Полная инструкция для ручного 2D
NEO FOX SD

Version2.0.2, Feb. 2022

Disclaimer

Please read through the manual carefully before using the product and operate it according to the manual. It is advised that you should keep this manual for future reference.

All pictures in this manual are for reference only and actual product may differ. Regarding to the product modification and update. Reserves the right to make changes to any software or hardware to improve reliability, function, or design at any time without notice. The information contained herein is subject to change without prior notice.

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Revision History

Version	Date	Modified Content
V1.0.0	2022.12	First draft

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Part I   Configuration Instructions for Serial

Port Commands

Chapter 1 Serial Commands

The user can transmit the serial port command to configure the scanning module through the host. To ensure normal communication, you need to set communication parameters (including baud rate, parity check, Data Bit and stop bit) to match the host device.

☞ Note：When use the Serial Commands to set the parameters , the device need to be set as USB Virtual Serial Port.And the corresponding driver needs to be installed in the host.

The default serial communication parameters of the scanning module are as follows:

Parameter	Default parameter value
Baud rate	9600bps
Check bit	None
Data bit	8bit
Stop bit	1bit
Hardware flow control	None

1.1 Operation of Reading Flag

The read device flag command is used to read the contents of 1 to 256 contiguous registers in the engine.

Syntax:

Send: {Head1} {Types} {Lens} {Address} {Datas} {CRC}

    Head1 :   0x7E 0x00 (2 bytes)

    Types :   0x07 (1 byte)

    Lens :   0x01 (1 byte)

    Address :   0x0000~0x00FF(2 bytes), starting register address.

    Datas :   0x00~0xFF(1 byte), number of registers to be read. When Datas=0x00, 256

             contiguous   registers are to be read.

    CRC :   CRC_CCITT checksum (2 bytes)

    Computation sequence: Types+Lens+Address+Datas;

    Polynomial: $X16+X12+X5+1$(0x1021), initial value: 0x0000. For a single byte, the highest bit is calculated first, and there is no need to invert it, direct output.

    The following C language program is provided for reference:

```
uint16_t crc_16(uint8_t *data, uint16_t len)
{
    uint16_t crc16 = 0x0000;

    while( len-- ) {
        for(uint8_t i=0x80; i!=0; i>>=1) {
            if((crc16 & 0x8000) != 0) {
                crc16 = crc16 << 1;
                crc16 = crc16 ^ 0x1021;
            }
            else {
                crc16 = crc16 << 1;
            }
            if((*data & i) != 0) {
                crc16 = crc16 ^ 0x1021;    //crc16 = crc16 ^ (0x10000 ^ 0x11021)
            }
        }
        data++;
    }

    return crc16;
}
```

☞ Note: If you do not need the CRC check function, you can choose no CRC check, that is, fill in 0xAB 0xCD without checking at the CRC byte.

Reply: {Head2} {Types} {Lens} {Datas} {CRC}

1) Success message

Head2   :   0x02 0x00

Types   :   0x00(success)

Lens   :   Byte count of Datas returned. If Lens=0x00, that means values of 256 contiguous registers are returned.

Datas   :   0x00~0xFF,data that are returned.

CRC   :   CRC-CCITT checksum.

Computation sequence: Types+ Lens+Address+Datas;

polynomial: X16+X12+X5+1(0x1021), initial value: 0x0000. For a single byte, the highest bit is calculated first, and there is no need to invert it, direct output.(Refers to the code above).

2) CRC check error message

No response command

3) Invalid Command response

No response command

Example:

Scan an address with the address 0x00FF in flag bits

1) Scan successfully and return the data of   0x3E

Send : 0x7E 0x00 0x07 0x01 0x00 0xFF 0x01 0x02 0xBE

Receive: 0x02 0x00 0x00 0x01 0x3E 0xE4 0xAC

2) CRC check error message

Send : 0x7E 0x00 0x07 0x01 0x00 0xFF 0x01 0x11 0x22

Receive: None

3) When the transmitted instruction between two bytes exceeds 400ms, it will be treated as an invalid command.

Send : 0x7E 0x00 0x07 0x01 0x00 0xFF 0x01

Receive: None

1.2 Operation of Writing Flag

The read device flag command is used to read the contents of 1 to 256 contiguous registers in the engine

The contents of the write flag operation modification will be lost after power off. If they need to be saved after power failure, the flag bit needs to be saved in the internal flash.

Syntax:

Send: {Head1} {Types} {Lens} {Address} {Datas} {CRC}

Head1   :   0x7E 0x00 (2 bytes)

Types   :   0x08 (1 byte)

Lens   :   0x00~0xFF(1 byte),byte count, i.e. number of registers written. When Lens=0x00, 256 contiguous registers are to be written.

Address   :   0x0000~0xFFFF (2 bytes), starting register address.

Datas   :   0x00~0xFF(1~256 bytes), data to be written into the flag bits. When configuring multiple flag bits, the data field must be filled from lowest to highest.

CRC   :   CRC-CCITT checksum.

Computation sequence: Types+ Lens+Address+Datas;

polynomial: X16+X12+X5+1(0x1021), initial value: 0x0000. For a single byte, the highest bit is calculated first, and there is no need to invert it, direct output.

The following C language program is provided for reference:

```c
uint16_t crc_16(uint8_t *data, uint16_t len)
{
    uint16_t crc16 = 0x0000;

    while( len-- ) {
        for(uint8_t i=0x80; i!=0; i>>=1) {
            if((crc16 & 0x8000) != 0) {
                crc16 = crc16 << 1;
                crc16 = crc16 ^ 0x1021;
            }
            else {
                crc16 = crc16 << 1;
            }
            if((*data & i) != 0) {
                crc16 = crc16 ^ 0x1021;    //crc16 = crc16 ^ (0x10000 ^ 0x11021)
            }
        }
        data++;
    }

    return crc16;
}
```

☞ Note: If you do not need the CRC check function, you can choose no CRC check, that is, fill in 0xAB 0xCD without checking at the CRC byte.

Reply: {Head2} {Types} {Lens} {Datas} {CRC}

1) Success message:

Head2   :   0x02 0x00

Types   :   0x00 (Success)

Lens   :   0x01

Datas : 0x00

CRC : CRC-CCITT checksum(0x33 0x31)..

2) CRC check error message

No response command

3) Invalid Command response

No response command

Example:

Write 0x3E in the flag bit of address 0x00FF

1) Write successful

Send : 0x7E 0x00 0x08 0x01 0x00 0xFF 0x3E 0xA0 0xFB

Receive: 0x02 0x00 0x00 0x01 0x00 0x33 0x31

2) CRC check error message

Send : 0x7E 0x00 0x08 0x01 0x00 0xFF 0x3E 0x11 0x22

Receive: None

3) When the length of the sent instruction is insufficient or the waiting time exceeds 400ms after transmitting 0x7E 0x00, it shall be treated as an invalid command.

Send : 0x7E 0x00 0x08 0x01 0x00 0xFF 0x3E

Receive: None

1.3 Flags Saved to Internal Flash Instructions

To save the device flag list to internal Flash, it is needed to transmit a save command.

☞Note: The device cannot save a single flag bit configuration separately and must maintain the entire list at the same time.

Syntax:

Send: {Head1} {Types} {Lens} {Address} {Datas} {CRC}

Head1 : 0x7E 0x00

Types : 0x09

Lens : 0x01

Address : 0x0000

Datas : 0x00

CRC : CRC-CCITT checksum (0xDE 0xC8)

Reply: {Head2} {Types} {Lens} {Datas} {CRC}

1) Success message:

Head2 : 0x02 0x00

Types   :   0x00 (Success)

Lens   :   0x01

Datas   :   0x00

CRC   :   CRC-CCITT checksum(0x33 0x31).

2) CRC check error message

No response command

3) Invalid Command response

No response command

1.4 Flags Restored to Factory Settings

To restore the contents of the device flag to the factory settings and save to Flash, you need to transmit a reset command.

Syntax:

Send: {Head1} {Types} {Lens} {Address} {Datas} {CRC}

Head1   :   0x7E 0x00

Types   :   0x09

Lens   :   0x01

Address   :   0x0000

Datas   :   0xFF

CRC   :   CRC-CCITT checksum(0x33 0x31).

Reply: {Head2} {Types} {Lens} {Datas} {CRC}

1) Success message:

Head2   :   0x02 0x00

Types   :   0x00 (Success)

Lens   :   0x01

Datas   :   0x00

CRC   :   CRC-CCITT checksum(0x33 0x31).

2) CRC check error message

No response command

3) Invalid Command response

No response command

Chapter 2 Flags

This chapter specifies the information related to the serial port configuration. Refer to the following table for details:

Flag	0x0000
Data Bit	Function
Bit7-6	01: No aiming of positioning lamp 10: The positioning lamp is always on (does not flash) when taking pictures
Bit5-4	00: Fill Light - always OFF 10/11: Fill Light - always ON
Bit3-0	0000: Manual Mode (Level Trigger) 0001: Manual Mode (Edge Trigger) 0010: Command Trigger Mode 0011: Sense Mode 0100: No Leave No Read Mode 0101: Continuous mode
Flag	0x0001
Bit7	Trigger command answer switch 0: Trigger command response allowed 1: Trigger command response disable
Bit6	0: Mute ON 1: Mute OFF
Bit5	0: Good Read LED OFF 1: Good Read LED ON
Bit4	Continuous mode key pause switch 0: Continuous mode key pause supports 1: Continuous mode key pause is not
Bit3-2	Passive Buzzer 00: Passive_Low Frequency 01: Passive_Intermediate Frequency 10: Passive_High Frequency

Bit1-0	Buzzer Settings 00: Passive Buzzer 01: Active Buzzer
Flag	0x0002
Data Bit	Function
Bit7-1	Reserved
Bit0	The command mode trigger flag is automatically cleared after the scan ends. 1: Trigger 0: Not Trigger
Flag	0x0003
Data Bit	Function
Bit7-2	HID Query Cycle. Period = (Reg0x0003[7:2]+1) ms
Bit1	0: Enter Setup 1: Exit Setup
Bit0	0: Do Not Transmit Programming Barcode Data 1: Transmit Programming Barcode Data
Flag	0x0004
Data Bit	Function
Bit7-0	Image Stabilization Timeout 0x00-0xFF: 0ms-25500ms
Flag	0x0005
Data Bit	Function
Bit7-0	Timeout between Decodes 0x00-0xFF: 0ms-25500ms
Flag	0x0006
Data Bit	Function
Bit7-0	0x00-0xFF: 100ms-25500ms (0x00 represents infinite)
Flag	0x0009

