

# **Configuration Control Document**

CR8200 Firmware Version 1.16.0  
CR8060 Firmware Version 1.16.0  
CR8070 Firmware Version 1.1.1  
CR950 Firmware Version 2.2.1  
CR1500 Firmware Version 1.6.5  
CR1100 Firmware Version 1.3.5  
CR2700 Firmware Version 1.2.6  
A271 Firmware Version 1.3.4  
BTDG27 Firmware version 1.3.4

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## 1 Keyword Table

These keywords are used throughout the document to show relationships between settings.

Keyword	Description
#2Of5	All 2 of 5 symbologies
#A271	Blue Tooth Base with charger
#AGC	Automatic Gain Control
#AIMId	AIM Identifier (ISO/IEC standard 15424)
#Aztec	Aztec symbology
#BC412	BC412 symbology
#BTDG27	Blue Tooth Dongle
#Codabar	Codabar symbology
#Codablock	Codablock symbology
#Code11	Code 11 symbology
#Code128	Code 128 symbology
#Code39	Code 39 symbology
#Code32	Code 32 symbology
#Code49	Code 49 symbology
#Code93	Code 93 symbology
#Communications	Used in changing the communication mode of the reader
#CompositeBarcodes	Settings that affect reading of barcodes with more than one part
#CR2700	Settings related specifically to Code Reader 2700
#CR807x	Settings related specifically to Code Reader 8071 and 8072
#CRA-B27	CRA-B27 Battery
#DataEncoding	Settings that affect incoming/outgoing data
#DataFormatting	Data Formatting settings
#DataMatrix	Data Matrix symbology
#DotCode	Dot Code symbology
#DuplicateBlock	Settings related to blocking duplicate barcodes
#EAN/JAN	EAN/JAN symbology
#GridMatrix	Grid Matrix symbology
#GS1DataBar	The GS1 DataBar family of symbologies
#HanXin	Han Xin symbology
#Image	Image cropping, ROI
#InterCharacterDelay	Settings controlling the USB keyboard inter-character delay
#Interleaved2Of5	Interleaved 2 of 5 symbology
#Maxicode	Maxicode symbology
#Message	Messages and logs
#MSIPlessey	MSI Plessey symbology
#PDF417	PDF417 symbology
#Pharmacode	Pharmacode symbology
#Postal	Postal symbologies
#QR	QR Code symbology
#Raw	Settings related to the reader accepting raw commands
#ReaderState	Settings that affect the transition from one state to another (i.e. Active to Idle)
#SerialComm	Settings related to serial communications mode

#Telepen	Telepen symbology
#Trioptic	Trioptic symbology
#UKPlessey	UK Plessey symbology
#UPC	UPC symbology

## 2 Scope

This Configuration Control Document (CCD) specifies the Reader configuration commands.

## 3 Notations

The interface protocol is described as a set of grammars, indicated by different type styles and symbols. These indications are listed in the table below.

Example	Indication	Grammar
<i>Text-Command</i>	Italic type	Syntactic categories (non-terminals)
<b>space</b>	Bold type	Terminal symbols
%xx	Byte data	In Hex
0xFF	0x prefix indicating hexadecimal	Literal byte values
'X'	Single quotes	Literal ASCII characters
SOH	All caps	Non-printable ASCII characters
esc   tab	Vertical bar	Alternatives (this or that)
<i>data<sub>opt</sub></i>	opt. (opt subscript)	Optional terminals and non-terminals
<i>crc16<sub>nr</sub></i>	nr (nr subscript)	Applies to packets sent in non-raw mode, i.e. in packet mode

## 4 Reader Command Overview

This section is intended to introduce users to the format of configuration commands a reader will accept to change and save configuration settings.

### 4.1 Configuration Command Architecture

Commands are defined as alphanumeric ASCII strings. For example, to enable Australian Post Symbology on the reader, the host will send the ASCII string SYAUPOSEN1. After the host sends a complete command, the reader will respond with a success or error message.

## 4.2 Command Format

Primary Category	Sub-Category	Action Code (S/P/R/G)	Parameter	Parameter Value (when action is S or P)
Example: SY, CM, etc.	Example: AZTC, SE etc.	S – Change and save P – Change but do not save R – Reset to default value G – Get value in effect X – Execute	Example: AL, BA , [ , etc.	String of decimal number or text

Example:

- SYAZTCSPO1: This command sets the polarity to Inverse mode of the Aztec symbology and saves it to non-volatile memory. Here is the breakdown of the command:
  - SY = Symbology
  - AZTC = Aztec
  - S = Set
  - PO = Polarity
  - 1 = Inverse Mode

Each Primary Category can have compound actions in the same command

Example:

- SYAZTCSPO1,MR1: This compound command sets the polarity to Inverse mode of the Aztec symbology and sets the ability to read mirrored Aztec codes. It saves both to non-volatile memory. Here is the breakdown of the command:
  - SY = Symbology
  - AZTC = Aztec
  - S = Set
  - PO = Polarity
  - 1 = Inverse Mode
  - MR = Mirror
  - 1 = Enable

## 4.3 Supported Commands

The CR8200 family of readers use a new command set as compared to the CR8000 family of readers. The default output style of the CR8200 readers is via XML.

The Configuration Manager is a series of commands that apply to all primary category settings. For a full output of CR8200 settings, requested by issuing the Configuration Manager command CFG, the XML contains the following elements:

```
<CFG>
    <CM>      ... </CM>      Communications
    <PM>      ... </PM>      Power Management
    <FC>      ... </FC>      Focus Testing
    <AG>      ... </AG>      Automatic Gain Control
    <CD>      ... </CD>      Decoder Control
    <SC>      ... </SC>      Scene Manager
    <SY>      ... </SY>      Symbologies
    <PK>      ... </PK>      Packet Protocol
    <IM>      ... </IM>      Image Sensor
    <JS>      ... </JS>      JavaScript
    <FW>      ... </FW>      Firmware
    <RD>      ... </RD>      Reader
    <FB>      ... </FB>      Feedback
    <LA>      ... </LA>      Language
    <MD>      ... </MD>      Motion Detection
    <EN>      ... </EN>      Encoder Image Parameters
    <ST>      ... </ST>      Storage
    <BT>      ... </BT>      Bluetooth Radio Parameters
    <Saved>    ... </Saved>  Saved Settings
    <Platform> ... </Platform> Platform Settings
</CFG>
```

Each of the above elements is a "Primary Category" in the command format and has its own configuration commands that start with the two-letter element name, which the following sections describe.

### 4.3.1 <CF> – Configuration Manager

There are other commands, besides G, in the Configuration Manager element as listed below:

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Reader Parameters	CF		G		Returns all Reader parameter values in an XML element. <b>Example:</b> CFG	
Get Saved Settings	CF		G	[^code]	[^CF]	Returns all Saved Settings in an XML element <b>Example:</b> CFG[^CF]
Get Platform Settings	CF		G	[^code]	[^PL]	Returns all Platform Settings in an XML element <b>Example:</b> CFG[^PL]

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Save All Reader Parameters not at default values.	CF		S		Save all the reader settings in the local copy to flash (Commands issued with 'P' (SUPP_P) save to local copy) <b>Example:</b> CFS	
Reset Reader Defaults - All	CF		R		Reset all Reader parameters, which support the 'R' action, to default values. <b>Note:</b> removes all saved/non-platform changes but does not remove any platform customizations or licenses <b>Example:</b> CFR	
Reset Reader Defaults - Specific	CF		R	[^code]	[^AL]	Remove all saved, platform and license parameters/data, except the Quality Data (RDQD) parameters set during the manufacturing process. (Note: This will not reset non-saved parameters – those set using the P Action Code) <b>Example:</b> CFR[^AL]
					[^LC]	Remove only License files <b>Example:</b> CFR[^LC]
					[^CF]	Remove only saved parameters which support the 'R' action <b>Example:</b> CFR[^CF]
					[^PL]	Remove only platform parameters <b>Example:</b> CFR[^PL]
					[^PM]	Has the same functionality as the generic CFR, but it preserves the current mode of communication <b>Example:</b> CFR[^PM]
					[^AM]	Has the same functionality as the CFR[^AL], but it preserves the current mode of communication after device reboot <b>Example:</b> CFR[^AM]
Reset Reader (shortcuts)	CF	CF	R	[^code]	Shortcut for performing both a CFR and CFR[^code] See CFR above	

#### 4.3.2 <CM> – Communications Parameters

Example output from CR8200. See Appendices for current default values.

```
<CM>
<GE CR="5000" />
<MO CM="UN" />
<SE BA="115200" DB="8" PA="N" SB="1" FC="0" PO="1" />
<UB MF="Code" PN="CR1500" FS="0" PD="0" />
<HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" />
<CP PM="0" />
<UK SN="1" NE="2" EM="3" IN="1000" />
<UN SN="1" IN="1000" />
<UP SN="1" />
<UV SN="0" />
<UC SN="0" />
```

</CM>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Communications Parameters	CM	CM	G		<b>Example:</b> CMCMG <b>Keyword:</b> #Communications	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Connection Retry Timeout (ms)	CM	GE	S/P/R/G	CR	If reader disconnects, it will try to reconnect after the timeout interval In milliseconds. <b>Example:</b> CMGESCR5000 <b>Keyword:</b> #Communications	
Communications Mode	CM	MO	S/P/R/G	CM	SE	RS-232 Serial <b>Example:</b> CMMOSCMSE
					UK	USB Keyboard <b>Example:</b> CMMOSCMUK
					UV	USB VCOM <b>Example:</b> CMMOSCMUV
					UN	USB HID Vendor (Similar to USB Native) <b>Example:</b> CMMOSCMUN
					UP	USB HID POS <b>Example:</b> CMMOSCMUP
					IP	USB IBM POS (surePos) <b>Example:</b> CMMOSCMIP
					UC	USB CDC VCOM <b>Example:</b> CMMOSCMUC
					BT	Bluetooth Vendor <b>Example:</b> CMMOSCMBT <b>Note:</b> Connects to base <b>Keyword:</b> #CR2700
					BK	Bluetooth Keyboard <b>Example:</b> CMMOSCMBK <b>Note:</b> Connects to host via keyboard (iOS, Android, Windows) <b>Keyword:</b> #CR2700
					<b>Keyword:</b> #Communications	
Communication Auto Detect	CM	MO	S/P/R/G	AD	Auto detect communications connection USB or RS232 <b>Example:</b> CMMOSADO to disable auto detect <b>Keyword:</b> #Communications	
RS-232 Interface – Get All parameters	CM	SE	G		Returns all serial communication parameters values in an XML element <b>Example:</b> CMSEG <b>Keyword:</b> #Communications	
RS-232 Interface – Baud Rate	CM	SE	S/P/R/G	BA	1200	1200 Bits per second <b>Example:</b> CMSESBA1200
					2400	2400 Bits per second <b>Example:</b> CMSESBA2400
					4800	4800 Bits per second <b>Example:</b> CMSESBA4800
					9600	9600 Bits per second <b>Example:</b> CMSESBA9600
					19200	19200 Bits per second <b>Example:</b> CMSESBA19200
					38400	38400 Bits per second <b>Example:</b> CMSESBA38400
					57600	57600 Bits per second <b>Example:</b> CMSESBA57600
					115200	115200 Bits per second <b>Example:</b> CMSESBA115200
					Supported Baud Rate <b>Keyword:</b> #Communications	
RS-232 Interface – Data Bits	CM	SE	S/P/R/G	DB	7	Seven data bits <b>Example:</b> CMSESDB7

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
				8	Eight data bits <b>Example:</b> CMSESDB8	
					The number of bits per character <b>Keyword:</b> #Communications	
RS-232 Interface – Stop Bits	CM	SE	S/P/R/G	SB	1 2	One stop bit <b>Example:</b> CMSESSB1 Two stop bits <b>Example:</b> CMSESSB2
						The number of stop bits sent <b>Keyword:</b> #Communications
RS-232 Interface – Parity	CM	SE	S/P/R/G	PA	N E O	None – No parity bits <b>Example:</b> CMESSPAN Even parity bit <b>Example:</b> CMESPAE Odd parity bit <b>Example:</b> CMESPAO
						A parity bit, or check bit, is a bit added to a string of binary code to ensure that the total number of 1-bits in the string is even or odd. <b>Keyword:</b> #Communications
RS-232 Interface – Flow Control	CM	SE	S/P/R/G	FC	0 1 2	Disable flow control <b>Example:</b> CMSESFC0 Enable flow control <b>Example:</b> CMSESFC1 Enable One Way flow control (Used in some POS terminals). Reader sets RTS high and waits for CTS high before sending data. Otherwise, RTS stays low. <b>Example:</b> CMSESFC2
						Transmit flow control <b>Keyword:</b> #Communications
RS-232 Interface – Signal Polarity	CM	SE	S/P/R/G	PO	0 1	Standard or non-inverted UART0 signals <b>Example:</b> CMSESPO0 Invert UART0 signals <b>Example:</b> CMSESPO1
						This allows the RS232 communication channel to communicate with a host using an inverted RS232 protocol. RS232 levels have a '1' as a negative voltage, and a '0' as a positive voltage. TTL levels define a '1' as VCC and a '0' as 0V. Thus non-inverted is RS232 levels and inverted is TTL levels. <b>Note:</b> UART1 does not have polarity control <b>Keyword:</b> #Communications
USB – Get All parameters	CM	UB	G			Returns all USB communication parameters values in an XML element <b>Example:</b> CMUBG <b>Keyword:</b> #Communications
USB – Manufacturer	CM	UB	S/P/R/G	MF		A string representing the manufacturer name for the product <b>Example:</b> CMUBSMFCODE <b>Note:</b> USB – Manufacturer doesn't support a reset ('R') on CR1500 <b>Keyword:</b> #Communications
USB – Part Number	CM	UB	S/P/R/G	PN		A string representing the part number or name for the product <b>Example:</b> CMUBSPNCR8200 <b>Note:</b> USB – Part Number doesn't support a reset ('R') on CR1500 <b>Keyword:</b> #Communications
USB – High Speed or Full Speed	CM	UB	S/P/R/G	FS	0 1	Disable Full Speed USB communications <b>Example:</b> CMUBSFS0 Enable Full Speed USB communications <b>Example:</b> CMUBSFS1

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					<p><b>Note:</b> Some hosts have USB ports that aren't fast enough to support high speed communication, so they must use full speed</p> <p><b>Keyword:</b> #Communications</p>	
USB – Presence Delay (ms)	CM	UB	S/P/R/G	PD	<p>This setting will cause the reader to delay before presenting as a device on the USB bus</p> <p><b>Example:</b> CMUBSPD10000</p> <p><b>Keyword:</b> #Communications</p>	
HID Keyboard – Get All parameters	CM	HD	G		<p>Returns all HID Keyboard parameters values in an XML element</p> <p><b>Example:</b> CMHGDG</p> <p><b>Keyword:</b> #Communications</p>	
HID Keyboard – Inter-Character Delay (ms)	CM	HD	S/P/R/G	IC	<p>This is the time between sending consecutive characters to the host in milliseconds</p> <p><b>Valid Range:</b> 0 - 10000</p> <p><b>Example:</b> CMHDSIC4</p> <p><b>Note:</b> See Appendix A</p> <p><b>Keyword:</b> #Communications #InterCharacterDelay</p>	
HID Keyboard – Inter-Scan Delay (ms)	CM	HD	S/P/R/G	IS	<p>This is the time between sending two non-zero scan codes in milliseconds</p> <p><b>Valid Range:</b> 0 - 10000</p> <p><b>Example:</b> CMHDSIS4</p> <p><b>Note:</b> See Appendix A</p> <p><b>Keyword:</b> #Communications</p>	
HID Keyboard – Release Delay (ms)	CM	HD	S/P/R/G	RL	<p>This is the time between the last non-zero scan code and sending release (all keys up) in milliseconds</p> <p><b>Valid Range:</b> 0 - 10000</p> <p><b>Example:</b> CMHDSRL4</p> <p><b>Note:</b> See Appendix A</p> <p><b>Keyword:</b> #Communications</p>	
HID Keyboard Control Characters	CM	HD	S/P/R/G	CC	0	Use default language special keyboard character encoding
					1	Use Ctrl+<char>
					2	Use Alt+<Keypad>
					3	Use Alt+0<Keypad>
						<b>Keyword:</b> #DataEncoding
HID Keyboard Decode Data Input Conversion	CM	HD	S/P/R/G	IE	0	ASCII – No Conversion
					1	ASCII to Unicode Code point
					2	UTF-8 to Unicode Code point
						This setting tells the reader how to report non-ASCII codes to the host. This only applies to keyboard communication modes. When this setting is non-zero, there must be an appropriate output conversion set (e.g., CMHDSOMn where "n" is a non-zero value).
HID Keyboard Decode Data Output Conversion	CM	HD	S/P/R/G	OM	0	Unicode or ASCII as XML Lookup
					1	Unicode as Windows Alt-Sequence
						<b>Example:</b> CMHDSOM0
						<b>Example:</b> CMHDSOM1
						<b>Note:</b> This parameter is only relevant when HID Keyboard Decode Data Input Conversion is greater than 0

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					2	Output Unicode as Thai characters IEC8859.11 This requires that the control characters be output as Alt+<Keypad> <b>Example:</b> CMHDSOM2
						This setting with a non-zero value requires the conversion of barcode data to Unicode (e.g., CMHDSIEn where "n" is a non-zero value) in order to output Unicode code points to the host system. <b>CMHDSIE2</b> <b>CMHDSCC2</b> <b>Keyword:</b> #DataEncoding
HID Keyboard Windows code page for Extended ASCII Characters	CM	HD	S/P/R/G	EA	0	Append leading zero (Code page 1232) <b>Example:</b> CMHDEAO
					1	Do not append leading zero (Code page 437) <b>Example:</b> CMHDEA1
						Extended ASCII characters [0x80, 0xFF] are output as alt-sequences with or without a leading zero which Windows uses to determine whether to display the character from CP1232 or CP437. This only applies when the HID Keyboard Decode Data Output Method is set to Unicode as Windows Alt-Sequence. <b>Keyword:</b> #DataEncoding
Communication Protocol	CM	CP	S/P/R/G	PM	0	Raw Mode <b>Example:</b> CMCPSPM0
					1	Packet Mode <b>Example:</b> CMCPSPM1
					2	Legacy Mode <b>Example:</b> CMCPSPM2
						<b>Keyword:</b> #Communications <b>Keyword:</b> #Raw
USB Keyboard – Get All parameters	CM	UK	G			Returns all USB Keyboard parameters values in an XML element <b>Example:</b> CMUKG <b>Keyword:</b> #Communications
USB Keyboard – Number of Endpoints	CM	UK	S/P/R/G	NE	1	One endpoint (IN) <b>Example:</b> CMUKSNE1
					2	Two endpoints (both IN and OUT) <b>Example:</b> CMUKSNE2
						The USB HID class keyboard is designed with an IN endpoint that communicates keystrokes to the computer and an optional OUT endpoint that communicates the status of the keyboard's LEDs from the computer to the device. Different hosts require different numbers of endpoints. <b>Keyword:</b> #Communications
USB Keyboard – Declaration Wait State	CM	UK	S/P/R/G	EM	0	Declare enumeration when addressed <b>Example:</b> CMUKSEM0
					1	Declare enumeration after receipt of output report <b>Example:</b> CMUKSEM1
					2	Declare enumeration after receipt of get report descriptor <b>Example:</b> CMUKSEM2
					3	Enumerate either after receiving output report or after Get report descriptor report is received <b>Example:</b> CMUKSEM3
						Choose when to have the device declare enumeration as a keyboard, in the special case when the USB device doesn't require host keyboard response <b>Keyword:</b> #Communications
USB Keyboard – Use Serial Number for the USB identification string	CM	UK	S/P/R/G	SN	0	Disable USB Keyboard <b>Example:</b> CMUKSSN0
					1	Enable USB Keyboard <b>Example:</b> CMUKSSN1

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					Use serial number, if it is set, uses the reader's actual serial number for the USB identification strings. In some cases, however, more than one device is connected to a modem, and needs to report a serial number of '0000000' in order to properly register on the modem. <b>Keyword:</b> #Communications	
USB Keyboard – IN Endpoint Polling Interval ( $\mu$ s)	CM	UK	S/P/R/G	IN	Controls the USB HID Keyboard IN Endpoint Polling Interval <b>Example:</b> CMUFSIN1000 <b>Keyword:</b> #Communications	
USB Keyboard – Product ID	CM	UK	S/P/R/G	PD	The product ID of the reader reported when in USB Keyboard mode. <b>Example:</b> CMUVSPD0x8201	
USB Vendor get all parameters	CM	UN	G		Returns all USB Vendor parameters values in an XML element <b>Example:</b> CMUNG <b>Keyword:</b> #Communications	
USB Vendor – Use Serial Number for the USB identification string	CM	UN	S/P/R/G	SN	0	Disable USB Vendor <b>Example:</b> CMUNSSN0
					1	Enable USB Vendor <b>Example:</b> CMUNSSN1
					Use serial number, if it is set, uses the reader's actual serial number for the USB identification strings. In some cases, however, more than one device is connected to a modem, and needs to report a serial number of '0000000' in order to properly register on the modem. <b>Keyword:</b> #Communications	
USB Vendor – IN Endpoint Polling Interval ( $\mu$ s)	CM	UN	S/P/R/G	IN	Controls the USB HID Vendor IN Endpoint Polling Interval <b>Example:</b> CMUNSIN1000 <b>Keyword:</b> #Communications	
USB Vendor – Product ID	CM	UN	S/P/R/G	PD	The product ID of the reader reported when in USB Vendor mode. <b>Example:</b> CMUVSPD0x8202	
USB HIDPOS get all parameters	CM	UP	G		Returns all USB HIDPOS parameters values in an XML element <b>Example:</b> CMUPG <b>Keyword:</b> #Communications	
USB HID POS – Use Serial Number for the USB identification string	CM	UP	S/P/R/G	SN	0	Disable USB HID POS <b>Example:</b> CMUPSSN0
					1	Enable USB HID POS <b>Example:</b> CMUPSSN1
					Use serial number, if it is set, uses the reader's actual serial number for the USB identification strings. In some cases, however, more than one device is connected to a modem, and needs to report a serial number of '0000000' in order to properly register on the modem. <b>Keyword:</b> #Communications	
USB HID POS – Product ID	CM	UP	S/P/R/G	PD	The product ID of the reader reported when in USB HID POS mode. <b>Example:</b> CMUVSPD0x8203	
USB IBM POS (surePos) – Use Serial Number for the USB identification string	CM	IP	S/P/R/G	SN	0	Use reader serial number as USB id string
					1	Use "0000000000" as USB id string
USB IBM POS – Product ID	CM	IP	S/P/R/G	PD	The product ID of the reader reported when in USB IBM POS mode. <b>Example:</b> CMUVSPD0x8253	
USB Vcom get all parameters	CM	UV	G		Returns all USB VCom parameters values in an XML element <b>Example:</b> CMUVG <b>Keyword:</b> #Communications	
USB Vcom – Product ID	CM	UV	S/P/R/G	PD	The product ID of the reader reported when in USB VCOM mode. <b>Example:</b> CMUVSPD0x8210	
USB VCOM – Use Serial Number for the USB	CM	UV	S/P/R/G	SN	0	Disable USB VCOM <b>Example:</b> CMUVSSN0

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples					
identification string					1	Enable USB VCOM <b>Example:</b> CMUVSSN1				
					Use serial number, if it is set, uses the reader's actual serial number for the USB identification strings. In some cases, however, more than one device is connected to a modem, and needs to report a serial number of '0000000' in order to properly register on the modem. <b>Keyword:</b> #Communications					
USB CDC – Use Serial Number for the USB identification string	CM	UC	S/P/R/G	SN	0	Disable USB CDC <b>Example:</b> CMUCSSN0				
					1	Enable USB CDC <b>Example:</b> CMUCSSN1				
					Use serial number, if it is set, uses the reader's actual serial number for the USB identification strings. In some cases, however, more than one device is connected to a modem, and needs to report a serial number of '0000000' in order to properly register on the modem. <b>Keyword:</b> #Communications					
USB CDC – Product ID	CM	UC	S/P/R/G	PD	The product ID of the reader reported when in USB CDC mode. <b>Example:</b> CMUCSPD0x8211					

#### 4.3.3 <PM> – Power Management Parameters

Example output from CR2700. See Appendices for current default values.

```
<PM>
  <SD EN="1" VA="7200" />
</PM>
```

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Power Management Parameters	PM	PM	G		Returns all Power management parameters values in an XML element. <b>Example:</b> PMPMG	
Standby Mode Timer	PM	SB	S/P/R/G	EN	0	Disable Standby Mode Timer <b>Example:</b> PMSBSENO
					1	Enable Standby Mode Timer <b>Example:</b> PMSBSEN1
					Enabling the Standby Mode Timer allows the reader to enter a lower power consumption mode. This setting does not affect the reader going into idle state. <b>Note:</b> Supported by CR8072 <b>Keyword:</b> #CR807x	
Standby Mode Timer Delay (ms)	PM	SB	S/P/R/G	VA	If Standby Mode Timer is enabled, reader will go into Standby Mode after this timer has expired. <b>Example:</b> PMSBSVA5000 <b>Note:</b> Supported by CR8072 <b>Keyword:</b> #CR807x	
Sleep Mode Timer	PM	SM	S/P/R/G	EN	0	Disable Sleep Mode Timer <b>Example:</b> PMMSMSENO
					1	Enable Sleep Mode Timer <b>Example:</b> PMMSMSEN1
					The Standby Mode Timer must be enabled for the reader to go into sleep mode. <b>Note:</b> Supported by CR8072 <b>Keyword:</b> #CR807x	

Sleep Mode Timer Delay (ms)	PM	SM	S/P/R/G	VA	<p>If both Standby Timer and Sleep Timer are enabled, Reader will go into Sleep Mode after this timer has expired.</p> <p><b>Example:</b> PMSMSVA3600</p> <p><b>Note:</b> Supported by CR8072</p> <p><b>Keyword:</b> #CR807x</p>	
Sleep Mode Timer – Maintain Connection	PM	SM	S/P/R/G	MC	0	Disconnect from host in Sleep Mode Example: PMSMSMCO
					1	Retain connection in Sleep Mode Example: PMSMSMC1
					<p><b>Note:</b> Supported by CR8072</p> <p><b>Keyword:</b> #CR807x</p>	
Power Mode Enter Sleep	PM	ES			<p>Force the reader to go into Sleep mode even if Standby Timer and Sleep Timer are disabled. This command should be sent as RAW. The reader will immediately go into sleep mode after receiving this command.</p> <p>Example: PMES</p> <p><b>Keyword:</b> #Raw</p>	
Power off Mode Timer	PM	SD	S/P/R/G	EN	0	Disable Power off Mode Timer <b>Example:</b> PMSDSEN0
					1	Enable Power off Mode Timer <b>Example:</b> PMSDSEN1
					<p>The power off mode timer must be enabled for the reader to go into power off mode.</p> <p><b>Note:</b> Supported by CR2700</p> <p><b>Keyword:</b> #CR2700</p>	
Power off Mode Timer Delay (s)	PM	SD	S/P/R/G	VA	<p>If power off mode is enabled, the reader will power off after this timer expires in seconds</p> <p><b>Example:</b> PMSDSVA7200</p> <p><b>Note:</b> Supported by CR2700</p> <p><b>Keyword:</b> #CR2700</p>	
Power Off Reader	PM	SD	X	PD	<p>Powers off the reader.</p> <p><b>Example:</b> PMSDXPD</p> <p><b>Note:</b> Supported by CR2700</p> <p><b>Keyword:</b> #CR2700</p>	

#### 4.3.4 <AG> – Automatic Gain Control (AGC) Parameters

Example output from CR8200. See Appendices for current default values.

