



CR2700 Application Firmware Read Me

Version 2.8.6

July 2025

Associated firmware file versions	
CR2700	
CR2700 Firmware	2.8.6
Decoder	24.1.28
Charger A271	3.3.0

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

- This readme file contains information about the latest version of the firmware for the CR2700 hardware. Code Technical Support and/or Support for all Code products is available from Code website at:
www.codecorp.com

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1. NEW FEATURES IN THIS RELEASE

Version 2.8.6

- Integration of decoder 24.1.28
 - Fixed bug causing polarity issue in decoding QR Code.
 - Reduced stack memory usage for Low Res 1D algorithm.
 - Fixed Codabar partial decoding when part of Codabar is blocked.
 - Fixed potential divide by 0 for BC412 when using less than the required number of codewords to get a character.
 - Fixed a Data Matrix message decoding bug where FNC1 is at both first and second position.
 - No longer support Security Level 3 as related algorithm has improved.
 - Improved overall decoding speed for linear barcodes.
 - Removed duplicate decoding when decoding multiple PDF417 barcodes in one image.
 - Improved DataBar Stacked decoding speed.
 - Improved index validation for Code 128.
 - Fixed memory allocation in Low Res 1D decoding that causes error in Ubuntu Linux decoder.
 - Fixed PDF/MicroPDF uninitialized symbology modifier value.
 - Fixed a GS1 parsing bug.
 - Reduced QR Code decoding time when the finders were in certain orientations.
 - Fixed a bug in QR finder search when analyzed an area with no quiet zone.
- Added imager connectivity test pixel data to the error log.
- Added a global beep volume setting. See category FB, subcategory IN in the CCD for more details.

2. ENHANCEMENTS/IMPROVEMENTS/FIXES

Version 2.8.6

- Fixed an issue where settings could get corrupted, preventing new settings from being saved and preventing previously saved settings from being loaded.
- Fixed an issue that could cause a reader to become unresponsive, also due to settings block corruption.
- Fixed an issue with downloading files larger than 2 MB.
- Licenses in the 5000 range are no longer required to access related features.
- Improved memory management for prefix and suffix commands.
- Restored decimated image capture functionality.
- Batch "hybrid" erase mode (mode 2) renamed to "high-speed mode" and now erases data that has been offloaded if offloading is interrupted.
- Fixed an issue with settings corruption after saving many settings.
- Fixed an issue with rebooting after many scans.
- Addressed situations where batch mode wasn't disconnecting when expected. Default "Batch Mode - Host Application Delay" changed from 10 seconds to 5 seconds.
- Fixed value returned by JavaScript decode.aimModifier property.
- Changed symbology ID values for Grid Matrix (27->73), Dot Code (74->76), BC412 (27->59), and QR Model 1 (27->41).
- Improved flash memory robustness.
- Radio FW version string format (x.x.x) replaced with git hash ("XXXXXXXX"). BTRDGRV now returns <BT><RD RD="XXXXXXXX"/></BT>.
- Removed Han Xin Polarity and Mirror settings.
- Fixed an issue with erroneous output when scanning invalid configuration codes.

Version 2.7.3

- 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.
- Performance in lowlight conditions improved.
- Fixed an issue with Pick List not taking effect when off-table or out-of-stand.
- Improvements made for exit logging.
- 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 fail to program.
- Illumination channels can now be specified independently for each AGC mode.
- Added duty cycle to reader.vibrate() and reader.beep() functions.
- 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.
- Generalized bootloaders between Code products.
- Issue scanning QR Code fixed.
- Fixed an issue where JavaScript would constantly write to the error log when there was an error in a script.
- Reduced the maximum size of the error log to prevent issues with CortexTools 3 crashing when retrieving the file.
- Vibrate settings that only apply to the "good read" indication have been moved to the FBGR category.
- 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.
- Brought reader.onDecodes, rules_onDecodes, reader.onDecode, and rules_onDecode behavior in line with the JavaScript programming guide.
- Removed extra beep on UART connections.
- 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 battery parameters for products that do not have a battery.
- Fixed an issue with Quick Decode FOV check performance.
- JavaScript reader.locked property now returns true if the reader is locked. Use reader.lock(pin) and reader.unlock(pin) to lock or unlock the reader.

- 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.
- Improved file system handling speed.
- Fixed an issue with CDC mode printing out invalid characters on connection.
- Removed default JavaScript echoing of raw data in default onRawData handler.
- Improved handling when the reader runs out of memory.
- Added a JavaScript debug setting.
- 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.
- Fixed an issue where certain platform settings could not be removed individually.
- Returning "true" from onConfigure will now stop configuration indication.
- Improved focusing verification during focus testing.
- reader.getKeyboardStatus() now returns with an error value if the reader is not configured to be in a keyboard communication mode.
- 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.
- Trigger Pressed handled in continuous scan mode.
- The behavior of reader.onDecode(s) and rules_onDecode(s) has been better defined and updated. See the JavaScript programming guide for the updated behavior.
- Generalized input/output handling for extensibility.