Data Bit	Function
Bit7-2	Timeout HID Release Timeout = (Reg0x0009[7:2]) ms
Bit1-0	Image Flip 00: Image Mirror Flip_ OFF 01: Image Mirror Flip _ ON 10/11: Reserved
Flag	0x000A
Bit7	the Chinese output shielding function 0: OFF 1: ON
Bit6-5	Virtual keyboard output mode 00: Control character output off 01: Ctrl Mode 10: Alt Mode
Bit4	Output of numeric function of keypad 0: OFF 1: ON
Bit3	Output of keypad operator function 0: OFF 1: ON
Bit2-1	Reserved
Bit0	HID Leading Key Output (shift+ctrl+r) 0: Disable HID Leading Key Output 1: HID Leading Key Output
Flag	0x000B
Data Bit	Function
Bit7-0	0x00-0xFF : 0-255ms
Flag	0x000C
Data Bit	Function

Bit7-3	Reserved
Bit2-1	CapsLock Switch. 00:General mode 01:Invert upper and lower case letters 10:All uppercase letters 11:All lowercase letters
Bit0	Default level in active buzzer mode 0: Buzzer idle mode with high level, and busy mode with low level 1: Buzzer idle mode with low level, and busy mode with high level
Flag	0x000D
Data Bit	Function
Bit7	Invoicing mode 0: Disable 1: Enable
Bit6	Virtual Keyboard Enable 0: Disable 1: Enable
Bit5-4	Encoding format of Output data 00: GBK 01: UNICODE 10: Original Data 11: UTF8
Bit3-0	0000：UART 0001：KBW 0011：USB-232 0100：POS 0101：COMPOSITE 0110：UART+KBW
Flag	0x000E
Data Bit	Function

Bit7-4	Reserved
Bit3	Startup Beep 0: ON 1: OFF
Bit2	Good Read Beep 0: Good Read Beep - OFF 1: Good Read Beep - ON
Bit1	Setup Beep 0: Setup Beep - ON 1: Setup Beep - OFF
Bit0	Serial port analog HID protocol 1: Enable serial port analog HID protocol 0: Disable serial port analog HID protocol
Flag	0x000F
Data Bit	Function
Bit7-0	Parameter 1 of Sensitivity Adjustment 0x00-0xFF: The higher the value is, the lower the sensitivity is
Flag	0x0010
Data Bit	Function
Bit7-0	Parameter 2 of Sensitivity Adjustment 0x00-0xFF: The higher the value is, the lower the sensitivity is
Flag	0x0013
Data Bit	Function
Bit7	Timeout between Decodes (Same Barcode) Setting 0: OFF 1: ON
Bit6-0	Timeout (unit: 100ms) 0x00: Infinite Time 0x01-0x7F: 0.1-12700ms;
Flag	0x0014
Data Bit	Function

Bit7-0	Information Output Reservation Perioed (unit: 100ms) 0x00-0xFF: 0-25500ms
Flag	0x0015
Bit7-3	Reserved
Bit2	Vibrate Switch 0: OFF 1: ON
Bit1	Select ion of the Invoicing Mode 0: Local Invoicing Mode 1: Online Invoicing Mode
Bit0	Reserved
Flag	0x0016
Bit7-5	Reserved
Bit4	Reverse Scanning Module 0: OFF 1: ON
Bit3-1	Reserved
Bit0	Enhancement of literacy 0: OFF 1: ON
Flag	0x0017
Bit7-4	Reserved
Bit3	QR prefixed (11) 0: OFF 1: ON
Bit2	Code128 prefixed (11) 0: OFF 1: ON
Bit1	Web address code recognition 0: ON 1: OFF

Bit0	GS Character Replacement 0: OFF 1: ON
Flag	0x0018
Bit7-0	GS Replacement Character 0x00-0xFF: GS replaces the character value
Flag	0x002B，0x002A
Data Bit	Function
Bit15	Reserved
Bit14-13	Parity mode: 0: NONE 1: ODD Parity 2: EVEN Parity
Bit12-0	Serial port baud rate: 0x0271: Serial port baud rate is 4800 bps 0x0139: Serial port baud rate is 9600 bps 0x00D0: Serial port baud rate is 14400 bps 0x009C: Serial port baud rate is 19200 bps 0x004E: Serial port baud rate is 38400 bps 0x0034: Serial port baud rate is 57600 bps 0x001A: Serial port baud rate is 115200bps 0x000D: Serial port baud rate is 230400bps 0x0007:Serial port baud rate is 460800bps 0x0004:Serial port baud rate is 9216000bps Example: 9600 baud rate: 0x002A = 0x39, 0x002B = 0x01
Flag	0x002C
Data Bit	Function
Bit7-3	Reserved
Bit2-1	Global Settings 00: Disable All Symbologies; 01: Enable All Symbologies;

	10/11: Enable Default Symbologies
Bit0	Reserved
Flag	0x002E
Data Bit	Function
Bit7	EAN13-5 Digit Add-On Code 0: Disable 1: Enable
Bit6	EAN13-2 Digit Add-On Code 0: Disable 1: Enable
Bit5	EAN13 Add-On Code Required 0: Not Required 1: Required
Bit4-2	Reserved
Bit1	Transmission of EAN13 Parity Bits 0: Disable 1: Enable
Bit0	Enable/Disable EAN13 code 0: Disable EAN13 1: Enable EAN13
Flag	0x002F
Data Bit	Function
Bit7	EAN8-5 Digit Add-On Code 0: Disable 1: Enable
Bit6	EAN8-2 Digit Add-On Code 0: Disable 1: Enable
Bit5	EAN8 Add-On Code Required 0: Not Required

	1: Required
Bit4-2	Reserved
Bit1	Transmission of EAN8 Parity Bits 0: Disable 1: Enable
Bit0	Enable/Disable EAN8 0: Disable EAN8 1: Enable EAN8
Flag	0x0030
Data Bit	Function
Bit7	UPC-A-5 Digit Add-On Code 0: Disable 1: Enable
Bit6	UPC-A-2 Digit Add-On Code 0: Disable 1: Enable
Bit5	UPC-A Add-On Code Required 0: Not Required 1: Required
Bit4	Conversion from UPC-A to EAN13 0: Disable 1: Enable
Bit3-2	Reserved
Bit1	Transmission of UPC-A Parity Bits 0: Disable 1: Enable
Bit0	Enable/Disable UPC-A 0: Disable UPC-A 1: Enable UPC-A
Flag	0x0031

Data Bit	Function
Bit7	UPC-E0-5 Digit Add-On Code 0: Disable 1: Enable
Bit6	UPC-E0-2 Digit Add-On Code 0: Disable 1: Enable
Bit5	UPC-E0 Add-On Code Required 0: Not Required 1: Required
Bit4-2	Reserved
Bit1	Transmission of UPC-E0 Parity Bits 0: Disable 1: Enable
Bit0	Enable/Disable UPC-E0 0: Disable UPC-E0 1: Enable UPC-E0
Flag	0x0032
Data Bit	Function
Bit7	UPC-E1-5 Digit Add-On Code 0: Disable 1: Enable
Bit6	UPC-E1-2 Digit Add-On Code 0: Disable 1: Enable
Bit5	UPC-E1 Add-On Code Required 0: Not Required 1: Required
Bit4-2	Reserved
Bit1	Transmission of UPC-E1 Parity Bits 0: Disable

	1: Enable
Bit0	Enable/Disable UPC-E1 0: Disable UPC-E1 1: Enable UPC-E1
Flag	0x0033
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable Code128 0: Disable Code128 1: Enable Code128
Flag	0x0034
Data Bit	Function
Bit7-0	Set the Minimum Length for Code128 0x00-0xFF: 0-255Byte
Flag	0x0035
Data Bit	Function
Bit7-0	Set the Maximum Length for Code128 0x00-0xFF: 0-255Byte
Flag	0x0036
Data Bit	Function
Bit7	Output of Code39 Stop Character 0: Disable 1: Enable
Bit6	Output of Code39 Start Character 0: Disable 1: Enable
Bit5	The output of Code32 prefix A 0: Disable 1: Enable

Bit4	Code32 Mode 0: OFF 1: ON
Bit3	FullAsc Mode 0: OFF 1: ON
Bit2	Check Digit Verification 0: Do Not Process Verification 1: Process Verification
Bit1	Code39 Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable Code39 0: Disable Code39 1: Enable Code39
Flag	0x0037
Data Bit	Function
Bit7-0	Set the Minimum Length for Code39 0x00-0xFF: 0-255Byte
Flag	0x0038
Data Bit	Function
Bit7-0	Set the Maximum Length for Code39 0x00-0xFF: 0-255Byte
Flag	0x0039
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable Code93 0: Disable Code93 1: Enable Code93
Flag	0x003A

Data Bit	Function
Bit7-0	Set the Minimum Length for Code93 0x00-0xFF: 0-255Byte
Flag	0x003B
Data Bit	Function
Bit7-0	Set the Maximum Length for Code93 0x00-0xFF: 0-255Byte
Flag	0x003C
Data Bit	Function
Bit7	CodaBar Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit6-4	Reserved
Bit3	CodaBar Mod10 0: Disable 1: Enable
Bit2	CodaBar Mod16 0: Disable 1: Enable
Bit1	CodaBar Transmit Start/Stop Character 0: Disable Output of CodaBar Start/Stop Character 1: Output of CodaBar Start/Stop Character
Bit0	Enable/Disable Codabar 0: Disable CodaBar 1: Enable CodaBar
Flag	0x003D
Data Bit	Function
Bit7-0	Set the Minimum Length for CodaBar 0x00-0xFF: 0-255Byte

Flag	0x003E
Data Bit	Function
Bit7-0	Set the Maximum Length for CodaBar 0x00-0xFF: 0-255Byte
Flag	0x003F
Data Bit	Function
Bit7-6	Reserved
Bit5	Enable/Disable QR Mode 1 0: Disable QR Mode 1 1: Enable QR Mode 1
Bit4-1	Reserved
Bit0	Enable/Disable QR 0: Disable QR 1: Enable QR
Flag	0x0040
Data Bit	Function
Bit7-3	Reserved
Bit2	Verify Format Setting 0: None 1: MOD10
Bit1	Interleaved 2 of 5Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable Interleaved 2 of 5 0: Disable Interleaved 2 of 5 1: Enable Interleaved 2 of 5
Flag	0x0041
Data Bit	Function

