User Manual

(Version 1.2.5)

FOR RT830A/RT830C/RT860/RT870/RT870W/RT880

Table of Contents

1 Getting Started

1.1 About This Guide

This guide provides programming instructions for the RTscan 2D Barcoder Readers: RT830A, RT830B, RT830C, RT860 RT870, RT870W and RT880. Users can configure the RTscan 2D Barcoder Reader by scanning the programming barcodes included in this manual.
With the button in the top of the scanner, we can do some quick setup to switch to scanner among: Normal Scan (read print code, cell phone screen code, 1d /2d), 1D fast scan (optimized for 1d quick scanning), Disable scan; please refer to the Quick Start Guide which included in the scanner package.

1.2 Barcode Scanning

RTscan 2D Barcoder Reader outstanding in fast scanning and decoding accuracy. Barcodes rotated at any angle can still be read with ease. When scanning a barcode, simply make the bar code face to the scanning window and the scanner will automatically detect and read the code quickly.

1.3 Factory Defaults

Scanning the following barcode can restore the scanner to the factory defaults.
Note: Use this feature with discretion.

0D0100.
Restore All Factory Defaults

2 Communication Interfaces

2.1 USB COM Port Emulation

With USB interface, scan the USB COM Port Emulation setting code allows the Host to receive data in the way as a serial port does. A driver is required for this feature.

USB COM Port Emulation

Default serial communication parameters are listed below. Make sure all parameters match the host requirements.

Parameter	Factory Default
Baud Rate	9600
Parity Check	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

2.2 TTL-232 Interface (Only for RT203/ RT830B/ RT830C)

Scan below setting code for using TTL-232 interface.

0606000.

TTL-232 interface

(Important note: this setting code only can be used for RT203/ RT830B/ RT830C)

Serial communication interface is usually used when connecting the scanner to a host device (like PC, POS). However, to ensure smooth communication and accuracy of data, you need to set communication parameters (including baud rate, parity check, data bit and stop bit) to match the host device.

The serial communication interface provided by the scanner is based on TTL-level signals. TTL-232 can be used for most application architectures. For those requiring RS232 or USB interface, an external conversion circuit is needed. RTscan can provide the conversion circuit (development kit board).

Default serial communication parameters are listed below. Make sure all parameters match the host requirements.

Parameter	Factory Default
Serial Communication	Standard TTL-232
Baud Rate	115200
Parity Check	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

2.3 Baud Rate

Baud rate is the number of bits of data transmitted per second. Set the baud rate to match the Host requirements.

0607023.
2400

0607024.
4800

0607025.
9600

0607026.
19200

0607027.
38400

0607028.
57600

0607029.
115200 (Default)

2.4 Data Bit & Parity Check & Stop Bit

Note: some products only allows default configuration (None Parity/8 Data Bits/1 Stop Bit), configuration command: 0607032;
If products do not support multiple configurations, scanning the bar code of non-default configuration would error beep.


0607032.
None Parity /8 Data Bits/1 Stop Bit (Default)


0607030.
None Parity /7 Data Bits/1 Stop Bit


0607031.
None Parity /7 Data Bits/2 Stop Bits


0607035.
Even Parity /8 Data Bits/1 Stop Bit


0607033.
Even Parity /7 Data Bits/1 Stop Bit


0607034.
Even Parity /7 Data Bits/2 Stop Bits


0607038.
Odd Parity /8 Data Bits/1 Stop Bit


0607036.
Odd Parity /7 Data Bits/1 Stop Bit


0607037.
Odd Parity /7 Data Bits/2 Stop Bit

2.5 USB HID-KBW

When you connect the scanner to the Host via a USB connection, you can enable the **USB HID-KBW** feature by scanning the barcode below. Then scanner's transmission will be simulated as USB keyboard input. The Host receives keystrokes on the virtual keyboard. It works on a Plug and Play basis and no driver is required.


090500.
USB HID-KBW (Default)

2.6 USB Country Keyboard Types

Keyboard layouts vary from country to country. The default setting is 1-U.S. keyboard.