Version 2.6.20

- In the 2.4.1 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 2.6.12, 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 2.4.1 and earlier, the input format reverted to decimal in version 2.6.19.
- 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.
- Fixed an issue where setting the Bluetooth Auto-Reconnect beep time (BTRDSRB0) wouldn't take effect.

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

Version 2.6.15

- Added support for CT8200 chip revision 2.2
- Allow upgrades to a future firmware version that supports a 3.x CT8200 chip revision

Version 2.6.12

- Added Batch Mode feature
- Added Night Mode feature
- Added capability to communicate with CodeBT SDK
- Removed the requirement of a 5014 license for driver's license parsing
- Updated decoder to 21.2.4
- Moved motion detection to DecodePlus architecture in order to improve performance
- Added the ability to adjust desired brightness target for decoding and picture capture
- Battery properties added to JavaScript to retrieve battery information
- Added control of the LED color indicators to JavaScript
- Added command that will prevent the reader from sending data to an unenumerated host.
- Added support for transitional images (normal to cellphone mode)
- Added settings to control the blinking of the Good Read LED
- Added support for future chip revisions
- Removed the warning on battery percent property
- Reconnect, Reconnect Beep, and Vender Timeout now take effect without a reboot
- 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
- Fixed an issue where the returned value from onDecodes() was not being handled correctly
- Fixed an issue where the reader object could not nest calls in JavaScript
- Improved illumination handling
- Improved Paging and charging test for manufacturing
- Recovery mode can now erase platform settings

Version 2.4.1

- Updated decoder to 21.1.20
- Fixed issue where the reader would reset around 8,000 scans

Version 2.3.1

- Updated decoder to 20.3.4
- Added support for Code 128 FNC4 symbology
- Added JavaScript control of data storage LED
- Added firmware check and correction of faulty battery status
- Fixed issue where the reader would reboot several times when in the charger and the battery was very low
- Fixed issue where upgrades on some readers resulted in the reader rebooting continuously
- Fixed issue where the reader would indicate an error if it went back into transmission range
- iOS screen toggle feature when CR2700 is connected wirelessly to an iOS device

Version 2.0.6

- Updated decoder to 20.1.9
- Updated firmware to handle new CT8200 chip
- Updated Bluetooth Radio SoftDevice
- Updated wireless LED to blink rapidly anytime the reader is attempting to connect to a peripheral device

- Improved connection handling on CR2700 when base is not available
- Improved power up behavior in the charger when a low battery is installed
- Improved .crvfw file handling
- Added configuration to return the radio chip revision
- Added support for extended Codabar checksum
- Added minimum length support Code 39, CodaBar, Code 93, Code 128, MSI Plessey
- Added ability to configure minimum and maximum BLE connection intervals in keyboard mode
- Added ability to store captured images to the filesystem
- Added ability to remove .codeRules.js files without removing other files
- Fixed issue where reader may power off when removed from the charger
- Fixed issue where good read beep volume could not be reset in JavaScript
- Fixed issue where checksum parameters were ignored for Straight 205 symbology
- Fixed issue where the length parameter was being ignored for Interleave 205 symbology
- Fixed issue where reader would remain in presentation mode when reader was removed from the base

Version 1.2.6

- Updated decoder to 19.1.13
- Added an alternate cell phone mode for better performance for high cell phone reading environments
- Fixed issue where a reader would stop scanning when exposed to large changes in ambient lighting until a reboot
- Added ability to correctly report new versions of the CT8200 processor
- Fixed issue where base would stop outputting data to the host when caps lock was enabled

Version 1.2.2

- Updated Cortex Decoder to version 18.3.8
- Added ability to scan QR configuration barcodes with the QR symbology disabled
- Added ability to retrieve BLE security information about the current Bluetooth connection
- Added ability to enable and disable cellphone mode
- Improved decoding performance when cellphone mode is enabled
- Improved robustness of A271 to CR2700 paging feature
- Fixed issue when the trigger was pressed while in the charger and presentation mode enabled, the presentation mode did not immediately resume
- Fixed issue where battery deployment date or serial number could not be set using CortexTools2
- Fixed issue after initial scan the reader would double scan if trigger was not released
- Removed vibrate indication for a successful decode when reader is in the charger
- Support for DotCode

Version 1.1.1

- Added ability to terminate paging via capacitive touch button on A271
- Added support for BLE 5 Secure Pairing
- Improved BLE firmware upgrade robustness
- Improved reader response at extremely low battery conditions when placed in the charger
- Improved connection reliability
- Fixed issue where if default JavaScript files are removed, the user was not able to scan barcodes
- Fixed issue where the reconnection notification beeps did not stop after the auto-reconnect timeout
- Fixed issue where the file listing was not returning when connected to CortexTools2 through the A271
- Fixed issue where unexpected characters returned when retrieving the battery serial number
- Updated Cortex Decoder to version 18.3.4

Version 1.0.6

- Supports Bluetooth Low Energy (BLE) HID Keyboard mode
- Supports BLE connection to A271 charging base via scanning Quick-Connect Code (QCC) or auto-reconnect (configurable)
- Wireless charging
- Supports battery health queries from host

