2D Barcode Reader User Guide

V 1.0.0

Table of Contents

1 Getting Started

1.1 About This Guide

This guide provides programming instructions for the Unitech 2D Barcoder Reader. Users can configure the Unitech 2D Barcoder Reader by scanning the programming barcodes included in this manual.

1.2 Barcode Scanning

Powered by area-imaging technology and Unitech 2D Barcoder Reader patented "Hercules" technology, the Unitech 2D Barcoder Reader features fast scanning and decoding accuracy. Barcodes rotated at any angle can still be read with ease. When scanning a barcode, simply center the aiming beam or pattern projected by the Unitech 2D Barcoder Reader over the barcode.

1.3 Factory Defaults

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

0D0100.

Restore All Factory Defaults

1.4 Firmware Version Number

Scanning the barcode below can display the firmware version number.

0D1302?.

Display The Firmware Version Number

2 Communication Interfaces

The Unitech 2D Barcoder Reader provides a TTL-232 interface and a USB interface to communicate with the host device. The host device can receive scanned data and send commands to control the engine or to access/alter the configuration information of the engine via the TTL–232 or USB interface.

2.1 TTL-232 Cable Select

Before using Serial Communication interface, scanner must be set as TTL-232 cable.

0606000.

232 Cable

2.2 TTL-232 Interface

Serial communication interface is usually used when connecting the engine 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 engine is based on TTL-level signals. TTL-232 can be used for most application architectures. For those requiring RS-232, an external conversion circuit is needed. The conversion circuit is available only to some models.

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

||||||||||||||||||||
0607030.

None Parity /7 Data Bits/1 Stop Bit

||||||||||||||||||||
0607032.

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

||||||||||||||||||||
0607035.

Even Parity /8 Data Bits/1 Stop Bit

||||||||||||||||||||
0607031.

None Parity /7 Data Bits/2 Stop Bits

||||||||||||||||||||
0607034.

Even Parity /7 Data Bits/2 Stop Bits

||||||||||||||||||||
0607033.

Even Parity /7 Data Bits/1 Stop Bit

||||||||||||||||||||
0607036.

Odd Parity /7 Data Bits/1 Stop Bit

||||||||||||||||||||
0607038.

Odd Parity /8 Data Bits/1 Stop Bit

||||||||||||||||||||
0607037.

Odd Parity /7 Data Bits/2 Stop Bit

USB Cable

2.5 USB HID-KB

When you connect the engine to the Host via a USB connection, you can enable the USB HID-KB feature by scanning the barcode below. Then engine➰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-KB (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 USB COM Port Emulation

If you connect the engine to the Host via a USB connection, the USB COM Port Emulation **feature allows the Host to receive data in the way as a serial port does. A driver is required for this feature, visit the official website to download and install .**

090400.

USB COM Port Emulation

3 General Configuration

3.1 Trigger Mode

If the Trigger Mode is enabled, you could activate the scanner by providing an external hardware trigger, or using a serial trigger command. When in manual trigger mode, the scanner scans until a barcode is read, or until the hardware trigger is released. When in serial mode, the scanner scans until a barcode has been read or until the deactivate command is sent.

091A00.

Manual Trigger Mode – Normal (Default)

091B00.

Manual Trigger Mode – Cellphone

Serial Trigger Command:

Command Trigger:	[0x02][0xF4][0x03]
Command Untrigger:	[0x02][0xF5][0x03]

3.2 Presentation Mode

This set the scanner to work in presentation mode.

0E01003.

Presentation Mode – Normal

0E01008.

Presentation Mode – Continue Scan

3.3 Inverse color

024B000.

OFF (Default)

024B001.

Only Inverse ON

||||barcode: 024B002.||||

Inverse And Normal Both ON

3.4 Good Read Beeper

||||barcode: 0502101.||||

ON (Default)

||||barcode: 0502100.||||

OFF

3.5 Good Read Beeper Volume

||||barcode: 05021D1.||||

Low

||||barcode: 05021D2.||||

Middle

||||barcode: 05021D3.||||

High (Default)

3.6 Good Read Beeper Duration

||||barcode: 0502160.||||

3.7 Good Read Beeper Number

0502161.
Short

05020E1.

1 (Default)

05020E2.

2

05020E3.

3

05020E4.

4

||||||| 05020E5.

5

||||||| 05020E6.

6

3.8 Barcode Scanning Delay

||||||| 080B080.
No Delay (Default)

||||||| 080B08500.
Delay 500 MS

||||||| 080B082000.
Delay 2000 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 5 .

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 5.

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, DataMatrix, 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 engine 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)

ΕNA/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, EAN-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.
```

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)

```
0202010.
```
Validate And Transmit

```
0202031.
```
Validate No Transmit

5.2.11 Code 93

Enable/Disable Code 93

```
020D011.
```
Enable Code 93 (Default)

```
020D010.
```
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.

020D051.

Enable Code 93 Append

020D050.

Disable Code 93 Append (Default)

5.2.12 GS1-128

Enable/Disable GS1-128

020B001.

Enable GS1-128 (Default)

020B000.

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.

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

Enable QR Code (Default)

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.

Enable QR Code Append (Default)

QR Code Page

QR code pages define the mapping of character codes to characters.

```
023704.
```

QR Code Page (Default)

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 Chinese in QR codes?

Application environment	QR Coding Rule	
	UTF8\GB2312	**Big5**
Word documents	 UTF8/GB2312 QR (Auto Identify) Form Keyboard to MS-Word	 Big5 QR Form Keyboard to MS-Word
Excel or notepad system languages:CH	 UTF8/GB2312 QR(Auto Identify) For Excel/Notepad (CH)	 Big 5 QR For Excel/Notepad
Sample Code	 （GB2312） 采菊东篱下，悠然见南山。 （UTF8） 鳳凰臺上鳳凰遊 鳳去臺空江自流	 關關雎鳩，在河之洲。 窈窕淑女，君子好逑。

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
	]F0	Standard Codebar
Codebar	]F2	Transmit check digit after parity check
	]F4	Do not transmit check digit after parity check
Code 93	]G0	Standard Code 93
	]H0	One check digit MOD11; transmit check digit
Code 11	]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
	]M0	One check digit, MOD10; transmit check digit
MSI-Plessey	]M1	One check digit, MOD10; do not transmit check digit
	]M8	Two check digits
	]M9	No parity check
	]X0	Specified by the manufacturer
Matrix 2 of 5	]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
	]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
Data Matrix	]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
	]Q0	QR1
	]Q1	2005 version, ECI excluded
QR Code	]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)

Hex	Dec	Char	
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	

Hex	Dec	Char	
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)

Hex	Dec	Char	
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

0	1	2	3
Y0Y	Y1Y	Y2Y	Y3Y

4	5	6	7
Y4Y	Y5Y	Y6Y	Y7Y

8	9	A	B
Y8Y	Y9Y	YAY	YBY

C	D	E	F
YCY	YDY	YEY	YFY