

Programming Command Guide

(Version 1.3)

For RT203 /RT830/RT870



Serial Programming Commands

The serial programming commands can be used in place of the programming bar codes. Both the serial commands and the programming bar codes will program the scanner. For complete descriptions and examples of each serial programming command, refer to the corresponding programming bar code in this manual.

The device must be set to an TTL-RS232 interface. The following commands can be sent via a PC COM port using terminal emulation software.

1 Function Commands

The serial function commands have the following formation:

STX + CMD(see following table) + EXT

Function	Command	Formation
Trigger	\xF4	\x02\xF4\x03
Untrigger	\xF5	\x02\xF5\x03

2 Menu Commands

The menu commands have the following syntax:

\x02\xF0\x03 + Menu Number + Setting Value + Character

Character consists of three characters. The details refer to following table.

Character	Function
.	Store in ROM
!	Store in RAM
?	Query the current setting
*	Return the valid setting range

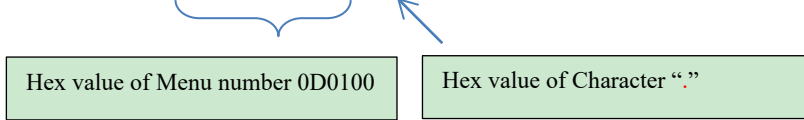
Example:

Action	Send Commands	Response
Set the unit default	\x02\xF0\x03 0D0100.	0D0100 [ACK].
Set unit mid-level illumination 1 (saved in ROM)	\x02\xF0\x03 0401011.	0401011[ACK].
Set unit mid-level illumination 1 (saved in RAM)	\x02\xF0\x03 0401011!	0401011[ACK]!
Query the current illumination level	\x02\xF0\x03 040101?.	0401010[ACK].
Query the range value of barcode scanning delay	\x02\xF0\x03 080B08*.	080B080-30000[ACK].

Example:

“Set the unit default” (HEX):

Send: 02 f0 03 30 44 30 31 30 30 2e



Response: 30 44 30 31 30 30 06 2e

Message example:

Set the unit default:

Send Commands(HEX): 02 F0 03 30 30 44 30 31 30 30 2e equal to (\x02\xF0\x030D0100.)

Response(HEX): 30 30 44 30 31 30 30 05 2E

Set Trigger Mode:

Send Commands(HEX): 02 F0 03 30 39 31 41 30 30 2e

Response(HEX): 30 39 31 41 30 30 06 2E

Start Trigger:

Send Commands(HEX): 02 f4 03

Not Response

Stop Trigger:

Send Commands(HEX): 02 f5 03

Not Response

Note:

RT870 has no buttons, so it is invalid to switch to Trigger Mode in USB-HID Mode, also the scanner cannot be set to USB-HID Mode when it's in Trigger Mode.

4 Menu number

Function	Details	Menu Number	Setting Value
Restore All Factory Defaults	Activate Defaults	0D0100	NA
Interface	232 Interface	091804	NA
232 Interface Baud rate	2400 BPS	060702	3
	4800 BPS		4
	9600 BPS		5
	19200 BPS		6
	38400 BPS		7
	57600 BPS		8
	115200 BPS(default)		9
232 Interface Data Bit & Parity Check& Stop Bit	None Parity /8 Data Bits/1 Stop Bit(default)	060703	2
	Even Parity /8 Data Bits/1 Stop Bit		5
	Odd Parity /8 Data Bits/1 Stop Bit		8
USB HID-KB	USB HID-KB	091809	NA
	No Case Conversion (default)	060D02	0
	Convert All to Upper Case		1
	Convert All to Lower Case		2
USB COM Port	USB COM Port Emulation	060500	130
Scanning Mode	Trigger Mode(default)	091A00	NA
	Presentation Mode	090901	NA
	Trigger Mode with cell phone reading	091B00	NA
	Presentation Mode with cell phone reading	090902	NA
Inverse Color	Off(default)	024B00	0
	Only Inverse On		1
	Inverse and Normal Both On		2
Illumination for Trigger Mode	High Level Illumination (default)	040102	0
	Mid Level Illumination 1		1
	Mid Level Illumination 2		2
	Low Level Illumination		3
	Illumination OFF		4

Illumination for Presentation Mode in Scanning	High Level Illumination (default)	040100	0
	Mid Level Illumination 1		1
	Mid Level Illumination 2		2
	Low Level Illumination		3
	Illumination OFF		4
Illumination for Presentation Mode in Idle	High Level Illumination	040101	0
	Mid Level Illumination 1		1
	Mid Level Illumination 2		2
	Low Level Illumination (default)		3
	Illumination OFF		4
Beeper - Good Read	On (default)	050210	1
	Off		0
Beeper Tone – Good Read	Low	05021D	1
	Middle		2
	High (default)		3
Beeper Duration – Good Read	Normal (default)	050216	0
	Short		1
Beeper Number-Good Read	1(default)	05020E	1
	2		2
	3		3
	4		4
	5		5
Barcode Scanning Delay	No Delay (default)	080B08	0
	Delay 500MS		500
	Delay 2000ms		2000
Add Specified Suffix	Add CR	080500	990D
	Add LF		990A
	Add CRLF		990D0A
	Add TAB		9909
Prefix	Add Prefix	080400	99XX
Suffix	Add Suffix	080500	99XX
Clear all prefix and suffix (default)	Clear all prefix and suffix (default)	080404;080507	NA