060E000.
1 – U.S. (Default)


060E007.
2 – UK


060E008.
3 – Denmark


060E003.
4 – France


060E002.
5 – Finland


060E0027.

6 – Turkey_F

060E005.

7 – Italy

060E009.

8 – Norway

060E0035.

9 – Albania

060E001.

10 – Belgium

060E0033.

11 – Bosnia

060E0016.

12 – Brazil

060E0032.

13 – Croatia

060E0015.

14 – Czech

060E0011.

15 – Dutch

060E0041.

16 – Estonia

060E004.

17 – Germany

060E0017.

18 – Greek

060E0019.

19 – Hungary

060E0073.

20 – Irish

060E0042.

21 – Latvia

060E0044.

22 – Lithuania

060E0034.

23 – Macedonia

060E0010.

24 – Spain

060E0020.

25 – Poland

060E0013.

26 – Portugal

060E0025.

27 – Romania

060E0026.

28 – Russia

060E0028.

29 – Japan

2.7 Convert Case

Scan the appropriate barcode below to convert barcode data to your desired case.


060D020.
No Case Conversion (Default)


060D021.
Convert All To Upper Case


060D022.
Convert All To Lower Case

Example: When the **Convert All to Lower Case** feature is enabled, barcode data "AbC" is transmitted as "abc".

2.8 RS232 Interface

If your scanner comes with an RS232 (DB9) cable, it works as serial Com protocol.

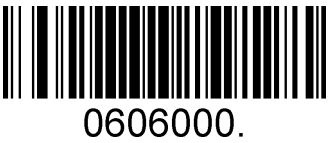
For all of the default serial communication parameters and baud rate settings, they are the same as above for "USB COM Port Emulation."

2.9 Important tip for changing cable between USB and RS232

If you have an RT830C or RT870, and you want to change cable from USB to RS232 (DB9 com port) or from RS232 to USB cable, please follow up below steps. Or else you would find the scanner stop working or can't get decoded data properly.

- From USB cable to RS232 (DB9 com port) cable:

Please read the following barcode first --this action should be done **before** changing the cable



0606000.

RS232 interface

Then plug out the USB cable and plug in the RS232 cable.

- From RS232 (DB9 com port) cable to USB cable:

Caution: Please be careful and make sure you have a USB cable that comes with the scanner from RTscan. If you do not have such USB cable, then after scanning below 0606001 setting code, **your scanner will not work anymore untill you get a USB cable from RTscan.**

Please read the following barcode first --this action should be done before changing the cable

0606001.

Then plug out the RS232 cable and plug in the USB cable.
After that, you can scan below setting code to set it to USB-HID or USB COM port emulation.

090500.
USB HID-KBW

090400.
USB COM Port Emulation

3 General Configuration

3.1 Presentation Mode

This set the scanner to work in presentation mode (also called sense mode). If the scanner is set as Presentation mode, the barcode will be detected and read automatically once there is barcode presented in front of the scanner. The presentation mode is default setting and it is also recommended for most kinds of application as the Normal mode will read well barcodes from both Paper/Document and Phone screen etc.


090901.
Presentation Mode – Normal


090902.
Presentation Mode - Cellphone


090903.
Presentation Mode – Continue Scan

3.2 Inverse color


024B000.
OFF (Default)


024B001.
Only Inverse ON


024B002.
Inverse And Normal Both ON

3.3 Illumination

Illumination setting for command Trigger Mode for RT203/ RT830B/C.

0401004.
Illumination Level 4 (Default)

0401003.
Illumination Level 3

0401002.
Illumination Level 2

0401001.
Illumination Level 1

3.4 Good Read Beeper

0502101.
ON (Default)

0502100.
OFF

3.5 Good Read Beeper Volume

05021D1.
Low


05021D2.
Middle


05021D3.
High (Default)

3.6 Good Read Beeper Duration


0502160.
Normal (Default)


0502161.
Short

3.7 Good Read Beeper Tone


05020D1680.
Low Frequency


05020D2790.
Medium Frequency (Default)


05020D3280.
Medium High Frequency


05020D4290.
High Frequency

3.7 Presentation Mode Reread Delay


080B06500.
Delay 500 MS (Default)


080B06750.
Delay 750 MS


080B061000.
Delay 1000 MS

4 Data Formatting

4.1 General Configuration

090200.