<AG>

```

<CR CX="300" CY="300" PX="0" PY="0" ES="0" ED="0" LT="8" LP="200" HT="85"
HP="200" />
<NO E1="100" E2="1400" E3="3200" E4="5600" E5="7500" E6="9200" />
<TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
<BY IL="50" EX="4000" GN="0"/>
<FX BP="50" />

```

</AG>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Get All AGC Parameters	AG	AG	G		Returns all AGC parameters values in an XML element <b>Example:</b> AGAGG <b>Keyword:</b> #AGC
AGC Control – Window width	AG	CR	S/P/R/G	CX	Set the contrast window width in pixels <b>Example:</b> AGCRSCX300 <b>Keyword:</b> #AGC

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
AGC Control – Window height	AG	CR	S/P/R/G	CY	Set the contrast window height pixels <b>Example:</b> AGCRSCY300 <b>Keyword:</b> #AGC	
AGC Control Window - X offset	AG	CR	S/P/R/G	PX	Set the contrast window's horizontal offset from the center of the image (default is 0). Use positive values to move the window to the right and negative values to move it to the left. <b>Example:</b> AGCRSPX175 <b>Note:</b> This setting value is ignored if AGC Control Window – Enable re-positioning is disabled <b>Keyword:</b> #Image <b>Keyword:</b> #AGC	
AGC Control Window - Y offset	AG	CR	S/P/R/G	PY	Set the contrast window's vertical offset from the center of the image (default is 0). Use positive values to move the window upwards and negative values to move it downwards. <b>Example:</b> AGCRSPY255 <b>Note:</b> This setting value is ignored if AGC Control Window – Enable re-positioning is disabled <b>Keyword:</b> #Image <b>Keyword:</b> #AGC	
AGC Control Window - Re-positioning	AG	CR	S/P/R/G	ES	0	Disable repositioning the contrast window <b>Example:</b> AGCRSE0
					1	Enable repositioning the contrast window <b>Example:</b> AGCRSES1  <b>Keyword:</b> #Image <b>Keyword:</b> #AGC
AGC Control Window - Drawing Boundaries	AG	CR	S/P/R/G		0	Disable drawing visible boundaries to show the contrast window edges <b>Example:</b> AGCRSE0
				ED	1	Enable drawing visible boundaries embedded in the image to show the contrast window edges <b>Example:</b> AGCRSED1  <b>Keyword:</b> # Image <b>Keyword:</b> #AGC
Quality Low Threshold	AG	CR	S/P/R/G		LT	Control quality calculations-Quality Low Threshold <b>Example:</b> AGCRSLT8 <b>Keyword:</b> #AGC
Quality Low Factor	AG	CR	S/P/R/G		LP	Control quality calculations-Quality Low Factor <b>Example:</b> AGCRSLP200 <b>Keyword:</b> #AGC
Quality High Threshold	AG	CR	S/P/R/G	HT	Control quality calculations-Quality High Threshold <b>Example:</b> AGCRSHT85 <b>Keyword:</b> #AGC	
Quality High Factor	AG	CR	S/P/R/G		HP	Control quality calculations-Quality High Factor <b>Example:</b> AGCRSHP200 <b>Keyword:</b> #AGC
Maximum illumination during Motion Detection <b>DEPRECATED</b>	AG	CR	S/P/R/G	MB	See MDPM command XI parameter.	
AGC minimum time limit (ms)	AG	TM	S/P/R/G	MN	AGC minimum time limit in milliseconds <b>Example:</b> AGTMSMN5 <b>Keyword:</b> #AGC	
AGC high quality time limit (ms)	AG	TM	S/P/R/G	HQ	AGC High Quality time limit in milliseconds <b>Example:</b> AGTMSHQ360 <b>Keyword:</b> #AGC	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
AGC Medium Quality time limit (ms)	AG	TM	S/P/R/G	MQ	AGC Medium Quality time limit in milliseconds <b>Example:</b> AGTMSMQ320 <b>Keyword:</b> #AGC
AGC Low Quality time limit (ms)	AG	TM	S/P/R/G	LQ	AGC Low Quality time limit in milliseconds <b>Example:</b> AGTMSLQ120 <b>Keyword:</b> #AGC
Timeout multiplier (FP24_8)	AG	TM	S/P/R/G	MT	Timeout multiplier (FP24_8) <b>Example:</b> AGTMSMT0x00000100 <b>Keyword:</b> #AGC
AGC high quality percentage	AG	TM	S/P/R/G	HP	AGC High Quality percentage <b>Example:</b> AGTMSHP80 <b>Keyword:</b> #AGC
AGC Medium Quality percentage	AG	TM	S/P/R/G	MP	AGC Medium Quality percentage <b>Example:</b> AGTMSMP20 <b>Keyword:</b> #AGC
AGC Low Quality percentage	AG	TM	S/P/R/G	LP	AGC Low Quality percentage <b>Example:</b> AGTMSLP10 <b>Keyword:</b> #AGC
AGC - Bypass Mode – Illumination Percent	AG	BY	S/P/R/G	IL	Overrides the illumination setting with the user-provided illumination setting when the AGC is set to bypass mode <b>Example:</b> AGBYSIL50 <b>Keyword:</b> #AGC
AGC - Bypass Mode – Exposure (μs)	AG	BY	S/P/R/G	EX	Overrides the exposure setting with the user-provided exposure setting when the AGC is set to bypass mode in microseconds <b>Example:</b> AGBYSEX4000 <b>Keyword:</b> #AGC
AGC - Bypass Mode – Gain Percent	AG	BY	S/P/R/G	GN	Overrides the gain setting with the user-provided gain setting when the AGC is set to bypass mode <b>Example:</b> AGBYSGN0 <b>Keyword:</b> #AGC
AGC - Fixed Mode –Percent	AG	FX	S/P/R/G	BP	When the AGC is in fixed mode, this value selects the point on the AGC curve from which to make calculations. <b>Valid Range:</b> 0 to 100. <b>Example:</b> AGFXSBP50 <b>Keyword:</b> #AGC

#### 4.3.5 <SC> – Scene Manager Parameters

Example output from CR8200. See Appendices for current default values.

<SC>

<SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />

</SC>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Scene Manager Parameters	SC	SC	G		Returns all Scene Manager parameters values in an XML element <b>Example:</b> SCSCG	
Scene Manager Mode	SC	SP	S/P/R/G	MO	NO	Normal AGC Mode <b>Example:</b> SCSPSMONO
					BY	Bypass AGC Mode (user can manually set image capture parameters <b>Example:</b> SCSPSMOBY)
					FX	Fixed AGC Mode <b>Example:</b> SCSPSMOFX

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Bypass Illumination <b>DEPRECATED</b>	SC	SP	S/P/R/G	IL	Bypasses the illumination setting when the AGC is set to bypass mode <b>Example:</b> SCSPSIL50 <b>Note:</b> THIS COMMAND HAS BEEN REPLACED BY AGBY_IL
Bypass Exposure <b>DEPRECATED</b>	SC	SP	S/P/R/G	EX	Bypasses the exposure setting when the AGC is set to bypass mode <b>Example:</b> SCSPSEX4000 <b>Note:</b> THIS COMMAND HAS BEEN REPLACED BY AGBY_EX
Bypass Gain <b>DEPRECATED</b>	SC	SP	S/P/R/G	GN	Bypasses the gain setting when the AGC is set to bypass mode <b>Example:</b> SCSPSGN50 <b>Note:</b> THIS COMMAND HAS BEEN REPLACED BY AGBY_GN
Percent <b>DEPRECATED</b>	SC	SP	S/P/R/G	FP	When the AGC is in fixed mode, this value selects the point on the AGC curve from which to make calculations. Valid values from 0 to 100. <b>Example:</b> SCSPSFP50 <b>Note:</b> THIS COMMAND HAS BEEN REPLACED BY AGFX_BP

#### 4.3.6 <CD> – Decoder Parameters

Example output from CR8200. See Appendices for current default values.

<CD>

```

<DP BE="0" BD="0" PD="0" PL="0" LC="0" BI="0" BH="0" />
<DT CD="0" TD="0" />
<OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" PT="0" SE="0" AP="115"
    AT="0" SD="0" FQ="0" UT="1" MD="0" DI="0" RD="612756" AS="0" VF="0" GB="0" NC="0"
    N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD="" IS=""
    IO="" XX="" />
<VA TT="1600" BD="0" BT="0" EB="0" />
<IM ET="1" />
<TP TE="0" RO="0" AB="0" CB="0" XO="0" YO="0" WD="1280" HT="960"/>

```

</CD>

See section [4.5 Data Formatting](#) for more information

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Decoder Parameters	CD	CD	G		Returns all CortexDecoder parameters values in an XML element <b>Example:</b> CDCDG	
Direct Part Mark Decoding	CD	DP	G		Returns all Direct Part Mark (DPM) decoding parameters <b>Example:</b> CDDPG	
DPM Basic Etch	CD	DP	S/P/R/G	BE	0	Disable DPM Basic Etch <b>Example:</b> CDDPSBE0
					1	Enable DPM Basic Etch <b>Example:</b> CDDPSBE1
					This basic etch mode can read basic laser/chemical etched image	
DPM Basic Dots	CD	DP	S/P/R/G	BD	0	Disable DPM Basic Dots <b>Example:</b> CDDPSBD0
					1	Enable DPM Basic Dots <b>Example:</b> CDDPSBD1
					The basic dots mode can read easy inkjet and dot peen images	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
DPM Dot Peen DL	CD	DP	S/P/R/G	PD	0	Disable DPM Dot Peen DL <b>Example:</b> CDDPSPD0
					1	Enable DPM Dot Peen DL <b>Example:</b> CDDPSPD1
					This mode is the most robust method for reading dark dots on light background <b>Note:</b> Requires license 5013	
DPM Dot Peen LD	CD	DP	S/P/R/G	PL	0	Disable DPM Dot Peen LD <b>Example:</b> CDDPSPL0
					1	Enable DPM Dot Peen LD <b>Example:</b> CDDPSPL1
					This mode is the most robust method for reading light dots on dark background <b>Note:</b> Requires license 5013	
DPM Laser Chem	CD	DP	S/P/R/G	LC	0	Disable DPM Laser Chem <b>Example:</b> CDDPSLC0
					1	Enable DPM Laser Chem <b>Example:</b> CDDPSLC1
					This mode is the most robust method for reading laser/chem etch marks <b>Note:</b> Requires license 5013	
DPM Basic Inkjet	CD	DP	S/P/R/G	BI	0	Disable DPM Basic Inkjet <b>Example:</b> CDDPSB0
					1	Enable DPM Basic Inkjet <b>Example:</b> CDDPSB1
					The mode can read poor quality inkjet image	
DPM Basic Handheld	CD	DP	S/P/R/G	BH	0	Enable DPM Basic Handheld <b>Example:</b> CDDPSBH0
					1	Enable DPM Basic Handheld <b>Example:</b> CDDPSBH1
					This mode can read good quality laser marks and normal barcode labels from images captured from a handheld reader that are more centered in the image but can have severe perspective distortion	
Decoder Timing – Get All Parameters	CD	DT	G		Returns all decoder timing parameter values in an XML element. <b>Example:</b> CDDTG	
Decode Time Limit (ms)	CD	DT	S/P/R/G	TL	Amount of time in milliseconds that CortexDecoder uses for decode attempt before returning a decode failure. <b>Example:</b> CDDTSTL9830720 9830720 = 0x00960140 (0x0096 = 150; 0x0140 = 320) with 320ms is total time and 150ms is for barcode locate time	
Continuous scan image capture delay (ms)	CD	DT	S/P/R/G	CD	Limit the rate of image capturing in milliseconds during continuous scan. <b>Example:</b> CDDTSCD100	
Trigger mode image capture delay (ms)	CD	DT	S/P/R/G	TD	Limit the rate of image capturing during normal trigger mode. <b>Example:</b> CDDSTD100	
Get All Decoder Operational Parameters	CD	OP	G		Returns all CortexDecoder Operational parameter values in an XML element <b>Example:</b> CDOPG	
Maximum Decodes Per Read	CD	OP	S/P/R/G	PR	The reader will process up to this number of barcodes per read. If there are more barcodes in the field of view and target tolerance, only the first ones found will be decoded. <b>Valid Range:</b> 1 to 16 <b>Example:</b> CDOPSPR2	
Ensure Region of Interest	CD	OP	S/P/R/G	RO	0	Disable Ensure ROI <b>Example:</b> CDOPSRO0
					1	Enable Ensure ROI <b>Example:</b> CDOPSRO1

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					Only decoded barcodes that are completely inside the region of interest. When disabled, barcode may be decoded as long as it is partially inside the ROI <b>Keyword:</b> #Image	
Region of Interest Leftmost pixel	CD	OP	S/P/R/G	RL	ROI Left is the x or column coordinate of the ROI upper-left corner. Default value is 0 <b>Example:</b> CDOPSRLO <b>Keyword:</b> #Image	
Region of Interest Topmost pixel	CD	OP	S/P/R/G	RT	ROI Top is the y or row coordinate of the ROI top-left corner. Default value is 0 <b>Example:</b> CDOPSRTO <b>Keyword:</b> #Image	
Region of Interest width (pixels)	CD	OP	S/P/R/G	RW	ROI width – The width of the ROI rectangle. Default value is 0, indicating the full image width is used. <b>Example:</b> CDOPSRW0 <b>Keyword:</b> #Image	
Region of Interest height (pixels)	CD	OP	S/P/R/G	RH	ROI height – The height of the ROI rectangle. Default value is 0, indicating the full image height is used. <b>Example:</b> CDOPSRHO <b>Keyword:</b> #Image	
					<b>Note</b> Whenever these values are non-zero, the decoder only attempts decoding barcodes within or partially within this area. The only way to disable this feature is set RL, RT, RW, RH back to 0	
Low Contrast Mode for 1D Barcodes	CD	OP	S/P/R/G	LC	0	Disable Low Contrast Mode <b>Example:</b> CDOPSLCO
					1	Enable Low Contrast Mode <b>Example:</b> CDOPSLC1
					Low contrast mode enable inverse images to be decoded more easily.	
Low Contrast Mode for 1D Barcodes	CD	OP	S/P/R/G	EC	0	Disable Enhance Contrast Mode <b>Example:</b> CDOPSECO
					1	Enable Enhance Contrast Mode <b>Example:</b> CDOPSEC1
					Enhance contrast mode enables DPM images to be decoded more easily.	
Select decode Preferred Field of interest	CD	OP	S/R/P/G	PF	0	This setting tells the decoder to attempt decoding in the HD Field <b>Example:</b> CDOPSPF0
					1	This setting tells the decoder to attempt decoding in the WF Field <b>Example:</b> CDOPSPF1
					2	This setting tells the decoder to analyze both fields and decode based on the field most likely to decode based on AGC calculations <b>Example:</b> CDOPSPF2
					<b>Note:</b> Not supported by Single Optics	
AGC Logging Form	CD	OP	S/P/R/G	LA	0	Disable AGC logging <b>Example:</b> CDOPSLA0
					1	Enable AGC logging in XML formatter form with time stamps <b>Example:</b> CDOPSLA1
					2	Enable AGC logging in raw form <b>Example:</b> CDOPSLA2
					3	Enable AGC extended logging in raw form <b>Example:</b> CDOPSLA3
					<b>Note:</b> To avoid missing characters use RDCMXDL with CDOPSLA1 exclusively. <b>Note:</b> To avoid extraneous characters use RDCMXRL with CDOPSLA2 and CDOPSLA3 exclusively. <b>Keyword:</b> #Message #AGC	
Field of Interest (FOI) Zoom	CD	OP	S/P/R/G	ZR	0	Disable FOI Zoom <b>Example:</b> CDOPSZR0

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					1	Enable FOI Zoom <b>Example:</b> CDOPSZR1
Increase the FOI resolution to robustly decode small barcodes when FOI is set to sub-region of the entire FOI. For faster speed, set FOI width * FOI height < 320 * 480.						
Send Aim ID	CD	OP	S/P/R/G	AS	0	Disable Send Aim ID <b>Example:</b> CDOPSAS0
					1	Enable Send Aim ID <b>Example:</b> CDOPSAS1
					<b>Keyword:</b> #AIMId	
Select Aim ID Position	CD	OP	S/P/R/G	PI	0	Before prefix <b>Example:</b> CDOPSPIO
					1	After prefix, before decode data <b>Example:</b> CDOPSPI1
					2	Positioned according to Data formatting string <b>Example:</b> CDOPSPI2
					<b>Keyword:</b> #AIMId	
Enable Cellphone Settings <b>DEPRECATED</b>	CD	OP	S/P/R/G	CI	0	Disable Cellphone Settings <b>Example:</b> CDOPSC10
					1	Enable Cellphone Settings <b>Example:</b> CDOPSC11
					Deprecated command that enabled cellphone settings in the decoder for <u>very old</u> iPhone screens so the decoder could process barcodes on the old screens. No longer needed as the very old iPhones are no longer in service and current iPhone screens are readable. <b>Keyword:</b> #Cellphone	
1D Barcode Aggressiveness	CD	OP	S/P/R/G	SE	0	Most Aggressive <b>Example:</b> CDOPSS0
					1	Less Aggressive for poorly printed 1D barcodes <b>Example:</b> CDOPSS1
					2	Least Aggressive for poorly printed 1D barcodes <b>Example:</b> CDOPSS2
					11	Less Aggressive for 1D barcodes with low module size <b>Example:</b> CDOPSS11
					12	Least Aggressive for 1D barcodes with low module size <b>Example:</b> CDOPSS12
					This tells the decoder that it can enforce the barcode standard more or less aggressively on poorly printed codes.	
Decode Attempt Timeout (ms)	CD	OP	S/P/R/G	AT	Decode attempt timeout in milliseconds (was sticky time) <b>Example:</b> CDOPSAT500	
Stop Decoding on Duplicate	CD	OP	S/P/R/G	SD	0	Enable Stop Decoding on Duplicate <b>Example:</b> CDOPSSD0
					1	Disable Stop Decoding on Duplicate <b>Example:</b> CDOPSSD1
					Instruct the decoder to stop looking for decodes in the current image when a duplicate is found	
Cellphone Mode Enable	CD	OP	S/P/R/G	CE	0	Disable Cellphone reading mode <b>Example:</b> CDOPSCEO
					1	Enable Cellphone reading mode <b>Example:</b> CDOPSCE1
					2	Enable alternate Cellphone reading mode <b>Example:</b> CDOPSCE2

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					Enables the reading of barcodes on cellphone screens in the decoder so it will properly decode barcodes from a light-emissive surface instead of a light-absorbent surface. Alternate cellphone mode captures two images, and compares the image quality which it uses to decide which image to attempt to decode. <b>Keyword:</b> #Cellphone	
Transfer Images	CD	OP	S/P/R/G	DI	0	Disable transferring images <b>Example:</b> CDOPPDIO
					1	Enable transferring images <b>Example:</b> CDOPPDI1
					When image transfer is enabled, each image captured by the reader will be sent as a stream of data to the host. The host is responsible for assembling the stream and saving it as a file. <b>Note:</b> This command enables transfer of all decoded, non-decoded and cellphone images. This command is a global enable and is linked to FWIM_DI, FWIM_NI, FWIM_CI.	
Decode Mode	CD	OP	S/P/R/G	MD	0	Trigger Mode <b>Example:</b> CDOPSMDO
					1	Motion Detection Mode <b>Example:</b> CDOPSMID1 <b>Note:</b> Not supported by #CR5200, refer to RDPM_OT or RDPM_FT
					2	Continuous scan Mode <b>Example:</b> CDOPSMID2 <b>Note:</b> Not supported by #CR5200, refer to RDPM_OT or RDPM_FT
					These values dictate the scanning mode in which to run the reader by default. Trigger mode will scan when a button or trigger is pressed, motion detection mode will scan when the scanner is stationary and detects motion, and continuous scan means the scanner is always attempting a scan.	
Data Formatting Enable	CD	OP	S/P/R/G	DF	0	Disable Data Formatting <b>Example:</b> CDOPSDFO
					1	Enable Data Formatting <b>Example:</b> CDOPSDFI1
					May be used in conjunction with a configuration string CDOPSFID, or prefix/suffix settings, or other special formatting like upper/lower case or output as hex. <b>Note:</b> May be used in conjunction with CDOP_DV to add data formatting to a validation type. <b>Keyword:</b> #DataFormatting	
Data validation selection For use with cd 17.2.x <b>REPLACES CDOP_FO</b>	CD	OP	S/P/R/G	DV	0	Disable data validation/parsing <b>Example:</b> CDOPSDV0
					1	DL / ID public sector parsing <b>Note:</b> Requires configuration string see CDOP_FP <b>Note:</b> Requires license 5014 <b>Example:</b> CDOPSDV1
					2	DL / ID public sector parsing output in JSON format <b>Example:</b> CDOPSDV2 <b>Note:</b> Requires license 5014
					3	Simple age verification <b>Example:</b> CDOPSDV3 <b>Note:</b> Does not require configuration string <b>Note:</b> Requires license 5017
					4	Match string validation <b>Example:</b> CDOPSDV4 <b>Note:</b> Requires configuration string see CDOP_SM

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Data format option selection <b>DEPRECATED</b> With cd 17.2.x (See CDOP_DV for more options)	CD	OP	S/P/R/G	FO	5	GS1 validation <b>Example:</b> CDOPSDV5 <b>Note:</b> Requires configuration string see CDOP_GP <b>Note:</b> Requires license 5019
					6	UDI validation <b>Example:</b> CDOPSDV6 <b>Note:</b> Requires configuration string see CDOP_UD <b>Note:</b> Requires license 5020
					7	ISO 15434 validation <b>Example:</b> CDOPSDV7 <b>Note:</b> Requires configuration string see CDOP_IS
					8	ISO 15434 before ISO 15418 validation <b>Example:</b> CDOPSDV8 <b>Note:</b> Requires configuration string see CDOP_IO
					9	Perform Success & Raw validation. Success & Raw means return both parsed data and raw data [4 chars parsed data length][parsed data][raw data] <b>Example:</b> CDOPSDV9
					Selects data validation or data parsing option applied to decoded data <b>Keyword:</b> #DataFormatting	
					0	Don't format data output <b>Example:</b> CDOPSFOO
					1	Format data with prefix/suffix or data configuration string <b>Example:</b> CDOPSFO1
					2 / 12	2 - Perform match string validation 12 - Perform match string validation and Data Formatting <b>Example:</b> CDOPSFO2
					3 / 13	3 - Perform GS1 validation 13 - Perform GS1 validation and Data Formatting <b>Note:</b> Requires license 5019 <b>Example:</b> CDOPSFO3
					4 / 14	4 - Perform UDI validation 14 - Perform UDI validation and Data Formatting <b>Example:</b> CDOPSFO4 <b>Note:</b> Requires license 5020
					5 / 15	5 - Perform ISO15434 validation 15 - Perform ISO15434 validation and Data Formatting <b>Example:</b> CDOPSFO5
					6 / 16	6 - Perform ISO15434 & ISO15418 validation 16 - Perform ISO15434 & ISO15418 validation and Data Formatting <b>Example:</b> CDOPSFO6
					7/17	<del>7 - Perform Simple Age verification using configuration string</del> <del>17 - Perform Simple Age verification using configuration string and Data Formatting</del> <b>Note:</b> Requires a license <b>Example:</b> CDOPSFO7 <b>REPLACED</b> — See commands CDOPSFO8/CDOPSFO18
					8/18	8 - Perform Simple Age verification 18 - Perform Simple Age verification and Data Formatting <b>Example:</b> CDOPSFO8 <b>Note:</b> Requires license 5017
					9/19	9 - Perform DL Parsing with configuration string 19 - Perform DL Parsing with configuration string and Data Formatting <b>Example:</b> CDOPSFO9 <b>Note:</b> Requires license 5014

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					10/20	10 - Perform DL Parsing without configuration 20 - Perform DL Parsing without configuration and Data Formatting <b>Example:</b> CDOPSFO10 <b>Note:</b> Requires license 5014
					11	Perform Success & Raw validation. Success & Raw means return both parsed data and raw data [4 chars parsed data length][parsed data][raw data] <b>Example:</b> CDOPSFO11
					<b>Keyword:</b> #DataFormatting	
Prefix	CD	OP	S/P/R/G	PX	Prefix added to start of the data decoded from a barcode. The prefix string must be enclosed in double quotes and it is recommended that any non-alphanumeric values be represented by hexadecimal values denoted by a forward slash, as in the example below. Hexadecimal values can be found in an appendix to this document. <b>Example:</b> CDOPSPX"/09" <b>Note:</b> Data format option selection must be set to 1 for this setting to have an effect <b>Keyword:</b> #DataFormatting	
Suffix	CD	OP	S/P/R/G	SX	Suffix added to the end of the data decoded from a barcode. The suffix string must be enclosed in double quotes and it is recommended that any non-alphanumeric values be represented by hexadecimal values denoted by a forward slash, as in the example below. Hexadecimal values can be found in an appendix to this document. <b>Example:</b> CDOPSSX"/0D" <b>Note:</b> Data format option selection must be set to 1 for this setting to have an effect <b>Note:</b> Until revision 1.7.5, the CR950 had a default suffix of <Windows Enter> <b>Keyword:</b> #DataFormatting	
Convert output text	CD	OP	S/P/R/G	FC	0	No change to case formatting of decoded text <b>Example:</b> CDOPSFC0
					1	Convert decoded text to upper case <b>Example:</b> CDOPSFC1
					2	Convert decoded text to lower case <b>Example:</b> CDOPSFC2
					3	Convert decoded text to bracketed hex bytes Barcode contents of 03400704 would produce output of: <30><33><34><30><30><37><30><34> <b>Example:</b> CDOPSFC3
					Data formatting output case/hex <b>Note:</b> Data format option selection must be set to 1 for this setting to have an effect <b>Keyword:</b> #DataFormatting	
Full data format string	CD	OP	S/P/R/G	FD	Data formatting raw format configuration string <b>Example:</b> CDOPSF<"string"> <b>Note:</b> This is enabled by setting data formatting enable to true (CDOPSDF1). <b>Note:</b> When FD is set, Prefix and Suffix are ignored <b>Keyword:</b> #DataFormatting	
Public sector & validation configuration string	CD	OP	S/P/R/G	FP	Validation & Public sector configuration string <b>Example:</b> CDOPSPF<"string"> <b>Note:</b> Data Validation option must be set to 1 for this setting to have an effect (CDOPSDV1) <b>Keyword:</b> #DataFormatting	
Match string validation configuration string	CD	OP	S/P/R/G	SM	Match String validation configuration string <b>Example:</b> CDOPSSM<"string"> <b>Note:</b> Data Validation option must be set to 4 for this setting to have an effect (CDOPSDV4) <b>Keyword:</b> #DataFormatting	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
GS1 standard validation configuration string	CD	OP	S/P/R/G	GP	GS1 standard validation configuration string <b>Example:</b> CDOPSGP<"string"> <b>Note:</b> Data format option must be set to 5 for this setting to have an effect (CDOPSDV5) <b>Keyword:</b> #DataFormatting	
UDI standard validation configuration string	CD	OP	S/P/R/G	UD	This configuration string is used for validation of FDA UDI Standard Validation (HIBCC-UDI, GS1-UDI, ICCBBA-UDI) barcode data. <b>Example:</b> CDOPSDV<"string"> <b>Note:</b> The Data Validation option must be set to 6 for UDI validation (CDOPSDV6) <b>Keyword:</b> #DataFormatting	
ISO15434 standard validation configuration string	CD	OP	S/P/R/G	IS	This configuration string is used to validate ISO/IEC 15434 Standard barcodes <b>Example:</b> CDOPSIIS <"string"> <b>Note:</b> Data Validation option be set to 7 (CDOPSDV7) <b>Keyword:</b> #DataFormatting	
ISO15434/15418 standard validation configuration string	CD	OP	S/P/R/G	IO	This configuration string is used to validate ISO/IEC 15434 followed by ISO/IEC 15418 validation and requires the <b>Example:</b> CDOPSIIO <"string"> <b>Note:</b> Data Validation option be set to 8 (CDOPSDV8) <b>Keyword:</b> #DataFormatting	
Targeting LED	CD	OP	S/P/R/G	UT	0	Disables targeting LED during capture <b>Example:</b> CDOPSUTO
					1	Enables targeting LED during capture <b>Example:</b> CDOPSTU1
					This command allows or prevents the reader from turning on the blue targeting LED when capturing an image.	
Verifone Support	CD	OP	S/P/R/G	VF	0	Disable Verifone formatting <b>Example:</b> CDOPSVFO
					1	Enable Verifone formatting <b>Example:</b> CDOPSVF1
Gilbarco Support	CD	OP	S/P/R/G	GB	0	Disable Gilbarco formatting <b>Example:</b> CDOPSGBO
					1	Enable Gilbarco formatting <b>Example:</b> CDOPSGB1
NCR Register Support (Option 1)	CD	OP	S/P/R/G	NC	0	Disable NCR formatting <b>Example:</b> CDOPSNCO
					1	Enable NCR formatting <b>Example:</b> CDOPSN1
NCR Register Support (Option 2)	CD	OP	S/P/R/G	N2	0	Disable NCR2 formatting <b>Example:</b> CDOPSN20
					1	Enable NCR2 formatting <b>Example:</b> CDOPSN21
Wincor Nixdorf Support	CD	OP	S/P/R/G	WN	0	Disable Wincor Nixdorf formatting <b>Example:</b> CDOPSWNO
					1	Enable Wincor Nixdorf formatting <b>Example:</b> CDOPSWN1
Target Tolerance (percent)	CD	VA	S/P/R/G	TT	For a reader to accept a barcode, it must be within the specified distance from the center of the image. The distance is defined as a percentage of the barcode's smaller dimension. For example, with a 10 x 20 mm barcode and a setting of 150 (%), the barcode must be within 15 mm of the center of the image. Any value over 1000 is considered infinite tolerance, and no target checking is performed. This is sometimes referred to as picklist mode. <b>Valid Range:</b> 1 to 1000 <b>Example:</b> CDVASTT1600	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Duplicate Block Time (ms)	CD	VA	S/P/R/G	BT	The additional time the reader will be prevented from decoding identical barcodes. This time is added on to the Default Block Time. <b>Example:</b> CDVASBT100 <b>Note:</b> Duplicate Block time has to be enable (CDVASBD1) <b>Keyword:</b> #DuplicateBlock	
Default Block Time (ms)	CD	VA	S/P/R/G	EB	The default time to prevent the reader from decoding identical barcodes <b>Example:</b> CDVASEB100 <b>Keyword:</b> #DuplicateBlock	
Enable Duplicate Block Time	CD	VA	S/P/R/G	BD	0	Disable – do not block duplicates <b>Example:</b> CDVASBDO
					1	Enable – block duplicates <b>Example:</b> CDVASBD1
					Setting enables or disables blocking duplicate barcodes. If enabled, the amount of time that duplicate barcodes will be blocked is Default Block Time + Duplicate Block Time <b>Keyword:</b> #DuplicateBlock	
Stand Detection enable <b>DEPRECATED</b>	CD	ST	S/P/R/G	SE	0	Disable stand detect <b>Example:</b> CDSTSSEO
					1	Enable stand detect <b>Example:</b> CDSTSSE1
					Setting allows the reader to detect whether or not it is in a stand, and follow in stand or out of stand behaviors. <b>Note: THIS COMMAND HAS BEEN REPLACED BY RDST_SE</b> <b>Note:</b> Supported by CR950 only	
Stand Duplicate Delay (ms) <b>DEPRECATED</b>	CD	ST	S/P/R/G	SD	When the reader is in the stand, block reading of duplicate barcodes for this long. In milliseconds <b>Note: THIS COMMAND HAS BEEN REPLACED BY RDST_SD</b> <b>Note:</b> Supported by CR950 only	
Command for take pictures	CD	TP	X	EV	Allows the reader to take a picture (Only captures, does not decode any data). <b>Example:</b> CDTPXEV1	
Use trigger to take pictures	CD	TP	S/P/R/G	TE	0	Disables image capture with a trigger press. <b>Example:</b> CDTPSTE0
					1	Enables image capture with a trigger press. <b>Example:</b> CDTPSTE1
Rotate picture	CD	TP	S/P/R/G	RO	Rotates picture by 90, 180, or 270 degrees. No rotation for any other values. <b>Default value:</b> 0 (in degrees) <b>Example:</b> CDTPSRO270 <b>Valid Numbers:</b> 0, 90, 180, 270, 360 (in degrees)	
Preferred Field of interest (FOI) for taking pictures	CD	TP	S/R/P/G	PF	0	Select the HD "Field Of Interest"(FOI) for taking a picture <b>Example:</b> CDTPSPFO
					1	Select the Wide "Field Of Interest"(FOI) for taking a picture <b>Example:</b> CDTPSPF1
					2	Select both HD and Wide fields for taking a picture <b>Example:</b> CDTPSPF2
					<b>Note:</b> This is only applicable to AGC calculations and has no effect on decoding nor on the size of image, and the entire image will be sent with every picture taken.	
Extra image capture for AGC analysis and stabilization	CD	TP	S/P/R/G	AB	Sets number of images to capture before the requested image, used to tune the AGC. Since all the images are written into the same buffer, only the last image is actually preserved. <b>Example:</b> CDTPSAB3	
Convert picture to black and white	CD	TP	S/P/R/G	CB	0	Disable converting an image from grayscale to black & white <b>Example:</b> CDTPSCB0