Save	Save setting	0D0400	NA
Not Save	Not save setting	0D0500	NA
Enable/Disable All Symbologies	Enable All Symbologies	020100	1
	Disable All Symbologies		0
Code 128	Restore the Factory Defaults of Code 128 (default)	020A00	NA
	Enable Code 128 (default)	020A01	1
	Disable Code 128		0
	Code 128 max length	020A03	Min~90
	Code 128 min length	020A02	0~max
EAN-8	Restore the Factory Defaults of EAN-8 (default)	021400	NA
	Enable EAN-8 (default)	021401	1
	Disable EAN-8		0
	Transmit EAN-8 Check Digit (default)	021402	1
	Do Not Transmit EAN-8 Check Digit		0
	Enable 2-Digit Add-On Code	021403	1
	Disable 2-Digit Add-On Code (default)		0
	Enable 5-Digit Add-On Code	021404	1
	Disable 5-Digit Add-On Code (default)		0
	EAN-8 Add-On Code Required	021405	1
	EAN-8 Add-On Code Not Required (default)		0
	Enable ENA/JAN-8 Addenda Separator (default)	021406	1
Disable ENA/JAN-8 Addenda Separator UPC	0		
EAN-13	Restore the Factory Defaults of EAN-13 (default)	021300	NA
	Enable EAN-13 (default)	021301	1
	Disable EAN-13		0
	Transmit EAN-13 Check Digit (default)	021302	1
	Do Not Transmit EAN-13 Check Digit		0
	Enable 2-Digit Add-On Code	021303	1
	Disable 2-Digit Add-On Code(default)		0
	Enable 5-Digit Add-On Code	021304	1
	Disable 5-Digit Add-On Code(default)		0
	EAN-13 Add-On Code Required	021305	1

	EAN-13 Add-On Code Not Required (default)		0
	Enable ENA/JAN-13 Addenda Separator (default)	021306	1
	Disable ENA/JAN-13 Addenda Separator		0
	Enable ISBN Translate	021307	1
	Disable ISBN Translate (default)		0
UPC-E	Restore the Factory Defaults of UPC-E (default)	021200	NA
	Enable UPC-E0 (default)	021201	1
	Disable UPC-E0		0
	Enable UPC-E1 (default)	021202	1
	Disable UPC-E1		0
	Enable UPC-E0 Check Digit (default)	021204	1
	Disable UPC-E0 Check Digit		0
	Enable UPC-E0 Expand	021203	1
	Disable UPC-E0 Expand (default)		0
	Enable UPC-E0 Required	021208	1
	Disable UPC-E0 Required (default)		0
	Enable UPC-E0 Separator (default)	021209	1
	Disable UPC-E0 Separator		0
	Enable UPC-E0 Number System (default)	021205	1
	Disable UPC-E0 Number System		0
	Enable 2 Digit Addenda	021206	1
	Disable 2 Digit Addenda (default)		0
	Enable 5 Digit Addenda	021207	1
	Disable 5 Digit Addenda (default)		0
	UPC-A	Restore the Factory Defaults of UPC-A (default)	021100
Enable UPC-A (default)		021101	1
Disable UPC-A			0
Enable UPC-A Check Digit (default)		021102	1
Disable UPC-A Check Digit			0
Enable UPC-A Required		021106	1
Disable UPC-A Required (default)			0
Enable UPC-A Separator (default)		021107	1

	Disable UPC-A Separator		0
	Enable UPC-A Number System (default)	021103	1
	Disable UPC-A Number System		0
	Enable 2 Digit Addenda	021104	1
	Disable 2 Digit Addenda (default)		0
	Enable 5 Digit Addenda	021105	1
	Disable 5 Digit (default)		0
Interleaved 2 of 5	Restore the Factory Defaults of Interleaved 2 of 5 (default)	020400	NA
	Enable Industrial 2 of 5	020401	1
	Disable Interleaved 2 of 5		0
	No check Char (default)	020402	0
	Validate and Transmit		2
	Validate not Transmit		1
	Interleaved 2 of 5 max length	020404	Min~80
Interleaved 2 of 5 min length	020403	2~max	
Matrix 2 of 5	Restore the Factory Defaults of Matrix 2 of 5 (default)	020800	NA
	Enable Matrix 2 of 5	020801	1
	Disable Matrix 2 of 5 (default)		0
	Matrix 2 of 5 max length	020803	Min~80
	Matrix 2 of 5 min length	020802	1~max
Industrial 2 of 5	Restore the Factory Defaults of Industrial 2 of 5 (default)	020600	NA
	Enable Industrial 2 of 5	020601	1
	Disable Industrial 2 of 5 (default)		0
	Industrial 2 of 5 max length	020603	Min~48
	Industrial 2 of 5 min length	020602	1~max
Code 39	Restore the Factory Defaults of Code 39 (default)	020300	NA
	Enable Code 39 (default)	020301	1
	Disable Code 39		0
	Transmit Start/Stop Character	020305	1
	Do not Transmit Start/Stop Character (default)		0
	No Check Char (default)	020304	0