Add CR

090202.

Add LF

090300.

Add CRLF

090201.

Add TAB

4.2 Add Prefix

080400.
Set Custom Prefix

0D0400.
Save

0D0500.
Not Save

To set a customer prefix, scan the **Set Custom Prefix** barcode and the numeric barcodes which representing the hexadecimal values of a desired prefix, and then scan the **Save** barcode. Refer to Appendix 2: ASCII Table for hexadecimal values of characters.

Example: Set the custom Prefix to "ODE"

1. Check the hex values of "ODE" in the ASCII Table. ("ODE": 4F, 44, 45)
2. Scan the **Set Custom Prefix** barcode.
3. Scan the numeric barcodes"9","9","4","F","4","4","4"and"5"in Appendix 3 .
4. Scan the **Save** barcode.

4.3 Add Suffix

080500.

Set Custom Suffix

0D0400.

Save

0D0500.

Not Save

To set a customer suffix, scan the **Set Custom Suffix** barcode and the numeric barcodes which representing the hexadecimal values of a desired suffix, and then scan the **Save** barcode. Refer to Appendix 2: ASCII Table for hexadecimal values of characters.

Example: Set the custom Suffix to "ODE"

1. Check the hex values of "ODE" in the ASCII Table. ("ODE": 4F, 44, 45)
2. Scan the **Set Custom Suffix** barcode.
3. Scan the numeric barcodes"9","9","4","F","4","4","4"and"5"in Appendix 3 .
4. Scan the **Save** barcode.

4.4 Clear All Prefix and Suffix

080404.

Clear All Prefix And Suffix (Default)

5 Symbologies

5.1 General Setting

5.1.1 Restore Symbology Default Setting

090101.

Restore Symbology Default

Symbologies Enable:

Code 128, Code 39, UPC, EAN, Interleaved 2 of 5, Code 93, Coda Bar, GS1-128, Data Matrix, PDF417, QR, Maxi Code, Aztec.

5.1.2 Optimize Performance for Retail Use Case

Make for optimize scan performance in most retail barcode scan use case.

Symbologies Enable:

UPC, EAN, Code128, QR, PDF417.

091832.

Only Enable Retail Barcode

5.1.3 Enable/Disable All Symbologies

If the **Disable All Symbologies** feature is enabled, the scanner will not be able to read any non-programming barcodes except the programming barcodes.

0201001.

Enable All Symbologies

0201000.

Disable All Symbologies

5.2 1D Symbologies

5.2.1 Code 128

Enable/Disable Code 128


020A011.
Enable Code 128 (Default)


020A010.
Disable Code 128

Message Length
Message length can be set to the maximum value or minimum value. The value between the maximum and the minimum is valid.
The maximum value and minimum value can be set using “Programming Command”. Please check the programming command guide for the detail.
Code 128 max length command: 020A03. The parameter of this command can be set from min to 90.
Code 128 min length command: 020A02. The parameter of this command can be set from 0 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 020A0325 ; Min: 020A0210.

5.2.2 EAN-8

Enable/Disable EAN-8

0214011.
Enable EAN-8 (Default)

0214010.
Disable EAN-8

Transmit Check Digit

EAN-8 is 8 digits in length with the last one as its check digit used to verify the accuracy of the data.

0214021.
Transmit EAN-8 Check Digit (Default)

0214020.
Do Not Transmit EAN-8 Check Digit

Add-On Code

An EAN-8 barcode can be augmented with a two-digit or five-digit add-on code to form a new one. In the examples below, the part surrounded by blue dotted line is an EAN-8 barcode while the part circled by red dotted line is add-on code.

0214031.
Enable 2-Digit Add-On Code


0214030.
Disable 2-Digit Add-On Code (Default)


0214041.
Enable 5-Digit Add-On Code


0214040.
Disable 5-Digit Add-On Code (Default)

Add-On Code Required


0214051.
EAN-8 Add-On Code Required


0214050.
EAN-8 Add-On Code Not Required (Default)

ENA/JAN-8 Addenda Separator

When this feature is enabled, there is a space between barcode and addenda. When this feature is disabled, there is no space.


