



CR8200

Application Firmware Read Me

Version 1.22.5

August 2024

Associated firmware file versions			
CR8200		CR8060	
Firmware	1.22.5	Firmware	1.22.5
Decoder	CD 23.2.2	Decoder	CD 23.2.2

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

- This readme file contains information about the latest version of the firmware for the CR8200 hardware family.
- Support for all Code products is available from Code website at www.codecorp.com or by contacting Code Technical Support at www.codecorp.com/code-support/.
- More information is available for applications developed by Code at www.codecorp.com

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1. NEW FEATURES IN THIS RELEASE

Version 1.22.5

- Integration of decoder 23.2.2
 - Fixed GS1 DataBar Expanded message decoding error related to ISO/IEC 646.
 - Improved Data Matrix decoding using erasures.
 - Enhanced decoding of QR Code on curved surface.
 - Improved DPM algorithms enabled.
- Added a parameter to allow for skipping formatting on barcodes that only contain CodeXML data
- Added target trigger mode to the reader, which holds the targeting bar on for a specified length of time before flashing the illumination.
- Added Quiet Scanning Mode. Quiet scanning mode will cause the reader to not indicate (both blink and beep) a good read or error indication for a scanned barcode. All other indication sources are still valid and will cause the reader to indicate.

2. ENHANCEMENTS/IMPROVEMENTS/FIXES

Please reference the CCD for specifics on the new features added below, including default values and commands for enabling, disabling, and setting associated parameters

Version 1.22.5

- Performance in low light conditions improved.
- Improvements made for exit logging.
- Issue scanning QR Code fixed.
- Added command to suppress invalid command responses.
- Prevent re-saving parameters that have already been saved with the same value, in order to better conserve flash usage.
- Added new output method for Unicode to Shift-JIS.
- Fixed an issue with converting input encodings to Unicode.
- FW with wrong CRC will be failed to program
- Illumination channel can now be specified independently for each AGC mode.
- Power Mode times are now based off of the time since the reader was last active, not the previous power mode. Restrictions are now in place to prevent a mode from having a time lower than a previous mode, if it's enabled.
- Fixed Shift-JS exception when we send command CMHDSIE5
- Created common scene management between different readers.
- Added target trigger mode to the reader, which holds the targeting bar on for a specified length of time before flashing the illumination.
- Improved decode mode handling and interactions with event based triggers
- Fixed an issue with a CFR not restoring baud rate platform settings.
- Deprecated AGTM parameters. Please use CDDT_TL and CDDT_LT to control the time spent decoding.
- Normal AGC curve configuration commands have been deprecated (AGNO subcategory). These commands now affect the Config AGC mode (AGCD).
- Consolidated AGC curves, allowing for dynamic AGC curve initialization at runtime.
- Fixed CFR issue on RS232 mode
- Prevented download of incomplete or corrupted CRVFW files
- PMES now puts the reader to sleep as intended.
- Sleep modes are no longer dependent on each other.
- Fixed an issue with USB communication after sleep.
- Fixed an issue with image capture after sleep.

- Removed unused JS and BT commands in products that don't support these functions
- Fixed an issue with AGC Mode not taking effect after a reboot.
- Fixed an issue with CDDT_TD not taking effect.
- Fixed an issue with flash corruption of qualification data.
- Fixed an issue with RDQD parameters seemingly erased when downgrading firmware.
- DecodePlus modes now can be applied to the trigger mode.
- Changed RDFW_FT to be more accurate
- Fixed an issue with CDC mode printing out invalid characters on connection.
- Improved handling when the reader runs out of memory.
- QuickDecode mode is now supported on non-CR5200 products.
- CDOP_AT now takes effect for motion detection as well as trigger modes.
- Saved settings can overwrite platform settings which are set with a P.
- Improved reader indication handling
- Improved messaging during cleanliness test.
- Fixed a reboot occurring during usb CDC communication with packet mode enabled.
- Fixed an issue with quick red LED indication
- Added a new message verbosity level (RDFBPVB2) that causes the reader to send a response message to the host when scanning a configuration barcode.
- New indication parameters added for more thorough modifications
- Added a parameter to allow for skipping formatting on barcodes that only contain CodeXML data
- Fixed an issue where certain platform settings could not be removed individually.
- Improved focusing verification during focus testing.
- Added new platform command to readers.
- Fixed an issue where the targeting LED would turn off when Sticky Trigger was enabled.
- Improved handling of devices with no imager attached
- Error Beep for packet mode added
- Added a new parameter to get barcode position.
- Generalized input/output handling for extensibility