Coda bar	Validate and Transmit		2
	Validate no Transmit		1
	Enable Code 39 Full ASCII	020302	1
	Disable Code 39 Full ASCII (default)		0
	Code 39 max length	020308	Min~48
	Code 39 min length	020307	0~max
	Restore the Factory Defaults of Coda bar (default)	020200	NA
	Enable Coda bar (default)	020201	1
	Disable Coda bar		0
	Coda bar max length	020206	Min~60
	Coda bar min length	020205	2~max
	Transmit Start/Stop Character	020202	1
	Do not Transmit Start/Stop Character (default)		0
	No Check Char (default)	020203	0
	Validate and Transmit		2
Validate no Transmit	1		
Code 93	Restore the Factory Defaults of Code 93 (default)	020D00	NA
	Enable Code 93	020D01	1
	Disable Code 93 (default)		0
	Code 93 max length	020D03	Min~80
	Code 93 min length	020D02	0~max
GS1-128	Restore the Factory Defaults of GS1-128 (default)	020B01	NA
	Enable GS1-128 (default)	020B00	1
	Disable GS1-128		0
	GS1-128 max length	020B03	Min~80
	GS1-128 min length	020B02	0~max
MSI	Restore the Factory Defaults of MSI (default)	020E00	NA
	Enable MSI	020E01	1
	Disable MSI (default)		0
	MSI max length	020E04	Min~48
	MSI min length	020E03	4~max
	Validate Type 10, No Transmit (Default)	020E02	0

	Validate Type 10, Transmit		1
	Validate 2 Type 10 Characters, No Transmit		2
	Validate 2 Type 10 Characters, Transmit		3
	Validate Type 11 Then Type 10 Character, No Transmit		4
	Validate Type 11 Then Type 10 Characters, Transmit		5
	Disable MSI Check Characters		6
PDF 417	Restore the Factory Defaults of PDF 417 (default)	021F00	NA
	Enable PDF 417 (default)	021F01	1
	Disable PDF 417		0
	PDF417 max length	021F06	Min~2750
	PDF417 min length	021F05	1~max
Micro PDF 417	Restore the Factory Defaults of Micro PDF 417 (default)	022000	NA
	Enable Micro PDF 417	022001	1
	Disable Micro PDF 417 (default)		0
	Micro PDF417 max length	022003	Min~2750
	Micro PDF417 min length	022002	1~max
QR Code	Restore the Factory Defaults of QR Code (default)	023700	NA
	Enable QR Code (default)	023701	1
	Disable QR Code		0
	QR max length	023703	Min~7089
	QR max length	023702	1~max
Data Matrix	Restore the Factory Defaults of Data Matrix (default)	023600	NA
	Enable Data Matrix (default)	023601	1
	Disable Data Matrix		0
	Data Matrix max length	023603	Min~3116
	Data Matrix min length	023602	1~max
Maxi code	Restore the Factory Defaults of Maxi code (default)	023400	NA
	Enable Maxi code	023401	1
	Disable Maxi code (default)		0
	Maxi Code max length	023403	Min~150
	Maxi Code min length	023402	1~max

Aztec	Restore the Factory Defaults of Aztec (default)	023300	NA
	Enable Aztec	023301	1
	Disable Aztec (default)		0
	Aztec max length	023306	Min~3832
	Aztec min length	023305	0~Max
Hanxin	Restore the Factory Defaults of Hanxin (default)	023800	NA
	Enable Hanxin	023801	1
	Disable Hanxin (default)		0
	Hanxin max length	023803	Min~7833
	Hanxin min length	023802	1~max
China Postal Code	Restore the Factory Defaults of China Postal Code (default)	021800	NA
	Enable China Postal Code	021801	1
	Disable China Postal Code (default)		0
Telepen	Restore the Factory Defaults of Telepen (default)	021000	NA
	Enable Telepen	021001	1
	Disable Telepen (default)		0

2) Serial returns, the data structure as below:

Name	Length	Content
Image Header	40 BYTE	[0x02][0xFE] [image_size]..... [0x1D]
Image data	The jpeg size=the 4 bytes [image_size] of image header(little-endian) -29	JPEG image Data

BMP image capture:

3) Serial send commands : \x02\xF0\x030408078F.

4) Serial returns, the data structure as below:

Name	Length	Content
Head	36 BYTE	[0x02][0xFE] [0x1D]
BMP Image data	308278 BYTE	BMP image
End	10 BYTE	0408078F[0x06][0x2E]