0214061.
Enable ENA/JAN-8 Addenda Separator (Default)


0214060.
Disable ENA/JAN-8 Addenda Separator UPC

5.2.3 EAN-13

Enable/Disable EAN-13

0213011.

Enable EAN-13 (Default)

0213010.

Disable EAN-13

Transmit Check Digit

0213021.

Transmit EAN-13 Check Digit (Default)

0213020.

Do Not Transmit EAN-13 Check Digit

Add-On Code

0213031.

Enable 2-Digit Add-On Code

0213030.

Disable 2-Digit Add-On Code (Default)

0213041.

Enable 5-Digit Add-On Code

0213040.

Disable 5-Digit Add-On Code (Default)

Add-On Code Required

0213051.

EAN-13 Add-On Code Required

0213050.

EAN-13 Add-On Code Not Required (Default)

ENA/JAN-13 Addenda Separator

When this feature is enabled, there is a space between barcode and addenda. When this feature is disabled, there is no space.

0213061.

Enable ENA/JAN-13 Addenda Separator (Default)

0213060.

Disable ENA/JAN-13 Addenda Separator

ISBN Translate

When enable this feature and is scanned, ENA-13 Book land symbols are translated into their equivalent ISBN number format.

0213071.

Enable ISBN Translate

0213070.

Disable ISBN Translate (Default)

5.2.4 UPC-E

Enable/Disable UPC-E0/E1

0212011.
Enable UPC-E0 (Default)

0212010.
Disable UPC-E0

0212021.
Enable UPC-E1

0212020.
Disable UPC-E1 (Default)

UPC-E0 Check Digit

0212041.
Enable UPC-E0 Check Digit (Default)

0212040.
Disable UPC-E0 Check Digit

UPC-E0 Expand

UPC-E0 expand expands the UPC-E code to the 12 digits, UPC-A format.

0212031.

Enable UPC-E0 Expand

0212030.

Disable UPC-E0 Expand (Default)

UPC-E0 Addenda Required

When required is scanned, the scanner will only read UPC-E barcodes that have addenda.

0212081.

Enable UPC-E0 Required

0212080.

Disable UPC-E0 Required (Default)

UPC-E0 Addenda Separator

0212091.

Enable UPC-E0 Separator (Default)

0212090.

Disable UPC-E0 Separator

UPC-E0 Number System

The number system digit of UPC symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will be not transmitted.


0212051.
Enable UPC-E0 Number System (Default)


0212050.
Disable UPC-E0 Number System

UPC-E0 Addenda


0212061.
Enable 2 Digit Addenda


0212060.
Disable 2 Digit Addenda (Default)


0212071.
Enable 5 Digit Addenda


0212070.
Disable 5 Digit Addenda (Default)

5.2.5 UPC-A

Enable/Disable UPC-A


0211011.
Enable UPC-A (Default)


0211010.
Disable UPC-A

UPC-A Check Digit


0211021.
Enable UPC-A Check Digit (Default)


0211020.
Disable UPC-A Check Digit

UPC-A Addenda Required

When required is scanned, the scanner will only read UPC-E barcodes that have addenda.


0211061.
Enable UPC-A Required


0211060.
Disable UPC-A Required (Default)

UPC-A Addenda Separator

0211071.

Enable UPC-A Separator (Default)

0211070.

Disable UPC-A Separator

UPC-A: Number System

The number system digit of UPC symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will be not transmitted.

0211031.

Enable UPC-A Number System (Default)

0211030.

Disable UPC-A Number System

UPC-A: Addenda


0211041.
Enable 2 Digit Addenda


0211040.
Disable 2 Digit Addenda (Default)


0211051.
Enable 5 Digit Addenda


0211050.
Disable 5 Digit (Default)

5.2.6 Interleaved 2 Of 5

Enable/Disable Interleaved 2 Of 5

0204011.

Enable Interleaved 2 Of 5 (Default)

0204010.

Disable Interleaved 2 Of 5

Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming Command. Please check the programming command guide for the detail.