- Setting of CR2700, A271, and battery deployment dates
- Configurable HID keyboard delays for both BLE Keyboard and A271 connection modes
- Link Lock – A271 to allow connection to only one specific CR2700
- Automatic presentation mode entry when CR2700 is placed in A271
- Battery capacity LEDs
- Power savings features
- Programmable triggers via custom JavaScripts
- CR2700 paging via A271 button
- A271 Pre-emptive mode
- Omnidirectional reading of 1D, 2D, and postal barcodes
- Dual-field optics
- Cortex Decoder 18.2.31

3. CHANGES TO DEFAULT SETTINGS

Version 2.8.6

Changes to existing setting defaults

- Bluetooth radio firmware version(BTRD_RV)now shows part of the commit hash for the radio version.
- STFS_GC set to 16-bit CRC of previous set file (GC="0xFFFFFFA" to GC="0xffffffa")
- BTRD_RS Sets the timeout for restart scan timer in milliseconds- default 1000 ms
- Changed symbology ID values for Grid Matrix (27->73), Dot Code (74->76), BC412 (27->59), and QR Model 1 (27->41).
- SYHAXN_PO Han Xin Polarity setting has been removed
- SYHAXN_MR Han Xin Mirror setting has been removed
- CDOP_SM match string validation setting default was "" is now "000000000000!,,,"
- CDOP_GP standard GS1 validation string default was "" is now "000000000000!,,,"
- CDOP_FP public sector and validation configuration string default was "" is now "000000000000!,,,"
- CDOP_UD UDI standard validation configuration string default was "" is now "000000000000!,,,"
- CDOP_IS ISO15434 standard validation configuration string default was "" is now "000000000000!,,,"
- CDOP_IO ISO15434/15418 standard validation configuration string default was "" is now "000000000000!,,,"

New setting defaults

- SYAZTC_US Aztec ultra small enable setting was added and defaults to 0
- SYC128_E2 C128 enhance method 2 setting was added and defaults to 0
- SYDATM_HD Data Matrix high density enable setting was added and defaults to 0
- SYQRCO_US QR ultra small enable setting was added and defaults to 0
- SYQRCO_HD QR high density enable setting was added and defaults to 0
- FBIN_VO Global Volume Percent setting was added and defaults to 100
- FWCM_OR (Raw Command Enable) - default 0
- FWCM_CT (Command timeout (ms)) - default 5000
- FWIM_RI (Transfer Raw Images) - default 0
- BTBM_DD (Batch Mode - Disconnect Delay) is 2000.
- BTBM_TD (Batch Mode - Offload Transfer delay (ms)) changed from 0 to 20
- BTBM_SD (Batch Mode - Host Application Delay (ms)) changed from 10000 to 5000

Version 2.7.3

- 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 2.6.20

- None

Version 2.6.15

- None

Version 2.6.12

- Radio firmware version was 2.1.0, new value is 2.2.1
- Added commands for Batch Mode control
- CMMO_AD changed from 1 to 0 for default

Version 2.4.1

- None

Version 2.3.1

- None

Version 2.0.6

- CDTF_AB Extra image capture for AGC analysis and stabilization is now 4, was 0
- SYI2O5_LN Interleaved 2 of 5 is now 2, was 0

Version 1.2.6

- CDOP_CE Cell Phone Mode, is now enabled by default

Version 1.2.2

- UPC/EAN/JAN – Send AIM Modifier changed from 0 – Do not send AIM Modifier to 1 – Send AIM Modifier

Version 1.1.1

- Bluetooth Auto-Reconnect Timeout changed from 1 minute to 5 minutes
- Bluetooth Auto-Reconnect Beep Time changed from 1 to 0. The reader will only beep once after the first reconnect attempt.

Version 1.0.6

- None

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*******

- AGBY_IS and other IS commands do not default to -1
- comm.sendUsbScanCodes doesn't work through the base
- The reader goes into an invalid state after changing the advertising name (BTRDSDN).
- Match string validation configuration string CDOP_SM and full data format string CDOPSFD can only handle up to 512 bytes of data in the command
- When MDPM_ET is set to 1 it can cause a flicker in the targeting bar
- Reader does not error beep when failing to connect to link-locked base
- Issue where targeting bar is on during image capture
- Deprecated commands AGNO, AGTM, FBVB, RDIL, and RDST all have settings that could be reset unintentionally if using the "C".

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 CR2700 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>_<Components>_<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	Major – A change to this number equates to significant changes such as breaking backwards compatibility
		Minor	Minor – A change to this number equates to a change or addition to functionality
		Build	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 CR2700 only (other values reserved for future use)	
<Components>	Four alphanumeric characters describing product characteristics and sub-assemblies	1 st character	2 = CT8200 Chip Revision 2.xx
		2 nd character	A = CR8200 Optics M = CR8000 Optics
		3 rd character	K = CR2700 Development Board for Development D = CR2700 Decode 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 or contact Code Technical Support.

Software	Version
CortexTools™3	2.1.20.1 or higher



8. TECHNICAL SUPPORT INFORMATION

You may contact Code at:

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You can track new product releases, software updates and technical bulletins by visiting the Code web page at <http://codecorp.com>.

If you have technical questions, please contact support@codecorp.com



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