Version 1.21.19

- Integration of decoder 22.2.6
- Enhanced PDF417 to decode poorly printed Start and Stop patterns.
- Added new aim identifiers (7011, 7230~9, 7240, 4309) for GS1 Validation.
- Added ability to transfer raw JPEG images in CDC mode.
- In the 1.19.5 version of the firmware, the "CDDT_TL" command served to set the decode locate time and decode time limit, using a formula where the decimal input value 9830720 equated to 0x00960140 (0x0096 = 150ms; 0x0140 = 320ms). However, a bug prevented the decode locate time value from taking effect. In the subsequent update, version 1.21.15, the command structure was enhanced by splitting it into two commands, "CDDT_TL" for decode time limit and "CDDT_LT" for decode locate time, and transitioned the input format from decimal to hexadecimal values. In order to further simplify and maintain backward compatibility with firmware version 1.19.5 and earlier, the input format reverted to decimal in version 1.21.19.
- Fixed an issue where platform settings couldn't be removed using a "^" or settings that were longer than 10 characters.
- Fixed an issue where sending RDCMXEV7 ~600 times caused the reader to become unresponsive.
- Fixed a manufacturing issue where the Quality bits could get corrupted.
- Fixed an issue where RDCMXEV1,P10 would not stop a continuous scan event with timeout (RDCMXEV1,P11,P20,P3500).
- Fixed an issue where RDCMXEV9 would trigger a continuous event if RDCMXEV7 has been issued since boot.
- Fixed an issue where the decode performance took ~20ms longer.

- Updated cleanliness test to allow preferred field selection on dual field lenses instead of running the test on the entire captured image.

Version 1.21.15

- Added support for CT8200 chip revision 2.2
- Removed the requirement of a 5014 license for driver's license parsing
- Updated decoder to 21.2.4
- Moved motion detection to DecodePlus architecture to improve performance
- Added the ability to adjust desired brightness target for decoding and picture capture
- Allow upgrades to a future firmware version that supports a 3.x CT8200 chip revision
- Fixed an issue with the SwissGerman_Win keyboard mode, where some keypresses were incorrect
- Fixed an issue where the reader would get into a bad illumination state when removed from the stand
- Improved illumination handling
- Fixed an issue with incorrect Decode Timeout in image header information
- Fixed an issue where the reader would get stuck and illumination would stay on, when in-stand motion detection mode and alternate cellphone mode was enabled
- Fixed an issue where the reader would freeze when alternate cellphone mode was enabled, and the reader is taken in and out of the stand multiple times
- Fixed an issue when handling invalid configurations in CDC mode
- Fixed an issue where AIM ID wouldn't load properly after reboot or power cycle
- Fixed an issue with raw commands in RS232 mode
- Fixed an issue where platform settings that contained a comma wouldn't save to the reader
- Improved image header information for JPEG and PGM images