Interleaved 2 of 5 max length command: 020404. The parameter of this command can be set from min to 80.

Interleaved 2 of 5 min length command: 020403. The parameter of this command can be set from 2 to max.

Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02040425 ; Min: 02040310.

Interleaved 2 Of 5 Check Digit

0204020.

No Check Char (Default)

0204022.

Validate And Transmit

0204021.

Validate Not Transmit

5.2.7 Matrix 2 Of 5

Enable/Disable Matrix 2 Of 5


0208011.
Enable Matrix 2 Of 5


0208010.
Disable Matrix 2 Of 5 (Default)

Message Length

Message length can be set to the maximum value, minimum value. The value is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Matrix 2 of 5 max length command: 020803. The parameter of this command can be set from min to 80.
Matrix 2 of 5 min length command: 020802. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02080325 ; Min: 02080210.

5.2.8 Industrial 2 Of 5

Enable/Disable Industrial 2 Of 5


0206011.
Enable Industrial 2 Of 5


0206010.
Disable Industrial 2 Of 5 (Default)

Message Length

Message length can be set to the maximum value, minimum value. The value is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Industrial 2 of 5 max length command: 020603. The parameter of this command can be set from min to 48.
Industrial 2 of 5 min length command: 020602. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02060325 ; Min: 02060210.

5.2.9 Code 39

Enable/Disable Code 39

0203011.
Enable Code 39 (Default)

0203010.
Disable Code 39

Transmit Start/Stop Character

0203051.
Transmit Start/Stop Character

0203050.
Do Not Transmit Start/Stop Character (Default)

Code 39 Check Character

0203040.
No Check Char (Default)

0203042.
Validate And Transmit

0203041.
Validate No Transmit

Code 39 Append

This function allows the scanner to append several Code 39 barcode data together before transmitting to host. When the scanner encounters a Code 39 barcode with append character (ex. Space character), it buffers the data until it reads a Code 39 barcode which does not have append character. Then the data is transmitted in the order that the barcodes were read.


0203031.
Enable Append


0203030.
Disable Append (Default)

Code 39 Full ASCII


0203021.
Enable Code 39 Full ASCII


0203020.
Disable Code 39 Full ASCII (Default)

Message Length

Message length can be set to the maximum value, minimum value. The value is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Code 39 max length command: 020308. The parameter of this command can be set from min to 48.
Code 39 min length command: 020307. The parameter of this command can be set from 0 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02030825 ; Min: 02030710.

5.2.10 Coda Bar

Enable/Disable Coda Bar

0202011.

Enable Coda Bar (Default)

0202010.

Disable Coda Bar

Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.

Coda bar max length command: 020206. The parameter of this command can be set from min to 60.

Coda bar min length command: 020205. The parameter of this command can be set from 2 to max.

Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02020625 ; Min: 02020510.

Transmit Start/Stop Character

0202021.

Transmit Start/Stop Character

0202020.

Do Not Transmit Start/Stop Character (Default)

Coda bar Check Character

0202030.

No Check Char (Default)

0202032.

Validate And Transmit

0202031.

Validate No Transmit

5.2.11 Code 93

Enable/Disable Code 93

Enable Code 93 (Default)

Disable Code 93

Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Code 93 max length command: 020D03. The parameter of this command can be set from min to 80.
Code 93 min length command: 020D02. The parameter of this command can be set from 0 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 020D0325 ; Min: 020D0210.

Code 93 Append

This function allows the scanner to append several Code 93 barcode data together before transmitting to host. When the scanner encounters a Code 93 barcode with append character (ex. Space character), it buffers the data until it reads a Code 93 barcode which does not have append character. Then the data is transmitted in the order that the barcodes were read.

Enable Code 93 Append

Disable Code 93 Append (Default)

5.2.12 GS1-128

Enable/Disable GS1-128

Enable GS1-128 (Default)

Disable GS1-128

Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
GS1-128 max length command: 020B03. The parameter of this command can be set from min to 80.
GS1-128 min length command: 020B02. The parameter of this command can be set from 0 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 020B0325 ; Min: 020B0210.