Bit7-0	Set the Minimum Length for Interleaved 2 of 5 0x00-0xFF: 0-255Byte
Flag	0x0042
Data Bit	Function
Bit7-0	Set the Maximum Length for Interleaved 2 of 5 0x00-0xFF: 0-255Byte
Flag	0x0043
Data Bit	Function
Bit7-3	Reserved
Bit2	Industrial 25Verify Format Setting 0: None 1: MOD10
Bit1	Industrial 25Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable Industrial 25 0: Disable Industrial 25 1: Enable Industrial 25
Flag	0x0044
Data Bit	Function
Bit7-0	Set the Minimum Length for Industrial 25 0x00-0xFF: 0-255Byte
Flag	0x0045
Data Bit	Function
Bit7-0	Set the Maximum Length for Industrial 25 0x00-0xFF: 0-255Byte
Flag	0x0046
Data Bit	Function

Bit2	Matrix 2 of 5 Verify Format Setting 0: None 1: MOD10
Bit1	Matrix 2 of 5Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable Matrix 2 of 5 0: Disable Matrix 2 of 5 1: Enable Matrix 2 of 5
Flag	0x0047
Data Bit	Function
Bit7-0	Set the Minimum Length for Matrix 2 of 5 0x00-0xFF: 0-255Byte
Flag	0x0048
Data Bit	Function
Bit7-0	Set the Maximum Length for Matrix 2 of 5 0x00-0xFF: 0-255Byte
Flag	0x0049
Data Bit	Function
Bit7-3	Reserved
Bit2	Code11 Verify Format Setting 0: 1bit Check(C or K) 1: 2bit Check(C+K)
Bit1	Code11Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable Code11 0: Disable Code11 1: Enable Code11
Flag	0x004A

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Data Bit	Function
Bit7-0	Set the Minimum Length for Code11 0x00-0xFF: 0-255Byte
Flag	0x004B
Data Bit	Function
Bit7-0	Set the Maximum Length for Code11 0x00-0xFF: 0-255Byte
Flag	0x004C
Data Bit	Function
Bit7-3	Reserved
Bit2	MSI Plessey Verify Format Setting 0: Single Mod10 Check 1: Double Mod10 Check
Bit1	MSI PlesseyTransmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable MSI Plessey 0: Disable MSI Plessey 1: Enable MSI Plessey
Flag	0x004D
Data Bit	Function
Bit7-0	Set the Minimum Length for MSI Plessey 0x00-0xFF : 0-255Byte
Flag	0x004E
Data Bit	Function
Bit7-0	Set the Maximum Length for MSI Plessey 0x00-0xFF : 0-255Byte
Flag	0x004F

Data Bit	Function
Bit7	RSS-14 AI Output with Parentheses 0: with Parentheses 1: Without Parentheses
Bit6-2	Reserved
Bit1	RSS-14 Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable RSS-14 0: Disable RSS-14 1: Enable RSS-14
Flag	0x0050
Data Bit	Function
Bit7	RSS-Limited AI Output with Parentheses 0: with Parentheses 1: Without Parentheses
Bit6-2	Reserved
Bit1	RSS-Limited Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable RSS-Limited 0: Disable RSS-Limited 1: Enable RSS-Limited
Flag	0x0051
Data Bit	Function
Bit7	RSS-Expanded AI Output with Parentheses 0: with Parentheses 1: Without Parentheses
Bit6-2	Reserved

Bit1	RSS-Expanded Transmit Check Digit 0: Do Not Transmit 1: Transmit
Bit0	Enable/Disable RSS-Expanded 0: Disable RSS-Expanded 1: Enable RSS-Expanded
Flag	0x0052
Data Bit	Function
Bit7-0	Set the Minimum Length for RSS-Expanded 0x00-0xFF : 0-255Byte
Flag	0x0053
Data Bit	Function
Bit7-0	Set the Maximum Length for RSS-Expanded 0x00-0xFF : 0-255Byte
Flag	0x0054
Data Bit	Function
Bit7-2	Reserved
Bit1	Multiple DM 0: OFF 1: ON
Bit0	Enable/Disable DM 0: Disable DM 1: Enable DM
Flag	0x0055
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable PDF417 0: Disable PDF417 1: Enable PDF417

Flag	0x0056
Data Bit	Function
Bit7-1	Reserved
Bit0	Chinese Sensible(HanXin) Code 0: Disable 1: Enable
Flag	0x0057
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable MicroPDF417 0: Disable MicroPDF417 1: Enable MicroPDF417
Flag	0x0058
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable Micro QR 0: Disable Micro QR 1: Enable Micro QR
Flag	0x0059
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable Maxi Code 0: Disable Maxi Code 1: Enable Maxi Code
Flag	0x005A
Data Bit	Function
Bit7-1	Reserved

Bit0	Enable/Disable Aztec 0: Disable Aztec 1: Enable Aztec
Flag	0x005B
Data Bit	Function
Bit7-3	Reserved
Bit2	Standard 2 of 5 Verification Processing 0: None 1: Verification
Bit1	Standard 2 of 5 Parity Bit Output 0: Does Not Output Parity Bits 1: Outputs Parity Bits
Bit0	Enable/Disable Standard 2 of 5 0: Disable Standard 2 of 5 1: Enable Standard 2 of 5
Flag	0x005C
Data Bit	Function
Bit7-0	Set the Minimum Length for Standard 2 of 5 0x00-0xFF : 0-255Byte
Flag	0x005D
Data Bit	Function
Bit7-0	Set the Maximum Length for Standard 2 of 5 0x00-0xFF : 0-255Byte
Flag	0x0060
Data Bit	Function
Bit7	Virtual Serial Port Output with Protocol 0: Raw Data 1: With Protocol
Bit6-5	Tail Type

	00: CR (0x0D)
	01: CRLF (0x0D ,0x0A)
	10: TAB (0x09)
	11: None
Bit4	RF Information
	1: Enable Transmitting RF Information
	0: Disable Transmitting RF Information
Bit3	Prefix
	0: Disable Prefix
	1: Enable Prefix
Bit2	Code ID
	0: Disable Code ID
	1: Enable Code ID
Bit1	Suffixes
	0: Disable Suffixes
	1: Enable Suffixes
Bit0	Tail
	0: Disable Tail
	1: Enable Tail
Flag	0x0061
Data Bit	Function
Bit7-0	Different Country Keyboard Settings
	00: U.S.
	01: Czech Republic
	02: France
	03: Germany
	04: Hungary
	05: Italy
	06: Japan
	07: Spain
	08: Turkey Q
	09: Turkey F

	0A: Mexico (Latin America)
Flag	0x0062
Data Bit	Function
Bit7-4	Prefix Character Length 0x00-0x0F: the Length of Prefix Character
Bit3-0	Suffix Character Length 0x00-0x0F: the Length of suffix character
Flag	0x0063 – 0x0071
Data Bit	Function
Bit7-0	Prefix 0x00-0xFF: Prefix Character Value, Up to 15Byte
Flag	0x0072 - 0x0080
Data Bit	Function
Bit7-0	Suffix 0x00-0xFF: AuffixCharacter Value, Up to 15Byte
Flag	0x0081
Data Bit	Function
Bit7-4	Reserved
Bit3-0	RF Information Length 0x00-0x0F: the Length of RF Information
Flag	0x0082– 0x0090
Data Bit	Function
Bit7-0	RF Information 0x00-0xFF: RF Character Value, Up to 15Byte
Flag	0x0091 – 0x00AE
Data Bit	Function
Bit7-0	Set Code ID Character 0x41-0x5a & 0x61-0x7a (A-Z, a-z): Code ID characters for each code system (see

	Appendix E for details)
Flag	0x00B0
Data Bit	Function
Bit7-2	Reserved
Bit1-0	Data character interception settings 00: Transmit all Data 01: Tansmit the Start Data 10: Tansmit the END Data 11: Tansmit the Center Data
Flag	0x00B1
Data Bit	Function
Bit7-0	Modify the Length for Start Data 0x00-0xFF: 0-255 characters
Flag	0x00B2
Data Bit	Function
Bit7-0	Modify the Length for End Data 0x00-0xFF: 0-255 characters
Flag	0x00B4
Data Bit	Function
Bit3-1	Prefix order setting 000（0）： CodeID+AIM+custom 001（1）： AIM+CodeID+custom 010（2）： AIM+custom+CodeID 011（3）： CodeID+custom+AIM 100（4）： custom+CodeID+AIM 101（5）： custom+AIM+CodeID
Bit0	AIM Prefix Settings 0：Prohibit (decode information without adding AIM prefix)

	1：Enables (adds AIM prefix characters to decode information)
Flag	0x00BB
Data Bit	Function
Bit7-3	Reserved
Bit2	Plessey Verification Processing 0: None 1: Verification
Bit1	Plessey Parity Bit Output 0: Does Not Output Parity Bits 1: Outputs Parity Bits
Bit0	Enable/Disable Plessey 0: Disable Plessey 1: Enable Plessey
Flag	0x00BC
Data Bit	Function
Bit7-0	Set the Minimum Length for Plessey 0x00-0xFF : 0-255Byte
Flag	0x00BD
Data Bit	Function
Bit7-0	Set the Maximum Length for Plessey 0x00-0xFF : 0-255Byte
Flag	0x00BE
Data Bit	Function
Bit7-3	Reserved
Bit2	ChinaPost 25 Verification Processing 0: None 1: Verification
Bit1	ChinaPost 25 Parity Bit Output 0: Does Not Output Parity Bits

	1: Outputs Parity Bits
Bit0	Enable/Disable ChinaPost 25 0: Disable ChinaPost 25 1: Enable ChinaPost 25
Flag	0x00BF
Data Bit	Function
Bit7-0	Set the Minimum Length for ChinaPost 25 0x00-0xFF : 0-255Byte
Flag	0x00C0
Data Bit	Function
Bit7-0	Set the Maximum Length for ChinaPost 25 0x00-0xFF : 0-255Byte
Flag	0x00C1
Data Bit	Function
Bit7-1	Reserved
Bit0	Enable/Disable Code16K 0: Disable Code16K 1: Enable Code16K
Flag	0x00C2
Data Bit	Function
Bit7-0	Set the Minimum Length for Code16K 0x00-0xFF : 0-255Byte
Flag	0x00C3
Data Bit	Function
Bit7-0	Set the Maximum Length for Code16K 0x00-0xFF : 0-255Byte
Flag	0x00C4
Data Bit	Function