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					1	Enable converting an image from grayscale to black & white <b>Example:</b> CDTSCB1
						Converts an image from grayscale to black & white
Window of interest - X coordinate	CD	TP	S/P/R/G	XO		Set picture window of interest starting X coordinate <b>Valid Range:</b> 0 - 1280 <b>Example:</b> CDTPSX00 <b>Note:</b> This is only effective when picture FOI is set to full image (CDTPSPF2)
Window of interest - Y coordinate	CD	TP	S/P/R/G	YO		Set picture window of interest starting Y coordinate <b>Valid Range:</b> 0 - 960 <b>Example:</b> CDTPSY00 <b>Note:</b> This is only effective when picture FOI is set to full image (CDTPSPF2)
Window of interest - width	CD	TP	S/P/R/G	WD		Set picture window of interest width <b>Valid Range:</b> 0 - 1280 <b>Example:</b> CDTPSWD1280 <b>Note:</b> This is only effective when picture FOI is set to full image (CDTPSPF2)
Window of interest - height	CD	TP	S/P/R/G	HT		Set picture window of interest height <b>Valid Range:</b> 0 - 960 <b>Example:</b> CDTPSHT960 <b>Note:</b> This is only effective when picture FOI is set to full image (CDTPSPF2)
Encode Type <b>DEPRECATED</b>	CD	IM	S/P/R/G	ET	1	RAW Image Format
					2	PGM Image Format
					3	JPEG Image Format
					This is a setting to select the format of the image being captured <b>Note:</b> THIS COMMAND HAS BEEN REPLACED BY ENIM_ET	

#### 4.3.7 <SY> – Symbology Parameters

Example output from CR8200. See Appendices for current default values.

<SY>

```

<AZTC EN="1" PO="0" MR="0" />
<B412 EN="0" RD="0" />
<C128 EN="1" />
<CBAR EN="1" CS="0" SS="0" />
<CO11 EN="0" CS="2" SC="0" />
<CO32 EN="0" />
<CO39 EN="1" EA="0" CS="0" SS="0" />
<CO93 EN="1" />
<COMP EN="0" />
<DATM EN="1" PO="2" MR="0" RE="1" RX="0" />
<GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />
<H2O5 EN="0" />
<I2O5 EN="1" CO="0" LN="0" />
<M2O5 EN="0" />
<MSIP EN="0" CS="0" SC="0" PE="0" />
<N2O5 EN="0" CS="0" />
<P417 EN="1" MI="0" />
<PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />

```

```

<QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />
<S2O5 EN="0" />
<TELP EN="0" OA="0" />
<TRIO EN="0" RV="0" SS="0" />
<UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" EC="0" NO="0" ES="0"
    DC="0" C8="0" AM="0" />
<CODF EN="0" />
<AUPO EN="0" SC="0" />
<CAPO EN="0" />
<CO49 EN="0" />
<GDMX EN="0" PO="0" MR="0" />
<HAXN EN="0" PO="0" MR="0" />
<JAPO EN="0" />
<KIX0 EN="0" />
<KOPO EN="0" />
<MAXC EN="0" />
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />

```

</SY>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Symbology Parameters	SY	ALLS	G		Returns all symbology values in a single XML element <b>Example:</b> SYALLSG	
Australian Post – Get All Parameters	SY	AUPO	G		Returns all Australian post parameter values in an XML element <b>Example:</b> SYAUPOG <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
Australian Post	SY	AUPO	S/P/R/G	EN	0	Disable Australian Post <b>Example:</b> SYAUPOSENO
					1	Enable Australian Post <b>Example:</b> SYAUPOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
Australian Post – Remove Checksum	SY	AUPO	S/P/R/G	SC	0	Transmit Australian Post Checksum <b>Example:</b> SYAUPOSSCO
					1	Do not transmit Australian Post Checksum <b>Example:</b> SYAUPOSSC1
					This setting value is ignored if Australian Post decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
Aztec – Get All Parameters	SY	AZTC	G		Returns all Aztec parameter values in an XML element <b>Example:</b> SYAZTCG <b>Keyword:</b> #Aztec	
Aztec	SY	AZTC	S/P/R/G	EN	0	Disable Aztec <b>Example:</b> SYAZTCSENO

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					1	Enable Aztec <b>Example:</b> SYAZTCSEN1  <b>Keyword:</b> #Aztec
					0	Normal mode enabled - Black on white background <b>Example:</b> SYAZTCSPO0
Aztec – Polarity	SY	AZTC	S/P/R/G	PO	1	Inverse mode enabled - White on black background <b>Example:</b> SYAZTCSPO1
					2	Both normal and inverse modes enabled <b>Example:</b> SYAZTCSPO2
					<b>Note:</b> This setting value is ignored if Aztec decoding is disabled <b>Keyword:</b> #Aztec	
					0	Disable Aztec – Mirror <b>Example:</b> SYAZTCMRO
Aztec – Mirror	SY	AZTC	S/P/R/G	MR	1	Enable Aztec – Mirror <b>Example:</b> SYAZTCMR1
					The ability to decode an Aztec code that has been printed as a mirror image of a standard Aztec. <b>Note:</b> This setting value is ignored if Aztec decoding is disabled <b>Keyword:</b> #Aztec	
BC412 – Get All Parameters	SY	B412	G		Returns all BC412 parameter values in an XML element <b>Example:</b> SYB412G <b>Keyword:</b> #BC412	
BC412	SY	B412	S/P/R/G	EN	0	Disable BC412 <b>Example:</b> SYB412SEN0
					1	Enable BC412 <b>Example:</b> SYB412SEN1
					<b>Keyword:</b> #BC412	
					0	Disable BC412 – Reverse Decoding <b>Example:</b> SYB412SRD0
BC412 – Reverse Decoding	SY	B412	S/P/R/G	RD	1	Enable BC412 – Reverse Decoding <b>Example:</b> SYB412SRD1
					Enable reading BC412 barcodes printed in light colors on a dark background (reverse printing) <b>Note:</b> This setting value is ignored if BC412 decoding is disabled <b>Keyword:</b> #BC412	
					0	Disable Canada Post <b>Example:</b> SYCAPOSEN0
					1	Enable Canada Post <b>Example:</b> SYCAPOSEN1
Canada Post	SY	CAPO	S/P/R/G	EN	<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
					0	Disable Codabar <b>Example:</b> SYCBARSEN0
					1	Enable Codabar <b>Example:</b> SYCBARSEN1
					<b>Keyword:</b> #Codabar	
Codabar	SY	CBAR	S/P/R/G	EN	0	Disable checksum check and output checksum if one exists <b>Example:</b> SYCBARSCS0
					1	Enable Codabar mod16 checksum
					0	Disable checksum check and output checksum if one exists <b>Example:</b> SYCBARSCS0
					1	Enable Codabar mod16 checksum
Codabar – Require Checksum	SY	CBAR	S/P/R/G	CS	0	Disable checksum check and output checksum if one exists <b>Example:</b> SYCBARSCS0
					1	Enable Codabar mod16 checksum

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
						<b>Example:</b> SYCBARSCS1
					2	Enable Codabar mod16 checksum and strip check character <b>Example:</b> SYCBARSCS2
					3	Enable Codabar 7DR checksum <b>Example:</b> SYCBARSCS3
					4	Enable checksum 7DR checksum and strip check character <b>Example:</b> SYCBARSCS4
					5	Enable either mod16 or 7DR checksum <b>Example:</b> SYCBARSCS5
					6	Enable either mod16 or 7DR checksum and strip check character <b>Example:</b> SYCBARSCS6
					<b>Note:</b> This setting value is ignored if Codabar decoding is disabled <b>Keyword:</b> #Codabar	
Codabar – Start/Stop Characters	SY	CBAR	S/P/R/G	SS	0	Transmit Codabar Start/Stop Characters <b>Example:</b> SYCBARSS0
					1	Do not transmit Codabar Start/Stop Characters <b>Example:</b> SYCBARSS1
					<b>Note:</b> This setting value is ignored if Codabar decoding is disabled <b>Keyword:</b> #Codabar	
Codabar – Set minimum decode length	SY	CBAR	S/P/R/G	ML	This sets the minimum data length to be decoded. If shorter than specified length, the reader will not decode the data <b>Example:</b> SYCBARSML2 <b>Note:</b> This setting value is ignored if Codabar decoding is disabled <b>Keyword:</b> #Codabar	
Codablock F	SY	CODF	S/P/R/G	EN	0	Disable Codablock F <b>Example:</b> SYCODFSEN0
					1	Enable Codablock F <b>Example:</b> SYCODFSEN1
					<b>Keyword:</b> #Codablock	
Code 11 – Get All Parameters	SY	CO11	G		Returns all Code 11 parameter values in an XML element. <b>Example:</b> SYCO11G <b>Keyword:</b> #Code11	
Code 11	SY	CO11	S/P/R/G	EN	0	Disable Code 11 <b>Example:</b> SYCO11SEN0
					1	Enable Code 11 <b>Example:</b> SYCO11SEN1
					<b>Keyword:</b> #Code11	
Code 11 – Require Checksum	SY	CO11	S/P/R/G	CS	0	Decode with checksum check disabled <b>Example:</b> SYCO11SCS0
					1	Decode with one checksum digits checked <b>Example:</b> SYCO11SCS1
					2	Decode with two checksum digits checked <b>Example:</b> SYCO11SCS2
					<b>Note:</b> This setting value is ignored if Code 11 decoding is disabled <b>Keyword:</b> #Code11	
Code 11 – Remove Checksum	SY	CO11	S/P/R/G	SC	0	Transmit Code 11 Checksum <b>Example:</b> SYCO11SSC0
					1	Do not transmit Code 11 Checksum <b>Example:</b> SYCO11SSC1
					<b>Note:</b> This setting value is ignored if Code 11 decoding is disabled <b>Keyword:</b> #Code11	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Code 32	SY	CO32	S/P/R/G	EN	0	Disable Code 32 <b>Example:</b> SYCO32SEN0
					1	Enable Code 32 <b>Example:</b> SYCO32SEN1
					<b>Keyword:</b> #Code32	
Code 39 – Get All Parameters	SY	CO39	G		Returns all Code39 parameter values in an XML element <b>Example:</b> SYCO39G <b>Keyword:</b> #Code39	
Code 39	SY	CO39	S/P/R/G	EN	0	Disable Code 39 <b>Example:</b> SYCO39SEN0
					1	Enable Code 39 <b>Example:</b> SYCO39SEN1
					<b>Keyword:</b> #Code39	
Code 39 – MOD 43 Checksum Character	SY	CO39	S/P/R/G	CS	0	Disable MOD 43 checksum check and output checksum if one exists <b>Example:</b> SYCO39SCS0
					1	Enable MOD 43 checksum check and output checksum <b>Example:</b> SYCO39SCS1
					2	Enable MOD 43 checksum check and do not output checksum from decode data <b>Example:</b> SYCO39SCS2
					<b>Note:</b> This setting value is ignored if Code 39 decoding is disabled <b>Keyword:</b> #Code39	
Code 39 – Extended ASCII	SY	CO39	S/P/R/G	EA	0	Disable support of Extended ASCII <b>Example:</b> SYCO39SEA0
					1	Enable support of Extended ASCII <b>Example:</b> SYCO39SEA1
					<b>Note:</b> This setting value is ignored if Code 39 decoding is disabled <b>Keyword:</b> #Code39	
Code 39 – Start/Stop Characters	SY	CO39	S/P/R/G	SS	0	Do not transmit Code 39 Start/Stop Characters <b>Example:</b> SYCO39SSS0
					1	Transmit Code 39 Start/Stop Characters <b>Example:</b> SYCO39SSS1
					<b>Note:</b> This setting value is ignored if Code 39 decoding is disabled <b>Keyword:</b> #Code39	
Code 39 – Set minimum decode length	SY	CO39	S/P/R/G	ML	This sets the minimum data length to be decoded. If shorter than specified length, the reader will not decode the data <b>Example:</b> SYCO39ML1 <b>Note:</b> This setting value is ignored if Code 39 decoding is disabled <b>Keyword:</b> #Code39	
Code 49	SY	CO49	S/P/R/G	EN	0	Disable Code 49 <b>Example:</b> SYCO49SEN0
					1	Enable Code 49 <b>Example:</b> SYCO49SEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Code49	
Code 93 – Get All Parameters	SY	CO93	G		Returns all Code 93 parameter values in an XML element <b>Example:</b> SYCO93G <b>Keyword:</b> #Code93	
Code 93	SY	CO93	S/P/R/G	EN	0	Disable Code 93 <b>Example:</b> SYCO93SEN0
					1	Enable Code 93 <b>Example:</b> SYCO93SEN1

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					<b>Keyword:</b> #Code93	
Code 93 – Set minimum decode length	SY	CO93	S/P/R/G	ML	This sets the minimum data length to be decoded. If shorter than specified length, the reader will not decode the data <b>Example:</b> SYCO93SML1 <b>Keyword:</b> #Code93	
Code 128 – Get All Parameters	SY	C128	G		Returns all Code 128 parameter values in an XML element <b>Example:</b> SYC128G <b>Keyword:</b> #Code128	
Code 128	SY	C128	S/P/R/G	EN	0	Disable Code 128 <b>Example:</b> SYC128SENO
					1	Enable Code 128 <b>Example:</b> SYC128SEN1
					<b>Keyword:</b> #Code128	
Code 128 – Set minimum decode length	SY	C128	S/P/R/G	ML	This sets the minimum data length to be decoded. If shorter than specified length, the reader will not decode the data <b>Example:</b> SYC128SML1 <b>Keyword:</b> #Code128	
Composite	SY	COMP	S/P/R/G	EN	0	Disable Composite <b>Example:</b> SYCOMPSENO
					1	Enable Composite <b>Example:</b> SYCOMPSEN1
					<b>Keyword:</b> #CompositeBarcodes	
Data Matrix – Get All Parameters	SY	DATM	G		Returns all Data matrix parameter values in an XML element <b>Example:</b> SYDATMG <b>Keyword:</b> #DataMatrix	
Data Matrix	SY	DATM	S/P/R/G	EN	0	Disable Data Matrix <b>Example:</b> SYDATMSENO
					1	Enable Data Matrix <b>Example:</b> SYDATMSEN1
					<b>Keyword:</b> #DataMatrix	
Data Matrix – Polarity	SY	DATM	S/P/R/G	PO	0	Normal mode enabled - Black on white background <b>Example:</b> SYDATMSPO0
					1	Inverse mode enabled - White on black background <b>Example:</b> SYDATMSPO1
					2	Both normal and inverse modes enabled <b>Example:</b> SYDATMSPO2
					<b>Note:</b> This setting value is ignored if Data Matrix decoding is disabled <b>Keyword:</b> #DataMatrix	
Data Matrix – Mirror	SY	DATM	S/P/R/G	MR	0	Disable decoding Data Matrix barcodes printed as a mirror image of a normal Data Matrix <b>Example:</b> SYDATMSMR0
					1	Enable decoding Data Matrix barcodes printed as a mirror image of a normal Data Matrix <b>Example:</b> SYDATMSMR1
					<b>Note:</b> This setting value is ignored if Data Matrix decoding is disabled <b>Keyword:</b> #DataMatrix	
Data Matrix Rectangular	SY	DATM	S/P/R/G	RE	0	Disable Data Matrix Rectangular <b>Example:</b> SYDATMSRE0
					1	Enable Data Matrix Rectangular <b>Example:</b> SYDATMSRE1
					<b>Note:</b> This setting value is ignored if Data Matrix decoding is disabled <b>Keyword:</b> #DataMatrix	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Data Matrix Rectangular Extended	SY	DATM	S/P/R/G	RX	0	Disable Data Matrix Rectangular Extended <b>Example:</b> SYDATMSRX0
					1	Enable Data Matrix Rectangular Extended <b>Example:</b> SYDATMSRX1
					<b>Note:</b> This setting value is ignored if Data Matrix decoding is disabled <b>Keyword:</b> #DataMatrix	
Dot Code – Get All Parameters	SY	DTCO	G		Returns all Dot Code parameter values in an XML element <b>Example:</b> SYDTCOG <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #DotCode	
Dot Code	SY	DTCO	S/P/R/G	EN	0	Disable Dot Code <b>Example:</b> SYDTCOSEN0
					1	Enable Dot Code <b>Example:</b> SYDTCOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #DotCode	
Dot Code	SY	DTCO	S/P/R/G	PO	0	Normal mode enabled - Black on white background <b>Example:</b> SYDTCOSPO0
					1	Inverse mode enabled - White on black background <b>Example:</b> SYDTCOSPO1
					2	Both normal and inverse modes enabled <b>Example:</b> SYDTCOSPO2
					<b>Note:</b> This setting value is ignored if Dot Code decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #DotCode	
Dot Code	SY	DTCO	S/P/R/G	MR	0	Disable Dot Code – Mirror <b>Example:</b> SYDTCOSMRO
					1	Enable Dot Code – Mirror <b>Example:</b> SYDTCOSMR1
					<b>Note:</b> This setting value is ignored if Dot Code decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #DotCode	
Grid Matrix – Get All Parameters	SY	GDMX	G		Returns all Grid Matrix parameter values in an XML element. <b>Example:</b> SYGDMXG <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #GridMatrix	
Grid Matrix	SY	GDMX	S/P/R/G	EN	0	Disable Grid Matrix <b>Example:</b> SYGDMXSENO
					1	Enable Grid Matrix <b>Example:</b> SYGDMXSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #GridMatrix	
Grid Matrix – Polarity	SY	GDMX	S/P/R/G	PO	0	Normal mode enabled - Black on white background <b>Example:</b> SYGDMXSPO0
					1	Inverse mode enabled - White on black background <b>Example:</b> SYGDMXSPO1
					2	Both normal and inverse modes enabled <b>Example:</b> SYGDMXSPO2
					<b>Note:</b> This setting value is ignored if Grid Matrix decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #GridMatrix	
Grid Matrix – Mirror	SY	GDMX	S/P/R/G	MR	0	Disable Grid Matrix – Mirror <b>Example:</b> SYGDMXSMR0

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					1	Enable Grid Matrix – Mirror <b>Example:</b> SYGDMXSMR1
						The ability to decode an Aztec code that has been printed as a mirror image of a standard Grid Matrix. <b>Note:</b> This setting value is ignored if Grid Matrix decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #GridMatrix
GS1 DataBar – Get All Parameters	SY	GS1D	G			Returns all GS1 DataBar parameter values in an XML element <b>Example:</b> SYGS1DG <b>Keyword:</b> #GS1DataBar
GS1 DataBar Omnidirectional/GS1 DataBar Truncated	SY	GS1D	S/P/R/G	EN	0	Disable GS1 DataBar Omnidirectional/GS1 DataBar Truncated <b>Example:</b> SYGS1DSEN0
					1	Enable GS1 DataBar Omnidirectional/GS1 DataBar Truncated <b>Example:</b> SYGS1DSEN1
						<b>Keyword:</b> #GS1DataBar
GS1 DataBar Stacked/ GS1 DataBar Stacked Omnidirectional	SY	GS1D	S/P/R/G	ST	0	Disable GS1 DataBar Stacked/ GS1 DataBar Stacked Omnidirectional <b>Example:</b> SYGS1DSST0
					1	Enable GS1 DataBar Stacked/ GS1 DataBar Stacked Omnidirectional <b>Example:</b> SYGS1DSST1
						<b>Keyword:</b> #GS1DataBar
GS1 DataBar Expanded	SY	GS1D	S/P/R/G	EX	0	Disable GS1 DataBar Expanded <b>Example:</b> SYGS1DSEX0
					1	Enable GS1 DataBar Expanded <b>Example:</b> SYGS1DSEX1
						<b>Keyword:</b> #GS1DataBar
GS1 DataBar Expanded Stacked	SY	GS1D	S/P/R/G	ES	0	Disable GS1 DataBar Expanded Stacked <b>Example:</b> SYGS1DSES0
					1	Enable GS1 DataBar Expanded Stacked <b>Example:</b> SYGS1DSES1
						<b>Keyword:</b> #GS1DataBar
GS1 DataBar Limited	SY	GS1D	S/P/R/G	LI	0	Disable GS1 DataBar Limited <b>Example:</b> SYGS1DSL0
					1	Enable GS1 DataBar Limited <b>Example:</b> SYGS1DSL1
						<b>Keyword:</b> #GS1DataBar
Han Xin – Get All Parameters	SY	HAXN	G			Returns all Han Xin parameter values in an XML element <b>Example:</b> SYHAXNG <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #HanXin
Han Xin	SY	HAXN	S/P/R/G	EN	0	Disable Han Xin <b>Example:</b> SYHAXNSE0
					1	Enable Han Xin <b>Example:</b> SYHAXNSE1
						<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #HanXin
Han Xin – Polarity	SY	HAXN	S/P/R/G	PO	0	Normal mode enabled - Black on white background <b>Example:</b> SYHAXNSP00
					1	Inverse mode enabled - White on black background <b>Example:</b> SYHAXNSP01
					2	Both normal and inverse modes enabled <b>Example:</b> SYHAXNSP02

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					<b>Note:</b> This setting value is ignored if Han Xin decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #HanXin	
Han Xin – Mirror	SY	HAXN	S/P/R/G	MR	0	Disable Han Xin – Mirror <b>Example:</b> SYHAXNSMRO
					1	Enable Han Xin – Mirror <b>Example:</b> SYHAXNSMRO1
					<b>Note:</b> This setting value is ignored if Han Xin decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #HanXin	
Hong Kong 2 of 5	SY	H2O5	S/P/R/G	EN	0	Disable Hong Kong 2 of 5 <b>Example:</b> SYH2O5SEN0
					1	Enable Hong Kong 2 of 5 <b>Example:</b> SYH2O5SEN1
					<b>Keyword:</b> #2Of5	
Interleaved 2 of 5 – Get All Parameters	SY	I2O5	G		Returns all Interleaved 2 of 5 parameter values in an XML element <b>Example:</b> SYI2O5G <b>Keyword:</b> #2Of5, #Interleaved2Of5	
Interleaved 2 of 5	SY	I2O5	S/P/R/G	EN	0	Disable Interleaved 2 of 5 <b>Example:</b> SYI2O5SEN0
					1	Enable Interleaved 2 of 5 <b>Example:</b> SYI2O5SEN1
					<b>Keyword:</b> #2Of5, #Interleaved2Of5	
Interleaved 2 of 5 – Checksum Characters	SY	I2O5	S/P/R/G	CO	0	Disable checksum checking and output checksum if one exists <b>Example:</b> SYI2O5SCO0
					1	Enable checksum checking and output checksum with decode data <b>Example:</b> SYI2O5SCO1 <b>Note:</b> Will not scan a Standard I2O5 barcode
					2	Enable checksum check and do not output checksum from decode data <b>Example:</b> SYI2O5SCO2 <b>Note:</b> Will not scan a Standard I2O5 barcode
					<b>Note:</b> This setting value is ignored if Interleaved 2 of 5 decoding is disabled <b>Keyword:</b> #2Of5, #Interleaved2Of5	
Interleaved 2 of 5 – Length	SY	I2O5	S/P/R/G	LN	2	<b>Minimum Value (will scan any Interleaved 2 of 5)</b> <b>Example:</b> SYI2O5SLN0
					100	<b>Maximum Value</b> <b>Example:</b> SYI2O5SLN100
					<b>Note:</b> This setting value is ignored if Interleaved 2 of 5 decoding is disabled <b>Keyword:</b> #2Of5, #Interleaved2Of5	
Japan Post	SY	JAPO	S/P/R/G	EN	0	Disable Japan Post <b>Example:</b> SYJAPOSEN0
					1	Enable Japan Post <b>Example:</b> SYJAPOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
KIX (Dutch Post)	SY	KIXO	S/P/R/G	EN	0	Disable KIX (Dutch Post) <b>Example:</b> SYKIXOSEN0
					1	Enable KIX (Dutch Post) <b>Example:</b> SYKIXOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
Korean Post	SY	KOPO	S/P/R/G	EN	0	Disable Korean Post