5.2.13 MSI

Enable/Disable MSI


020E011.
Enable MSI


020E010.
Disable MSI (Default)

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
MSI max length command: 020E04. The parameter of this command can be set from min to 48.
MSI min length command: 020E03. The parameter of this command can be set from 4 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 020E0425 ; Min: 020E0310.

MSI Check Character

020E021.
Validate Type10 Transmit

020E020.
Validate 2 Type10 No Transmit (Default)

020E024.
Validate Type10 Then Type11 Char NO Transmit

020E025.
Validate Type10 Then Type11 Char Transmit

020E023.
Validate 2 Type10 Char Transmit

020E022.
Validate 2 Type10 Char No Transmit

020E026.
Disable MSI Check

5.2.14 Code 11

Enable/Disable Code 11


0209011.
Enable Code 11


0209010.
Disable Code 11 (Default)

Code11 Check Digit(s)


0209040.
One Check Digit


0209041.
Two Check Digits (Default)

5.3 2D Symbologies

5.3.1 PDF 417

Enable/Disable PDF 417

021F011.

Enable PDF 417 (Default)

021F010.

Disable PDF 417

Enable/Disable Micro PDF 417

0220011.

Enable Micro PDF 417

0220010.

Disable Micro PDF 417 (Default)

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum.

The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.

PDF417 max length command: 021F06. The parameter of this command can be set from min to 2750.

PDF417 min length command: 021F05. The parameter of this command can be set from 1 to max. Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 021F0625 ; Min: 021F0510.

5.3.2 QR Code

Enable/Disable QR Code


0237011.
Enable QR Code (Default)


0237010.
Disable QR Code

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum is valid.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
QR max length command: 023703. The parameter of this command can be set from min to 7089.
QR min length command: 023702. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02370325 ; Min: 02370210.

QR Code Append

This function allows the scanner to append several QR barcode data together before transmitting to host. When the scanner encounters a QR barcode with append character (ex. Space character), it buffers the data until it reads a QR barcode which does not have append character. Then the data is transmitted in the order that the barcodes were read.


0237081.
Enable QR Code Append (Default)


0237080.
Disable QR Code Append

5.3.3 Data Matrix

Enable/Disable Data Matrix


0236011.
Enable Data Matrix (Default)


0236010.
Disable Data Matrix

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Data Matrix max length command: 023603. The parameter of this command can be set from min to 3116.
Data Matrix min length command: 023602. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02360325 ; Min: 02360210.

5.3.4 Maxi code

Enable/Disable Maxi code


0234011.
Enable Maxi Code


0234010.
Disable Maxi Code (Default)

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Maxi Code max length command: 023403. The parameter of this command can be set from min to 150.
Maxi Code min length command: 023402. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02340325 ; Min: 02340210.

5.3.5 Aztec

Enable/Disable Aztec


0233011.
Enable Aztec (Default)


0233010.
Disable Aztec

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Aztec max length command: 023306. The parameter of this command can be set from min to 3832.
Aztec min length command: 023305. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02330625 ; Min: 02330510.

Aztec Append


0233081.
Enable Aztec Append (Default)


0233080.
Disable Aztec Append

5.3.6 Hanxin

Enable/Disable Hanxin


0238011.
Enable Hanxin


0238010.
Disable Hanxin (Default)

Message Length

Message length can be set to the maximum value, minimum value. The data is valid between the maximum and the minimum.
The maximum value and minimum value can be set using Programming command. Please check the programming command guide for the detail.
Hanxin max length command: 023803. The parameter of this command can be set from min to 7833.
Hanxin min length command: 023802. The parameter of this command can be set from 1 to max.
Example: Set the Barcode Message length of the minimum value is 10; the maximum value is 25.
Programming command: Max: 02380325 ; Min: 02380210.