Version 1.19.5

- Updated to Cortex Decoder 20.3.10
 - Added optional verification output to support graphic display of error corrected modules
 - Added verification output for print growth and nominal module size
 - Removed Minimum Reflectance Margin from AIM-DPM verification
 - Improved decoded corner estimation for difficult to read 1D, PDF417, and CodablockF images
 - Improved Code128 decoding
 - Fixed verification issue for a certain type of MicroQR Code
 - Improved Dotpeen LD DPM algorithm for image size up to 2560x2048
- Corrected Straight 2Of5 and IATA 2Of5
 - Added category A2O5 for IATA barcode
 - Added straight 2Of5 Checksum parameter
- Added Japanese Shift JIS
- Added ability to process .crccs files
- Added support for Codabar checksum
- Corrected Interleaved 2Of5 length value
- Fixed issue where the illumination and target bar would not turn off when motion stopped
- Fixed issue when in continuous scan mode a decode would occasionally be missed
- Fixed issue where user could not switch between IBM POS and USB HID Vendor mode
- Fixed issue where capturing a decimated or median image would cause a reader to reboot
- Fixed issue where a reader recovery did not clear platform settings
- Fixed issue where the connection to IBM POS would drop when turning beep on or off
- Fixed issue where sending decoded images along with the decode results, the decode results are occasionally split in two sets of characters on separate lines
- Fixed an issue where settings would get corrupted after many saves

- Improved Motion detection decoding performance
- Improved the reading performance under direct sunlight environment
- Improved best field selection by choosing Wide Field
- Improved image properties of current and next AGC percent values
- Improved CDC VCOM by adding packet mode changes
- Improved ability to set serial number for USB VCOM
- Improved USB enumeration stability
- Improved reader connection after a PC restart
- Improved PID configurability
- Improved USB Enumeration with some zero clients
- Improved image meta data results
- Added support for CT8200 2.2 chip

Version 1.16.0

- Updated to Cortex Decoder 19.1.13
 - Added Codabar 7DR checksum
 - Added priority checking in data manipulation match string mode
 - Added support for DotCode
 - Improved decoding of blurry Code 128 and Code 39 images
- Fixed issue where barcodes greater than 12 characters returned truncated data
- Fixed issue where the barcode name would not return as a prefix or suffix when configured in a data formatting string
- Fixed issue where the maximum decodes per read CDOP_PR had to be reset on reboot, even if saved
- Updated SwissGerman_Win.xml keyboard
- Added the ability to scan configuration barcodes when QR Code symbology is disabled
- Added an alternate cell phone mode which captures two images and compares quality for decoding
- Added ability to set the position of the AIM id
- Improved AGC curve configurability
- Added ability to shift the AGC contrast window from its default position in the center of the field of interest
- Added ability to draw white lines around the AGC contrast window for visual inspection
- Improved Imaging/AGC parameter logging
- Added Configuration Lock
- Added IBM SurePOS
- Added ability to crop images

Version 1.15.0 Dual Optics CR8060 Initial Release

- Support for CR8060
- Supports Cortex Decoder 18.3.8
- Added AGC curve configurability
- Added ability to output AGC parameters for single captured image in raw mode to message logs
- Added ability to output AGC parameters for every captured image in raw mode to message logs
- Improved firmware upgrade
- Improved ability to take pictures

Version 1.12.2

- Updated to Cortex Decoder 18.2.1
 - Added an option in Data Formatting configuration string to allow the output data to be shorter than the specified length. This is achieved by setting bit 1 of the upper byte of ControlBits
 - Added support for decoding QR Code based CR8200 Configuration Code without enabling QR Code

- Added conditional logic in Match String features of Data Manipulation
 - Added result status item in Data Formatting features of Data Manipulation
- Improved AGC stability
- Added support for Portuguese Keyboard for Windows
- Added support for Italian Keyboard for Windows
- Fixed issue where continuous scan stopped when cell phone mode was enabled
- Removed English from Language list
- Fixed issue where CFR[^LC] would clear more than licenses
- Fixed issue where CFR[^PL] would clear more than platform settings
- Fixed issue with case formatting
- Fixed issue where reader would double scan when decode attempt timeout (Sticky Time) was set
- Fixed issue with prescription bits being improperly converted
- Fixed issue where HD field and Wide field prescription could not be set at the same time