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
						<b>Example:</b> SYKOPOSEN0
					1	Enable Korean Post <b>Example:</b> SYKOPOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
Matrix 2 of 5	SY	M2O5	S/P/R/G	EN	0	Disable Matrix 2 of 5 <b>Example:</b> SYM2O5SENO
					1	Enable Matrix 2 of 5 <b>Example:</b> SYM2O5SEN1
					<b>Keyword:</b> #2of5	
Maxicode	SY	MAXC	S/P/R/G	EN	0	Disable Maxicode <b>Example:</b> SYMAXCSENO
					1	Enable Maxicode <b>Example:</b> SYMAXCSEN1
					<b>Keyword:</b> #Maxicode	
MSI Plessey – Get All Parameters	SY	MSIP	G		Returns all MSI Plessey parameter values in an XML element <b>Example:</b> SYMSIPG <b>Keyword:</b> #MSIPlessey	
MSI Plessey	SY	MSIP	S/P/R/G	EN	0	Disable MSI Plessey <b>Example:</b> SYMSIPSENO
					1	Enable MSI Plessey <b>Example:</b> SYMSIPSEN1
					<b>Keyword:</b> #MSIPlessey	
MSI Plessey – Require Checksum	SY	MSIP	S/P/R/G	CS	0	Disable checksum checking <b>Example:</b> SYMSIPS0
					1	Check for Mod 10 checksum type <b>Example:</b> SYMSIPS1
					2	Check for Mod 10/10 checksum type <b>Example:</b> SYMSIPS2
					3	Check for Mod 11/10 checksum type <b>Example:</b> SYMSIPS3
					<b>Note:</b> This setting value is ignored if MSI Plessey decoding is disabled <b>Keyword:</b> #MSIPlessey	
MSI Plessey – Remove Checksum	SY	MSIP	S/P/R/G	SC	0	Transmit MSI Plessey Checksum <b>Example:</b> SYMSIPSS0
					1	Do not transmit MSI Plessey Checksum <b>Example:</b> SYMSIPSS1
					<b>Note:</b> This setting value is ignored if MSI Plessey decoding is disabled <b>Keyword:</b> #MSIPlessey	
MSI Plessey – Set minimum decode length	SY	MSIP	S/P/R/G	ML	This sets the minimum data length to be decoded. If shorter than specified length, the reader will not decode the data <b>Example:</b> SYMSIPSML1 <b>Note:</b> This setting value is ignored if MSI Plessey decoding is disabled <b>Keyword:</b> #MSIPlessey	
UK Plessey – PLE	SY	MSIP	S/P/R/G	PE	0	Disable UK Plessey – PLE <b>Example:</b> SYMSIPSPE0
					1	Enable UK Plessey – PLE <b>Example:</b> SYMSIPSPE1
					<b>Keyword:</b> #UKPlessey	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
NEC 2 of 5 – Get All Parameters	SY	N2O5	G		Returns all NEC 2 of 5 parameter values in an XML element <b>Example:</b> SYN2O5G <b>Keyword:</b> #2Of5	
NEC 2 of 5	SY	N2O5	S/P/R/G	EN	0	Disable NEC 2 of 5 <b>Example:</b> SYN2O5SEN0
					1	Enable NEC 2 of 5 <b>Example:</b> SYN2O5SEN1
					<b>Keyword:</b> #2Of5	
NEC 2 of 5 – Require Checksum	SY	N2O5	S/P/R/G	CS	0	Disable checksum checking <b>Example:</b> SYN2O5SCS0
					1	Enable checksum checking <b>Example:</b> SYN2O5SCS1
					<b>Note:</b> This setting value is ignored if NEC 2 of 5 decoding is disabled <b>Keyword:</b> #2Of5	
PDF417	SY	P417	S/P/R/G	EN	0	Disable PDF417 <b>Example:</b> SYP417SEN0
					1	Enable PDF417 <b>Example:</b> SYP417SEN1
					<b>Keyword:</b> #PDF417	
Micro PDF417	SY	P417	S/P/R/G	MI	0	Disable Micro PDF417 <b>Example:</b> SYP417SMI0
					1	Enable Micro PDF417 <b>Example:</b> SYP417SMI1
					<b>Keyword:</b> #PDF417	
Pharma Code – Get All Parameters	SY	PHCO	G		Returns all Pharma code parameter values in an XML element <b>Example:</b> SYPHCOG <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode	
Pharmacode	SY	PHCO	S/P/R/G	EN	0	Disable Pharmacode <b>Example:</b> SYPHCOSEN0
					1	Enable Pharmacode <b>Example:</b> SYPHCOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode	
Pharmacode – Reverse	SY	PHCO	S/P/R/G	RV	0	Disable Pharmacode – Reverse <b>Example:</b> SYPHCOSRV0
					1	Enable Pharmacode – Reverse <b>Example:</b> SYPHCOSRV1
					Enable reading Pharmacode barcodes printed in light colors on a dark background (reverse printing). <b>Note:</b> This setting value is ignored if Pharmacode decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode	
Pharmacode – Support Color bars	SY	PHCO	S/P/R/G	CB	0	Disable Pharmacode – Support Color bars <b>Example:</b> SYPHCOSC0
					1	Enable Pharmacode – Support Color bars <b>Example:</b> SYPHCOSC1
					<b>Note:</b> This setting value is ignored if Pharmacode decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Pharmacode – Bar Count Min	SY	PHCO	S/P/R/G	CN	4	<b>Minimum Value</b> <b>Example:</b> SYPHCOSCN4  <b>Note:</b> This setting value is ignored if Pharmacode decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode
Pharmacode – Bar Count Max	SY	PHCO	S/P/R/G	CX	16	<b>Maximum Value</b> <b>Example:</b> SYPHCOSCX16  <b>Note:</b> This setting value is ignored if Pharmacode decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode
Pharmacode – Min Value	SY	PHCO	S/P/R/G	MI	15	<b>Minimum Value</b> <b>Example:</b> SYPHCOSMI15  <b>Note:</b> This setting value is ignored if Pharmacode decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode
Pharmacode – Max Value	SY	PHCO	S/P/R/G	MX	1310 70	<b>Maximum Value</b> <b>Example:</b> SYPHCOSMX131070  <b>Note:</b> This setting value is ignored if Pharmacode decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Pharmacode
QR Code – Get All Parameters	SY	QRCO	G		Returns all QR code parameter values in an XML element. <b>Example:</b> SYQRCOG <b>Keyword:</b> #QR	
QR Code	SY	QRCO	S/P/R/G	EN	0	Disable QR Code <b>Example:</b> SYQRCOSEN0
					1	Enable QR Code <b>Example:</b> SYQRCOSEN1
					<b>Keyword:</b> #QR	
QR Code – Polarity	SY	QRCO	S/P/R/G	PO	0	Normal mode enabled - Black on white background <b>Example:</b> SYQRCOSPO0
					1	Inverse mode enabled - White on black background <b>Example:</b> SYQRCOSPO1
					2	Both normal and inverse modes enabled <b>Example:</b> SYQRCOSPO2
					<b>Note:</b> This setting value is ignored if QR code decoding is disabled <b>Keyword:</b> #QR	
Micro QR Code	SY	QRCO	S/P/R/G	MI	0	Disable Micro QR Code <b>Example:</b> SYQRCOSM0
					1	Enable Micro QR Code <b>Example:</b> SYQRCOSM1
					<b>Keyword:</b> #QR	
QR Code – Mirror	SY	QRCO	S/P/R/G	MR	0	Disable QR Code – Mirror <b>Example:</b> SYQRCOSMR0
					1	Enable QR Code – Mirror <b>Example:</b> SYQRCOSMR1
					<b>Note:</b> This setting value is ignored if QR Code decoding is disabled <b>Keyword:</b> #QR	
QR Code – Model 1	SY	QRCO	S/P/R/G	M1	0	Disable QR Code – Model 1 <b>Example:</b> SYQRCOSM10
					1	Enable QR Code – Model 1 <b>Example:</b> SYQRCOSM11
					<b>Note:</b> This setting value is ignored if QR Code decoding is disabled	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					<b>Keyword:</b> #QR	
QR Code – Custom	SY	QRCO	S/P/R/G	CQ	0	Disable QR Code – Custom <b>Example:</b> SYQRCosCQ0
					1	Enable QR Code – Custom <b>Example:</b> SYQRCosCQ1
					<b>Note:</b> This setting value is ignored if QR Code decoding is disabled <b>Keyword:</b> #QR	
Straight 2 of 5 - Get All Parameters	SY	S205	G		Returns all Straight 2 of 5 parameters in an XML element <b>Example:</b> SYS205G <b>Note:</b> Use for Straight 205, Standard 205, Industrial 205 and IATA 205 <b>Keyword:</b> #205	
Straight 2 of 5	SY	S205	S/P/R/G	EN	0	Disable Straight 2 of 5 <b>Example:</b> SYS205SEN0
					1	Enable Straight 2 of 5 <b>Example:</b> SYS205SEN1
					<b>Note:</b> Use for Straight 205, Standard 205, Industrial 205 and IATA 205 <b>Keyword:</b> #205	
Straight 2 of 5 – Set minimum decode length	SY	S205	S/P/R/G	ML	This sets the minimum data length to be decoded. If shorter than specified length, the reader will not decode the data <b>Example:</b> SYS205SML1 <b>Note:</b> This setting value is ignored if S205 decoding is disabled <b>Note:</b> Use for Straight 205, Standard 205, Industrial 205 and IATA 205 <b>Keyword:</b> #205	
Telepen – Get All Parameters	SY	TELP	G		Returns all Telepen parameter values in an XML element <b>Example:</b> SYTELPG <b>Keyword:</b> #Telepen	
Telepen	SY	TELP	S/P/R/G	EN	0	Disable Telepen <b>Example:</b> SYTELPSEN0
					1	Enable Telepen <b>Example:</b> SYTELPSEN1
					<b>Keyword:</b> #Telepen	
Telepen – Output ASCII	SY	TELP	S/P/R/G	OA	0	Disable Telepen – Output ASCII <b>Example:</b> SYTELPOAO
					1	Enable Telepen – Output ASCII <b>Example:</b> SYTELPOA1
					<b>Note:</b> This setting value is ignored if Telepen decoding is disabled <b>Keyword:</b> #Telepen	
Trioptic – Get All Parameters	SY	TRIO	G		Returns all Trioptic parameter values in an XML element <b>Example:</b> SYTRIOG <b>Keyword:</b> #Trioptic	
Trioptic	SY	TRIO	S/P/R/G	EN	0	Disable Trioptic <b>Example:</b> SYTRIOSENO
					1	Enable Trioptic <b>Example:</b> SYTRIOSEN1
					<b>Keyword:</b> #Trioptic	
Trioptic – Reverse	SY	TRIO	S/P/R/G	RV	0	Disable Trioptic – Reverse <b>Example:</b> SYTRIOSRVO
					1	Enable Trioptic – Reverse <b>Example:</b> SYTRIOSRV1
					Enable reading Trioptic barcodes printed in light colors on a dark background (reverse printing) <b>Note:</b> This setting value is ignored if Trioptic decoding is disabled <b>Keyword:</b> #Trioptic	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Trioptic – Require Start/Stop Characters	SY	TRIO	S/P/R/G	SS	0	Do not require Start/Stop Characters <b>Example:</b> SYTRIOSS0
					1	Require Start/Stop Characters <b>Example:</b> SYTRIOSS1
					<b>Note:</b> This setting value is ignored if Trioptic decoding is disabled <b>Keyword:</b> #Trioptic	
UK Royal Mail	SY	UKRO	S/P/R/G	EN	0	Disable UK Royal Mail <b>Example:</b> SYUKROSENO
					1	Enable UK Royal Mail <b>Example:</b> SYUKROSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
UK Royal Mail – Require Check Character	SY	UKRO	S/P/R/G	CC	0	Do not require a valid Check Character to output barcode data <b>Example:</b> SYUKROSCC0
					1	Require a valid Check Character in order to output barcode data <b>Example:</b> SYUKROSCC1
					<b>Note:</b> This setting value is ignored if UK Royal Mail decoding is disabled <b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
UPC/EAN/JAN – Get All Parameters	SY	UPCO	G		Returns all UPC/EAN parameter values in an XML element <b>Example:</b> SYUPCOG <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN	SY	UPCO	S/P/R/G	EN	0	Disable <b>Example:</b> SYUPCOSENO
					1	Enable <b>Example:</b> SYUPCOSEN1
					<b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Expand UPC-E to UPC-A	SY	UPCO	S/P/R/G	EA	0	Do not expand UPC-E to UPC-A <b>Example:</b> SYUPCOSEA0
					1	Expand UPC-E to UPC-A <b>Example:</b> SYUPCOSEA1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	

UPC/EAN/JAN – Supplemental	SY	UPCO	S/P/R/G	SU	0	Disable UPC/EAN/JAN – Supplemental <b>Example:</b> SYUPCOSSU0
					1	Enable UPC/EAN/JAN – Supplemental <b>Example:</b> SYUPCOSSU1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Expand EAN-8 to EAN-13	SY	UPCO	S/P/R/G	E8	0	Do not expand EAN-8 to EAN-13 <b>Example:</b> SYUPCOSE80
					1	Expand EAN-8 to EAN-13 <b>Example:</b> SYUPCOSE81
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Expand UPC-A to EAN-13	SY	UPCO	S/P/R/G	AD	0	Do not expand UPC-A to EAN-13 <b>Example:</b> SYUPCOSAD0
					1	Expand UPC-A to EAN-13 <b>Example:</b> SYUPCOSAD1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Convert Bookland EAN-13 to ISBN	SY	UPCO	S/P/R/G	DI	0	Do not convert Bookland EAN-13 to ISBN <b>Example:</b> SYUPCOSDIO
					1	Convert Bookland EAN-13 to ISBN <b>Example:</b> SYUPCOSDI1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Convert Bookland EAN-13 to ISSN	SY	UPCO	S/P/R/G	DN	0	Do not convert Bookland EAN-13 to ISSN <b>Example:</b> SYUPCOSDN0
					1	Convert Bookland EAN-13 to ISSN <b>Example:</b> SYUPCOSDN1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Transmit UPC-A Check digit	SY	UPCO	S/P/R/G	AC	0	Transmit UPC-A Check digit <b>Example:</b> SYUPCOSAC0
					1	Do not transmit UPC-A Check digit <b>Example:</b> SYUPCOSAC1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Transmit UPC-A Number System	SY	UPCO	S/P/R/G	AN	0	Transmit UPC-A Number System <b>Example:</b> SYUPCOSANO
					1	Do not transmit UPC-A Number System <b>Example:</b> SYUPCOSAN1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Transmit UPC-A Number System 0	SY	UPCO	S/P/R/G	N0	0	Transmit UPC-A Number System 0 <b>Example:</b> SYUPCOSN00
					1	Do not transmit UPC-A Number System 0 <b>Example:</b> SYUPCOSA01
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Transmit UPC-E Check digit	SY	UPCO	S/P/R/G	EC	0	Transmit UPC-E Check digit <b>Example:</b> SYUPCOSECO
					1	Do not transmit UPC-E Check digit <b>Example:</b> SYUPCOSEC1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	

UPC/EAN/JAN – Transmit UPC-E Number System	SY	UPCO	S/P/R/G	ES	0	Transmit UPC-E Number System <b>Example:</b> SYUPCOSES0
					1	Do not transmit UPC-E Number System <b>Example:</b> SYUPCOSES1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Transmit EAN-13 Check digit	SY	UPCO	S/P/R/G	DC	0	Transmit EAN-13 Check digit <b>Example:</b> SYUPCOSDC0
					1	Do not transmit EAN-13 Check digit <b>Example:</b> SYUPCOSDC1
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Transmit EAN-8 Check digit	SY	UPCO	S/P/R/G	C8	0	Transmit EAN-8 Check digit <b>Example:</b> SYUPCOSC80
					1	Do not transmit EAN-8 Check digit <b>Example:</b> SYUPCOSC81
					<b>Note:</b> This setting value is ignored if UPC/EAN decoding is disabled <b>Keyword:</b> #UPC, #EAN/JAN	
UPC/EAN/JAN – Send AIM Modifier	SY	UPCO	S/P/R/G	AM	0	Do not send AIM Modifier <b>Example:</b> SYUPCOSAM0
					1	Send AIM Modifier <b>Example:</b> SYUPCOSAM1
					<b>Keyword:</b> #AIMId	
USPS Planet	SY	USPL	S/P/R/G	EN	0	Disable USPS Planet <b>Example:</b> SYUSPLSENO
					1	Enable USPS Planet <b>Example:</b> SYUSPLSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
USPS Postnet	SY	USPO	S/P/R/G	EN	0	Disable USPS Postnet <b>Example:</b> SYUSPOSEN0
					1	Enable USPS Postnet <b>Example:</b> SYUSPOSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
UPU ID Tags	SY	UPUI	S/P/R/G	EN	0	Disable UPU ID Tags <b>Example:</b> SYUPUISENO
					1	Enable UPU ID Tags <b>Example:</b> SYUPUISEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	
USPS Intelligent Mail	SY	USIM	S/P/R/G	EN	0	Disable USPS Intelligent Mail <b>Example:</b> SYUSIMSENO
					1	Enable <b>Example:</b> SYUSIMSEN1
					<b>Note:</b> Not supported by the CR950 <b>Keyword:</b> #Postal	

#### 4.3.8 <PK> – Protocol Parameters

Example output from CR8200. See Appendices for current default values.

<PK>

<OP RT="250" CT="60" RC="0" />

</PK>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Packet – Get All parameters	PK	OP	G		Returns all packet parameter values in an XML element <b>Example:</b> PKOPG <b>Keyword:</b> #Communications	
Receive Timeout (ms)	PK	OP	S/P/R/G	RT	When retry count specified and reader doesn't receive the ACK, it will resend the response after the timeout in milliseconds <b>Example:</b> PKOPSRT250 <b>Keyword:</b> #Communications	
Connection Protocol Timeout (s)	PK	OP	S/P/R/G	CT	When sending fragmented data in packet mode, this timeout specifies the maximum time between two fragments. Reader cancels the transaction when the timeout expires and it didn't receive new fragmented data in Seconds <b>Example:</b> PKOPSCT120 <b>Keyword:</b> #Communications	
Reader Retry Count	PK	OP	S/P/R/G	RC	Number of retries from the reader when no ACK is received from the host. <b>Example:</b> PKOPSRC1 <b>Keyword:</b> #Communications	
Image Protocol Destination	PK	OP	S/P/R/G	ID	0	Send images to the host
					1	Send images to the filesystem
					When an image is captured and transferred by the reader, it will be sent to the specified destination. <b>Example:</b> PKOPSID0 <b>Note:</b> Not supported on CR8200 and CR950 <b>Keyword:</b> #Communications	

#### 4.3.9 <IM> – Image Sensor Parameters

Example output from CR8200. See Appendices for current default values.

<IM>

```
<SN FI="5436BCEFC97F7083" GR="" CV="0x00002400" CR="0x00004100" />
<CP ME="0" XE="0" />
```

</IM>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get all imager parameters	IM	IM	G		Returns all imager parameters <b>Example:</b> IMIMG	
Minimum Exposure (percent)	IM	CP	S/P/R/G	ME	0	Minimum Value
					Define the minimum exposure parameter of camera <b>Note:</b> Do not set this to a value greater than the maximum exposure. <b>Example:</b> IMCPSE20	
Maximum Exposure (percent)	IM	CP	S/P/R/G	XE	100	Maximum Value
					<b>Note:</b> Do not set this to a value less than the minimum exposure. <b>Example:</b> IMCPX100	
Enable cropped image downloads	IM	CP	S/P/R/G	EN	0	Disable cropped image downloading <b>Example:</b> IMCPSEN0
					1	Enable cropped image downloading <b>Example:</b> IMCPSEN1
					<b>Keyword:</b> #Image	
Set cropping X offset	IM	CP	S/P/R/G	WS	Set cropping window starting X coordinate <b>Example:</b> IMCPWS100 <b>Keyword:</b> #Image	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Set cropping Y offset	IM	CP	S/P/R/G	HS	Set cropping window starting Y coordinate <b>Example:</b> IMCPSHS250 <b>Keyword:</b> #Image
Set cropping width	IM	CP	S/P/R/G	WL	Set cropping window width <b>Example:</b> IMCPSWL300 <b>Keyword:</b> #Image
Set cropping height	IM	CP	S/P/R/G	HL	Set cropping window height <b>Example:</b> IMCPSHL550 <b>Keyword:</b> #Image

#### 4.3.10 <EN> – Encoder Image Parameters

Example output from CR8200. See Appendices for current default values.

```
<EN>
  <IM ET="1" JQ="100" JS="30"/>
</EN>
```

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Get All Encoder Image Parameters	EN	EN	G		Returns all image encoding parameter values in an XML element <b>Example:</b> ENENG
Encode Type	EN	IM	S/P/R/G	ET	This is a setting to select the format of the image being captured <b>Note:</b> This parameter is an alias of CDIM_ET
					1    RAW Image Format <b>Example:</b> ENIMSET1
					2    PGM Image Format <b>Example:</b> ENIMSET2
					3    JPEG Image Format <b>Example:</b> ENIMSET3
					4    BMP Image Format <b>Example:</b> ENIMSET4
Encode JPEG Quality (percent)	EN	IM	S/P/R/G	JQ	Quality percentage used when encoding JPEG images. 1% quality is poor and 100% is best for JPEG format <b>Example:</b> ENIMSQ85
Encode JPEG Smoothing (percent)	EN	IM	S/P/R/G	JS	Smoothing percentage used when encoding JPEG images. 0 is no smoothing and 100 is a lot of smoothing <b>Example:</b> ENIMJS50

#### 4.3.11 <FW> – Firmware Parameters

Example output from CR8200. See Appendices for current default values.

```
<FW>
  <CM OE="0" OR="0" CT="5000"/>
  <HW WT="5" TF="250000" TB="100" />
  <IM DI="0" NI="0" CI="0" />
</FW>
```

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Firmware Parameters	FW	FW	G		Returns all Firmware parameter values in an XML element <b>Example:</b> FWFWG	
Echo option	FW	CM	S/P/R/G	OE	0	Disable Raw Command Echoing <b>Example:</b> FWCMSEO
					1	Enable Raw Command Echoing <b>Example:</b> FWCMSE1
					Commands sent over the debug serial port are not displayed in the host's terminal window by default. Enabling this parameter instructs the reader to print any characters received by the debug port in the host's terminal window. <b>Keyword:</b> #Raw	
Raw Command Enable	FW	CM	S/P/R/G	OR	0	Disable Raw Commands <b>Example:</b> FWCMSOR0
					1	Enable Raw commands <b>Example:</b> FWCMSOR1
					This setting allows commands to be sent to the reader from the host without being in packet mode. <b>Keyword:</b> #TextCommands <b>Keyword:</b> #Raw	
Command timeout (ms)	FW	CM	S/P/R/G	CT	Tells the reader to allow commands this much time to execute before sending a command failed response to the host in milliseconds <b>Example:</b> FWCMPT1000	
Watchdog Timeout (s)	FW	HW	S/P/G/R	WT	5	Minimum Watchdog timeout (in seconds) <b>Example:</b> FWHWSWT5
Targeting Frequency	FW	HW	S/P/G/R	TF	250000	Targeting LED Frequency <b>Example:</b> FWHWSTF250000
Targeting Brightness	FW	HW	S/P/G/R	TB	100	Targeting LED Brightness (in percent) <b>Example:</b> FWHWSTB100
Targeting Leave On	FW	HW	S/P/G/R	TO	0	Disable turning targeting LED to be always on <b>Example:</b> FWHWSTO0
					1	Enable turning targeting LED to be always on <b>Example:</b> FWHWSTO1 <b>Note:</b> This setting takes precedence over disables targeting LED during capture
Set Trigger Press De-bounce Time (ms)	FW	HW	S/P/G/R	PD	25	Set the time (sm) that the trigger must remain pressed to register <b>Example:</b> FWHWSPD10 <b>Note:</b> Supported in CR1100
Set Trigger Release De-bounce Time (ms)	FW	HW	S/P/G/R	RD	50	Set the time (ms) that the trigger must remain released to register <b>Example:</b> FWHWSRD75 <b>Note:</b> Supported in CR1100
Transfer Decoded Images	FW	IM	P/G/R	DI	0	Disable transferring decoded images <b>Example:</b> FWIMPDIO
					1	Enable transferring decoded images <b>Example:</b> FWIMPDI1 <b>Keyword:</b> #Image
Transfer Non-Decoded Images	FW	IM	P/G/R	NI	0	Disable transferring non-decoded images <b>Example:</b> FWIMPNIO
					1	Enable transferring non-decoded images <b>Example:</b> FWIMPNI1 <b>Keyword:</b> #Image
Transfer Cellphone Images	FW	IM	P/G/R	CI	0	Disable transferring cellphone images <b>Example:</b> FWIMPCIO

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					1	Enable transferring cellphone images <b>Example:</b> FWIMPCI1 <b>Keyword:</b> #Image
Transfer Subsampled Images	FW	IM	P/G/R	SI	0	Disable transferring decimated images <b>Example:</b> FWIMPSI0
					1	Enable transferring decimated images <b>Example:</b> FWIMPSI1 <b>Note:</b> Supported by CR950 only <b>Keyword:</b> #Image

#### 4.3.12 <RD> – Reader Parameters

Example output from CR8200. See Appendices for current default values.

