffix to a length of 64 bytes
- Improve JavaScript initialization
- Fixed an issue with CR5000RTC units beeping more often than designed, including some beeping with beep disabled

#### Version 1032

- CortexDecoder 14.2.9 (build 0296)
  - Improvement on low brightness cellphone reading. (For iPhone below 30% brightness level).
  - Improved shiny Driver license reading performance.
  - Major improvements to overall decoding performance.
  - Add support for Code 49 symbology
  - Improve pattern motion detection
  - Improved rectangular Data Matrix decoding
  - Improved Light on Dark DPM decoding
  - Improved decoding of high density QR Code with significant damage to the finder areas
  - Fixed high density decoding being timed out prematurely. Made it harder to mis-decode C39 for Security Level 2

- Improvements to motion detect mode (set to default for all products except for CR6000)
  - Won't attempt to decode unless a barcode is seen
  - Turns on targeting
- Added support for CR5000 "detect motion" in/out of stand option
  - In this mode, if the reader detects motion, it will turn on red illumination.
  - It will leave illumination on for 1 second after detecting motion if the nothing is decoded.
  - If something is decoded, it will leave the illumination off when the barcode leaves the field of view.
- Keyboard Mapping support has been changed significantly.
  - Keyboard Map file names have been standardized to accepted keyboard map naming conventions as seen in Microsoft® and Apple® operating systems
  - UK English and Spanish keyboard maps have been added
  - The ability to representation of non-printable characters in four different methods has been extended from just English to all Windows® based keyboards
  - When using the latest Code Modem firmware, the reader controls the keyboard map, not the modem. If either the reader or modem is not using the latest firmware, the modem will control the keyboard map used.
- Fixed problems where the buttons would stop working if the reader buttons were configured for non-decoding events and they were pressed while the reader was detecting motion.
- Fixed a problems where some of the flash storage space was unnecessarily consumed.
- Applied imager row-noise correction.
- Fixed improper handling of 'H' packets while waiting for a response.
- Fixed a problem where the red illumination might flash when placing the reader on the table.
- Fixed a problem where custom install script with DOS line-endings fail to install.
- Removed code that would attempt to turn off LEDs during host communication.
- Scanning a CodeXML barcode could cause the output to be repeated indefinitely.
- CR5000 USB enumeration indicates that it is CR1000.
- Fixed an issue where the error "Imager error: timeout occurred" could occur if there were stale images on the reader.
- Updated Kernel version (0069) and JavaScript engine version (0091)

#### Version 0992

- Initial release

### 3. CHANGES TO DEFAULT SETTINGS

#### Version 1294

- None

#### Version 1292

- None

#### Version 1290

- None

#### Version 1268

- None

**Version 1236**

- None

**Version 1234**

- None

**Version 1206**

- None

**Version 1204**

- None

**Version 1200**

- None

**Version 1178**

- None

**Version 1160**

For the CR5000RTC Only:

- Register 93 Suppress Beep On Decode – default is 0x00

**Version 1032**

For both the CR5000 and CR5000RTC:

- Register 2D Keyboard Map – default is 0x02
- Registers 19D-1AA Presentation Mode AGC
- Registers 223-22E Cellphone AGC
- Register 2B2 Illumination Axis Control – default is 0x70
- Register 2DD In-Stand Illumination Axis Control – default is 0x70
- Register 2DE Out-of-Stand Illumination Axis Control – default is 0x70
- Register 2DF In-Stand Ignore Duplicate Barcode – default is 0x259 (600 in decimal)

For the CR5000RTC Only:

- Register 93 Suppress Beep On Decode – default is 0x01
- Register 2B4 Public Sector Behavior – default is 0x09
- Register 2E5 Stand Alone Age Verification Primary Age - default is 0x15 (21 in decimal)
- Register 2E6 Stand Alone Age Verification Secondary Age - default is 0x00

**Version 0992**

- Initial release



## 4. OUTSTANDING ISSUES

Note: Firmware ENHANCEMENTS and OUTSTANDING ISSUES are categorized as critical and noncritical. Critical updates require the user to upgrade firmware and all reader programming guides and manuals.

### \*\*\*\*\* CRITICAL \*\*\*\*\*

- None

### \*\*\*\*\*NON CRITICAL\*\*\*\*\*

- None

## 5. CONFIGURATION CODES

NEW CONFIGURATION CODES:

M-Code	Ver	Description

EXISTING CONFIGURATION CODES THAT HAVE BEEN MODIFIED:

M-Code	Ver	Description

Several configuration codes used for other Code Readers are not applicable to the CR5000. Please see the CR5000 Configuration guide at <http://codecorp.com/ConfigGuide/?product=CR5000> for a complete list of configuration codes for the CR5000.

## 6. SOFTWARE/READER TOOL COMPATIBILITY

Recently upgraded Code software is available for download from Code website at: [www.codecorp.com](http://www.codecorp.com) or contact Code Technical Support.

Software	Version
CortexTools2™	1.0.0
CortexTools™	2.6.5
CortexMobile™	3.2.0
USB VCOM	2.1
T500 Firmware	5040

## 7. TECHNICAL SUPPORT INFORMATION

**You may contact Code at:**

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If you have technical questions visit our website at <http://codecorp.com/contact.php> for phone numbers and email addresses.

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