5.4 Postal Symbologies

5.4.1 China Postal Code

Enable/Disable China Postal Code


0218011.
Enable China Postal Code


0218010.
Disable China Postal Code (Default)

5.4.2 Telepen

Enable/Disable Telepen


0210011.
Enable China Telepen


0210010.
Disable China Telepen (Default)

6 Q&A

6.1 How to scan Japanese in QR codes?

Application environment	QR coding rule	
	UTF8\GB2312	Shift-JIS
word documents	091842.	091840.
Excel or notepad system languages:JP	091846.	091845.
Sample Code	こんにちは	123 あいうえ ABC かきくけこ 456

6.2 How to scan Korean in QR codes?

application environment	QR coding rule	
	UTF8	CP949
word documents	091842.	091844.
Excel or notepad system languages:Korean	09184B.	09184A.
Sample Code	안녕하세요	123ㅂㄲ툺ㅋㅊㅣㅌ.채ㅜㅠ

6.3 How to scan Thai in QR codes?

Application environment	QR coding rule	
	UTF8	CP874
word documents	 091842.	 091843.
Excel or notepad system languages:Thai	 09184D.	 09184C.
Sample Code	 แบบทดสอบภาษาไทยบาร์โค้ด	 12345678 ห ฟ ด่ ดาสกหฟร้ำ แส่ส่ KTB CO.,LTD

7 Appendix

7.1 Appendix 1: AIM ID Table

Symbology	AIM ID	Remark
EAN-13	]E0	Standard EAN-13
	]E3	EAN-13 + 2/5-Digit Add-On Code
EAN-8	]E4	Standard EAN-8
	]E4...]E1...	EAN-8 + 2-Digit Add-On Code
	]E4...]E2...	EAN-8 + 5-Digit Add-On Code
UPC-E	]E0	Standard UPC-E
	]E3	UPC-E + 2/5-Digit Add-On Code
UPC-A	]E0	Standard UPC-A
	]E3	UPC-A + 2/5-Digit Add-On Code
Code 128	]C0	Standard Code 128
GS1-128 (UCC/EAN-128)	]C1	FNC1 is the character right after the start character
AIM-128	]C2	FNC1 is the 2nd character after the start character
ISBT-128	]C4	
Interleaved 2 of 5	]I0	No parity check
	]I1	Transmit check digit after parity check
	]I3	Do not transmit check digit after parity check
ITF-6	]I1	Transmit check digit
	]I3	Do not transmit check digit
ITF-14	]I1	Transmit check digit
	]I3	Do not transmit check digit
Industrial 2 of 5	]S0	Not specified
Standard 2 of 5	]R0	No parity check
	]R8	One check digit, MOD10; do not transmit check digit
	]R9	One check digit, MOD10; transmit check digit
Code 39	]A0	Transmit barcodes as is; Full ASCII disabled; no parity check
	]A1	One check digit, MOD43; transmit check digit
	]A3	One check digit, MOD43; do not transmit check digit
	]A4	Full ASCII enabled; no parity check
	]A5	Full ASCII enabled; transmit check digit
	]A7	Full ASCII enabled; do not transmit check digit
Codebar	]F0	Standard Codebar
	]F2	Transmit check digit after parity check
	]F4	Do not transmit check digit after parity check
Code 93	]G0	Standard Code 93
Code 11	]H0	One check digit MOD11; transmit check digit
	]H1	Two check digits, MOD11/MOD11; transmit check digit
	]H3	Do not transmit check digit after parity check
	]H9	No parity check
GS1-DataBar (RSS)	]e0	Standard GS1-DataBar
Plessey	]P0	Standard Plessey
MSI-Plessey	]M0	One check digit, MOD10; transmit check digit
	]M1	One check digit, MOD10; do not transmit check digit
	]M8	Two check digits
	]M9	No parity check