Version 1.11.2

- Good read pulse on continuous scan
- Fixed issue with UART flow control
- Added ability to leave targeting on
- Added new firmware commands to support updated Cortex Decoder
- Improved object detection in dimly lit conditions
- Added ability to suppress a good read beep
- Fixed issue where platform setting could not be saved with parsing
- Updated to Cortex Decoder 17.2.9
 - Updated to Cortex Decoder 17.2.9
 - Added properties to individually enable/disable optional checksum for Matrix 2 of 5, Standard 2 of 5, Hong Kong 2 of 5, NEC 2 of 5, IATA 2 of 5:
 - Improved Data Manipulation
 - Improved decoding of UPC/EAN printed on uneven surface
 - Improved decoding of poorly printed Code 128
 - Enhanced Colombia DL/ID applications
 - Fixed Grid Matrix enabling issue that also requires enabling at least one of these: 1D, PDF417, DataBar, DM, or QR.
 - Fixed Code 49 enabling issues
 - Fixed IATA 2 of 5 string length checking

Version 1.10.2

- Thai Keyboard support
- Ability to match barcode data and replace matched data
- Added new command to get saved settings
- Added new command to get platform settings
- Pre-processing of images to improve reading barcodes with busy backgrounds
- Added ability to gracefully handle imager failures
- Fixed issue with UART flow control
- Corrected byte ordering of the image sensor FuseID
- Improved motion detection sensitivity
- Improved motion detection algorithm
- Added option to change JPEG compression
- Added option to change JPEG smoothing percent

- Increased allowable values for volume control
- Added DL parsing + Data Formatting
- Updated to Cortex Decoder 17.1.28
 - Added new pre-processing feature with P property as P_FILTER_TYPE
 - 0: No preprocessing
 - 1: Low pass filter 1
 - 2: Low pass filter 2
 - 3 and higher: Reserved

Version 1.9.1

- Support for Maxicode Symbology
- Ability to match barcode data and replace matched data
- Improved barcode-in-cellphone reading performance
- Added support for manual hardware flow control mode for serial-based communication
- Added ability to get and set match string, DL parsing string, and data-formatting string
- Fixed issue where the next image could get started during the current capture
- Added ability to get/set separate Match, DL Parsing, GS1 Parsing, and Data Formatting strings
- Updated to Cortex Decoder 17.1.22
 - Added ability to strip UPC-A number system char only when it is 0
 - Added decoder based POS terminal emulation
 - Improved decoding of low contrast 1D barcode laser etched on yellow gas pipe
 - Enhanced Match String feature to perform match/replace up to 50 locations
 - Added individual configuration strings for DL and GS1 parsing, Data Formatting, and Match string decoder post-processing
 - Added Data Formatting to be performed on parsed output
 - Match String output can be the decoded data without the matched portion of data
 - Fixed issue that prevented calling formatOutput() when the old configuration string length variable is 0
 - Extended Maxicode time limit

Version 1.8.2

- Improved cellphone AGC mode flow
- Improved multiple image captures

Version 1.8.1

- Simplified cellphone AGC mode flow
- Synchronized multiple image captures

Version 1.7.3

- Update to Cortex Decoder 17.1.0
- AIM ID will return when reader is in HID POS mode

Version 1.6.1

- Update to Cortex Decoder 16.1.44
- Added support for British Columbia DL and Colombia DL/ID
- Added support to switch from USB Keyboard to USB HID
- Fixed issue with beep volume, if set less than 30 no beep could be heard
- Fixed issue where the Raw command handler failed to respond
- Fixed issue when reading multiple configuration codes
- Fixed issue with GoCode