Bit7-1	Reserved
Bit0	Enable/Disable Code49 0: Disable Code49 1: Enable Code49
Flag	0x00C5
Data Bit	Function
Bit7-0	Set the Minimum Length for Code49 0x00-0xFF : 0-255Byte
Flag	0x00C6
Data Bit	Function
Bit7-0	Set the Maximum Length for Code49 0x00-0xFF : 0-255Byte
Flag	0x00D9(Write-Only Flag)
Data Bit	Function
Bit7-0	Function Flag 0x50: Restore Factory Defaults 0x55: Restore Custom Defaults 0x56: Save as Custom Defaults 0xA0: Slightly dormant, it can be woken up through the serial port interrupt, and the serial port command is effective; Sleep power consumption 18mA 0xA5: Deep sleep. Wake up through serial port interruption. After wake-up, the device restarts. This serial port command is invalid (This function is only valid for manual mode); Sleep power consumption 1.8mA 0x00: Device can be waken up by writing 0 (this function is valid only for manual mode)
Flag	0x00E0 (Read-Only Flag)
Data Bit	Function
Bit7-0	Product Model Number 0x01：WSM-QL1601

Flag	0x00E1 (Read-Only Flag)
Data Bit	Function
Bit7-0	Hardware Version 0x64: V1.00 0x6E: V1.10 0x78: V1.20 0x82: V1.30 0x8C: V1.40 ......
Flag	0x00E2 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Version First digit 0x01: V1.xx 0x02: V2.xx ......
Flag	0x00E3 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Version Second digit 0x01: Vx.1x 0x02: Vx.2x ......
Flag	0x00E4 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Version Third digit 0x01: Vx.x1 0x02: Vx.x2 ......
Flag	0x00E5 (Read-Only Flag)

Data Bit	Function
Bit7-0	Software Year (Add 2000 to the value to epresent the year) 0x15: 2021 0x16: 2022 ......
Flag	0x00E6 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Month (This value represents Month X) 0x09: Sep. 0x0A: Oct. 0x0B: Nov. ......
Flag	0x00E7 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Date (This value represents Date) 0x0A: 10th 0x0B: 11st ......

Part II Configuration Instructions for Programming Barcode

Chapter 1 Operation Settings

The factory default settings of the Barcode Scanner are designed to meet the direct use of users in most cases. You can also set the parameters by setting the code according to the actual use.

1.1 Use of Programming Barcode

Scan "enter programming barcode" to configure the module function (set code function). After booting the function, the parameter can be modified by reading one or more programming barcodes. After recognizing "exit programming barcode", the scanning module will exit the setting mode.

<div style="display:flex; justify-content:space-between;">

**Enter Setup

Exit Setup**

</div>

Enable and disable the output of set code content.

Transmit Programming Barcode Data   **Do Not Transmit Programming Barcode Data

☞ Note: The optionmarked with (**) in the programming barcode indicates the default function or parameter.

1.2 Restore Factory Defaults

After reading this programming barcode, the current parameter setting will be lost and the factory default value will be restored. Factory default parameters and functions can be found in Appendix C.

Restore Factory Defaults

☞ Note: Please use the "Restore Factory Defaults" function with caution.

1.3 User Default Settings

In addition to the factory reset, users can save frequently used settings as user defaults. By reading "Save as Custom Defaults", you can save the current device configuration as user default information so that you can make quick settings when needed.

The default settings saved by the user can be restored by reading "Restore Custom Defaults".

Save as Custom Defaults

Restore Custom Defaults

Chapter 2 Communication Interface

2.1 Selection of Communication Mod

The USB-HID mode is default for communication. Users can switch between communication port output modes by reading code settings (Virtual Serial Port / USB-HID Mode).

☞ Note1: When the module is set as USB Virtual Serial Port and communicates with the host through this port, the corresponding driver needs to be installed in the host.

☞ Note2: The USB-HID uses 2 numbers to identify the device and find the correct device.

VID&PID information is shown in the following table:

Interface Type	VID(HEX)	PID(HEX)
USB Virtual Serial Port	0x152A	0x880F
HID-KBW	0x34EB	0x1502
HID-POS	0x34EB	0x1503

2.1.1 Output Mode of Communication Port

Scan the following programming barcode to set the communication output mode.

**HID-KBW   USB Virtual Serial Port Mode

HID-POS

HID-POS acquire scan data

Data transmission								
Bit								
Byte	7	6	5	4	3	2	1	0
0	Message ID=0xfd							
1	BarCode Data Length							
2	Fixed Value 0xff							
3~62	Fixed Value 0x51							
63	0x01 (followed by packets)/0x0 (followed by no packets)							

Data reception								
Bit								
Byte	7	6	5	4	3	2	1	0
0	Message ID=0x02							
1	BarCode Data Length							
2	Fixed Value 0x5d							
3	Fixed Value 0x51							
4	Fixed Value 0x31							
5-60	Barcode Data							
61	Barcode Data							
62	Fixed Value 0x51							
63	0x01 (followed by packets)/0x0 (followed by no packets)							

2.2 Serial Communication Interface

2.2.1 Baud Rate

The Baud Rate is in bps: bits per second. You can scan the following programming barcodes to select configuration parameters.

1200bps

4800bps

**9600bps

14400bps

19200bps

38400bps

57600bps

115200bps

230400bps

460800bps

921600bps

2.2.2 Parity Methods

There are 3 alternative parity methods, as follows:

**None

ODD Parity

Even Parity

2.3 Configuration of USB-HID Interface Related Parameter

2.3.1 Access Cycle of PC to HID Device

You can modify the access period of PC to HID device by reading the following programming barcode. The period ranges from 1ms to 64ms.

**1ms	3ms

5ms	10ms

2.3.2 Timeout HID Release

The HID release time interval can be modified by reading the following setting codes (i.e., the time interval from the effective message to the release message). The interval range is 1ms ～ 63ms

**1ms	2ms

5ms	10ms

2.3.3 CapsLock Switch

** CapsLock-Normal	CapsLock-reverse

2.3.4 Leading Key Output

Users can scan the following programming barcode to enable HID to output a preamble message before outputting each piece of data, which is convenient for client as to software development and positioning. The key value is Ctrl+Shift+r.

** Disable HID Leading Key Output   Enable HID Leading Key Output

Chapter 3 Scanning Mode

3.1 Manual Mode

The trigger condition can be selected in the manual mode. The trigger condition defaults to edge triggering and level triggering.

☞ Edge triggering refers to the detection of the level pulse of the trigger signal, that is, start reading, and the reading is ended when the reading is successful or the decode session timeout condition is reached.

☞ The Level Trigger condition refers to the level at which the trigger signal needs to be held during the start of reading to the end of reading. When the trigger level is cancelled, the reading is successful, or the reading is longer than the single reading duration, the reading is ended.

Edge Trigger   **Level Trigger

3.1.1 Decode Session Timeout

Decode Session Timeout is the time allowed to conduct the longest reading after the reading is triggered. When the time is exceeded, it will exit the reading state. The range is from 100ms to 25500ms. Scan the following programming barcode to set the Decode Session Timeout.

1000ms   3000ms

**5000ms   10000ms

Infinite

3.2 Command Trigger Mode

In the command trigger mode, the scanning module starts shooting and reading after

receiving the trigger signal command sent by the host (that is, the bit 0 of the flag bit 0x0002 is written to "1"); within the limited time range of "decode session timeout" If the reading is successful, the scanning module will output the scan content through the communication interface and stop reading. If a new reading is to be booted, the trigger command needs to be resent. If the reading exceeds the length of a single reading in time duration, the reading will be stopped.

Command Trigger Mode

☞ Note: In the command trigger mode, the serial command of the trigger signal is: 7E 00 08 01 00 02 01 AB CD; After receiving the scan commands, the serial port returns the write success command: 02 00 00 01 00 33 31, the scanning module is booted.

Read the following setting codes to allow and prohibit the trigger command response.

Trigger command response disable

** Trigger command response allowed

3.2.1 Decode Session Timeout

For the single reading duration setting, please refer to 3.1.2 Decode Session Timeout Code to set.

3.3 Continuous Mode

Continuous Mode is a way for the scanning module to continuously capture, scan and output information.

In this mode, it is defaulted to go into the 1000ms reading timeout after successful

reading.

In Continuous Mode, you can use the trigger level control to pause continuous reading or continue reading continuously. In continuous reading, it is necessary to maintain the trigger level of 50ms or more and then cancel it, so that the reading will be suspended. When the reading state is suspended, the trigger level of 50ms or more is also maintained and then canceled, and the reading is continued.

Continuous Mode

3.3.1 Timeout Between Decodes

It refers to the timeout between the next reading and the current successful reading. No acquisition is performed during this timeout. Scan the following programming barcode to set timeout between decodes. The setting is from 0ms to 25500ms, and the default duration is 1000ms.

No Timeout

200 ms

500ms

**1000ms

3000ms

5000ms

3.3.2 Timeout between Decodes (Same Barcode)

In order to avoid the same barcode being continuously scanned for multiple times in continuous mode, Timeout between Decodes (Same Barcode) is required for scanning module in this mode before enabling the same barcode. Timeout between Decodes (Same Barcode) means that the same barcode will not be read if it has been scanned within the set timeout. It can only be read and output beyong the timeout. By default, Timeout between Decodes (Same Barcode) is turned off.

ON

**OFF

Scan the following programming barcode to set Timeout between Decodes (Same Barcode).

Setting range: 0ms~12700ms.

☞ Note: The delay time setting can be set only after the "Timeout between Decodes (Same Barcode)" is turned on.

500ms

1000ms

3000ms

5000ms

Infinite Delay

3.3.3 Decode Session Timeout

For the decode session timeout, please refer to the programming barcode of Section 3.1.2 Decode Session Timeout.

3.3.4 Continuous mode key pause switch

When "Continuous Mode Key Pause Support" is set, the continuous mode trigger can be suspended by pressing the key for the first time, and the continuous mode trigger can be started by pressing the key again; When "Continuous mode key pause is not supported" is set, the key is invalid for continuous mode.

The user can set the continuous mode key pause switch through the following setting code.

**Continuous mode key pause supports

Continuous mode key pause is not

3.4 Sense Mode

Sense Mode refers to a working mode in which the scanning module conducts reading by sensing the change in brightness of the surrounding environment. When the scene changes, the scanning module begins to scan. After successful reading and outputing information or the Decode Session Timeout,the scanning module needs to be separated for a certain period(can be set) to re-enter the monitoring state. If the following conditions do not occur, the scanning module will cycle in the above manner: the barcode is not scanned within a Decode Session Timeout, and the scanning module will automatically pause the reading and enter the monitoring state. In the sensing scanning module, the scanning module can also boot reading by pressing the trigger button, and continue to monitor the brightness of the surrounding environment after the reading succeeds in outputting the information or releasing the trigger button.