Matrix 2 of 5	]X0	Specified by the manufacturer
	]X1	No parity check
	]X2	One check digit, MOD10; transmit check digit
	]X3	One check digit, MOD11; do not transmit check digit
ISBN	]X4	Standard ISBN
ISSN	]X5	Standard ISSN
PDF417	]L0	Comply with 1994 PDF417 specifications
Data Matrix	]d0	ECC000 - ECC140
	]d1	ECC200
	]d2	ECC200, FNC1 is the 1st or 5th character after the start character
	]d3	ECC200, FNC1 is the 2nd or 6th character after the start character
	]d4	ECC200, ECI included
	]d5	ECC200, FNC1 is the 1st or 5th character after the start character,ECI included
	]d6	ECC200, FNC1 is the 2nd or 6th character after the start character,ECI included
QR Code	]Q0	QR1
	]Q1	2005 version, ECI excluded
	]Q2	2005 version, ECI included
	]Q3	QR Code 2005, ECI excluded, FNC1 is the 1st character after the start character
	]Q4	QR Code 2005, ECI included, FNC1 is the 1st character after the start character
	]Q5	QR Code 2005,ECI excluded,FNC1 is the 2nd character after the start character
	]Q6	QR Code 2005, ECI included, FNC1 is the 2nd character after the start character

Reference: ISO/IEC 15424:2008 Information technology – Automatic identification and data capture techniques – Data Carrier

Identifiers (including Symbology Identifiers).

7.2 Appendix 2: ASCII Table

Hex	Dec	Char	
00	0	NUL	(Null char.)
01	1	SOH	(Start of Header)
02	2	STX	(Start of Text)
03	3	ETX	(End of Text)
04	4	EOT	(End of Transmission)
05	5	ENQ	(Enquiry)
06	6	ACK	(Acknowledgment)
07	7	BEL	(Bell)
08	8	BS	(Backspace)
09	9	HT	(Horizontal Tab)
0a	10	LF	(Line Feed)
0b	11	VT	(Vertical Tab)
0c	12	FF	(Form Feed)
0d	13	CR	(Carriage Return)
0e	14	SO	(Shift Out)
0f	15	SI	(Shift In)
10	16	DLE	(Data Link Escape)
11	17	DC1	(XON) (Device Control 1)
12	18	DC2	(Device Control 2)
13	19	DC3	(XOFF) (Device Control 3)
14	20	DC4	(Device Control 4)
15	21	NAK	(Negative Acknowledgment)
16	22	SYN	(Synchronous Idle)
17	23	ETB	(End of Trans. Block)
18	24	CAN	(Cancel)
19	25	EM	(End of Medium)
1a	26	SUB	(Substitute)
1b	27	ESC	(Escape)
1c	28	FS	(File Separator)
1d	29	GS	(Group Separator)
1e	30	RS	(Request to Send)
1f	31	US	(Unit Separator)
20	32	SP	(Space)
21	33	!	(Exclamation Mark)
Hex	Dec	Char	
22	34	"	(Double Quote)
23	35	#	(Number Sign)
24	36	$	(Dollar Sign)
25	37	%	(Percent)
26	38	&	(Ampersand)
27	39	`	(Single Quote)
28	40	(	(Right / Closing Parenthesis)
29	41	)	(Right / Closing Parenthesis)
2a	42	*	(Asterisk)
2b	43	+	(Plus)
2c	44	,	(Comma)
2d	45	-	(Minus / Dash)

2e	46	. (Dot)
2f	47	/ (Forward Slash)
30	48	0
31	49	1
32	50	2
33	51	3
34	52	4
35	53	5
36	54	6
37	55	7
38	56	8
39	57	9
3a	58	: (Colon)
3b	59	; (Semi-colon)
3c	60	< (Less Than)
3d	61	= (Equal Sign)
3e	62	> (Greater Than)
3f	63	? (Question Mark)
40	64	@ (AT Symbol)
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
Hex	Dec	Char
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[(Left / Opening Bracket)
5c	92	\ (Back Slash)
5d	93	] (Right / Closing Bracket)
5e	94	^ (Caret / Circumflex)
5f	95	_ (Underscore)
60	96	' (Grave Accent)

61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
Hex	Dec	Char
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{ (Left/ Opening Brace)
7c	124	| (Vertical Bar)
7d	125	} (Right/Closing Brace)
7e	126	~ (Tilde)
7f	127	DEL (Delete)

7.3 Appendix 3: Digit Barcodes


Y0Y


Y1Y


Y2Y


Y3Y

4


Y4Y

5


Y5Y

6


Y6Y

7


Y7Y

8


Y8Y

9


Y9Y

A


YAY

B


YBY

C


YCY

D


YDY

E


YEY

F


YFY