Version 1.5.36

- Update to Cortex Decoder 16.1.37
 - Added British Columbia Canada and Colombia DL/ID parser
 - Improved decoding of Codabar with non-uniform inter-character space.
 - Modified Codabar algorithm to allow inter-character gap to vary up to 6X.
 - Added a method to decode Codabar with wide to narrow ratio up to 5.5.
 - Enabled additional quiet zone checking to avoid partially decoding EAN13/UPC-A into UPC-E.
 - Improved Pharmacode decoding and lowered the minimum number of bars from 4 to 3 via a new setting.
 - Enhance UPC/EAN decoding.
 - Added option to disable checksum for Code 11.
 - Support IATA 2 of 5 with two different inter-character gaps.
 - Allow out of spec encoding in MicroPDF.
 - Made MSI decoding more robust when checksum is disabled.
 - Added logic to limit IATA 2of5 partial decoding.
 - Codablock A is not supported.
- Fixed an issue where the commands to immediately turn on or off targeting were not working correctly
- Fixed an issue where some settings were not getting saved through the process of a reboot
- Issue Fixes and Performance Enhancements
- Added recovery method
- Added raw data timeout
- Added parameter to pace continuous scans
- Added more motion detect parameters
- Added CFS (save all parameters not at default)
- Added firmware build option and version string
- Added CFCFR action which removes licenses
- Added parameters for controlling targeting frequency and brightness
- Added Fixed and Bypass AGC modes
- Added parameter for getting the reader model, updated the reader model type
- Added parameters for decoder options Stop Decode On Duplicate Barcode and Prefix AIM ID.
- Added DL Parsing options
- Added routine which deletes all the saved settings with CFR command
- Added PGM image support
- Added the ability to transfer images that successfully decoded, images that were unable to be decoded, or images that were captured in cellphone mode
- Removed support for Revision 1 CT8200 chips

Version 1.4.3

- Update to Cortex Decoder 16.1.15
 - Enhanced reading poorly printed Data Matrix barcodes
 - Fixed issue in MSI Plessey checksum calculations
 - Improved decode speed and aggressiveness for Code 39, I 2 of 5, and Codabar
 - Improved decoding of multiple QR Codes in the same image.
 - Fixed MaxiCode modifier misreporting
 - Fixed Japan Post mis-decoding
- Image Transfer Protocol – enable image capture
- CDC VCOM communication mode
- Motion Detection and Continuous Scan
- Duplicate Scan Delay

- Stand Detection
- Configurable inter-character delay for USB Keyboard mode
- Configurable Region of Interest
- Packet Mode (in addition to the existing Raw Mode)
- Cell phone reading enhancement
- Added support to license files that are used to enable features in the reader
- Added support for manufacturer name and part name strings
- Added the ability to store platform-specific default settings
- Updated an issue where the settings did not reflect symbology support
- Fixed an issue where the communication retry timeout was set too short
- Added the ability to set prefixes and suffixes independently.
- Fixed an issue where the handshake of the protocol could get out of order when resetting to factory defaults
- Removed the ability to read barcodes when updating firmware
- Fixed an issue where the decoder could decode multiple barcodes, even when configured not to
- Added ability to timeout and exit upgrade if the reader stops receiving data
- Removed extraneous English.xml language file
- Optimized language support for run-time execution
- Added parameter to configure number of retries from the reader
- Added the ability to add platform-specific settings file support

Version 1.2.3

- Implemented USB Keyboard intra character delays
- Added power management
- Support dual-field optics when the package includes a dual-field optical head
- Added High Speed vs Full Speed USB support
- Added USB alternate OS support
- Added support for several languages
 - Belgian French for Windows
 - US English for Windows
 - English for Apple
 - French for Windows
 - French for Apple
 - German for Apple
 - German for Windows
 - Swiss German for Apple
 - Swiss German for Windows
 - Italian for Apple
 - Japanese for Windows
 - Latin American Spanish for Windows
 - Russian for Windows
 - Spanish for Windows
 - Spanish for Apple
 - UK English for Windows
- Added control character support
- Fixed an issue where the response from a barcode command did not get sent out in keyboard mode
- Fixed an issue where in USB Keyboard mode the Caps lock was not being honored correctly
- Fixed an issue where the USB version of the CR8200 stopped working when resetting the reader.