Sense Mode

3.4.1 Decode Session Timeout

For the setting of decode session timeout, please refer to the programming barcode in Section 3.1.2 Decode Session Timeout to set.

3.4.2 Timeout between Decodes

For the setting of the timeout between decodes, please refer to the programming barcode in Section 3.3.1 Timeout between Decodes to set.

3.4.3 Timeout between Decodes (Same Barcode)

For the setting of the timeout between Decodes (Same Barcode), please refer to the programming barcode in Section 3.3.2 Timeout between Decodes (Same Barcode) to set.

3.4.4 Sensitivity

Sensitivity refers to the degree of changes in the scene detected in the inductive scanning module. When the scanning module meets the requirements in telling the degree of scene changes, it will switch from the monitoring state to the reading state.

Low Sensitivity	**Medium Sensitivity
High Sensitivity	Enhanced Sensitivity

Highest sensitivity

3.4.5 Image Stabilization Timeout

Image Stabilization Timeout refers to the period for which the scanning module that

detects the scene change needs to wait for the image to stabilize before reading the code in the inductive scanning module. The settting range of image stabilization timeout is 0~25500 ms, and the step size is 100ms. The default image stabilization timeout is 400ms.

**0ms

100ms

400ms

1000ms

2000ms

3.5 No Leave No Read Mode

No Leave No Read Mode

3.5.1 No Leave No Read Timeout

It refers to the time interval required for the next reading after successful reading.

Acquisition read is not performed during this interval. Reading the following setting codes can set the reading interval duration. The setting range is 0ms~25,500ms, and the default duration is 1000ms.

1000ms

3000ms

5000ms

10000ms

Chapter 4 Filling Light

4.1 Fill Light

There is a set of LEDs on the scanning module that are specially equipped for shooting, providing auxiliary fill light, illuminating the light beams on the reading targets, improving the adaptability of recognizing performance and weak ambient light. You can set it according to the actual use:

☞ Fill Light - ON when Photographing: The fill light lights up while shooting and goes out if there is no shooting.

☞ Fill Light - always ON: The fill light continues to glow after the scanning module is turned on.

☞ Fill Light - always OFF : the fill light does not light up in any cases.

**Fill Light - ON when Photographing

Fill Light - always ON

Fill Light - always OFF

Chapter 5 Prompt Output

5.1 Buzzer Master Switch

Scan the following programming barcode to turn on /off all of the beep sounds.

Mute _ ON

**Mute _ OFF

5.2 Buzzer Settings

5.2.1 Passive Buzzer

Scan the following programming barcode to set the buzzer to passive and set the drive frequency of the passive buzzer.

**Passive Buzzer

Passive_Low Frequency

**Passive_Intermediate Frequency

Passive_High Frequency

5.2.2 Active Buzze

Scan the following programming barcodes to set the buzzer as active one and set the active buzzer's operating level. Scan "High Level", the buzzer is set to active low when idle, and active high level when working; scan "Low Level", the buzzer is set to active high when idle, and active low level when working.

Active Buzzer

**High Level

Low Level

5.3 Good Read Beep for Programming Barcode

Scan the following programming barcodes to enable/disable the programming barcode beep.

**Beep for Programming Barcode_ON

Beep for Programming Barcode _OFF

5.4 Startup Beep

When the scanning module is on after power on, the scanning module can output or turn off the startup beep according to the setting requirements.

** Startup Beep_ON

Startup Beep_OFF

5.5 Good Read LED / Beep

After the scanning module is successfully scan the codes, BEEP and DLED prompt signals are output through the 12pin external interface by default, and the external passive buzzer and LED are used for prompting. These signals can be turned off if the user requires to do so.

**Good Read LED_ON

Good Read LED_OFF

**Good Read Beep_ON

Good Read Beep_OFF

The user can set the timeout of Good Read Beep, by reading the following programming barcodes.

30ms

**60ms

90ms   120ms

5.6 Data Output Encoding Format

Users can set the output format of the scanning module through the following programming barcodes, so that the host can output Chinese data according to the specified encoding format.

☞ Note: GBK format is used for Text., UNICODE format is used for Word and input box of common chat tool.

The Original Data output is used to encrypt the serial output of the data.

**GBK   UTF8

Original Data   UNICODE

5.7 Different Country Keyboard Settings

In order to apply it in different countries, the device can be set as the corresponding "keyboard" of each country by the following programming barcodes.

**US   Czech

French

Germany

Hungary

Italy

Japan

Spain

Turkey Q

Turkey F

Mexico (Latin America)

5.8 Virtual keyboard enable

In order to apply it in more regional application environments, the standard/virtual keyboard output settings can be made by reading the following programming barcodes. But that will cause a certain loss in output efficiency. Note that when using a virtual keyboard, you must ensure that the keypad number keys are enabled.

**Standard Keyboard   Virtual Keyboard

1. Virtual keyboard output mode

In order to adapt to different application scenarios, the virtual keyboard has two different output modes for control characters less than 0x20, and users can switch by scanning the following setting codes.

Ctrl Mode   Alt Mode   **Control Character Output Off

2. Control character transmission

ASCII characters between 0x00 and 0x1F can be escaped as a control function key. When the virtual keyboard is enabled (other HID Keyboard of the module is set as default value), the input operation of the control function key is as follows: (Please refer to the control character correspondence table for the corresponding relationship between the specific ASCII value and the control function key)

(1) Virtual keyboard Ctrl Mode on

Read the characters whose data is "A < HT > F (HT is an invisible character and is not displayed on the terminal software)" (hexadecimal values are 0x41/0x09/0x46 respectively), and the virtual keyboard operation of the scanning module is as follows:

Enter "A"-press key A;

Enter "Ctrl I"-since the data of 0x09 corresponds to the control function key "I", the virtual keyboard would hold down Ctrl, then press the I key, and finally release the Ctrl key and the I key at the same time;

Enter "F"-press key F.

Since "Ctrl I" corresponds to the function of converting characters into italics in some word processing software, completing the above operation may result in normal characters "A" and italic "F".

At present, in QL1601 small module, the virtual keyboard Ctrl mode "control character output only supports American keyboard layout.

(2) Virtual keyboard Alt mode

If the virtual keyboard is turned on and set to "ALT Mode", the output corresponding control character operation is: ALT + "Character corresponds to ASCII decimal value". For example, for "<HT>" characters, the scanning module virtual keyboard operation is as follows:

Enter "Alt 0 9"-the virtual keyboard would hold down Alt, then press "0" and "9" of the numeric keypad, and finally release Alt.

When the standard keyboard outputs, the control character output function is turned off, and ASCII characters less than 0x20 would output the corresponding key value function. (For corresponding functions, please refer to the Control Character Correspondence Table)

Control character correspondence table

ASCII Function	ASCII Value(HEX)	Control Character Output Off	Ctrl Mode	CTRL+X Funciton
NUL	0	Null	Ctrl+@	

SOH	1	KeypadEnter	Ctrl+A	Select all
STX	2	CapsLock	Ctrl+B	Bold
ETX	3	ALT	Ctrl+C	Copy
EOT	4	Null	Ctrl+D	Bookmark
ENQ	5	CTRL	Ctrl+E	Center
ACK	6	Null	Ctrl+F	Find
BEL	7	Enter	Ctrl+G	
BS	8	LeftArrow	Ctrl+H	History
HT	9	Horizontal Tab	Ctrl+I	Italic
LF	0A	DownArrow	Ctrl+J	Justify
VT	0B	Vertical Tab	Ctrl+K	hyperlink
FF	0C	Delete	Ctrl+L	list,left align
CR	0D	Enter	Ctrl+M	
SO	0E	Insert	Ctrl+N	New
SI	0F	Esc	Ctrl+O	Open
DLE	10	F11	Ctrl+P	Print
DC1	11	Home	Ctrl+Q	Quit
DC2	12	PrintScreen	Ctrl+R	
DC3	13	Backspace	Ctrl+S	Save
DC4	14	tab+shift	Ctrl+T	
NAK	15	F12	Ctrl+U	
SYN	16	F1	Ctrl+V	Paste
ETB	17	F2	Ctrl+W	
CAN	18	F3	Ctrl+X	
EM	19	F4	Ctrl+Y	
SUB	1A	F5	Ctrl+Z	
ESC	1B	F6	Ctrl+[	
FS	1C	F7	Ctrl+\	

GS	1D	F8	Ctrl+]	
RS	1E	F9	Ctrl+6	
US	1F	F10	Ctrl+-	

5.9 Chinese output shielding

Enable this function，the device shields Chinese output.The user can read the following setting code to open and close the Chinese output shielding function.

**Chinese output shielding-OFF   Chinese output shielding-ON

5.10 Analog keypad

5.10.1 Output of numeric function of keypad

If this function is not turned on, all outputs would be output according to the corresponding key value of the large keyboard.

After this function is turned on, only the numbers "0~9" in the decoded data obtained by the reading module are output according to the key values corresponding to the small keyboard, and the rest are output according to the key values corresponding to the large keyboard.

The user can turn on and off the digital output function of the analog keypad by reading the following setting codes.

Keypad Numeric Output-On   **Keypad Numeric Output-Off

5.10.2 Output of keypad operator function

If this function is not turned on, all outputs would be output according to the corresponding key value of the large keyboard.

After this function is turned on, only "+","_","*","/" in the decoded data obtained by the reading module is output according to the key value corresponding to the small keyboard, and the rest is output according to the key value corresponding to the large keyboard.

The user can turn on and off the output function of analog keypad operators by reading the following setting codes.

Keypad Operator Output-On

**Keypad Operator Output-Off

5.12 Image Mirroring Mode

When there is mirror flip in image, you can boot the mirror flip mode by reading the following programming barcodes.

Image Mirror Flip_ON

**Image Mirror Flip_OFF

Note: In the mirror flip mode, only the barcode of the mirror flip can be recognized. Please exit the mirror flip mode first before identifying the normal barcode or programming barcode.

5.13 Reverse Scanning Module

In some special application scenarios, special barcodes for black and white inversion need to be enabled. The user can enable/disable the reading function of inverse video code by reading the following programming barcodes.

**Video Reverse OFF

Video Reverse ON

5.14 Invoicing mode

In order to facilitate the use of this module in the billing system, users can configure the billing mode by reading the setting code, and realize the format conversion and output of the invoice code. Invoicing modes include local invoicing mode and online invoicing mode. When invoicing mode is enabled, local invoicing mode is used by default.

Users can realize the format conversion and output of invoice codes by reading the following setting codes.

**Invoicing Mode Enable

Invoicing Mode Disable

After the invoice mode is opened, you can select the invoicing mode by reading the following setting codes.