<RD>

```

<FW MJ="0" MN="0" BU="16211" OP="" VS="0.0.16211" TY="Cxxxxxx" DV="cd(17.1.0)" />
<CP RV="2.00" SN="0E1D2680504C9A" />
<RR SN="1020000119" ID="55779404" HR="0x04" MD="CR8200" MT="2AD0" IS="20170706:1357" />
<QD N1="0" L1="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" TR="0" F0="0x00" F1="0x00"
    P0="0x00" P1="0x00" />
<LC GL="" />
<FB VB="0" SM="0" />
<ST SE="1" SD="500" SB="1" />
<IL LO="0" MB="100" />
<OF LE="" />
<TC MD="1" />

```

</RD>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Reader Information Parameters	RD	RD	G		Returns all Reader Information parameter values in an XML element <b>Example:</b> RDRDG	
Get all Firmware information	RD	FW	G		Returns all Firmware parameter values in an XML element <b>Example:</b> RDFWG	
Firmware Version Major	RD	FW	G	MJ	Returns Firmware Major Version parameter value in an XML element <b>Example:</b> RDFWGMJ	
Firmware Version Minor	RD	FW	G	MN	Returns Firmware Minor Version parameter value in an XML element <b>Example:</b> RDFWGMN	
Firmware Version Build Version	RD	FW	G	BU	Returns Firmware Build Version parameter value in an XML element <b>Example:</b> RDFWGBU	
Firmware Version Build Option	RD	FW	G	OP	Returns Firmware Build Option parameter value in an XML element <b>Example:</b> RDFWGOP <b>Note:</b> This value may be an empty string for most readers.	
Firmware Build Major &.Minor-Version	RD	FW	G	VS	Returns Firmware Build Major and Minor-Version parameter values in an XML element <b>Example:</b> RDFWGVS	
Firm Type Parameter	RD	FW	G	TY	Returns Firmware Part Number parameter value in an XML element <b>Example:</b> RDFWGTY	
Decoder Version	RD	FW	G	DV	Returns Decoder version. <b>Example:</b> RDFWGVD	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Chip Revision	RD	CP	G	RV	Returns CT8200 Chip Revision parameter value in an XML element <b>Example:</b> RDCPGRV	
CT8200 Chip Serial Number	RD	CP	G	SN	Returns CT8200 Chip Serial Number parameter value in an XML element <b>Example:</b> RDCPGSN	
Reader Information	RD	RR	G		Returns Reader Information parameter value in an XML element <b>Example:</b> RDRRG	
Reader ID	RD	RR	G	ID	Returns Reader ID parameter value in an XML element <b>Example:</b> RDRRGID <b>Note:</b> This is a GUID that is internally generated used for packet communications.	
Hardware Revision	RD	RR	G	HR	Returns Reader Hardware Revision parameter value in an XML element <b>Example:</b> RDRRGHR	
CR Reader Imager Model Type	RD	RR	G	MT	CR8200	2A0D0
					CR950	2A90
					CR1500	2A0D0
					CR1100	2A0D0
					CR2700	2A0D0
					CR8060	2MD0
					CR8071	2MD0
					CR8072	2MD0
					A string that indicates the Version of the CT8200 chip, the Imager model that is used, the Package type of the reader, and the Type of decoder. <b>Example:</b> RDRRGMT <b>Note:</b> See the Firmware File Naming Convention section of a firmware's included Read Me file for more information	
Reader Model Version	RD	RR	G	MD	CR8200	"CR8200"
					CR806x	"CR8200"
					CR807x	"CR8071" "CR8072"
					CR950	"CR950"
					CR1500	"CR1500" <b>Example:</b> RDRRSMDCR1500 <b>Note:</b> Supports S/P/G for CR1500 <b>Keyword:</b> #CR1500
					CR1100	"CR1100"
					CR2700	"CR2700"
					A string that indicates the model name of the reader <b>Example:</b> RDRRGMD	
Reader Serial Number	RD	RR	G	SN	This command returns the factory programmed reader serial number from the flash <b>Example:</b> RDRGSN	
Reader Information String	RD	RR	G	IS	Returns Reader Information String parameter <b>Example:</b> RDRGIS	
Reader Device Deployment Date	RD	RR	S/P/G	DD	The Device Deployment Date. <b>Example:</b> RDRRSDD"0319" User can enter date in any format desired	
Reader Output Format – Line Ending	RD	OF	S/P/R/G	LE	Defines the output format line ending. Non-printable ASCII characters must be set using URL encoded hex value <CR><LF> (%0D%0A) <b>Example:</b> RDOFSLE%0D%0A	
Reader Command – Process Barcode Data	RD	CM	X	BD	Send <data> to the host as barcode data <b>Example:</b> RDCMXBD12345	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples					
Reader Command – List files on reader filesystem <b>REPLACED</b> – See the command STFSXLS in section 4.3.16	RD	CM	*	FL	<u>List all files on reader</u>					
Reader Dump log messages to console (Formatted)	RD	CM	X	DL	Print the contents of the message log to the console window in XML format and with time stamps. <b>Note:</b> To achieve proper format, enable logging in XML form with CDOPSLA1 <b>Example:</b> RDCMXDL <b>Keyword:</b> #Message					
Reader Dump log messages to console (Raw)	RD	CM	X	RL	Print the contents of the message log to the console window in raw form. <b>Example:</b> RDCMXRL <b>Note:</b> To avoid extraneous characters enable logging in raw form with CDOPSLA2 or CDOPSLA3. <b>Keyword:</b> #Message					
Reader Clear message logs	RD	CM	X	CL	Erase the contents of the message logs <b>Example:</b> RDCMXCL <b>Keyword:</b> #Message					
Reader Command – Reboot	RD	CM	X	RB	Reboots the reader <b>Example:</b> RDCMXRB1					
Reader Command – Platform settings	RD	CM	X	PL	[<CfgCmd>]		Save configuration command to Platform Settings. Enclose the configuration command in brackets, with the command appearing <u>exactly</u> as used when setting and saving a parameter. <b>Note:</b> Adding the same setting more than once will result in multiple entries for the same parameter. Adding different values for the same parameter will result in the reader using the last-added parameter value. <b>Example:</b> RDCMXPL[CDOPPDF1] (enables data formatting using a decoder data-manipulation string) <b>Example:</b> RDCMXPL[CDOPSFID"000000000000!,,/01Y/1Ean/2F/2Fn/04"] (sets decoder data-manipulation string to append a suffix of Enter)			
					[^<CfgCmd>]		Delete configuration command from Platform Settings. Enclose the command in square brackets and add a caret between the opening square bracket and command to delete the command from the platform configuration. <b>Note:</b> If there are multiple entries for a parameter, issuing this command will remove only the first entry. <b>Example:</b> RDCMXPL[CDOPPDF1] (removes command enabling data formatting using a decoder data-manipulation string from platform settings) <b>Example:</b> RDCMXPL[^CDOPSFID"000000000000!,,/01Y/1Ean/2F/2Fn/04"] (removes command setting decoder data-manipulation string to append a suffix of Enter from platform settings) <b>See also</b> CFR[APL] & CFG[PL]			
Each time the reader reboots it re-applies commands saved as Platform Settings.										
Send user event to JavaScript	RD	CM	X	ES	PRES	S1	TRIG	This command allows the user to set events to be intercepted by JavaScript, and handled outside of the firmware. The events simulate a button event (\$1) on a specified input line (P1). The event is passed to reader.onEvent which the user may customize in the codeRules file to handle the event appropriately. If the S1 parameter is omitted, the reader will send the event with a 'TRIG' input. <b>Examples:</b> RDCMXESPRES,S1TRIG RDCMXESHOLD,S1INPO		
					HOLD		WAKE			
					RELS		STND			
							INPO			
							INP1			

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples						
Reader Command – Post Event 1	RD	CM	X	EV1	P10	-	-	Stop the decode event that is currently running <b>Example:</b> RDCMXEV1,P10			
					P11	P20	-	Start a single decode event and continue scanning until decode is successful <b>Example:</b> RDCMXEV1,P11,P20			
					P11	P22	-	Start continuous decode event until it is stopped <b>Example:</b> RDCMXEV1,P11,P22			
					Post an event of type 1. The event has up to three parameters. Any other issued event will override this event, such as pushing the trigger to decode. There are 'Enable Targeting" and "Disable Targeting" events in a decode sequence. <b>Note:</b> Events with parameters cannot be posted from JavaScript						
Reader Command – Post Event 2	RD	CM	X	EV2	P10	Disable Targeting immediately as an event <b>Example:</b> RDCMXEV2,P10					
					P11	Enable Targeting immediately as an event <b>Example:</b> RDCMXEV2,P11					
					Post an event of type 2. The event has one parameter. Any other issued event will override this event, such as pushing the trigger to decode. There are 'Enable Targeting" and "Disable Targeting" events in a decode sequence. <b>Note:</b> Events with parameters cannot be posted from JavaScript						
Reader Command – Post Event 7	RD	CM	X	EV7	Post an event to continuously scan until decode is successful. <b>Example:</b> RDCMXEV7						
Stand Detection – Enable	RD	ST	S/P/R/G	SE	0	Disable <b>Example:</b> RDSTSSEO					
					1	Enable <b>Example:</b> RDSTSSE1					
					Detect when the reader has been placed in a stand that contains a trigger magnet <b>Note:</b> Not supported by CR8200 and CR2700 <b>Note:</b> This command replaces CDST_SE						
Stand behavior	RD	ST	S/P/R/G	SB	0	Manually Triggered <b>Example:</b> RDSTSSB0					
					1	Motion Detection <b>Example:</b> RDSTSSB1					
					<b>Note:</b> Not supported by CR8200 <b>Note:</b> This command is linked to both BTRD_PM and RDPM_OT. Changing one will change both of them, since they implement the same behavior. Sets the Decode Mode when Stand Detection is enabled and the reader is in the stand.						
Stand Duplicate Delay (ms)	RD	ST	S/P/R/G	SD	When the reader is in the stand, block reading of duplicate barcodes for this many milliseconds <b>Example:</b> RDSTSSD100 <b>Note:</b> Not supported by CR8200 <b>Note:</b> This command replaces CDST_SD <b>Note:</b> Duplicate Block time has to be enable (CDVASBD1)						
Get All Reader Licenses	RD	LC	G	GL	Returns all Reader License values in an XML element <b>Example:</b> RDLCGGL						
Load License	RD	LC	X	LD	Loads license on the reader in the form of a "URL encoded license string" Copy the contents of the License CRB file starting after the '?' character to use as the URL encoded license string. This string must be in quotes in the command. <b>Example:</b> RDLCXLDP%"23%45...."						
Delete License	RD	LC	X	DL	Delete a License number License number is an integer that represents just the license number, not the serial number of the license you want to delete. <b>Example:</b> RDLCXDL5000						
Leave Illumination On between image captures	RD	IL	S/P/R/G	LO	0	Disable illumination-On between captures <b>Example:</b> RDILSLO0					

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					1	Enable illumination-On between captures <b>Example:</b> RDILSLO1
					Leave illumination on prevents the illumination LED from blinking while scanning in a continuous scan (or motion) mode.	
Illumination Max Brightness	RD	IL	S/P/R/G	MB	Max Illumination Brightness (0-100 percent) <b>Example:</b> RDILSMB100 <b>Note:</b> Supported in CR1500 CR2700 and CR1100	
Set Message verbosity	RD	FB	S/P/R/G	VB	0	Set verbosity level zero. <b>Example:</b> RDFBSV0
					1	Set verbosity level one. <b>Example:</b> RDFBSV1
					Set error message verbosity Level <b>Note:</b> Level 1 will provide more descriptive error text <b>Keyword:</b> Message	
Erase Error Log	RD	FB	X	EL	Erases the error log. <b>Example:</b> RDFBXEL <b>Keyword:</b> Message	
Trigger Control	RD	TC	S/P/R/G	MD	0	Trigger disabled <b>Example:</b> RDTCSMD0
					1	Normal triggered mode (default) <b>Example:</b> RDTCSMD1
					2	Motion detection mode <b>Example:</b> RDTCSMD2 <b>Note:</b> Motion detection is enabled when trigger is held
					3	Continuous scan mode <b>Example:</b> RDTCSMD3 <b>Note:</b> Continuous scan is enabled when trigger is held
CR2700 Button/Trigger Enable	RD	TC	S/P/R/G	T1	0	Disable handle trigger <b>Example:</b> RDTCT10
					1	Enable handle trigger <b>Example:</b> RDTCT11
				T2	0	Disable top front button <b>Example:</b> RDTCT20
					1	Enable top front button <b>Example:</b> RDTCT21
				T3	0	Disable top rear button <b>Example:</b> RDTCT30
					1	Enable top rear button <b>Example:</b> RDTCT31
					Note: When a trigger is disabled, pressing, holding, or releasing the button has no effect <b>Keyword:</b> #CR2700	
Format	RD	FS	X	FM	0	Firmware <b>Example:</b> RDFSXFM0 <b>Note:</b> Supported by all readers
					1	License (Deprecated) <b>Example:</b> RDFSXFM1 <b>Note:</b> Supported by all readers <b>Note:</b> License files have their own simplified "license load" command; see RDLCXLD
					2	File by Extension (file system in user flash storage) Requires the File Name (FN) parameter <b>Example:</b> RDFSXFM2

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
					The format of file being downloaded to the reader <b>Note:</b> All format targets require the RDFSXSZ (file size) parameter <b>Note:</b> This type determines where the file is stored on the reader
Base Address	RD	FS	X	BA	Base Address for the start of the file in storage <b>Example:</b> RDFSXBA0 <b>Keyword:</b> #A271 #BTDG27
File Name	RD	FS	X	FN	File name of the file to write to the reader's file system This parameter is required when downloading a file to the file system (FM2). <b>Example:</b> RDFSXFNmyScript.js <b>Note:</b> Not supported by CR8200 and CR950
File Size	RD	FS	X	SZ	File size in bytes. This parameter is required to download a file. <b>Example:</b> RDFSXFS800000 (800,000 bytes)
CRC Checksum	RD	FS	X	CR	CRC checksum of the file's data <b>Example:</b> RDFSXCR40123
Reboot	RD	FS	X	RB	Reboot reader after file download completes
					0 Do not reboot the reader <b>Example:</b> RDFSXRBO
					1 Reboot the reader <b>Example:</b> RDFSXRBI
Download File Data	RD	FD			This command must follow the RDFS command(s). The reader writes the file data immediately following the RDFD command to the file defined by the RDFS command. <b>Example:</b> RDFDdata where: data the file's data (must be exactly size bytes of data where size is the value of the RDFSSZ parameter).
Reader Battery Status	RD	BI	G		Returns all Reader Battery Status <b>Example:</b> RDBIG <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Present	RD	BI	G	BP	Returns whether or not the battery is attached to the reader. <b>Example:</b> RDBIGBP <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Voltage (mV)	RD	BI	G	BV	Returns the voltage from the battery. <b>Example:</b> RDBIGBV <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Current (uA)	RD	BI	G	CC	Returns the current from the battery. <b>Example:</b> RDBIGCC <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Average Current (uA)	RD	BI	G	AC	Returns the average current from the battery. <b>Example:</b> RDBIGAC <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Temperature (C)	RD	BI	G	BT	Returns the battery temperature. <b>Example:</b> RDBIGBT <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Capacity (%)	RD	BI	G	BL	Returns the battery capacity. <b>Example:</b> RDBIGBL <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Battery Health (%)	RD	BI	G	LF	Returns the current battery health. <b>Example:</b> RDBIGLF <b>Note:</b> Percentage decreases over the life of the battery and drops off drastically after 70% <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Charge Status	RD	BI	G	CS	Returns the charge status from the battery. 0 = Not Charging, 1 = Charging. <b>Example:</b> RDBIGCS <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Serial Number	RD	BI	G	SN	Returns the serial number on the battery. <b>Example:</b> RDBIGSN <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Deployment Date	RD	BI	G	DD	Returns the deployment date on the battery. <b>Example:</b> RDBIGDD <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27
Battery Deployment Date	RD	BI	X	DS	Sets the deployment date on the battery. <b>Example:</b> RDBIXDS"0123" <b>Note:</b> This command requires an input of exactly 4 digits of valid alphanumeric characters. <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27

#### 4.3.13 <FB> – Feedback Parameters

Example output from CR8200. See Appendices for current default values.

<FB>

```

<IN BI="0" BE="1" />
<GR BI="0" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
<CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
<CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
<ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
<VB EN="1" NT="80" FT="20" NB="1" />

```

</FB>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get All Reader Feedback Parameters	FB	FB	G		Returns all Reader Feedback parameter values in an XML element <b>Example:</b> FBFBG	
Beep Enable	FB	IN	S/P/R/G	BE	0	Globally disable all beeps (doesn't affect vibrate) <b>Example:</b> FBINSBEO
					1	Globally enable all beeps (doesn't affect vibrate) <b>Example:</b> FBINSBE1
Beep as IO	FB	IN	S/P/R/G	BI	0	Beep output is an audible tone <b>Example:</b> FBINSBIO
					1	Beep output is a GPIO signal toggle <b>Example:</b> FBINSB1
Good Read Indication – Enable	FB	GR	S/P/R/G	EN	0	Disable good read indication on successful decode <b>Example:</b> FBGRSENO

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples					
					1	Enable good read indication on successful decode <b>Example:</b> FBGRSEN1				
					<b>Note:</b> A good read indication includes LED, Vibration and beep					
Good Read Beep Indication – Beep	FB	GR	S/P/R/G	BE	0	Suppress good read beep on successful decode <b>Example:</b> FBGRSBE0				
					1	Enable good read beep on successful decode <b>Example:</b> FBGRSBE1				
					<b>Note:</b> Good read beeps, vibrates and blinks, the FBGR_BE beep settings only affect the good read beep, not the Good Read LED Indication or vibration.					
Good Read Indication – Frequency (Hz)	FB	GR	S/P/R/G	FQ	Good read beep output frequency. <b>Suggested Values:</b> 2730 and 2800 <b>Example:</b> FBGRSFQ2730					
Good Read Indication – Beep Volume (%)	FB	GR	S/P/R/G	VO	Good read beep output volume as a percentage of full volume <b>Valid Range:</b> 0 to 100 percent <b>Example:</b> FBGRSVO100					
Good Read Beep As IO (Aliased from FBIN_BI global indication settings)	FB	GR	S/P/R/G	BI	0	Good Read Indication is a tone output whose frequency is defined by FBGRGFQ <b>Example:</b> FBGRSBIO				
					1	Good Read Indication is an IO signal <b>Example:</b> FBGRSBI1				
Good Read Beep On Time(mS)	FB	GR	S/P/R/G	NT	This parameter is the time the beep is on <b>Example:</b> FBGRSNT80					
Good Read Beep Off Time(mS)	FB	GR	S/P/R/G	FT	This parameter is the time the beep is off <b>Example:</b> FBGRSFT80					
Good Read Number of Beeps	FB	GR	S/P/R/G	NB	This the number of beep on/off cycles to execute on a good read <b>Example:</b> FBGRSNB1					
Configuration beep Frequency (Hz)	FB	CB	S/P/R/G	FQ	The frequency used when performing a beep to indicate that a configuration has been applied <b>Example:</b> FBCBSFQ2800					
Configuration beep volume (%)	FB	CB	S/P/R/G	VO	The volume used when performing a beep to indicate that a configuration has been applied. This is a percentage of full volume. <b>Valid Range:</b> 0 to 100 percent <b>Example:</b> FBCBSVO100					
Configuration beep On time (ms)	FB	CB	S/P/R/G	NT	The amount of time the beep sounds when performing a beep to indicate that a configuration has been applied In Milliseconds <b>Example:</b> FBCBSNT80					
Configuration beep Off time (ms)	FB	CB	S/P/R/G	FT	If multiple beeps are configured for Configuration beep number of beeps, this is the amount of time of silence the beep sounds when performing a beep to indicate that a configuration has been applied. In milliseconds <b>Example:</b> FBCBSFT20					
Configuration beep number of beeps	FB	CB	S/P/R/G	NB	The number of beep sounds to play when performing a beep to indicate that a configuration has been applied <b>Example:</b> FBCBSNB1					
Error Beep Frequency (Hz)	FB	ER	S/P/R/G	FQ	The frequency used when performing a beep to indicate that an error has occurred <b>Example:</b> FBERSFQ2800					
Error Beep volume (%)	FB	ER	S/P/R/G	VO	The volume used when performing a beep to indicate that an error has occurred. This is a percentage of full volume. <b>Valid Range:</b> 0 to 100 percent <b>Example:</b> FBERSVO100					

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Error Beep On time (ms)	FB	ER	S/P/R/G	NT	The amount of time the beep sounds when performing a beep to indicate that an error has occurred In milliseconds <b>Example:</b> FBERSNT200	
Error Beep Off time (ms)	FB	ER	S/P/R/G	FT	If multiple beeps are configured for Error beep number of beeps, this is the amount of time of silence the beep sounds when performing a beep to indicate that an error has occurred In milliseconds <b>Example:</b> FBERSFT100	
Error Beep number of beeps	FB	ER	S/P/R/G	NB	The number of beep sounds to play when performing a beep to indicate that an error has occurred <b>Example:</b> FBERSNB3	
Host connect beep frequency (Hz)	FB	CM	S/P/R/G	FQ	The frequency used when performing a beep to indicate that the reader has connected to a host <b>Example:</b> FBCMSFQ2730	
Host connect beep volume (%)	FB	CM	S/P/R/G	VO	The volume used when performing a beep to indicate that the reader has connected to a host. This is a percentage of full volume. <b>Valid Range:</b> 0 to 100 percent <b>Example:</b> FBCMSVO35	
Host connect beep On time (ms)	FB	CM	S/P/R/G	NT	The amount of time the beep sounds when performing a beep to indicate that the reader has connected to a host in milliseconds <b>Example:</b> FBCMSNT100	
Host connect beep Off time (ms)	FB	CM	S/P/R/G	FT	If multiple beeps are configured for Comm connect beep number of beeps, this is the amount of time of silence the beep sounds when performing a beep to indicate that the reader has connected to a host.In milliseconds <b>Example:</b> FBCMSFT100	
Host connect beep number of beeps	FB	CM	S/P/R/G	NB	The number of beep sounds to play when performing a beep to indicate that the reader has connected to a host <b>Example:</b> FBCMSNB1	
Paging Beep frequency (Hz)	FB	PG	S/P/R/G	FQ	The frequency used when performing a beep to indicate paging. <b>Example:</b> FBPGSFQ2730 <b>Keyword:</b> #CR2700	
Paging Beep volume (%)	FB	PG	S/P/R/G	VO	The volume used when performing a beep to indicate paging. This is a percentage of full volume. <b>Example:</b> FBPGSVO100 <b>Keyword:</b> #CR2700	
Paging Beep On time (ms)	FB	PG	S/P/R/G	NT	The amount of time the beep sounds when performing a beep to indicate paging. In milliseconds <b>Example:</b> FBPGSNT500 <b>Keyword:</b> #CR2700	
Paging Beep Off time (ms)	FB	PG	S/P/R/G	FT	If multiple beeps are configured, amount of time for beeps, this is the amount of time of silence the beep sounds when performing a beep to indicate paging. In milliseconds <b>Example:</b> FBPGSFT500 <b>Keyword:</b> #CR2700	
Paging beep number of beeps (s)	FB	PG	S/P/R/G	NB	The amount of time beeps continue when performing a beep to indicate paging in seconds. <b>Example:</b> FBPGSNB30 <b>Note:</b> Paging time In milliseconds is calculated as (on time + off time)*Number of beeps. <b>Keyword:</b> #CR2700	
Vibration on good read	FB	VB	S/P/R/G	EN	0	Disable vibrate on good read <b>Example:</b> FBVBSEN0
					1	Enable vibrate on good read <b>Example:</b> FBVBSEN1

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
					<b>Note:</b> Only supported on readers with a vibrate motor (Ex. CR1500)
Vibration On time (ms)	FB	VB	S/P/R/G	NT	Set the number of milliseconds the reader should vibrate per pulse <b>Example:</b> FBVBSNT750 <b>Note:</b> Only supported on readers with a vibrate motor (Ex. CR1500)
Vibration Off time (ms)	FB	VB	S/P/R/G	FT	Set the number of milliseconds the reader should rest between pulses <b>Example:</b> FBVBSFT250 <b>Note:</b> Only supported on readers with a vibrate motor (Ex. CR1500)
Vibration number of pulses	FB	VB	S/P/R/G	NB	Set the number of vibrate pulses per good read <b>Example:</b> FBVBSNB2 <b>Note:</b> Only supported on readers with a vibrate motor (Ex. CR1500)
Reconnect Beep frequency (Hz)	FB	RB	S/P/R/G	FQ	The frequency used when performing a beep to indicate reconnect. <b>Example:</b> FBPGSFQ2730 <b>Keyword:</b> #CR2700
Reconnect Beep volume (%)	FB	RB	S/P/R/G	VO	The volume used when performing a beep to indicate reconnect. This is a percentage of full volume. <b>Example:</b> FBRBSVO100 <b>Keyword:</b> #CR2700
Reconnect Beep On time (ms)	FB	RB	S/P/R/G	NT	The amount of time the beep sounds when performing a beep to indicate reconnect. In Milliseconds <b>Example:</b> FBPGSNT500 <b>Keyword:</b> #CR2700
Reconnect Beep Off time (ms)	FB	RB	S/P/R/G	FT	If multiple beeps are configured, amount of time for beeps, this is the amount of time of silence the beep sounds when performing a beep to indicate reconnect. In milliseconds <b>Example:</b> FBPGSFT500 <b>Keyword:</b> #CR2700
Reconnect Number of Beeps	FB	RB	S/P/R/G	NB	The amount of beeps when indicating reconnect. <b>Example:</b> FBRBSNB3 <b>Keyword:</b> #CR2700
Reconnect Beep Delay(ms)	FB	RB	S/P/R/G	DL	The amount of time before a beep to indicate reconnecting in milliseconds <b>Example:</b> FBRBSDL1 <b>Keyword:</b> #CR2700

#### 4.3.14 <LA> – Language Parameters

Example output from CR8200. See Appendices for current default values.

<LA>

```
<IN AL="USEnglish_Win"
    IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portugu
    ese_Win,LatinAmerican_Win,Japanese_Win,Italian_Win,Italian_Apple,SwissGerman_Win,German
    nSwiss_Apple,German_Apple,German_Win,French_Apple,French_Win,English_Apple,BelgianFren
    ch_Win,USEnglish_Win" />
```

</LA>

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Get all language parameters	LA	LA	G		Returns all language settings <b>Example:</b> LAING
Active language	LA	IN	S/P/R/G	AL	Active language setting <b>Valid Range:</b> Languages listed by the LAINGIL command <b>Example:</b> LAINSALSpanish_Win

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Get Installed languages list	LA	IN	G	IL	Returns list of installed language names <b>Example:</b> LAINGIL

#### 4.3.15 <MD> – Motion Detection Parameters

Example output from CR8200. See Appendices for current default values.

<MD>

```
<PM NG="1" XG="47" IG="40" NE="1" XE="46" IE="21" NI="1" XI="6" II="1" NL="60" XL="90" PL="15"
    TL="5" BT="4" DT="0" ET="0" DI="0" />
```

</MD>

See section [4.4 Motion Detection](#) for more information

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples		
Get All motion detect settings	MD	PM	G		Returns all motion detection parameters values in an XML element <b>Example:</b> MDPMG		
Minimum illumination	MD	PM	S/P/R/G	NI	<table border="1"> <tr> <td>0</td> <td>Minimum Value</td> </tr> </table> Minimum illumination is the lowest value the AGC should use to set the illumination <b>Valid Range:</b> 0 to Maximum illumination <b>Example:</b> MDPMNI1	0	Minimum Value
0	Minimum Value						
Maximum illumination	MD	PM	S/P/R/G	XI	<table border="1"> <tr> <td>100</td> <td>Maximum Value</td> </tr> </table> This is the highest value the AGC should use to set the illumination <b>Valid Range:</b> Minimum illumination to 100 <b>Example:</b> MDPMXI6 <b>Note:</b> This command replaces AGCR_MB	100	Maximum Value
100	Maximum Value						
Initial illumination value	MD	PM	S/P/R/G	II	The starting value the AGC will use to start adjusting illumination <b>Valid Range:</b> Minimum illumination to Maximum illumination <b>Example:</b> MDPMII1		
Minimum exposure time (μs)	MD	PM	S/P/R/G	NE	<table border="1"> <tr> <td>1</td> <td>Minimum Value</td> </tr> </table> <b>Valid Range:</b> 1 to Maximum exposure time microseconds <b>Example:</b> MDPMNSE100 This is the minimum time the camera lets light into the element to take the picture in microseconds.	1	Minimum Value
1	Minimum Value						
Maximum exposure time (μs)	MD	PM	S/P/R/G	XE	<table border="1"> <tr> <td>20000</td> <td>Maximum Value</td> </tr> </table> <b>Valid Range:</b> Minimum exposure time to 20000 microseconds <b>Example:</b> MDPMX10040	20000	Maximum Value
20000	Maximum Value						
Initial exposure time (μs)	MD	PM	S/P/R/G	IE	<b>Valid Range:</b> Minimum exposure time to Maximum exposure time microseconds <b>Example:</b> MDPMIE100		
Minimum gain	MD	PM	S/P/R/G	NG	<table border="1"> <tr> <td>0</td> <td>Minimum Value</td> </tr> </table> <b>Valid Range:</b> 0 to Maximum Gain <b>Example:</b> MDPMNG15	0	Minimum Value
0	Minimum Value						
Maximum gain	MD	PM	S/P/R/G	XG	<table border="1"> <tr> <td>64</td> <td>Maximum Value</td> </tr> </table> Gain is the amount of signal amplification the AGC can apply to make the picture easier to read <b>Valid Range:</b> Minimum Gain to 64 <b>Example:</b> MDPMXG35	64	Maximum Value
64	Maximum Value						
Initial gain	MD	PM	S/P/R/G	IG	<b>Valid Range:</b> Greater than or equal to Minimum Gain and less than or equal to Maximum Gain. <b>Example:</b> MDPMIG15		
Minimum lightest pixel value	MD	PM	S/P/R/G	NL	<table border="1"> <tr> <td>0</td> <td>Minimum Value</td> </tr> </table>	0	Minimum Value
0	Minimum Value						

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					<b>Valid Range:</b> 0 to Maximum lightest pixel value <b>Example:</b> MDPMSNL60	
Maximum lightest pixel value	MD	PM	S/P/R/G	XL	255	<b>Maximum Value</b>
					The lightest values give the motion calculations a base range for maximum brightness before the image begins to saturate. If you set these too high the algorithm will not be able to detect individual pixels because the image is washed out. <b>Valid Range:</b> Minimum lightest pixel value to 255 <b>Example:</b> MDPMSXL90	
Detection pixel threshold	MD	PM	S/P/R/G	PL	This pixel threshold is the minimum difference value between the background brightness and the pixel brightness for the current pixel to be considered a pixel. Different environments may require different thresholds which can be developed empirically. <b>Example:</b> MDPMSP15	
Detection total threshold	MD	PM	S/P/R/G	TL	Total threshold is the minimum number of pixels detected per detection region (left, center, right) to be considered detected motion Different environments may require different thresholds which can be developed empirically. <b>Example:</b> MDPMSTL5	
Detection blob threshold	MD	PM	S/P/R/G	BT	The minimum number of sequential pixels to be considered a group or blob (like a bar width) Different environments may require different thresholds which can be developed empirically. <b>Example:</b> MDPMSTB4	
Enable Targeting	MD	PM	S/P/R/G	ET	0	Disable targeting while detecting motion <b>Example:</b> MDPMSETO
					1	Enable targeting while detecting motion <b>Example:</b> MDPMSET1
Leave Illumination On while detecting motion	MD	PM	S/P/R/G	DI	0	Leave illumination on while scanning for motion. <b>Example:</b> MDPMSDIO
					1	Turn off illumination while scanning for motion. <b>Example:</b> MDPMSDI1

#### 4.3.16 <ST> - Storage Parameters

The following commands manage files in the user file system of a reader's flash storage.