- Fixed an issue where an exception occurred when changing communication mode to USB Keyboard using CR8200 Utility
- Fixed an issue where the reader was not able to enable 'expand EAN-8 to EAN-13'.
- Fixed an issue where sending multiple 'CFG' commands really fast crashed the reader.
- Fixed an issue where changing baud rate while rapid scanning caused forever loop
- Fixed an issue where the setting CDDTTF was set as 0 for the default instead of 30.
- Fixed an issue where the Keyboard settings all gave a negative/invalid response.
- Fixed an issue where Get commands were allowed when omitting the "G" action under certain circumstances
- Fixed an issue where the Reader locked up if a barcode is scanned before enumeration.
- Fixed an issue where the Reader got stuck as if it were holding down a key when scanning medium to large barcodes repeatedly.
- Fixed an issue where the reader was able to scan barcodes while updating
- Fixed an issue where the Reader could crash when a Windows PC booted up if the Reader was connected when it was shut down
- Fixed an issue where the PWRDWN signal was not getting set first thing in Boot code.

Version 1.1.0

- Supports USB Keyboard communication mode in US English Windows
- Fully supports USB Native communication mode
 - Firmware load
 - Command support
- Supports Manufacturing Final Qualification procedures
- Reset the firmware or firmware category with an R command

Version 1.0.1

- Initial release
- Fully supports RS232 (Serial) communication mode
 - Output decode data
 - Firmware load
 - Command support
- Partially supports USB Keyboard communication mode
 - Output decode data
- Decodes most symbologies supported by Code's CR8000 products
- CR8200 Utility software is used to configure the CR8200
- Supports both single and dual board formats of the CR8200

3. CHANGES TO DEFAULT SETTINGS

Version 1.22.5

- New feature Target bar trigger mode target time (CDOP_TT) default 1000 ms
- New feature Quiet Scanning Mode (FBIN_QM) default 0
- New command PickList Target Tolerance % (CDVA_PT) default value 150%
- Set cropping width (IMCP_WL) default now -1, this value uses the entire available width
- Set cropping height (IMCP_HL) default now -1, this value uses the entire available height
- Sleep Mode Timer Delay default time changed from 3600 ms to 8600 ms

Version 1.21.19

- CDDT_TL reverted back to an integer value of 320.

Version 1.21.15

- CDDT_TL Upper byte access problem fixed old default was 320 new default is 0x00000140

- SCSP_MO changed from NO (Normal AGC mode) to DF (Default AGC Behavior)
- FWHW_RD changed from 25 to 50, button release delay improvement
- FWHW_PD changed from 0 to 25, button release delay

Version 1.19.5

- Extra Image capture for AGC analysis and stabilization CDTP_AB, changed from 3 to 4
- Interleaved 2 Of 5 Length SYI2O5_LN, changed from 0 to 2
- Trigger control RDTC_MD, changed from 0 to 1

Version 1.16.0

- Cell phone mode is enabled by default

Version 1.15.0

- None

Version 1.12.2

- None

Version 1.11.2

- None

Version 1.10.2

- None

Version 1.10.2

- None

Version 1.9.1

- None

Version 1.8.2

- None

Version 1.8.1

- None

Version 1.7.3

- None

Version 1.6.1

- None

Version 1.5.36

- None

Version 1.5.22

- Changed AGC Desired Light parameter (CDOPAP) default value to 115
- Motion detection now begins with zero illumination
- Set default in stand duplicate scan delay to match the 950 and 8x
- Set default value for Data Formatting to off

Version 1.4.3

- Decode Timeout Factor (CDDTxTF) changed to 30 ms
- Decode Optional Parameter Low Contrast 1D (CDOPxLC) changed to Enabled (1)
- Code 11 Checksum (SYC011xCS) changed to Decode with two Checksum digits (2)
- Grid Matrix – Polarity (SYGDMXxPO) changed to Normal mode enabled - Black on white background (0)
- Good Read Indication – Frequency (Hz) (FBGRxFQ) changed to 2730 Hz
- Removed GS1 DataBar Omnidirectional & truncated (SYGS1DxOT)

- Removed (PMAMxEN, PMAMxVA)
- Removed (PMIMxEN, PMAMxVA)
- Removed (PMPOxEN, PMAMxVA)

Version 1.2.3

- None

Version 1.1.0

- None

Version 1.0.1

- 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*******

- Deprecated commands AGNO, AGTM, FBVB, RDIL, and RDST all have settings that could be reset unintentionally if using the “C” action.