**Local Invoicing Mode

Online Invoicing Mode

It should be noted that when the user uses the online billing mode, the module must be

switched to the HID-POS output mode only and used in combination with the WSM billing assistant.

5.15 Read Device Version Information

Users can quickly obtain the current device version information and all the device version information by reading the following setting codes.

Read device version information

Read all device version information

Example:

（1）. Use the code scanner to read the device version information setting code

Output information: HS:v1.00; F:V1.1.71;   2022.06.09

HS:1.00, the hardware version is 1.00

F:V1.1.71;   2022.06.09, the app version is 1.1.71, and the app version date is 2022.06.09

（2）. Use the code scanner to read all information setting codes of the device version

HS:V1.00;   QR_ BOOT:V1.1.8-21.07.29;   QR_ APP:V1.1.71-22.06.09 ;   LIB:V2.2.95

HS:V1.00;the hardware version is 1.00

QR_ BOOT:V1.1.8-21.07.29;the boot version is 1.1.8, and the boot version date is 2021.07.29

QR_ APP:V1.1.71-22.06.09 ; the app version is 1.1.71, and the app version date is 2022.06.09

5.16 Write/Read Device ID

Users can read and write ID through serial port or virtual serial port.

The ID information include:

SN: product serial number

FID: Manufacturer Information

MID: Product Model

ID up to 64 bytes (pure numbers and upper and lower case letters)

Write ID format:

WriteDeviceID:SN:xxxx;MID:xxxx;FID:xxxx. (Can be changed according to requirements)

The return value of the write ID instruction is: The same as that of the write ID instruction

Read ID format:

ReadDeviceID.

Return: SN:xxxx;MID:xxxx;FID:xxxx.

For example: write device ID information for device: SN: 20200508; MID: WSM1605;

FID: WSM 2020., and read that device ID by command

Write ID:

Serial   port   sending:

WriteDeviceID:SN:20200508;MID:WSM1605;FID:WSM2020.

WriteDeviceID:SN:20200508;MID:WSM1605;FID:WSM2020.

Serial   port   return:

WriteDeviceID:SN:20200508;MID:WSM1605;FID:WSM2020.

Read ID:

Serial port sending: ReadDeviceID.

Serial port return: SN:20200508;MID:WSM1605;FID:WSM2020.

☞ **Note:**

1. The instruction is followed by "." as the closing mark.

2. When SN, FID, MID are not written, read the DeviceID of the device and return "SN:NULL;MID: NULL;FID: NULL."

3. If the write instruction ID data does not meet the requirements or the instruction format is wrong, send a write instruction to return "FALSE" or not, and the write fails.

The user can also read DeviceID by reading the following setting codes, and the return format is consistent with the reading of the sending instruction.

Read Device ID

5.17 Read Chip SN

Users can quickly obtain SN information of the current device chip by reading the following setting codes.

Read chip SN number

Chapter 6 Prefix & Suffix

In practical applications, in order to facilitate data differentiation processing, sometimes it is necessary for the read data to be edited before being output.

Prefix & Suffix include:

◆ Prefix

◆ Suffix

◆ Decode data segment interception

◆ Code ID

◆ Decoding failure feature output information (RF Information)

◆ Tails

Processed output data format:

【Prefix】【Code ID】【Data】【Suffix】【Tail】

6.1 Prefix

Prefix is a string of strings defined by the user before the data is decoded. The user can add and modify the prefixes by reading the following programming barcodes.

Enable Prefixes

**Disable Prefixes

Scan the following programming barcode, with the programming barcode of "Digit Barcodes

" and the programming barcode of "save", the user can modify the prefixes.

Modify Prefix

☞ Note: A prefix has 15 characters at most and two hexadecimal values is for a prefix character. Refer to Appendix F for the hexadecimal conversion table of character values.

6.2 Suffix

Suffix is a string of strings defined by the user before the data is decoded. The user can add and modify the prefixes by reading the following programming barcodes.

Enable Sufixes   **Disable Sufixes

Scan the following programming barcode, with the programming barcode of "Digit Barcodes" and the programming barcode of "save", the user can modify the suffixes.

Modify Suffix

☞ Note: A suffix has 15 characters at most and two hexadecimal values is for a prefix character. Refer to Appendix F for the hexadecimal conversion table of character values.

6.3 Code ID

6.3.1 Custom Code ID

Code ID uses one character. Users can customize Code ID by reading the following programming barcodes to identify different barcode types.

Enable Code ID   **Disable Code ID

Scan the following programming barcode to restore the default value of Code ID of the barcode. The default list can be found in Appendix E.

Restore Default Code ID

6.3.2 Modify Code ID

Users can modify the Code ID corresponding to each barcode by reading the following programming barcodes.

Modify EAN13 Code ID

Modify EAN8 Code ID

Modify UPC-A Code ID

Modify UPC-E0 Code ID

Modify UPC-E1 Code ID

Modify Code 128 Code ID

Modify Code 39 Code ID

Modify Code 93 Code ID

Modify Codabar Code ID

Modify Interleaved 2 of 5 Code ID

Modify Industrial 25 Code ID

Modify Matrix 2 of 5 Code ID

Modify Code11 Code ID

Modify MSI Plessey Code ID

Modify RSS-14 Code ID

Modify RSS-Limited Code ID

Modify RSS-Expanded Code ID

Modify QR Code Code ID

Modify Data Matrix Code ID

Modify PDF417 Code ID

Modify Micro QR Code ID

Modify Chinese Sensible(HanXin) Code ID

Modify Micro PDF417 Code ID

Modify Standard 2 of 5 Code ID

Modify Plessey Code ID

Modify ChinaPost 25 Code ID

Modify Code 16K Code ID

Modify Code 49 Code ID

Modify Maxi Code Code ID

Modify Aztec Code ID

Modify GS1 Composite Code ID

6.4 AIM ID

6.4.1 Custom AIM ID

AIM is the abbreviation of automatic identification manufacturers (automatic identification Manufacturers Association). AIM ID defines the identification code for various standard barcodes, which is specifically defined in Appendix H. After decoding, the scanner can add this identification code to the barcode data, that is, the AIM prefix. Prefix format: "]" +AIM prefix + number,

For example, the AIM ID prefix of code 128 is "]c0".

Enable AIM ID   **Disable AIM ID

6.4.2 Modify AIM location

After adding prefix, Code ID and AIM ID, you can read the following setting codes and change their order.

**CodeID+AIM+Custom   AIM+CodeID+Custom

AIM+Custom+CodeID

CodeID+Custom+AIM

Custom+CodeID+AIM

Custom+AIM+CodeID

6.5 Tail

Tail OFF

**CR Tail (0x0D)

TAB Tail (0x09)

CRLF Tail (0x0D 0x0A)

6.6 Data Character

6.6.1 Date Character Interception

This function is used in scenarios where the user needs to output partial decoded information.

The decoding information Data consists of three parts:

【Start】【Center】【End】

The user can select some of the information that needs to be output by reading the following programming barcodes.

<table>
<tr>
<td align="center">**Transmit all Data</td>
<td align="center">Tansmit the Start Data</td>
</tr>
<tr>
<td align="center">Tansmit the END Data</td>
<td align="center">Tansmit the Center Data</td>
</tr>
</table>

6.6.2 Modify the Length for Data

The user can modify the length of the Start Data and the length of the End Data by reading the following programming barcodes, combined with the programming barcodes of "Digit Barcodes" and "Save" . Both the Start and End segments have up to 255 characters, and both are represented by a hexadecimal character for their length. The characters which are corresponding to the hexadecimal conversion table can be found in Appendix F.

<table>
<tr>
<td align="center">Modify the Length for Start Data</td>
<td align="center">Modify the Length for End Data</td>
</tr>
</table>

6.7 RF Information

The Scan Fail (RF) information is the output information after the scanning module fails to scan the codes, so that the user or the program can adjust or operate after detecting the information. Users are free

to define RF information.

Scan the following programming barcode to enable/disable RF transmitting.

Enable Transmitting RF Information

**Disable Transmitting RF Information

Scan the following programming barcode, combined with the programming barcode of "Digit Barcodes" and "save", you can modify the RF information by yourself, and two hexadecimal values is for a prefix character, there are 15 characters at most. Refer to Appendix F for the character-to-hexadecimal conversion table.

Modify RF Information

☞Note: When an odd number of hexadecimal values are input, if it is failed to set the last bit, only the first few characters are output.

6.8 Output Protocol

The user can decode the output format of result by reading the following programming barcodes to modify the virtual serial port/serial port mode.

The format of the decoding result with the protocol output is: <03><length><decoded data>

☞ Note: The protocol mode must adopt UTF-8 encoding output format. In other output encoding formats, only raw data can be output regardless of whether the output with protocol is selected.

**Raw Data

With Protocol

6.9 GS Character Replacement

GS, as a group separator, was applied to the bar code of the European Food and Drug Administration after the 2012 London Olympics. Because GS characters are invisible in many text display tools, some areas need to replace GS with displayable character output. That is, replace the 0x1D byte in the ASCII code table with the displayable byte in ASCII.

At present, the QR decoding module temporarily supports replacing GS with characters in 0x20-0x7E in ASCII.

The alternative method is as follows:

1) Read the setting code of "GS character replacement enable";

2) Read the setting code of "GS replacement character modification";

3) The characters replaced by GS are represented by two hexadecimal values, and the characters correspond to the hexadecimal conversion table refer to Appendix F

4) Read the "Save" setting code.

GS Character Replacement Enable

**GS Character Replacement Disable

Read the following setting codes, cooperate with the "data code" setting code and the "save" setting code, and the user can modify GS replacement characters.

GS Alternate Character Modification

6.10 Web address code recognition

Read the following setting codes, and you can set the permission and prohibition of the website code reading function

**Enable Reading Of Web Address Codes

Disable Reading Of Web Address Codes

Chapter 7 Quick Operation

7.1 1-Dimensional Code

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Close all 1-dimensional codes

Open all 1-dimensional codes

7.2 2-Dimensional Code

Close all 2-dimensional codes

Open all 2-dimensional codes

Chapter 8 Symbologies

8.1 Global Shortcuts

8.1.1 Global Operations

The user can globally enable/Disable and enable the default reading type for all supported code systems by reading the following programming barcodes. After reading all types of code systems, only the programming barcode is enabled.

Enable All Symbologies

Disable All Symbologies

**Enable Default Symbologies

8.1.2 Product Barcode Check Digit Output Enable

The user can enable/disable the commodity barcode check digit output by reading the following programming barcode (commodity barcode includes: EAN13/EAN8/UPC-A/UPC-E0/UPC-E1).