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
List Files	ST	FS	X	LS	List all the files saved in the file system <b>Example:</b> STFSXLS <b>Note:</b> Supported by all readers (CR950 and CR8200 return empty file listing)	
Upload File (from reader to host)	ST	FS	X	RD	File read – Uploads the file to host (returns NODATA if the file is not stored in the file system) <b>Example:</b> STFSXRDfilename <b>Note:</b> Supported by CR1500 , CR1100, CR2700	
Remove File	ST	FS	X	RM	File remove – Remove the file specified (returns NODATA if the file is not stored in the file system) <b>Example:</b> STFSXRMfilename <b>Note:</b> Supported by CR1500 , CR1100, CR2700	
Remove Image Files	ST	FS	X	RI	Removes all of the transferred images that were sent to the filesystem. <b>Example:</b> STFSXRI <b>Note:</b> Supported by CR1500 , CR1100, CR2700	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Remove JS Rules Files	ST	FS	X	RR	Removes all JS files starting with ".codeRules." that already exist in the filesystem. <b>Example:</b> STFSXRR <b>Note:</b> Supported by CR1500 , CR1100, CR2700

#### 4.3.17 <JS> - JavaScript Configuration Settings and Commands (For readers that support JavaScript)

Example output from CR1500. See Appendices for current default values.

```
<JS>
<PM EN="1" AP="1" RS="6144" IT="1000" MM="0" PM="0" />
</JS>
```

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Get all JavaScript parameters	JS	JS	G		Returns all JavaScript parameters <b>Example:</b> JSJSG	
Execute JavaScript from filesystem	JS	CM	X	ES	This command tells the reader to read the named JavaScript file from the "disk" and execute (or run) that script. The script must have already been loaded to the reader for the command to successfully execute the script. <b>Example:</b> JSCMXES"User1.js"	
Restart JavaScript Engine	JS	CM	X	RS	This command clears the JavaScript engine and memory allocations and restarts the engine with the current settings. Settings can be changed, and the restart causes them to take effect. <b>Example:</b> JSCMXRS1	
JavaScript Engine	JS	PM	S/P/R/G	EN	0	Disable JavaScript Engine <b>Example:</b> JSPMSENO
					1	Enable JavaScript Engine <b>Example:</b> JSPMSEN1
					Turn on the JavaScript capabilities and functionality in the reader	
AllowProcessing	JS	PM	S/P/R/G	AP	0	Disables AllowPorcessing <b>Example:</b> JSPMSAPO
					1	Enables AllowPorcessing <b>Example:</b> JSPMSAP1
					AllowProcessing tells the reader to allow the JavaScript engine to handle the decode data directly. <b>Note:</b> JSPMSAPO Tells the system to bypass the JavaScript processing of the decoded data.	
JavaScript Runtime Size	JS	PM	S/P/R/G	RS	The amount of memory in kb that the JavaScript is allowed to use from system memory <b>Example:</b> JSPMSRS256	
IdleTimeout	JS	PM	S/P/R/G	IT	IdleTimeout is the period for the JavaScript engine to idle before signaling to the system to move to idle mode. <b>Example:</b> JSPMSIT100	

#### 4.3.18 <BT> – Bluetooth Radio Parameters

Example output from CR2700. See Appendices for current default values.

<BT>

```
<RD DN="Code CR2700" DA="000BEF100226" RV="1.1.1" SV="5.0.0" BV="2" ID="2642462480" PW="0"
PM="0" RC="1" RT="300000" RB="0" VT="3000" LT="0" />
```

&lt;/BT&gt;

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Bluetooth Radio Parameters	BT	RD	G		Returns Bluetooth Radio Parameter values <b>Example:</b> BTRDG <b>Keyword:</b> #CR2700 <b>Keyword:</b> #CRA-B27	
Bluetooth Radio Device Name	BT	RD	S/P/R/G	DN	Set Bluetooth Device Name. <b>Example:</b> BTRDSDN"Code CR2700" <b>Keyword:</b> #CR2700	
Bluetooth Radio Clear Connection History	BT	RD	X	CC	Clears the connection history on the reader radio. <b>Example:</b> BTRDXCC <b>Note:</b> If the reader has been paired with another device in Bluetooth Keyboard Mode, that device will need to clear its history in order for this command to take effect. This will also disconnect the reader from the remote device. <b>Keyword:</b> #CR2700	
Bluetooth Radio Firmware Version	BT	RD	G	RV	Returns the firmware version loaded on the radio. <b>Example:</b> BTRDGRV <b>Keyword:</b> #CR2700	
Bluetooth Radio SoftDevice Version	BT	RD	G	SV	Returns the SoftDevice version loaded on the radio. <b>Example:</b> BTRDGSV <b>Note:</b> SoftDevice Version format is Major.Minor.BugFix. <b>Keyword:</b> #CR2700	
Bluetooth Radio Bootloader Version	BT	RD	G	BV	Returns the bootloader version loaded on the radio. <b>Example:</b> BTRDGBV <b>Keyword:</b> #CR2700	
Bluetooth Radio Chip Serial Number	BT	RD	G	ID	Returns the radio chip serial number <b>Example:</b> BTRDGIN <b>Keyword:</b> #CR2700	
Bluetooth Radio Device Vendor Timeout (ms)	BT	RD	S/P/G/R	VT	The amount of time that the radio will try to connect in vendor mode before error beeping or indicating the first auto-reconnect beep. <b>Example:</b> BTRDSVT5000 <b>Keyword:</b> #CR2700	
Bluetooth In Charger Presentation Mode	BT	RD	S/P/G/R	PM	0	Trigger Mode <b>Example:</b> BTRDSPMO
					1	Motion Detection Mode <b>Example:</b> BTRDSPM1
					Sets Bluetooth mode when reader is in the charger base <b>Note:</b> This command is linked to RDST_SB. Changing one will change both of them, since they implement the same behavior. <b>Keyword:</b> #CR2700	
Bluetooth Auto-Reconnect	BT	RD	S/P/G/R	RC	0	Disable auto-reconnect <b>Example:</b> BTRDSRC0
					1	Enable auto-reconnect <b>Example:</b> BTRDSRC1
					Sets auto-reconnect mode when reader is in Bluetooth vendor mode. Auto-reconnect will automatically attempt to reconnect to the last base connected to the reader. <b>Keyword:</b> #CR2700	
Bluetooth Auto-Reconnect Timeout (ms)	BT	RD	S/P/G/R	RT	Sets the timeout for auto-reconnect in milliseconds. <b>Example:</b> BTRDSRT300000 <b>Note:</b> If set to a negative value, the reader will attempt to reconnect indefinitely. <b>Keyword:</b> #CR2700	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Bluetooth Auto-Reconnect Beep Time	BT	RD	S/P/G/R	RB	<b>Frequency</b> , in milliseconds, which the reader will initiate the reconnect beep. <b>Example:</b> BTRDSR0 <b>Note:</b> If set to zero, the reader will only beep once after the first reconnect attempt. <b>Keyword:</b> #CR2700	
Terminate Bluetooth Connection	BT	RD	X	DC	Disconnects reader from all remote devices. <b>Example:</b> BTRDXDC <b>Keyword:</b> #CR2700	
Bluetooth Radio Link ID Type	BT	RD	S/P/G/R	LT	0	Sets the Link Lock ID to reader serial number <b>Example:</b> BTRDSL0
					1	Sets the Link Lock ID to radio chip serial number <b>Example:</b> BTRDSL1
						<b>Keyword:</b> #CR2700
Bluetooth Security Mode	BT	SE	G	SM	The security mode of the current Bluetooth connection. <b>Example:</b> BTSEGSM <b>Keyword:</b> #CR2700	
Bluetooth Security Level	BT	SE	G	SL	The security level of the current Bluetooth connection. <b>Example:</b> BTSEGLS <b>Keyword:</b> #CR2700	
Bluetooth LE Secure Pairing	BT	SE	G	LS	Returns whether or not the current connection is LE Secure. <b>Example:</b> BTSEGLS <b>Keyword:</b> #CR2700	
Bluetooth Radio Command Base	BT	BR	X	CM	Sends a given command through the radio to the base. If the command has associated output data meant for the host PC as opposed to the sender, the base must be first set into Host Response mode by the BTCPMRD_ setting and then changed back to the default response mode. <b>Example:</b> BTBRXCM[BTCPXCMUK] – Sends response back to originator destination (default) <b>Example:</b> BTBRXCM[BTCPMRD1] – Enable response to host BTBRXCM[CFG] – Send A271 base configuration command BTBRXCM[BTCPMRD0] – Disable Response to Host <b>Keyword:</b> #CR2700	

#### 4.3.19 <BT> – Bluetooth Charger Parameters

Example output from CRA-271. See Appendices for current default values.

<BT>

```

<CM LB="100" />
<BR AN="BT Charger Station" DD="0519" BO="2" SD="6.0.0" CP="0" PD="1000" PR="500" LL="" />
<MI SN="2026070020" MJ="1" MN="1" BV="1" OP="0" VS="1.1.1" IS="" FT="C011855" MD="A270"
MT="A271" HW="0" />
<UB KL="1" IC="0" IS="0" RL="0" />

```

</BT>

**Note:** If Bluetooth Base/Charger commands are sent from the reader (such as scanned through a barcode), they need to be enclosed in BTBRXCM command as documented in the last command above. If not using a reader commands may be sent directly using CT2

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
Base Communication Mode	BT	CM	X S/P/G/R	CM	UK	USB HID Keyboard <b>Example:</b> BTMSCMUK

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples	
					UP	USB HID POS <b>Example:</b> BTCMSCMUP
					<b>Note:</b> X action is deprecated; please use P/S instead	
Base LED Brightness (%)	BT	CM	S/P/G/R	LB	Adjust Base LED brightness. This is percentage of full brightness. <b>Valid Range :</b> 0 to 100 <b>Example:</b> BTCMSLB100 <b>Keyword:</b> #A271 #BTDG27	
Base Paging Touch Duration (ms)	BT	BR	S/P/G/R	PD	The base touch-and hold Duration to activate paging in milliseconds. Default is set to 1000 milliseconds. <b>Example:</b> BTBRSPD2000 <b>Keyword:</b> #A271 #BTDG27	
Base Paging Blink Rate (ms)	BT	BR	S/P/G/R	PR	The base wireless LED blink rate (on/off frequency) while paging in milliseconds. Default is set to 500 milliseconds (2Hz). <b>Example:</b> BTBRSPR1000 <b>Keyword:</b> #A271 #BTDG27	
Base Device Name	BT	BR	S/P/G/R	AN	Bluetooth base device name. <b>Example:</b> BTBRSAN"BT Charger Station" <b>Keyword:</b> #A271 #BTDG27	
Base Device Deployment Date	BT	BR	S/P/G	DD	Device Deployment Date. <b>Example:</b> BTBRSDD"0319" to set the deployment date to 03/19. <b>Note:</b> Customer can use whatever format best fits their needs. <b>Keyword:</b> #A271 #BTDG27	
Base Bootloader Version	BT	BR	G	BO	Returns base bootloader version <b>Example:</b> BTBRGBO <b>Keyword:</b> #A271 #BTDG27	
Base Connection Preemptive mode	BT	BR	S/P/G/R	CP	0	Disable Connection Preemptive mode <b>Example:</b> BTBRSCP0
					1	Enable Connection Preemptive mode <b>Example:</b> BTBRSCP1
					Preemptive mode allows a reader to connect to a base even if another reader is connected to that base. The preempted reader will be disconnected from the base. <b>Keyword:</b> #A271 #BTDG27	
Terminate Bluetooth Connection	BT	BR	X	DC	0	Disconnects base from all remote devices. <b>Example:</b> BTBRXDC0
					1	Disconnects base from all remote devices & clears connection history information (bonding data) <b>Example:</b> BTBRXDC1
					<b>Keyword:</b> #A271 #BTDG27	
Base Reboot	BT	BR	X	RB	Reboots the base <b>Example:</b> BTBRXRB <b>Keyword:</b> #A271 #BTDG27	
Base Soft-Device version	BT	BR	G	SD	Returns the base's soft-device version <b>Example:</b> BTBRGSD <b>Keyword:</b> #A271 #BTDG27	
Base Link Lock	BT	BR	X	LE	0	Disables the Bluetooth link lock and clears the stored reader link ID <b>Example:</b> BTBRXLE0
					1	Enables the Bluetooth link lock and stores the reader link ID received from reader <b>Example:</b> BTBRXLE1
					<b>Keyword:</b> #A271 #BTDG27	

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
Base Link Lock ID	BT	BR	G	LL	Returns the reader link ID received over Bluetooth from the reader if Link Lock is enabled <b>Example:</b> BTBRGLL <b>Keyword:</b> #A271 #BTDG27
Base Chip Serial Number	BT	MI	G	SN	Returns Base Chip serial number <b>Example:</b> BTMIGSN <b>Keyword:</b> #A271 #BTDG27
Base Chip Revision	BT	MI	G	CV	Returns the chip hardware revision <b>Example:</b> BTMIGCV <b>Keyword:</b> #A271 #BTDG27
Base Firmware Version Major	BT	MI	G	MJ	Returns Firmware Major Version parameter <b>Example:</b> BTMIGMJ <b>Keyword:</b> #A271 #BTDG27
Base Firmware Version Minor	BT	MI	G	MN	Returns Firmware Minor Version parameter <b>Example:</b> BTMIGMN <b>Keyword:</b> #A271 #BTDG27
Base Firmware Build Version	BT	MI	G	BV	Returns Firmware Build Version parameter <b>Example:</b> BTMIGBV <b>Keyword:</b> #A271 #BTDG27
Base Firmware Option Build Version	BT	MI	G	OP	Returns Firmware Build Option parameter <b>Example:</b> BTMIGOP <b>Keyword:</b> #A271 #BTDG27
Base Firmware Version Major,Minor,Build	BT	MI	G	VS	Returns Firmware Major and Minor Version information <b>Example:</b> BTMIGVS <b>Keyword:</b> #A271 #BTDG27
Base Information String	BT	MI	G	IS	Returns Base Information String parameter <b>Example:</b> BTMIGIS <b>Keyword:</b> #A271 #BTDG27
Base Firmware Type	BT	MI	G	FT	Returns Base Firmware type <b>Example:</b> BTMIGFT <b>Note:</b> Firmware type (C-number) "Cxxxxx" etc. <b>Keyword:</b> #A271 #BTDG27
Base Model	BT	MI	G	MD	Returns Base Model i.e. "A270" etc. <b>Example:</b> BTMIGMD <b>Keyword:</b> #A271 #BTDG27
Base Model Type	BT	MI	G	MT	Returns base Model type i.e. "A271" etc. <b>Example:</b> BTMIGMT <b>Keyword:</b> #A271 #BTDG27
Base Hardware Revision	BT	MI	G	HW	Returns Base hardware revision <b>Example:</b> BTMIGHW <b>Keyword:</b> #A271 #BTDG27
HID Keyboard – Inter Character Delay (ms)	BT	UB	S/P/R/G	IC	This is the time between sending consecutive characters to the host in milliseconds The greater of the value set on the reader and on the base is used. <b>Valid Range:</b> 0 - 10000 <b>Example:</b> BTUBSIC10 <b>Note:</b> See Appendix A <b>Keyword:</b> #Communications <b>Keyword:</b> #InterCharacterDelay <b>Keyword:</b> #A271 #BTDG27
HID Keyboard – Inter Scan Delay (ms)	BT	UB	S/P/R/G	IS	This is the time between sending two non-zero scan codes in milliseconds The greater of the value set on the reader and on the base is used. <b>Valid Range:</b> 0 - 10000 <b>Example:</b> BTUBSIS10 <b>Note:</b> See Appendix A <b>Keyword:</b> #Communications

Code Description	Pri-Cat	Sub-Cat	Action	Param	Notes/Examples
HID Keyboard – Release Delay (ms)	BT	UB	S/P/R/G	RL	<p><b>Keyword:</b> #A271 #BTDG27</p> <p>This is the time between the last non-zero scan code and sending release (all keys up) in milliseconds</p> <p>The greater of the value set on the reader and on the base is used.</p> <p><b>Valid Range:</b> 0 - 10000</p> <p><b>Example:</b> BTUBSRL10</p> <p><b>Note:</b> See Appendix A</p> <p><b>Keyword:</b> #Communications</p> <p><b>Keyword:</b> #A271 #BTDG27</p>

## 4.4 Motion Detection

The CR8200 supports motion detection, which means the reader will trigger automatically when an object is brought into the field of view. Motion detect mode is typically used when the reader is mounted in a stationary position, and barcodes are presented to it. The reader is set to use minimal illumination while detecting motion, and works best with bright ambient light shining from behind the reader.

The motion detection algorithm uses several parameters. The exposure time, gain, and illumination are camera settings that are used to get the best picture to determine whether or not objects have moved into the field of view. All three have minimum and maximum values which the AGC (automatic gain control) uses to get the best picture.

The exposure is the length of time that the camera "shutter" lets light into the detector array. If it isn't open long enough, the image will be too dark to detect motion. If it is open too long, the image will be over-exposed. By setting the minimum and maximum time the AGC is allowed to open the shutter, we can try to force the AGC to not over-expose or under-expose the picture.

The gain is the amount of amplification the AGC can use to attempt to increase the contrast of the picture between light and dark pixels. Setting the minimum too low doesn't produce enough contrast, and setting the maximum too high saturates the image. Thus, the gain range helps the AGC to optimize the contrast of the image.

The illumination is light the reader shines on the object to increase the sensitivity of the motion detection algorithm. This is in addition to any ambient light that may be present. More illumination makes it easier to detect motion, but brighter illumination can be undesirable in some environments.

## 4.5 Data Formatting

The CR8200 supports data formatting at the decoder level. This produces fast, consistent results in a minimal amount of reader space. The reader supports simple prefixes and suffixes around the decoded data, the simplest form of data formatting, allows the user full control by using the data format string, and performs data validations and public sector parsing using the format parse setting in conjunction with the selected format option.

### 4.5.1 Data Formatting Options

The decoder allows many types of data formatting, selected by setting the data format option, and setting the appropriate configuration string. See Decoder Parameters section on format options.

<b>Data Format Options</b>	
<b>Valid for cd 17.1.28 and below</b>	
<b>Value</b>	<b>Description</b>
0	Data formatting off
1	Simple data formatting using either prefix and suffix, or by setting the format data string directly
2	Match String validation
3	GS1 DataBar validation ( <b>requires license 5019</b> )
4	UDI/HIBC validation ( <b>requires license 5020</b> )
5	ISO15434 validation
6	ISO15434 & ISO15418 validation
7	<del>Simple age verification using a configuration string (<b>requires a license</b>)</del> <b>REPLACED – Use value ‘8’</b>
8	Simple age verification ( <b>requires license 5017</b> )
9	DL Parsing using a configuration string ( <b>requires license 5014</b> )
10	DL Parsing without using a configuration string ( <b>requires license 5014</b> )
11	Success and Raw validation
12	Match String validation + Data Formatting
13	GS1 validation + Data Formatting ( <b>requires license 5019</b> )
14	UDI validation + Data Formatting ( <b>requires license 5020</b> )
15	ISO15434 validation + Data Formatting
16	ISO15434 & ISO15418 validation + Data Formatting
18	Perform Simple Age verification and Data Formatting
19	Perform DL Parsing with configuration string and Data Formatting ( <b>requires license 5014</b> )
20	Perform DL Parsing without configuration and Data Formatting ( <b>requires license 5014</b> )

<b>Data Format Options</b>	
<b>Valid for cd 17.2.9 and above</b>	
<b>Value</b>	<b>Description</b>
DF=0	Data formatting off
DF=1	Simple data formatting using either prefix and suffix, or by setting the format data string directly
DV=1	DL Parsing using a configuration string( <b>requires license 5014</b> )
DV=2	DL / ID public sector parsing output in JSON format <b>(requires a license)</b>
DV=3	Simple age verification ( <b>requires a license</b> )

Data Format Options	
Valid for cd 17.2.9 and above	
Value	Description
DV=4	Match String validation
DV=5	GS1 DataBar validation ( <b>requires license 5019</b> )
DV=6	UDI/HIBC validation ( <b>requires license 5020</b> )
DV=7	ISO15434 validation
DV=8	ISO15434 & ISO15418 validation
DV=1 DF=1	Perform DL Parsing with configuration string + Data Formatting ( <b>requires license 5014</b> )
DV=2 DF=1	DL / ID public sector parsing output in JSON format + Data Formatting
DV=3 DF=1	Simple age verification + Data Formatting ( <b>requires license 5017</b> )
DV=4 DF=1	Match String validation + Data Formatting
DV=5 DF=1	GS1 DataBar validation + Data Formatting ( <b>requires license 5019</b> )
DV=6 DF=1	UDI/HIBC validation + Data Formatting ( <b>requires license 5020</b> )
DV=7	ISO15434 validation + Data Formatting
DV=8	ISO15434 & ISO15418 validation+ Data Formatting

**Note:** several options require a license

#### 4.5.2 Data Format String

The data format string allows the user full control of the data formatting. This string consists of a 12-digit configuration string, typically zeros, a prefix, decode data, and a suffix. There may also be user data injected into the string. A format string example would be CDOPSF"000000000000!,,/0d/0a" which appends a carriage return line feed to the decoded data.

#### 4.5.3 Prefixes and Suffixes

Prefix and suffix values define data that will be added to the decoded barcode data. The firmware adds the prefix and suffix to the beginning and end of the decoded data, respectively. Adding prefix or suffix data takes two steps – defining the prefix and/or suffix strings and enabling the application of data formatting.

- Command to define a prefix – CDOPSPX"string"
- Command to define a suffix – CDOPSSX"string"
  - "string" must be enclosed in quotes in the command.
  - Non-printable characters are represented by a forward slash and the corresponding hexadecimal value, such as /0D for a carriage return

#### Examples:

- Command to define a prefix comma - CDOPSPX","
- Command to define a prefix non-keyboard tab - CDOPSPX"/09"

After defining strings for a prefix and/or suffix, the application of prefixes and suffixes must be enabled. This allows you to define prefixes and/or suffixes and enable/disable them as needed.

- Command to enable - CDOPSFO1 with cd 17.1.28 CDOPSDF1 with cd 17.2.x

#### 4.5.4 Format Case

The decoder will decode the barcode data and if this option, which changes the default configuration string, is set, the data will be output as decoded (0), uppercase (1), lowercase (2), or bracketed hex (3).

An example is CDOPSFC1 to set the data to output in uppercase.

#### 4.5.5 Format Parse and Validation Configuration String

Validation and public sector parsing also require a configuration string. This string is set using CDOPSFP"string".

#### 4.5.6 Sending Windows Keystrokes using CodeXML

The Code Reader products are often connected to a PC using keyboard input. The data contained in the read barcode is simply "typed" into the PC application. It is often required that the reader send a certain key as a prefix or suffix to the application such as an "enter" key, mimicking an actual keystroke. In order to do this, Code has defined what is called a CodeXML Sequence to indicate to the reader to send a Windows keystroke instead of literal data. Please note that an "Enter" key is not the same as an ASCII carriage return (0x0D).

A CodeXML sequence consists of a header, a payload, and a footer.

CodeXML header	<SOH>Y<RS>an/
Payload	(A keystroke representation. See the table below)
CodeXML footer	<EOT>

The non-printable characters are represented by their hexadecimal equivalents. This representation will be different based on the context, but will often be seen as \x01, /01, 0x01, etc. for the <SOH> (or Start of Header) non-printable character. For CortexDecoder formatting, the correct format is /01.

A CodeXML header, formatted for CortexDecoder formatting, would look like this:

/01Y/1Ean/2F

A CodeXML payload consists of one or more keystroke representations. These keystrokes are represented by a forward slash (which must be escaped by the hexadecimal /2F in the format string) and a letter. A full list of available keys is below:

Characters	Key
/a	Toggle Alt

Characters	Key
/g	Toggle AltGr (right Alt)
/c	Toggle Ctrl
/m	Toggle Menu
/s	Toggle Shift
/w	Toggle Windows Logo
/u	Up arrow
/l	Left arrow
/r	Right arrow
/d	Down arrow
/t	Tab
/z	Delete
/e	Esc
/n	Enter
/v	End
/b	Backspace
/i	Insert
/p	Page up
/x	Page down
/h	Home
/,	500 ms delay
/0 - /9	Number pad
/f1 - /f12	Function keys
//	/
/k	USB scan codes (see section 4.5.7)

The CodeXML footer would look like this:

/04

Therefore, a CodeXML string representing a Windows Enter key, formatted for CortexDecoder formatting, would look like this:

/01Y/1Ean/2F/2Fn/04

And the entire command to add the above example as a suffix to decoded data (remembering to enable data formatting) would look like this:

```
CDOPSSX"/01Y/1Ean/2F/2Fn/04"  
CDOPSFO1
```

#### 4.5.7 Sending USB Keyboard Scan Codes using CodeXML

In addition to sending keyboard keystrokes using the aforementioned keystroke representations, CodeXML also has the ability to send USB scan codes to identify an exact key on a keyboard.

One such use case involves some language keyboards (e.g., Italian) labeling the left Alt key as "Alt" and the right "Alt" key as "AltGr" and entering different language characters for a keystroke based on just a key, Shift+key, AltGr+key, and even AltGr+Shift+key. Using CodeXML to identify the scan code for AltGr (right Alt), a reader can send a language character available only when AltGr (Alt Grave) is pressed by sending the scan codes for AltGr and the key.

USB scan codes provide for "modifiers"; that is, an indication of whether or not the Ctrl, Shift, Alt, AltGr and/or Meta/GUI (e.g., "Windows") keys are pressed at the same time a normal key is pressed, thus "modifying" the key's keystroke. For example, to send just the "a" character using scan codes requires sending the scan code for the "a" key (0x04) with no modifier (0x00); however, to send the "A" character requires sending the "a" key's scan code with a "Shift" modifier (0x02 (left Shift) or 0x20 (right Shift)).

The table below identifies the 2-digit hexadecimal representation for the "modifier" keys.

Key	Modifier
Left Ctrl	0x01
Left Shift	0x02
Left Alt	0x04
Left Meta/GUI	0x08
Right Ctrl	0x10
Right Shift	0x20
Right Alt (AltGr)	0x40
Right Meta/GUI	0x80

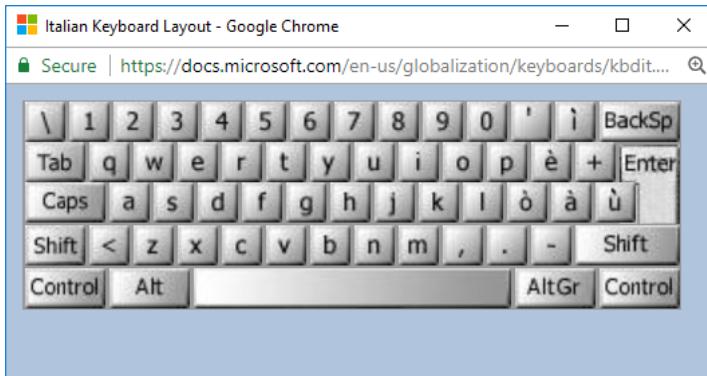
Note modifier keys can be combined by or'ing their values together; e.g., Left Shift + Right Alt = 0x42.