5. CONFIGURATION CODES

NEW CONFIGURATION CODES: NONE

Code	Ver	Description

EXISTING CONFIGURATION CODES THAT HAVE BEEN MODIFIED: NONE

Code	Ver	Description

EXISTING CONFIGURATION CODES THAT HAVE BEEN REMOVED: NONE

Code	Ver	Description

6. FIRMWARE FILE NAMING CONVENTION

The CR8200 firmware BIN file names indicate which firmware runs on what hardware. The following breaks down the information:

Cxxxxxx_<Version>_<Product>_<Sub_product>_<Imager_type>.bin

File name part	Description	Notes	
Cxxxxxx	Unique Code internal tracking number	This number is unique for all Code firmware/hardware but has no other significance	
<Version>	The version number of this firmware in three integers as Major.Minor.Build	Major – A change to this number equates to significant changes such as breaking backwards compatibility	
		Minor – A change to this number equates to a change or addition to functionality	
		Build – A change in this number equates to an issue fix or some minor change. It is updated for every build of the firmware.	
<Product>	The product on which this firmware will run	Currently CR950 only (other values reserved for future use)	
<Sub_product>	Four alphanumeric characters describing product characteristics and sub-assemblies	1 st character	2 = CT8200 Chip Revision 2.xx
		2 nd character	A = CR8200 Optical Head M = CR8000 Optical
		3 rd character	E = Evaluation Adapter board in evaluation units 9 = CR950 Adapter board in production units
		4 th character	0 = Normal firmware (other integers reserved for future use)
<Imager_type>	Designates the optics used	L00	Single-field optics
		L01	Single-field IR-Cut optics
		L02	Dual-field optics

The CR8200 firmware CRVFW file names describe the corresponding platform associated with the file. See the table below for a breakdown of the filename:

Cxxxxxx_<Version>_<Product>_<Sub_product>_<Imager_type>.crvfw

File name part	Description	Notes	
Cxxxxxx	Unique Code internal tracking number	This number is unique for all Code firmware/hardware but has no other significance	
<Version>	The version number of this firmware in three integers as Major.Minor.Build	Major – A change to this number equates to significant changes such as breaking backwards compatibility	
		Minor – A change to this number equates to a change or addition to functionality	
		Build – A change in this number equates to an issue fix or some minor change. It is updated for every build of the firmware.	
<Product>	The product on which this firmware will run	Currently CR950 only (other values reserved for future use)	
<Sub_product>	Four alphanumeric characters describing product characteristics and sub-assemblies	1 st character	2 = CT8200 Chip Revision 2.xx
		2 nd character	A = CR8200 Optical Head M = CR8000 Optical
		3 rd character	E = Evaluation Adapter board in evaluation units 9 = CR950 Adapter board in production units
		4 th character	0 = Normal firmware (other integers reserved for future use)
<Imager_type>	Designates the optics used	L00	Single-field optics
		L01	Single-field IR-Cut optics
		L02	Dual-field optics

7. SOFTWARE/READER TOOL COMPATIBILITY

Recently upgraded Code software is available for download from Code website at www.codecorp.com/knowledge-database.php or by contacting Code Technical Support.

Software	Version
CortexTools3™	2.1.20.1 or higher

8. TECHNICAL SUPPORT INFORMATION

You may contact Code at:

Code Corporation
434 Ascension Way
Suite 300
Salt Lake City, UT 84123

Voice : 801-495-2200

Fax : 801-495-0280

Technical Support: support@codecorp.com

You can track new product releases, software updates, and technical bulletins by visiting the Code website at www.codecorp.com.

If you have technical questions, visit our website at www.codecorp.com/contact-us for phone numbers and email addresses.

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