**Enable Transmit Check Digit

Disable Transmit Check Digit

8.1.3 Enhancement of literacy

Enabling and disabling bar code reading ability enhancement can be carried out by reading the following setting codes. After the ability to read is strengthened and enabled, the ability to read special codes such as defaced bar codes and QR code surfaces can be improved. The strengthening of reading ability and prohibition would improve the decoding speed.

**Enhancement of literacy disable   Enhancement of literacy enable

8.2 1D Symbologies

8.2.1 EAN 13

1. Enable or Disable EAN13

The user can enable and disable the EAN13 barcode reading function by reading the following programming barcodes.

**Enable EAN13   Disable EAN13

2. Enable or Disable Add-On Code

The user can enable and disable the forced output function of EAN13 add-on code by reading the following programming barcodes.

EAN13 Add-On Code Required   **EAN13 Add-On Code Not Required

The user can enable and disable the configuration of the EAN13 add-on code by reading the following programming barcodes.

Enable EAN13-2 Digit Add-On Code   **Disable EAN13-2 Digit Add-On Code

Enable EAN13-5 Digit Add-On Code   **Disable EAN13-5 Digit Add-On Code

3. Check bit Output Function Enable and Disable

**Enable Transmission of EAN13 Parity Bits   Disable Transmission of EAN13 Parity Bits

8.2.2 EAN 8

1. Enable or Disable EAN8

The user can enable and disable the EAN8 barcode reading function by reading the following programming barcodes.

    **Enable EAN8   Disable EAN8

2. Enable or Disable Add-On Code

The user can enable and disable the forced output function of EAN8 add-on code by reading the following programming barcodes.

   EAN8 Add-On Code Required   **EAN8 Add-On Code Not Required

The user can enable and disable the configuration of the EAN8 add-on code by reading the following programming barcodes.

Enable EAN8-2 Digit Add-On Code   **Disable EAN8-2 Digit Add-On Code

Enable EAN8-5 Digit Add-On Code   **Disable EAN8-5 Digit Add-On Code

3. Check bit Output Function Enable and Disable

**Enable Transmission of EAN8 Parity Bits   Disable Transmission of EAN8 Parity Bits

8.2.3 UPC-A

1. Enable or Disable UPC-A

The user can scan and disable the UPC-A barcode reading function by reading the following programming barcodes.

**Enable UPC-A   Disable UPC-A

2. Enable or Disable Add-On Code

The user can enable and disable the forced output function of UPC-A add-on code by reading the following programming barcodes.

UPC-A Add-On Code Required   **UPC-A Add-On Code Not

Required

The user can enable and disable the configuration of the UPC-A add-on code by reading the following programming barcodes.

Enable UPC-A-2 Digit Add-On Code

**Disable UPC-A-2 Digit Add-On Code

Enable UPC-A-5 Digit Add-On Code

**Disable UPC-A-5 Digit Add-On Code

3. Enable Conversion from UPC-A to EAN13

The user can enable/disable the conversion of UPC-A to EAN13 by reading the following programming barcodes.

Enable UPC-A to EAN13

**Disable UPC-A to EAN13

4. Check bit Output Function Enable and Disable

**Enable Transmission of UPCA Parity Bits

Disable Transmission of UPCA

Parity Bits

8.2.4 UPC-E0

1. Enable or Disable UPC-E0

The user can scan and disable the UPC-E0 barcode reading function by reading the following programming barcodes.

**Enable UPC-E0   Disable UPC-E0

2. Enable or Disable Add-On Code

The user can enable and disable the forced output function of UPC-E0 add-on code by reading the following programming barcodes.

UPC-E0 Add-On Code Required   ****UPC-E0 Add-On Code Not Required**

The user can enable and disable the configuration of the UPC-E0 add-on code by reading the following programming barcodes.

Enable UPC-E0-2 Digit Add-On Code   ****Disable UPC-E0-2 Digit Add-On Code**

Enable UPC-E0-5 Digit Add-On Code   **Disable UPC-E0-5 Digit Add-On Code

3.Check bit Output Function Enable and Disable

**Enable Transmission of UPC-E0 Parity Bits   Disable Transmission of UPC-E0 Parity Bits

8.2.5 UPC-E1

1. Enable or Disable UPC-E1

The user can enable and disable the UPC-E1 barcode reading function by reading the following programming barcodes.

**Enable UPC-E1   Disable UPC-E1

2. Enable or Disable Add-On Code

The user can enable and disable the forced output function of UPC-E1 add-on code by reading the following programming barcodes.

UPC-E1 Add-On Code Required   **UPC-E1 Add-On Code Not Required

The user can enable and disable the configuration of the UPC-E1 add-on code by reading the

following programming barcodes.

Enable UPC-E1-2 Digit Add-On Code

**Disable UPC-E1-2 Digit Add-On Code

Enable UPC-E1-5 Digit Add-On Code

**Disable UPC-E1-5 Digit Add-On Code

3. Check bit Output Function Enable and Disable

**Enable Transmission of UPC-E1 Parity Bits

Disable Transmission of UPC-E1 Parity Bits

8.2.6 Code128

1. Enable or Disable Code128

The user can enable and disable the Code128 barcode reading function by reading the following programming barcodes.

**Enable Code128

Disable Code128

2. Set Length Range for Code128

Users can set the minimum and maximum length of Code128 by reading the following

programming barcodes.

**Set the Minimum Length for Code128 to 0   Set the Minimum Length for Code128 to 4

Set the Maximum Length for Code128 to 32   **Set the Maximum Length for Code128 to 255

3. Code 128 prefixed (11)

The user can turn on or off the Code128 barcode prefix (11) function by reading the

following setting codes.

Code128 Prefix (11)-On   **Code128 Prefix (11)-Off

8.2.7 Code39

1. Enable or Disable Code39

The user can enable and disable the Code39 barcode reading function by reading the

following programming barcodes.

**Enable Code39   Disable Code39

2. Set Length Range for Code39

Users can set the minimum and maximum length of Code39 by reading the following

programming barcodes.

**Set the Minimum Length for Code39 to 0	Set the Minimum Length for Code39 to 4

Set the Maximum Length for Code39 to 32	**Set the Maximum Length for Code39 to 255

3.Transmit Start/Stop Character

The user can set the output of Code39 Start/Stop Character by reading the following

programming barcodes.

Output of Code39 Start Character	**Disable Output of Code39 Stop Character

Output of Code39 Stop Character	**Disable Output of Code39 Stop Character

4. Code32 Mode

Users can choose whether Code39 supports Code32 mode by reading the following

programming barcodes.

Support Code32 Mode   **Disable Support Code32 Mode

Users can choose whether Code 32 outputs the prefix A by reading the following programming barcodes.

**the output of Code 32 prefix A   Disable output of Code 32 prefix A

5. FullAsc Mode

Users can choose whether Code39 supports FullAsc mode by reading the following programming barcodes.

Support FullAsc Mode   **Disable Support FullAsc Mode

6. Proces Verification

The user can set whether Code39 handles verification by reading the following setting code.

Code 39 Handles Verification   **Code 39 Does Not Handle Verification

7. Parity bit Output

The user can set whether Code39 outputs check bits by reading the following setting codes.

Code39 Outputs Parity Bits

**Code39 Does Not Output Parity Bits

8.2.8 Code93

1. Enable or Disable Code93

The user can enable and disable the Code93 barcode reading function by reading the following programming barcodes.

**Enable Code93

Disable Code93

2. Set Length Range for Code93

Users can set the minimum and maximum length of Code93 by reading the following programming barcodes.

**Set the Minimum Length for Code93 to 0

Set the Minimum Length for Code93 to 4

Set the Maximum Length for Code93 to 32   **Set the Maximum Length for Code93 to 255

8.2.9 CodaBar

1. Enable or Disable CodaBar

The user can enable and disable the CodaBar barcode reading function by reading the following programming barcodes.

  **Enable CodaBar   Disable CodaBar

2. Set Length Range for CodaBar

Users can set the minimum and maximum length of CodaBar by reading the following programming barcodes.

**Set the Minimum Length for CodaBar to 0 Set the Minimum Length for CodaBar to 4

Set the Maximum Length for CodaBar to 32 **Set the Maximum Length for CodaBar to 255

3. Transmit Start/Stop Character

The user can set the output of CodaBar Start/Stop Character by reading the following

programming barcodes.

Output of CodaBar Start/Stop Character

**Disable Output of CodaBar Start/Stop Character

4. Verification Processing

The user can set CodaBar check processing by reading the following setting codes.

**CodaBar Do Not Process Verification

CodaBar Mod10 Check

CodaBar Mod16 Check

CodaBar Double Check

5. Parity Bit Output Setting

The user can set the output of CodaBar check bits by reading the following setting codes.

CodaBar Parity Bit Output

**CodaBar Parity Bit Not Output

8.2.10 Interleaved 2 of 5

1. Enable or Disable Interleaved 2 of 5

The user can enable and disable the Interleaved 2 of 5 barcode reading function by reading the following programming barcodes.

Enable Interleaved 2 of 5   **Disable Interleaved 2 of 5

2. Set Length Range for Interleaved 2 of 5

Users can set the minimum and maximum length of Interleaved 2 of 5 by reading the following programming barcodes.

Set the Minimum Length to 0   **Set the Minimum Length to 4

**Set the Maximum Length to 32   Set the Maximum Length to 255

3. Verify Format Setting

The user can set whether Interleaved 2 of 5 processes verification by reading the following setting code.

Interleaved 2 of 5 Verification Format Mod10   **Interleaved 2 of 5 Verification Format NONE

4. Parity Bit Output Setting

The user can set whether Interleaved 2 of 5 outputs check bits by reading the following setting code.

Interleaved 2 of 5 Outputs Parity Bits   **Interleaved 2 of 5 Does Not Output Parity Bits

8.2.11 Industrial 25

1. Enable or Disable Industrial 25

The user can enable and disable the Industrial 25 barcode reading function by reading the following programming barcodes.

       Enable Industrial 25   **Disable Industrial 25

2. Set Length Range for Industrial 25

Users can set the minimum and maximum length of Industrial 25 by reading the following programming barcodes.

Set the Minimum Length to 0   **Set the Minimum Length to 4

**Set the Maximum Length to 32   Set the Maximum Length to 255

3. Verify Format Setting

The user can set whether Industrial 25 processes verification by reading the following setting code.

Industrial 25 Verification Format Mod10   **Industrial 25 Verification Format NONE

4. Parity Bit Output Setting

The user can set whether Industrial 25 outputs check bits by reading the following setting code.