The CodeXML syntax for sending scan codes is the CodeXML header, followed by "/k", followed by two 2-digit hexadecimal values indicating the modifier(s) and key scan codes, respectively.

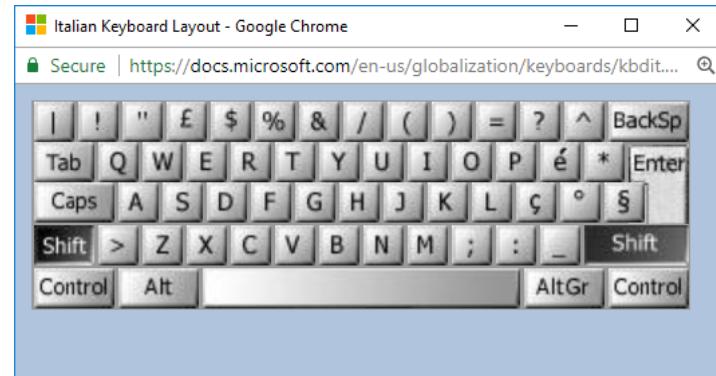
To illustrate, assume an Italian user wants to replace all "\$" characters in a barcode with the Euro symbol "€", which is a non-ASCII character. The decoder's string-matching feature can easily accomplish this by replacing each dollar sign with CodeXML for the Euro sign on the Italian keyboard.

Below are the Italian keyboard character layouts based on the modifier keys pressed. Note the Euro sign is available as AltGr+5 or AltGr+e.

The USB scan codes for the "5" and "e" keys, which are in the same keyboard key position on both the English and Italian keyboards, are 0x22 and 0x08, respectively. The USB modifier scan code for the Italian AltGr key position, which is also the right Alt key position on the English keyboard, is 0x40.



No Modifier Keys



Shift Modifier Key



AltGr Modifier Key



AltGr+Shift Modifier Keys

Note after the "key press" scan code(s) there must be a "key release" specified using 0x00 (no modifier) and 0x00 (no key) to terminate the key press or the operating system may interpret the last scan code as "auto-repeating", which would be undesirable.

Below is the CodeXML for the AltGr+e scan codes to indicate a "€" key press on an Italian keyboard, followed by the "key release" scan codes ("0000") to end the "€" key press.

*CodeXML:*

```
/01Y/1Ean//k40080000/04
```

*CodeXML in a decoder data-management configuration string for all symbologies:*

```
000000000000!,,|/24^1/01Y/1Ean/2F/2Fk40080000/04
```

*For all barcode symbologies, replace all "\$" (0x24) with "€" for Italian keyboard and enable String-matching.*

```
CDOPSSM"000000000000!,,|/24^1/01Y/1Ean/2F/2Fk40080000/04"
```

CDOPSDV4

## 4.6 Command Barcode Format

The CR8200 can receive commands directly through user input via serial or text or via configuration barcode decoding. This section describes the format of configuration command barcodes.

Header	Command	Trailer
<SOH>Y<GS><STX> (/01Y/1D/02)	String as described in Section 4.2	<ETX><EOT> (/03/04)

Multiple commands can be included in one barcode by separating each command with ASCII <ETX> (0x03).

Example: Scanning barcode generated from **/01Y/1d/02SYAZTCG/03SYAUPOG/03/04** will output all settings of symbology AZTC and AUPO.

Configuration Command Barcodes:

- CR8200 configuration barcodes use QR Code barcode symbology.
- Source files to generate configuration barcodes have a file extension of .crccs and an intermediate file extension of .crmkr.
- If source files contain comments, a comment should start with two forward slash (//) characters.
- Source files can have only one Primary Category command per line as defined in Section 4.2 above.

Examples:

Example.crccs

Contains:

```
// Hypothetical
// Output all settings of symbologies Aztec and Australian Post
// Rev 1 – 6/22/16 – Jackson – Initial Release

SYAZTCG // Get All Aztec settings
SYAUPOG // Get All Australian Post settings
```

Example.crmkr

Contains:

/01Y/1d/02SYAZTCG/03SYAUPOG/03/04

Example.png



Example

## 4.7 Device Recovery

A device may get into a state in which it is difficult to determine its configuration state on very rare occasions. Code provides two methods that allow the user to set devices back to their factory (default) settings for those occasions. The first method is to issue a configuration reset (CFR) command. This method sets all settings

modified by users back to the default values set at the factory. If the device does not respond to either scanned (readers), or manually entered configuration codes (readers and charging station), powering down the unit and then powering it up again should clear this condition to allow configuration reset codes to be sent to the reader. Users may reset (recover) the device to factory default settings in the unlikely event where it does not communicate even after the aforementioned procedure. This removes all saved settings even if they do not support the 'R' action. The following are the recovery steps for specific Code devices:

**CR8200, CR806x, and CR950:**

1. Power down the reader.
2. Press and hold down the trigger button while restoring power to the reader.
3. The reader will beep three times; a high pitch beep, a low pitch beep, and the high pitch beep again.
4. Release the trigger and press and hold down again within two seconds after the triple-beep sequence is heard.

**Note:** *If the trigger button is held down beyond the two-second limit, the settings will not reset.*

5. The reader will go through quintuple-beep sequence, after which the user must release the trigger to reset the reader to its factory defaults.

**Note:** *The sequence starts with three beeps (high, low, and high pitch beep), two beeps (high, low), two beeps (high, low), one beep (high) and one beep (high).*

**CR2700, CR1500, CR1100, and CR807x:**

1. Power down the reader by removing cable or battery.
2. For CR2700 press and hold down the top two trigger buttons with the power source (e.g. battery) in place. For CR1500 and CR1100 press and hold down the trigger button while restoring power to the reader (insert cable while the button is being held down).
3. A sextuple-beep sequence with increasing pitch will be heard followed by a one second LED flash, and then the reader enters the "boot-loader" mode.
4. Release the button for CR1500 and CR1100, or the top two buttons for CR2700, and then press and hold down again for 5 seconds. The reader LED will blink green as an indication of entering the "recovery" mode during the 5 seconds, and then the LED will turn off for 1 second. A triple-beep sequence of a low pitch, a high pitch, and then a low pitch will be heard indicating that the recovery has taken effect. A single beep will be heard at the end indicating that the reader's application program has started to run.
5. Release the button(s) and reader recovery will be complete.

**A271:**

1. Power down the charging station by removing the USB cable from power source. Power up the device by re-attaching the USB cable.

**Note:** *To use the touch button, use a finger to touch where the button indicates "page" only, without obscuring the wireless indicator LED.*

2. Touch and hold the button within 1 second after the power is restored. The LED will turn solid as you hold the button. Hold the button for 5 seconds until the LED turns off.
3. Remove finger momentarily, then touch again and hold the button within 3 seconds while the LED blinks rapidly. The LED will turn solid as you hold the button. Hold the button for 5 seconds until the LED turns off.
4. Remove finger to exit the recovery process and enter the normal application process. The LED will blink rapidly momentarily and the settings will clear when the application is being initialized. The LED will turn off, and then starts to blink normally with all saved settings cleared.

## Appendix A – HID scancode delay description

**Keyword:** #Communications

All HID keyboard devices communicate via HID reports. These reports contain the keyboard scancodes for all possible keypresses including press, release, and modifier scancodes. In this way, each HID report represents a keyboard ‘key’ action.

- **Inter-character delay** is the time (in milliseconds) between sending consecutive characters to the host. These delays are necessary sometimes because the host may only be able to handle data at a lower rate.
- **Inter-scancode delay** is the time (in milliseconds) between sending two non-zero scan codes to the host.
- **Release delay** is the time (in milliseconds) between the last non-zero scan code and sending the release (all keys up) report to the host.

## Appendix B – ASCII-Hexadecimal table

This table is for finding hexadecimal values for use in Prefixes, Suffixes and the Format String.

Decimal Value	Hexadecimal Value	ASCII Character	Notes / Alternate Definition
0	00	NUL	(null)
1	01	SOH	(start of header)
2	02	STX	(start of text)
3	03	ETX	(end of text)
4	04	EOT	(end of transmission)
5	05	ENQ	(enquiry)
6	06	ACK	(acknowledge)
7	07	BEL	(bell)
8	08	BS	(backspace)
9	09	TAB; HT	(horizontal tab); ○ (notepad)
10	0A	LF	(line feed, new line); □ (notepad)
11	0B	VT	(vertical tab)
12	0C	FF	(form feed, new page)
13	0D	CR	(carriage return); ↵ (notepad)
14	0E	SO	(shift out)
15	0F	SI	(shift in)
16	10	DLE	(data link escape)
17	11	DC1	(device control 1)
18	12	DC2	(device control 2)
19	13	DC3	(device control 3)
20	14	DC4	(device control 4)
21	15	NAK	(negative acknowledgement)
22	16	SYN	(synchronous Idle)
23	17	ETB	(end of transmission block)
24	18	CAN	(cancel)
25	19	EM	(end of medium)
26	1A	SUB	(substitute)
27	1B	ESC	(escape)
28	1C	FS	(file separator); ▾ (notepad)
29	1D	GS	(group separator)
30	1E	RS	(record separator); ▲ (notepad)
31	1F	US	(unit separator)
32	20	Space	
33	21	!	
34	22	"	
35	23	#	
36	24	\$	

Decimal Value	Hexadecimal Value	ASCII Character	Notes / Alternate Definition
37	25	%	
38	26	&	
39	27	'	
40	28	(	
41	29	)	
42	2A	*	
43	2B	+	
44	2C	,	
45	2D	-	
46	2E	.	
47	2F	/	
48	30	0	
49	31	1	
50	32	2	
51	33	3	
52	34	4	
53	35	5	
54	36	6	
55	37	7	
56	38	8	
57	39	9	
58	3A	:	
59	3B	;	
60	3C	<	
61	3D	=	
62	3E	>	
63	3F	?	
64	40	@	
65	41	A	
66	42	B	
67	43	C	
68	44	D	
69	45	E	
70	46	F	
71	47	G	
72	48	H	
73	49	I	
74	4A	J	
75	4B	K	
76	4C	L	

Decimal Value	Hexadecimal Value	ASCII Character	Notes / Alternate Definition
77	4D	M	
78	4E	N	
79	4F	O	
80	50	P	
81	51	Q	
82	52	R	
83	53	S	
84	54	T	
85	55	U	
86	56	V	
87	57	W	
88	58	X	
89	59	W	
90	5A	Z	
91	5B	[	
92	5C	\	
93	5D	]	
94	5E	^	
95	5F	-	
96	60	`	
97	61	a	
98	62	b	
99	63	c	
100	64	d	
101	65	e	
102	66	f	
103	67	g	
104	68	h	
105	69	i	
106	6A	j	
107	6B	k	
108	6C	l	
109	6D	m	
110	6E	n	
111	6F	o	
112	70	p	
113	71	q	
114	72	r	
115	73	s	
116	74	t	

Decimal Value	Hexadecimal Value	ASCII Character	Notes / Alternate Definition
117	75	u	
118	76	v	
119	77	w	
120	78	x	
121	79	y	
122	7A	z	
123	7B	{	
124	7C		
125	7D	}	
126	7E	~	
127	7F	DEL	DEL

## Appendix C – Reference CFG XML output from CR8200, detailing current defaults

This section contains the CFG output from a CR8200 configured with default settings. You can use this reference to check default values for any parameter in the CR8200 firmware.

```
<CFG>
<CM>
  <GE CR="5000" />
  <MO CM="UN" AD="0" />
  <SE BA="115200" DB="8" PA="N" SB="1" FC="0" PO="1" />
  <UB MF="Code" PN="CR8200" FS="0" PD="0" />
  <CP PM="0" />
  <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />
  <UK SN="1" NE="2" EM="3" IN="1000" />
  <UN SN="1" IN="1000" />
  <UP SN="1" />
  <IP SN="1" />
  <UV SN="0" />
  <UC SN="0" />
</CM>
<PM>
  <SB EN="0" VA="5000" />
  <SM EN="0" VA="3600" MC="1" />
</PM>
<ST />
<FC>
  <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
</FC>
<AG>
  <CR CX="300" CY="300" PX="0" PY="0" ES="0" ED="0" CT="227" LT="8" LP="200" HT="85" HP="200"
DL="11" ME="7" />
  <NO E1="100" E2="1400" E3="3200" E4="5600" E5="7500" E6="9200" G1="15" G2="25" G3="25" G4="25"
G5="25" G6="25" I1="1" I2="14" I3="28" I4="44" I5="62" I6="80" />
  <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
  <BY IL="50" EX="4000" GN="0" />
  <FX BP="50" />
</AG>
<CD>
  <DP BE="0" BD="0" PD="0" PL="0" LC="0" DP="0" BI="0" BH="0" SM="0" />
  <DT TL="320" TF="30" CD="100" TD="0" />
  <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0"
CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="0" AS="0" PI="1" VF="0"
```

GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD="" IS="" IO="" SR="0" PF="2" LA="0" XX="" />  
<VA TT="1600" BD="0" BT="0" EB="0" />  
<IM ET="1" />  
<TP TE="0" RO="0" AB="3" CB="0" XO="0" YO="0" WD="1280" HT="960" PF="2" />  
</CD>  
<SC>  
<SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />  
</SC>  
<SY>  
<AZTC EN="1" PO="0" MR="0" />  
<B412 EN="0" RD="0" />  
<C128 EN="1" ML="1" />  
<CBAR EN="1" CS="0" SS="0" ML="2" />  
<CO11 EN="0" CS="2" SC="0" />  
<CO32 EN="0" />  
<CO39 EN="1" EA="0" CS="0" SS="0" ML="1" />  
<CO93 EN="1" ML="1" />  
<COMP EN="0" />  
<DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />  
<DTCO EN="1" PO="0" MR="0" />  
<GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />  
<H2O5 EN="0" />  
<I2O5 EN="1" CO="0" LN="0" />  
<M2O5 EN="0" />  
<MSIP EN="0" CS="0" SC="0" PE="0" ML="1" />  
<N2O5 EN="0" CS="0" />  
<P417 EN="1" MI="0" />  
<PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />  
<QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />  
<S2O5 EN="0" ML="1" />  
<TELP EN="0" OA="0" />  
<TRIO EN="0" RV="0" SS="0" />  
<UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" NO="0" EC="0" ES="0" DC="0" C8="0" AM="1" />  
<CODA EN="0" />  
<CODF EN="0" />  
<MAXC EN="0" />  
<AUPO EN="0" SC="0" />  
<CAPO EN="0" />  
<CO49 EN="0" />  
<GDMX EN="0" PO="0" MR="0" />  
<GOCO EN="0" MR="0" />  
<HAXN EN="0" PO="0" MR="0" />

```
<JAPO EN="0" />
<KIX0 EN="0" />
<KOPO EN="0" />
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />
</SY>
<PK>
  <OP RT="2000" CT="60" RC="0" />
</PK>
<IM>
  <SN FI="F026FC14BD650FCD" GR="" CV="0x00002402" CR="0x00000010" />
  <CP TM="0" ME="0" XE="0" EN="0" WS="0" HS="0" WL="1280" HL="960" />
</IM>
<FW>
  <CM OE="0" OR="0" CT="5000" />
  <TS MR="0" ID="0" />
  <HW WT="5" TF="250000" TB="100" TO="0" />
  <IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
  <FW MJ="1" MN="16" BU="0" OP="" VS="1.16.0" TY="C010605" DV="cd(19.1.13.6081 -
20191105:1419)"/>
  <CP RV="2.0" SN="0E1D2680504FA3" />
  <RR SN=" 1020001352" ID="74702924" HR="0x00" MD="CR8200" MT="2MD0" IS="20191119:1824"
DD="" />
  <QD SO="0" N1="0" L1="0" N0="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" TR="0" B1="0"
B2="0" BL="0" AF="0" WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
  <LC GL="" />
  <FB VB="0" SM="0" />
  <IL LO="0" MB="100" AC="0" />
  <OF LE="" />
  <TC MD="1" T1="0" T2="0" T3="0" />
</RD>
<FB>
  <IN BI="0" BE="1" />
  <GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
  <CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
  <CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
  <ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
</FB>
<LA>
```

```
<IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,Lati
nAmerican_Win,Japanese_Win,Italian_Win,Italian_Apple,SwissGerman_Win,GermanSwiss_Apple,German_Ap
ple,German_Win,French_Apple,French_Win,English_Apple,BelgianFrench_Win,USEnglish_Win" />
</LA>
<MD>
  <PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70"
PL="15" TL="5" BT="8" IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />
</MD>
<EN>
  <IM ET="1" JQ="100" JS="30" />
</EN>
<BT>
  <RD DN="" DA="" RV="" SV="" BV="0" ID="" PW="" RC="0" RT="0" RB="0" VT="0" LT="0" />
</BT>
<Saved />
<Platform />
</CFG>
```

## Appendix D – Reference CFG XML output from CR8060, detailing current defaults

This section contains the CFG output from a CR8060 configured with default settings. You can use this reference to check default values for any parameter in the CR8060 firmware.

```
<CFG>
<CM>
  <GE CR="5000" />
  <MO CM="UN" AD="0" />
  <SE BA="115200" DB="8" PA="N" SB="1" FC="0" PO="1" />
  <UB MF="Code" PN="CR8200" FS="0" PD="0" />
  <CP PM="0" />
  <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />
  <UK SN="1" NE="2" EM="3" IN="1000" />
  <UN SN="1" IN="1000" />
  <UP SN="1" />
  <IP SN="1" />
  <UV SN="0" />
  <UC SN="0" />
</CM>
<PM>
  <SB EN="0" VA="5000" />
  <SM EN="0" VA="3600" MC="1" />
</PM>
<ST />
<FC>
  <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
</FC>
<AG>
  <CR CX="300" CY="300" PX="0" PY="0" ES="0" ED="0" CT="227" LT="8" LP="200" HT="85" HP="200"
DL="11" ME="7" />
  <NO E1="100" E2="1400" E3="3200" E4="5600" E5="7500" E6="9200" G1="15" G2="25" G3="25" G4="25"
G5="25" G6="25" I1="1" I2="14" I3="28" I4="44" I5="62" I6="80" />
  <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
  <BY IL="50" EX="4000" GN="0" />
  <FX BP="50" />
</AG>
<CD>
  <DP BE="0" BD="0" PD="0" PL="0" LC="0" DP="0" BI="0" BH="0" SM="0" />
  <DT TL="320" TF="30" CD="100" TD="0" />
  <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0"
CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="0" AS="0" PI="1" VF="0"
```

GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD="" IS="" IO="" SR="0" PF="2" LA="0" XX="" />  
<VA TT="1600" BD="0" BT="0" EB="0" />  
<IM ET="1" />  
<TP TE="0" RO="0" AB="3" CB="0" XO="0" YO="0" WD="1280" HT="960" PF="2" />  
</CD>  
<SC>  
<SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />  
</SC>  
<SY>  
<AZTC EN="1" PO="0" MR="0" />  
<B412 EN="0" RD="0" />  
<C128 EN="1" ML="1" />  
<CBAR EN="1" CS="0" SS="0" ML="2" />  
<CO11 EN="0" CS="2" SC="0" />  
<CO32 EN="0" />  
<CO39 EN="1" EA="0" CS="0" SS="0" ML="1" />  
<CO93 EN="1" ML="1" />  
<COMP EN="0" />  
<DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />  
<DTCO EN="1" PO="0" MR="0" />  
<GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />  
<H2O5 EN="0" />  
<I2O5 EN="1" CO="0" LN="0" />  
<M2O5 EN="0" />  
<MSIP EN="0" CS="0" SC="0" PE="0" ML="1" />  
<N2O5 EN="0" CS="0" />  
<P417 EN="1" MI="0" />  
<PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />  
<QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />  
<S2O5 EN="0" ML="1" />  
<TELP EN="0" OA="0" />  
<TRIO EN="0" RV="0" SS="0" />  
<UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" NO="0" EC="0" ES="0" DC="0" C8="0" AM="1" />  
<CODA EN="0" />  
<CODF EN="0" />  
<MAXC EN="0" />  
<AUPO EN="0" SC="0" />  
<CAPO EN="0" />  
<CO49 EN="0" />  
<GDMX EN="0" PO="0" MR="0" />  
<GOCO EN="0" MR="0" />  
<HAXN EN="0" PO="0" MR="0" />

```
<JAPO EN="0" />
<KIX0 EN="0" />
<KOPO EN="0" />
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />
</SY>
<PK>
  <OP RT="2000" CT="60" RC="0" />
</PK>
<IM>
  <SN FI="448B328E9CCB8AD8" GR="" CV="0x00002400" CR="0x00000042" />
  <CP TM="0" ME="0" XE="0" EN="0" WS="0" HS="0" WL="1280" HL="960" />
</IM>
<FW>
  <CM OE="0" OR="0" CT="5000" />
  <TS MR="0" ID="0" />
  <HW WT="5" TF="250000" TB="100" TO="0" />
  <IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
  <FW MJ="1" MN="16" BU="0" OP="" VS="1.16.0" TY="C010605" DV="cd(19.1.13.6081 - 20191105:1419)" />
  <CP RV="2.0" SN="0E0518700C5EB7" />
  <RR SN="1020030479" ID="116889612" HR="0x04" MD="CR8200" MT="2MD0" IS="20191119:1824" DD="" />
  <QD SO="0" N1="0" L1="0" N0="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" TR="0" B1="0" B2="0" BL="0" AF="0" WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
  <LC GL="" />
  <FB VB="0" SM="0" />
  <IL LO="0" MB="100" AC="0" />
  <OF LE="" />
  <TC MD="1" T1="0" T2="0" T3="0" />
</RD>
<FB>
  <IN BI="0" BE="1" />
  <GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
  <CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
  <CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
  <ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
</FB>
<LA>
```

```
<IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,Lati
nAmerican_Win,Japanese_Win,Italian_Win,Italian_Apple,SwissGerman_Win,GermanSwiss_Apple,German_Ap
ple,German_Win,French_Apple,French_Win,English_Apple,BelgianFrench_Win,USEnglish_Win" />
</LA>
<MD>
<PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70"
PL="15" TL="5" BT="8" IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />
</MD>
<EN>
<IM ET="1" JQ="100" JS="30" />
</EN>
<BT>
<RD DN="" DA="" RV="" SV="" BV="0" ID="" PW="" RC="0" RT="0" RB="0" VT="0" LT="0" />
</BT>
<Saved />
<Platform />
</CFG>
```

## Appendix E – Reference CFG XML output from CR807x, detailing current defaults

```
<CFG>
<CM>
  <GE CR="5000" />
  <MO CM="UN" AD="0" />
  <SE BA="115200" DB="8" PA="N" SB="1" FC="0" />
  <UB MF="Code" PN="CR8x7x" FS="0" PD="0" />
  <CP PM="0" />
  <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />
  <UK SN="1" NE="2" EM="3" IN="1000" />
  <UN SN="1" IN="1000" />
  <UP SN="1" />
  <IP SN="1" />
  <UV />
  <UC SN="0" />
</CM>
<PM>
  <SB EN="0" VA="5000" />
  <SM EN="1" VA="3600" MC="1" />
</PM>
<ST />
<FC>
  <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
</FC>
<AG>
  <CR CX="300" CY="300" CT="227" LT="8" LP="200" HT="85" HP="200" DL="11" ME="7" />
  <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
  <BY IL="50" EX="4000" GN="0" />
  <FX BP="50" />
</AG>
<CD>
  <DP BE="0" BD="0" PD="0" PL="0" LC="0" DP="0" BI="0" BH="0" SM="0" />
  <DT TL="320" TF="30" CD="100" TD="0" />
  <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0" CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="0" AS="0" PI="1" VF="0" GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD="" IS="" IO="" SR="0" PF="2" XX="" />
  <VA TT="1600" BD="0" BT="0" EB="0" />
  <IM ET="1" />
  <TP TE="0" RO="0" AB="0" CB="0" XO="0" YO="0" WD="1280" HT="960" PF="2" />
</CD>
<SC>
  <SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />
</SC>
<SY>
  <AZTC EN="1" PO="0" MR="0" />
  <B412 EN="0" RD="0" />
  <C128 EN="1" ML="1" />
  <CBAR EN="1" CS="0" SS="0" ML="2" />
  <CO11 EN="0" CS="2" SC="0" />
  <CO32 EN="0" />
```

```
<CO39 EN="1" EA="0" CS="0" SS="0" ML="1" />
<CO93 EN="1" ML="1" />
<COMP EN="0" />
<DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />
<DTCO EN="1" PO="0" MR="0" />
<GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />
<H2O5 EN="0" />
<I2O5 EN="1" CO="0" LN="0" />
<M2O5 EN="0" />
<MSIP EN="0" CS="0" SC="0" PE="0" ML="1" />
<N2O5 EN="0" CS="0" />
<P417 EN="1" MI="0" />
<PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />
<QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />
<S2O5 EN="0" ML="1" />
<TELP EN="0" OA="0" />
<TRIO EN="0" RV="0" SS="0" />
<UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" NO="0" EC="0" ES="0" DC="0" C8="0" AM="1" />
<CODA EN="0" />
<CODF EN="0" />
<MAXC EN="0" />
<AUPO EN="0" SC="0" />
<CAPO EN="0" />
<CO49 EN="0" />
<GDMX EN="0" PO="0" MR="0" />
<GOCO EN="0" MR="0" />
<HAXN EN="0" PO="0" MR="0" />
<JAPO EN="0" />
<KIX0 EN="0" />
<KOPO EN="0" />
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />
</SY>
<PK>
<OP RT="750" CT="60" RC="0" ID="0" />
</PK>
<IM>
<SN FI="94822ADEF089F26D" GR="" CV="0x00002400" CR="0x00000042" />
<CP TM="0" ME="0" XE="0" EN="0" WS="0" HS="0" WL="1280" HL="960" />
</IM>
<FW>
<CM OE="0" OR="0" CT="5000" />
<TS MR="0" ID="0" />
<HW WT="5" TF="250000" TB="100" TO="0" RD="50" PD="25" />
<IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
<FW MJ="1" MN="1" BU="1" OP="" VS="1.1.1" TY="C012117" DV="cd(19.1.4.5922 - 20190806:1303)" />
<CP RV="2.0" SN="0E0518700E2B22" />
<RR SN="1030000789" ID="72014860" HR="0x00" MD="CR8071" MT="2MD0" IS="20200214:1516" DD="" />
```

```
<QD SO="0" N1="0" L1="0" NO="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" TR="0" B1="0" B2="0" BL="0" AF="0"
WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
<LC GL="" />
<FB VB="0" SM="0" />
<IL LO="0" MB="100" AC="0" />
<OF LE="" />
<TC MD="1" T1="0" T2="0" T3="0" />
</RD>
<FB>
<IN BI="0" BE="1" />
<GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" HT="100" />
<CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
<CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
<ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
</FB>
<LA>
<IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,LatinAmerican_Win,Japan
ese_Win,Italian_Win,Italian_Apple,SwissGerman_Win,GermanSwiss_Apple,German_Apple,German_Win,French_Apple,French_Win,
English_Apple,English,BelgianFrench_Win,USEnglish_Win" />
</LA>
<MD>
<PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70" PL="15" TL="5" BT="8"
IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />
</MD>
<EN>
<IM ET="1" JQ="100" JS="30" />
</EN>
<JS>
<PM EN="1" AP="1" RS="2048" IT="1000" MM="0" PM="0" />
</JS>
<BT>
<RD DN="" DA="" RV="" SV="" BV="0" ID="" PW="" RC="0" RT="0" RB="0" VT="0" LT="0" />
</BT>
<Saved />
<Platform />
</CFG>
```

## Appendix F – Reference CFG XML output from CR950, detailing current defaults

This section contains the CFG output from a CR950 configured with default settings. You can use this reference to check default values for any parameter in the CR950 firmware.

```
<CFG>
<CM>
  <GE CR="5000" />
  <MO CM="UN" AD="0" />
  <SE BA="115200" DB="8" PA="N" SB="1" FC="0" />
  <UB MF="Code" PN="CR950" FS="0" PD="0" />
  <CP PM="0" />
  <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />
  <UK SN="1" NE="2" EM="3" IN="1000" />
  <UN SN="1" IN="1000" />
  <UP SN="1" />
  <IP SN="1" />
  <UV SN="0" />
  <UC SN="0" />
</CM>
<PM>
  <SB EN="0" VA="5000" />
  <SM EN="0" VA="3600" MC="1" />
</PM>
<ST />
<FC>
  <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
</FC>
<AG>
  <CR CX="300" CY="300" PX="0" PY="0" ES="0" ED="0" CT="227" LT="8" LP="200" HT="85" HP="200"
DL="11" ME="7" />
  <NO E1="100" E2="1400" E3="3200" E4="5600" E5="7500" E6="9200" G1="15" G2="25" G3="25" G4="25"
G5="25" G6="25" I1="1" I2="14" I3="28" I4="44" I5="62" I6="80" />
  <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
  <BY IL="50" EX="4000" GN="0" />
  <FX BP="50" />
</AG>
<CD>
  <DP BE="0" BD="0" BI="0" BH="0" SM="0" />
  <DT TL="320" TF="30" CD="100" TD="0" />
  <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0"
CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="0" AS="0" PI="1" VF="0"
```

GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD="" IS="" IO="" SR="0" PF="2" LA="0" XX="" />  
<VA TT="1600" BD="0" BT="0" EB="0" />  
<IM ET="1" />  
<TP TE="0" RO="0" AB="3" CB="0" XO="0" YO="0" WD="1280" HT="960" PF="2" />  
<ST />  
</CD>  
<SC>  
<SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />  
</SC>  
<SY>  
<AZTC EN="1" PO="0" MR="0" />  
<B412 EN="0" RD="0" />  
<C128 EN="1" ML="1" />  
<CBAR EN="1" CS="0" SS="0" ML="2" />  
<CO11 EN="0" CS="2" SC="0" />  
<CO32 EN="0" />  
<CO39 EN="1" EA="0" CS="0" SS="0" ML="1" />  
<CO93 EN="1" ML="1" />  
<COMP EN="0" />  
<DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />  
<GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />  
<H2O5 EN="0" />  
<I2O5 EN="1" CO="0" LN="0" />  
<M2O5 EN="0" />  
<MSIP EN="0" CS="0" SC="0" PE="0" ML="1" />  
<N2O5 EN="0" CS="0" />  
<P417 EN="1" MI="0" />  
<PHCO EN="0" />  
<QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />  
<S2O5 EN="0" ML="1" />  
<TELP EN="0" OA="0" />  
<TRIO EN="0" RV="0" SS="0" />  
<UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" NO="0" EC="0" ES="0" DC="0" C8="0" AM="1" />  
<CODA EN="0" />  
<CODF EN="0" />  
<MAXC EN="0" />  
</SY>  
<PK>  
<OP RT="2000" CT="60" RC="0" />  
</PK>  
<IM>  
<SN FI="D02FD7B0002B327C" GR="" CV="0x00002402" CR="0x00000010" />

```
<CP TM="0" ME="0" XE="0" />
</IM>
<FW>
  <CM OE="0" OR="0" CT="5000" />
  <TS MR="0" ID="0" />
  <HW WT="5" TF="250000" TB="100" TO="0" />
  <IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
  <FW MJ="2" MN="2" BU="1" OP="" VS="2.2.1" TY="C010718" DV="cd(19.1.13.6081 - 20191105:1416)" />
  <CP RV="2.0" SN="0E0518700A4F9C" />
  <RR SN="1110000137" ID="60019724" HR="0x00" MD="CR950" MT="2A90" IS="20191209:1451" DD="" />
  <QD SO="0" N1="0" L1="0" N0="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" SD="0" TR="0"
B1="0" B2="0" BL="0" AF="0" WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
  <LC GL="" />
  <FB VB="0" SM="0" />
  <ST SE="1" SD="500" SB="1" />
  <IL LO="0" MB="100" AC="0" />
  <OF LE="" />
  <TC MD="1" T1="0" T2="0" T3="0" />
</RD>
<FB>
  <IN BI="0" BE="1" />
  <GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
  <CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
  <CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
  <ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
</FB>
<LA>
  <IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,LatinAmerican_Win,Japanese_Win,Italian_Win,Italian_Apple,SwissGerman_Win,GermanSwiss_Apple,German_Apple,German_Win,French_Apple,French_Win,English_Apple,BelgianFrench_Win,USEnglish_Win" />
</LA>
<MD>
  <PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70"
PL="15" TL="5" BT="8" IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />
</MD>
<EN>
  <IM ET="1" JQ="100" JS="30" />
</EN>
<BT>
  <RD DN="" DA="" RV="" SV="" BV="0" ID="" PW="" RC="0" RT="0" RB="0" VT="0" LT="0" />
</BT>
```

```
<Saved />
<Platform />
</CFG>
```

## Appendix G – Reference CFG XML output from CR1500, detailing current defaults

This section contains the CFG output from a CR1500 configured with default settings. You can use this reference to check default values for any parameter in the CR1500 firmware.

```
<?xml version="1.0" encoding="UTF-8"?>
<CFG>
  <CM>
    <GE CR="5000" />
    <MO CM="UN" AD="1" />
    <SE BA="115200" DB="8" PA="N" SB="1" FC="0" />
    <UB MF="Code" PN="CR1500" FS="0" PD="0" />
    <CP PM="0" />
    <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />
    <UK SN="1" NE="2" EM="3" IN="1000" />
    <UN SN="1" IN="1000" />
    <UP SN="1" />
    <IP SN="1" />
    <UV />
    <UC SN="0" />
  </CM>
  <PM>
    <SB EN="0" VA="5000" />
    <SM EN="0" VA="3600" MC="1" />
  </PM>
  <ST />
  <FC>
    <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
  </FC>
  <AG>
    <CR CX="300" CY="300" CT="227" LT="8" LP="200" HT="85" HP="200" DL="11" ME="7" />
    <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
    <BY IL="50" EX="4000" GN="0" />
    <FX BP="50" />
  </AG>
  <CD>
    <DP BE="0" BD="0" PD="0" PL="0" LC="0" DP="0" BI="0" BH="0" SM="0" />
    <DT TL="320" TF="30" CD="100" TD="0" />
    <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0" CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="0" AS="0" PI="1" VF="0" GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD="" IS="" IO="" SR="0" PF="2" XX="" />
    <VA TT="1600" BD="0" BT="0" EB="0" />
  
```

```
<IM ET="1" />
<TP TE="0" RO="0" AB="0" CB="0" XO="0" YO="0" WD="1280" HT="960" />
<ST />
</CD>
<SC>
  <SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />
</SC>
<SY>
  <AZTC EN="1" PO="0" MR="0" />
  <B412 EN="0" RD="0" />
  <C128 EN="1" ML="1" />
  <CBAR EN="1" CS="0" SS="0" ML="2" />
  <CO11 EN="0" CS="2" SC="0" />
  <CO32 EN="0" />
  <CO39 EN="1" EA="0" CS="0" SS="0" ML="1" />
  <CO93 EN="1" ML="1" />
  <COMP EN="0" />
  <DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />
  <DTCO EN="1" PO="0" MR="0" />
  <GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />
  <H2O5 EN="0" />
  <I2O5 EN="1" CO="0" LN="0" />
  <M2O5 EN="0" />
  <MSIP EN="0" CS="0" SC="0" PE="0" ML="1" />
  <N2O5 EN="0" CS="0" />
  <P417 EN="1" MI="0" />
  <PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />
  <QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />
  <S2O5 EN="0" ML="1" />
  <TELP EN="0" OA="0" />
  <TRIO EN="0" RV="0" SS="0" />
  <UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" NO="0" EC="0" ES="0" DC="0"
C8="0" AM="1" />
  <CODA EN="0" />
  <CODF EN="0" />
  <MAXC EN="0" />
  <AUPO EN="0" SC="0" />
  <CAPO EN="0" />
  <CO49 EN="0" />
  <GDMX EN="0" PO="0" MR="0" />
  <GOCO EN="0" MR="0" />
  <HAXN EN="0" PO="0" MR="0" />
  <JAPO EN="0" />
  <KIX0 EN="0" />
```

```
<KOPO EN="0" />
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />
</SY>
<PK>
  <OP RT="750" CT="60" RC="0" />
</PK>
<IM>
  <SN FI="B0369EF513F556D9" GR="" CV="0x00002402" CR="0x00000010" />
  <CP TM="0" ME="0" XE="0" />
</IM>
<FW>
  <CM OE="0" OR="0" CT="5000" />
  <TS MR="0" ID="0" />
  <HW WT="5" TF="250000" TB="100" TO="0" />
  <IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
  <FW MJ="1" MN="6" BU="5" OP="" VS="1.6.5" TY="C011338" DV="cd(19.1.13.6081 - 20191105:1419)"
DE="cd(19.1.13.6081 - 20191105:1419)" />
  <CP RV="2.0" SN="0E1D268051604B" />
  <RR SN="1060005315" ID="158868044" HR="0x00" MD="CR1500" MT="2AD0" IS="20200414:1046" DD="" />
  <QD SO="0" N1="0" L1="0" N0="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" SD="0" TR="0"
B1="0" B2="0" BL="0" AF="0" WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
  <LC GL="" />
  <FB VB="0" SM="0" />
  <ST SE="1" SD="500" SB="1" />
  <IL LO="0" MB="100" AC="0" />
  <OF LE="" />
  <TC MD="1" T1="0" T2="0" T3="0" />
</RD>
<FB>
  <IN BI="0" BE="1" />
  <GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
  <CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
  <CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
  <ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
  <VB EN="1" NT="80" FT="20" NB="1" />
</FB>
<LA>
```

```
<IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,Lati
nAmerican_Win,Japanese_Win,Italian_Win,Italian_Apple,SwissGerman_Win,GermanSwiss_Apple,German_Ap
ple,German_Win,French_Apple,French_Win,English_Apple,BelgianFrench_Win,USEnglish_Win" />
</LA>
<MD>
<PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70"
PL="15" TL="5" BT="8" IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />
</MD>
<EN>
<IM ET="1" JQ="100" JS="30" />
</EN>
<JS>
<PM EN="1" AP="1" RS="2048" IT="1000" MM="0" PM="0" />
</JS>
<BT>
<RD DN="" DA="" RV="" SV="" BV="0" ID="" PW="" RC="0" RT="0" RB="0" VT="0" LT="0" />
</BT>
<Saved>
<Param Val="0" Description="CMUBPMFCode" />
<Param Val="1" Description="CMUBPPNCR1500" />
<Param Val="2" Description="RDRRPMDCR1500" />
<Param Val="3" Description="RDRRPDD" />
<Param Val="4" Description="BTRDPDA" />
<Param Val="5" Description="BTRDPPW" />
</Saved>
<Platform />
</CFG>
```

## Appendix H – Reference CFG XML output from CR1100, detailing current defaults

This section contains the CFG output from a CR1100 configured with default settings. You can use this reference to check default values for any parameter in the CR1100 firmware.

```
<CFG>
<CM>
  <GE CR="5000" />
  <MO CM="UN" AD="1" />
  <SE BA="115200" DB="8" PA="N" SB="1" FC="0" />
  <UB MF="Code" PN="CR1100" FS="0" PD="0" />
  <CP PM="0" />
  <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />
  <UK SN="1" NE="2" EM="3" IN="1000" />
  <UN SN="1" IN="1000" />
  <UP SN="1" />
  <IP SN="1" />
  <UV />
  <UC SN="0" />
</CM>
<PM>
  <SB EN="0" VA="5000" />
  <SM EN="0" VA="3600" MC="1" />
</PM>
<ST />
<FC>
  <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
</FC>
<AG>
  <CR CX="300" CY="300" CT="227" LT="8" LP="200" HT="85" HP="200" DL="11" ME="7" />
  <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
  <BY IL="50" EX="4000" GN="0" />
  <FX BP="50" />
</AG>
<CD>
  <DP BE="0" BD="0" PD="0" PL="0" LC="0" DP="0" BI="0" BH="0" SM="0" />
  <DT TL="320" TF="30" CD="100" TD="0" />
  <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0"
    CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="0" AS="0" PI="1" VF="0"
    GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD=""
    IS="" IO="" SR="0" PF="2" XX="" />
  <VA TT="1600" BD="0" BT="0" EB="0" />
<IM ET="1" />
```

```
<TP TE="0" RO="0" AB="0" CB="0" XO="0" YO="0" WD="1280" HT="960" />
<ST />
</CD>
<SC>
  <SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />
</SC>
<SY>
  <AZTC EN="1" PO="0" MR="0" />
  <B412 EN="0" RD="0" />
  <C128 EN="1" ML="1" />
  <CBAR EN="1" CS="0" SS="0" ML="2" />
  <CO11 EN="0" CS="2" SC="0" />
  <CO32 EN="0" />
  <CO39 EN="1" EA="0" CS="0" SS="0" ML="1" />
  <CO93 EN="1" ML="1" />
  <COMP EN="0" />
  <DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />
  <DTCO EN="1" PO="0" MR="0" />
  <GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />
  <H2O5 EN="0" />
  <I2O5 EN="1" CO="0" LN="0" />
  <M2O5 EN="0" />
  <MSIP EN="0" CS="0" SC="0" PE="0" ML="1" />
  <N2O5 EN="0" CS="0" />
  <P417 EN="1" MI="0" />
  <PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />
  <QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />
  <S2O5 EN="0" ML="1" />
  <TELP EN="0" OA="0" />
  <TRIO EN="0" RV="0" SS="0" />
  <UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" NO="0" EC="0" ES="0" DC="0"
C8="0" AM="1" />
  <CODA EN="0" />
  <CODF EN="0" />
  <MAXC EN="0" />
  <AUPO EN="0" SC="0" />
  <CAPO EN="0" />
  <CO49 EN="0" />
  <GDMX EN="0" PO="0" MR="0" />
  <GOCO EN="0" MR="0" />
  <HAXN EN="0" PO="0" MR="0" />
  <JAPO EN="0" />
  <KIX0 EN="0" />
  <KOPO EN="0" />
```

```
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />
</SY>
<PK>
  <OP RT="750" CT="60" RC="0" />
</PK>
<IM>
  <SN FI="902303A9285F9803" GR="" CV="0x00002402" CR="0x00000010" />
  <CP TM="0" ME="0" XE="0" />
</IM>
<FW>
  <CM OE="0" OR="0" CT="5000" />
  <TS MR="0" ID="0" />
  <HW WT="5" TF="250000" TB="100" TO="0" RD="50" PD="25" />
  <IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
  <FW MJ="1" MN="3" BU="5" OP="" VS="1.3.5" TY="C011667" DV="cd(19.1.4.5922 - 20190806:1303)" DE="cd(19.1.4.5922 - 20190806:1303)" />
  <CP RV="2.0" SN="0E05187008E020" />
  <RR SN="0000000000" ID="68685836" HR="0x00" MD="CR1100" MT="2AD0" IS="20200414:1043" DD="" />
  <QD SO="0" N1="0" L1="0" NO="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" SD="0" TR="0" B1="0" B2="0" BL="0" AF="0" WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
  <LC GL="" />
  <FB VB="0" SM="0" />
  <ST SE="1" SD="500" SB="1" />
  <IL LO="0" MB="100" AC="0" />
  <OF LE="" />
  <TC MD="1" T1="0" T2="0" T3="0" />
</RD>
<FB>
  <IN BI="0" BE="1" />
  <GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
  <CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
  <CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
  <ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
</FB>
<LA>
  <IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,Lati
```

nAmerican\_Win,Japanese\_Win,Italian\_Win,Italian\_Apple,SwissGerman\_Win,GermanSwiss\_Apple,German\_Apple,German\_Win,French\_Apple,French\_Win,English\_Apple,BelgianFrench\_Win,USEnglish\_Win" />  
</LA>  
<MD>  
  <PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70"  
  PL="15" TL="5" BT="8" IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />  
  </MD>  
<EN>  
  <IM ET="1" JQ="100" JS="30" />  
</EN>  
<JS>  
  <PM EN="1" AP="1" RS="2048" IT="1000" MM="0" PM="0" />  
</JS>  
<BT>  
  <RD DN="" DA="" RV="" SV="" BV="0" ID="" PW="" RC="0" RT="0" RB="0" VT="0" LT="0" />  
</BT>  
<Saved />  
<Platform />  
</CFG>

## Appendix I – Reference CFG XML output from CR2700, detailing current defaults

This section contains the CFG output from a CR2700 configured with default settings. You can use this reference to check default values for any parameter in the CR2700 firmware.

```
<CFG>
  <BT>
    <RD DN="Code CR2700" DA="" RV="1.2.0" SV="5.0.0" BV="2" ID="2642462480" PW="0" RC="1"
RT="300000" RB="0" VT="3000" ST="500" LT="0" PM="0" />
    <SE SM="1" SL="2" LS="1" />
  </BT>
  <PM>
    <SB EN="1" VA="5000" />
    <SM EN="1" VA="3600" MC="1" />
    <SD EN="1" VA="7200" />
  </PM>
  <ST />
  <FC>
    <TS EN="0" TM="" MN="0" XN="0" MF="0" XF="0" M2="0" X2="0" M3="0" X3="0" DR="2113568" IF="0" />
  </FC>
  <AG>
    <CR CX="300" CY="300" PX="0" PY="0" ES="0" ED="0" CT="227" LT="8" LP="200" HT="85" HP="200"
DL="11" ME="7" />
    <TM MN="5" MT="0x00000100" HQ="360" MQ="320" LQ="120" HP="80" MP="20" LP="10" />
    <BY IL="50" EX="4000" GN="0" />
    <FX BP="50" />
  </AG>
  <CD>
    <DP BE="0" BD="0" PD="0" PL="0" LC="0" DP="0" BI="0" BH="0" SM="0" />
    <DT TL="320" TF="30" CD="100" TD="0" />
    <OP PR="1" RO="0" RL="0" RT="0" RW="0" RH="0" LC="1" ZR="0" EC="0" DL="0" SP="0" QD="0" PT="0"
CI="0" SE="0" AP="115" AT="0" SD="0" FQ="0" CE="1" UT="1" MD="0" DI="0" RD="1" AS="0" PI="0" VF="0"
GB="0" NC="0" N2="0" WN="0" DF="0" DV="0" FO="0" PX="" SX="" FC="0" FD="" SM="" GP="" FP="" UD=""
IS="" IO="" SR="0" PF="2" LA="0" XX="" />
    <VA TT="1600" BD="0" BT="0" EB="0" />
    <IM ET="1" />
    <TS />
    <TP TE="0" RO="0" AB="0" CB="0" XO="0" YO="0" WD="1280" HT="960" PF="2" />
  <ST />
  </CD>
  <SC>
    <SP MO="NO" IL="50" EX="4000" GN="0" FP="50" />
  </SC>
```

```
<SY>
<AZTC EN="1" PO="0" MR="0" />
<B412 EN="0" RD="0" />
<C128 EN="1" />
<CBAR EN="1" CS="0" SS="0" />
<CO11 EN="0" CS="2" SC="0" />
<CO32 EN="0" />
<CO39 EN="1" EA="0" CS="0" SS="0" />
<CO93 EN="1" />
<COMP EN="0" />
<DATM EN="1" PO="2" MR="0" RE="1" RX="0" FQ="0" />
<GS1D EN="1" ST="1" EX="1" ES="1" LI="1" />
<H2O5 EN="0" />
<I2O5 EN="1" CO="0" LN="0" />
<M2O5 EN="0" />
<MSIP EN="0" CS="0" SC="0" PE="0" />
<N2O5 EN="0" CS="0" />
<P417 EN="1" MI="0" />
<PHCO EN="0" CB="0" CN="4" CX="16" MI="15" MX="131070" RV="0" />
<QRCO EN="1" PO="0" MI="0" MR="0" M1="0" CQ="0" />
<S2O5 EN="0" />
<TELP EN="0" OA="0" />
<TRIO EN="0" RV="0" SS="0" />
<UPCO EN="1" EA="0" SU="0" E8="0" AD="0" DI="0" DN="0" AC="0" AN="0" N0="0" EC="0" ES="0" DC="0"
C8="0" AM="0" />
<CODA EN="0" />
<CODF EN="0" />
<MAXC EN="0" />
<AUPO EN="0" SC="0" />
<CAPO EN="0" />
<CO49 EN="0" />
<DTCO EN="1" PO="0" MR="0" />
<GDMX EN="0" PO="0" MR="0" />
<GOCO EN="0" MR="0" />
<HAXN EN="0" PO="0" MR="0" />
<JAPO EN="0" />
<KIX0 EN="0" />
<KOPO EN="0" />
<UKRO EN="0" CC="0" />
<UPUI EN="0" />
<USIM EN="0" />
<USPL EN="0" />
<USPO EN="0" />
</SY>
```

```
<PK>
<OP RT="2000" CT="60" RC="0" />
</PK>
<IM>
<SN FI="702FBA7DFEF27D6F" GR="" CV="0x00002402" CR="0x00000010" />
<CP TM="0" ME="0" XE="0" EN="0" WS="0" HS="0" WL="1280" HL="960" />
</IM>
<FW>
<CM OE="0" OR="0" CT="5000" />
<TS MR="0" ID="0" />
<HW WT="5" TF="250000" TB="100" TO="0" />
<IM DI="0" NI="0" CI="0" SI="0" X1="0" X2="0" X3="0" X4="0" />
</FW>
<RD>
<FW MJ="1" MN="2" BU="6" OP="" VS="1.2.6" TY="C011781" DV="cd(19.1.13.6081 - 20191105:1419)" DE="cd(19.1.13.6081 - 20191105:1419)" />
<CP RV="2.0" SN="0E05187008AD33" />
<RR SN="1130000231" ID="107696140" HR="0x00" MD="CR2700" MT="2AD0" IS="20200428:1253" DD="" PN="" />
<QD SO="0" N1="0" L1="0" N0="0" LO="0" RS="0" US="0" TG="0" LD="0" IL="0" SP="0" SD="0" TR="0" B1="0" B2="0" BL="0" AF="0" WT="0" BT="0" DL="0" WL="0" F0="0x00" P0="0x00" F1="0x00" P1="0x00" />
<LC GL="100" />
<FB VB="0" SM="0" />
<ST SE="1" SD="500" SB="0" />
<IL LO="0" MB="100" AC="0" />
<OF LE="" />
<TC MD="1" T1="1" T2="1" T3="1" />
<BI BP="1" BV="3908" CC="80703" AC="78" BT="27" BL="100" RL="100" LF="99" CS="0" LT="3000" CT="90" LE="0" CB="0" DD="0504" SN="105971905D" CO="0" US="84" LS="0" TC="88" BC="4" CM="2" CP="85" SC="0" VC="4100" VH="200" UT="9694" BU="3300" BI="10000" />
</RD>
<FB>
<IN BI="0" BE="1" />
<GR BI="0" EN="1" BE="1" FQ="2730" VO="100" NT="80" FT="20" NB="1" />
<CB FQ="2800" VO="100" NT="80" FT="20" NB="1" />
<CM FQ="2730" VO="35" NT="100" FT="100" NB="1" />
<ER FQ="2800" VO="100" NT="200" FT="100" NB="3" />
<PG FQ="2730" VO="100" NT="500" FT="500" NB="30" />
<RB FQ="2730" VO="50" NT="100" FT="100" NB="3" DL="1" />
<VB EN="1" NT="80" FT="20" NB="1" />
</FB>
<LA>
<IN AL="USEnglish_Win"
IL="USInternational_Win,UnitedKingdom_Win,Spanish_Apple,Spanish_Win,Russian_Win,Portuguese_Win,Lati
```

nAmerican\_Win,Japanese\_Win,Italian\_Win,Italian\_Apple,SwissGerman\_Win,GermanSwiss\_Apple,German\_Apple,German\_Win,French\_Apple,French\_Win,English\_Apple,BelgianFrench\_Win,USEnglish\_Win" />  
  </LA>  
  <MD>  
    <PM NG="2" XG="42" IG="25" NE="299" XE="10000" IE="5000" NI="1" XI="6" II="1" NL="35" XL="70"  
      PL="15" TL="5" BT="8" IC="5" DT="0" ET="0" SD="0" DR="100" DI="0" AT="500" />  
    </MD>  
  <EN>  
    <IM ET="1" JQ="100" JS="30" />  
  </EN>  
  <JS>  
    <PM EN="1" AP="1" RS="2048" IT="1000" MM="0" PM="0" />  
  </JS>  
  <CM>  
    <GE CR="5000" />  
    <MO CM="BT" AD="1" />  
    <SE BA="115200" DB="8" PA="N" SB="1" FC="1" />  
    <UB MF="Code" PN="CR2700" FS="0" PD="0" />  
    <CP PM="0" />  
    <HD IC="0" IS="0" RL="0" CC="0" IE="0" OM="0" EA="0" />  
    <UK SN="1" NE="2" EM="3" IN="1000" />  
    <UN SN="1" IN="1000" />  
    <UP SN="1" />  
    <UV SN="0" />  
    <UC SN="0" />  
  </CM>  
  <Saved>  
    <Param Val="0" Description="BTRDPDA" />  
    <Param Val="1" Description="BTRDPPW0" />  
    <Param Val="2" Description="RDRRPMDCR2700" />  
    <Param Val="3" Description="RDRRPDD" />  
    <Param Val="4" Description="RDRRPPN" />  
    <Param Val="5" Description="CMUBPMFCode" />  
    <Param Val="6" Description="CMUBPPNCR2700" />  
    <Param Val="7" Description="BTRDPRA000BEF107723" />  
  </Saved>  
  <Platform />  
</CFG>

## Appendix J – Reference CFG XML output from A271, detailing current defaults

This section contains the CFG output from an A271 configured with default settings. You can use this reference to check default values for any parameter in the A271 firmware.

```
<CFG>
  <BT>
    <CM CM="" TM="10000" LB="100" RD="0" />
    <BR SN="" AN="BT Charger Station" BA="000BEF10270F" DD="" BO="6" SD="6.0.0" CP="0" TP="-8" LT="0"
PD="1000" PR="500" LL="" />
    <MI SN="3432363841" CV="AAC0" MJ="1" MN="3" BV="4" OP="0" VS="1.3.4" IS="" FT="C011855"
MD="A270" MT="A271" HW="0" />
    <UB MF="" PN="" FS="0" PD="0" KL="0" IC="0" IS="0" RL="0" />
    <ST IC="0" DC="0" AC="0" SP="60000" SE="0" PC="7" />
  </BT>
  <PK>
    <OP RT="2000" CT="60" RC="0" AK="1" />
  </PK>
  <Saved>
    <Param Val="0" Description="BTBRPBA000BEF10270F" />
  </Saved>
  <Platform />
</CFG>
```

## Appendix K - Reference CFG XML output from BTDG27, detailing current defaults

This section contains the CFG output from a BTDG27 configured with default settings. You can use this reference to check default values for any parameter in the BTDG27 firmware.

```
<CFG>
  <BT>
    <CM CM="" TM="10000" LB="100" RD="0" />
    <BR SN="" AN="BTDG27 Station" BA="000BEF100128" DD="" BO="6" SD="6.0.0" CP="0" TP="-8" LT="0"
PD="1000" PR="500" LL="" />
    <MI SN="3627333034" CV="AAC0" MJ="1" MN="3" BV="4" OP="0" VS="1.3.4" IS="" FT="C012048"
MD="BTDG27R" MT="BTDG27" HW="15" />
    <UB MF="" PN="" FS="0" PD="0" KL="0" IC="0" IS="0" RL="0" />
    <ST IC="0" DC="0" AC="0" SP="60000" SE="0" PC="0" />
  </BT>
  <PK>
    <OP RT="2000" CT="60" RC="0" AK="1" />
  </PK>
  <Saved />
  <Platform />
</CFG>
```