Industrial 25 Outputs Parity Bits   **Industrial 25 Does Not Output Parity Bits

8.2.12 Matrix 2 of 5

1. Enable or Disable Matrix 2 of 5

The user can enable and disable the Matrix 2 of 5 barcode reading function by reading the following programming barcodes.

<table>
<tr><td>Enable Matrix 2 of 5</td><td>**Disable Matrix 2 of 5</td></tr>
</table>

2. Set Length Range for Matrix 2 of 5

Users can set the minimum and maximum length of Matrix 2 of 5 by reading the following programming barcodes.

<table>
<tr><td>Set the Minimum Length to 0</td><td>**Set the Minimum Length to 4</td></tr>
<tr><td>**Set the Maximum Length to 32</td><td>Set the Maximum Length to 255</td></tr>
</table>

3. Verify Format Setting

The user can set whether Matrix 2 of 5 processes verification by reading the following setting code.

<table>
<tr><td>Matrix 2 of 5 Verification Format Mod10</td><td>**Matrix 2 of 5 Verification Format NONE</td></tr>
</table>

4. Parity Bit Output Setting

The user can set whether Matrix 2 of 5 outputs check bits by reading the following setting code.

Matrix 2 of 5 Outputs Parity Bits	**Matrix 2 of 5 Does Not Output Parity Bits

8.2.13 Code11

1. Enable or Disable Code11

The user can enable and disable the Code11 barcode reading function by reading the following programming barcodes.

Enable Code11	**Disable Code11

2. Set Length Range for Code11

Users can set the minimum and maximum length of Code11 by reading the following programming barcodes.

Set the Minimum Length for Code11 to 0	**Set the Minimum Length for Code11 to 4

**Set the Maximum Length for Code11 to 32   Set the Maximum Length for Code11 to 255

3. Setting of Check Format

The user can set the check format of Code11 by reading the following programming barcode.

**Check Code11-1bit   Check Code11-2bit

4. Parity Bit Output Setting

The user can set whether Code11 outputs check bits by reading the following setting code.

Code11 Outputs Parity Bits   **Code11 Does Not Output Parity Bits

8.2.14 MSI Plessey

1. Enable or Disable MSI Plessey

Enable MSI Plessey   **Disable MSI Plessey

2. Set Length Range for MSI Plessey

Users can set the minimum and maximum length of MSI Plessey by reading the following programming barcodes.

Set the Minimum Length for MSI Plessey to 0   **Set the Minimum Length for MSI Plessey to 4

**Set the Maximum Length for MSI Plessey to 32   Set the Maximum Length for MSI Plessey to 255

3. Verify Format Setting

The user can set whether MSI Plessey processes verification by reading the following setting code.

Single Mod10   **Double Mod10

4. Parity Bit Output Setting

The user can set whether MSI Plessey outputs check bits by reading the following setting code.

MSI Plessey Outputs Parity Bits

**MSI Plessey Does Not Output Parity Bits

8.2.15 RSS-14

1. Enable or Disable RSS-14

The user can enable and disable the RSS-14 barcode reading function by reading the following programming barcodes.

Enable RSS-14

**Disable RSS-14

2. AI () output enable and disable

The user can set whether RSS-14 barcode AI () is output by reading the following setting codes.

**RSS-14 AI Output with Parentheses

RSS-14 AI Output Without Parentheses

3. Check bit Output Function Enable and Disable

Enable Transmission of RSS-14 Parity Bits   **Disable Transmission of RSS-14 Parity Bits

8.2.16 RSS-Limited

1. Enable or Disable RSS-Limited

The user can enable and disable the RSS-Limited barcode reading function by reading the following programming barcodes.

Enable RSS-Limited   **Disable RSS-Limited

2. AI () output enable and disable

The user can set whether RSS-Limited barcode AI () is output by reading the following setting codes.

**RSS-Limited AI Output with Parentheses   RSS-Limited AI Output Without Parentheses

3.Check bit Output Function Enable and Disable

Enable Transmission of RSS-Limited Parity Bits **Disable Transmission of RSS-Limited Parity Bits

8.2.17 RSS-Expanded

1. Enable or Disable RSS-Expanded

The user can enable and disable the RSS-Expanded barcode reading function by reading the following programming barcodes.

Enable RSS-Expanded   **Disable RSS-Expanded

2. Set Length Range for RSS-Expanded

Set the Minimum Length to 0   **Set the Minimum Length to 4

**Set the Maximum Length to 32   Set the Maximum Length to 255

3. AI () output enable and disable

The user can set whether RSS-Expanded barcode AI () is output by reading the following setting codes.

**RSS-Expanded AI Output with Parentheses

RSS-Expanded AI Output Without Parentheses

4.Check bit Output Function Enable and Disable

Enable Transmission of RSS-Expanded Parity Bits

**Disable Transmission of RSS-Expanded Parity Bits

8.2.18 Standard 2 of 5

1. Enable or Disable Standard 2 of 5

Enable Standard 2 of 5

**Disable Standard 2 of 5

2.Set Length Range for Standard 2 of 5

Users can set the minimum and maximum length of Standard 2 of 5 by reading the following programming barcodes.

Set the Minimum Length to 0

**Set the Minimum Length to 4

| **Set the Maximum Length to 32 | Set the Maximum Length to 255 |

**Set the Maximum Length to 32   Set the Maximum Length to 255

3. Verify Format Setting

The user can set whether Standard 2 of 5 processes verification by reading the following setting code.

Verify ON   **Verify OFF

4. Parity Bit Output Setting

The user can set whether Standard 2 of 5 outputs check bits by reading the following setting code.

Standard 2 of 5 Outputs Parity Bits   **Standard 2 of 5 Does Not Output Parity Bits

8.2.19 Plessey

1. Enable or Disable Plessey

Enable Plessey   **Disable Plessey

2. Set Length Range for Plessey

Users can set the minimum and maximum length of Plessey by reading the following

programming barcodes.

Set the Minimum Length to 0

**Set the Minimum Length to 4

**Set the Maximum Length to 32

Set the Maximum Length to 255

3. Verify Format Setting

The user can set whether Plessey processes verification by reading the following setting code.

Verify ON

**Verify OFF

4. Parity Bit Output Setting

The user can set whether Plessey outputs check bits by reading the following setting code.

Plessey Outputs Parity Bits

**Plessey Does Not Output Parity Bits

8.2.20 ChinaPost 25

1. Enable or Disable ChinaPost 25

Enable ChinaPost 25

**Disable ChinaPost 25

2. Set Length Range for ChinaPost 25

Users can set the minimum and maximum length of ChinaPost 25 by reading the following programming barcodes.

Set the Minimum Length to 0

**Set the Minimum Length to 4

**Set the Maximum Length to 32

Set the Maximum Length to 255

3. Verify Format Setting

The user can set whether ChinaPost 25 processes verification by reading the following setting code.

Verify ON

**Verify OFF

4. Parity Bit Output Setting

The user can set whether ChinaPost 25 outputs check bits by reading the following

setting code.

ChinaPost 25 Outputs Parity Bits   **ChinaPost 25 Does Not Output Parity Bits

8.3 Operation of 2D Symbologies

8.3.1 QR Code

1. Enable or Disable QR Code

The user can enable and disable the QR Code barcode reading function by reading the following programming barcodes.

**Enable QR   Disable QR

2. Enable or Disable QR Mode1

The user can enable and disable the QR Mode1 reading function by reading the following programming barcodes.

Enable QR Mode1   **Disable QR Mode1

3. QR Code prefixed (11)

The user can turn on or off the e QR barcode prefix (11) function by reading the following setting codes.

QR Prefix (11)-On   **QR Prefix (11)-Off

8.3.2 Data Matrix (DM)

The user can enable and disable the Data Matrix reading function by reading the following programming barcodes.

**Enable DM   Disable DM

The user can enable and disable simultaneous multiple DM code reading function by reading the following programming barcodes.

Enable Multiple DM   **Disable Multiple DM

8.3.3 PDF417

The user can enable and disable the PDF417 barcode reading function by reading the following programming barcodes.

**Enable PDF417   Disable PDF417

8.3.4 Mico QR

The user can enable and disable the Mico QR barcode reading function by reading the following programming barcodes.

**Enable Mico QR   Disable Mico QR

8.3.5 Chinese Sensible(HanXin) Code

The user can enable and disable the Chinese Sensible(HanXin) Code reading function by reading the following programming barcodes.

Enable Chinese Sensible(HanXin) Code   **Disable Chinese Sensible(HanXin) Code

8.3.6 Micro PDF 417

The user can enable and disable the Micro PDF 417 barcode reading function by reading the following programming barcodes.

**Enable Micro PDF 417

Disable Micro PDF 417

8.3.7 Code 16K

1. Enable or Disable Code 16K

The user can enable and disable the Code 16K barcode reading function by reading the following programming barcodes.

Enable Code 16K

**Disable Code 16K

2. Set Length Range for Code 16K

Set the Minimum Length to 0

**Set the Minimum Length to 4

**Set the Maximum Length to 32

Set the Maximum Length to 255

8.3.8 Code 49

1.Enable or Disable Code 49

The user can enable and disable the Code 49 barcode reading function by reading the following programming barcodes.

<table>
<tr><td>Enable Code 49</td><td>**Disable Code 49</td></tr>
</table>

2.Set Length Range for Code 49

<table>
<tr><td>Set the Minimum Length to 0</td><td>**Set the Minimum Length to 4</td></tr>
<tr><td>**Set the Maximum Length to 32</td><td>Set the Maximum Length to 255</td></tr>
</table>

8.3.9 Maxi Code

The user can enable and disable the Maxi Code reading function by reading the following programming barcodes.

Enable Maxi Code   **Disable Maxi Code

8.3.10 Aztec

The user can enable and disable the Aztec barcode reading function by reading the following programming barcodes.

Enable Aztec   **Disable Aztec

8.3.11 GS1 Composite

The user can enable and disable the GS1 Composite barcode reading function by reading the following programming barcodes.

Enable GS1 Composite   ** Disable GS1 Composite

Chapter 9 Save and Cancle

9.1 Save

After reading the "Digit Barcodes", you need to read the programming barcode of "Save" to save the data.

Save

9.2 Cancel

When an error occurs in the scanned data, the following programming barcode can be scanned to cancel the current setting, also one bit of data which is previous scanned, and a string of data which is previous scanned.

Cancel the Last Digit

Cancel All Digits

Cancel Current Setting

☞ Note: Cancelling the current setting means cancelling all the Digit Barcodes that were scan, and reset shall be conducted after canceling.

Chapter 10 Batch Setting

When the reading device needs to make multiple setting, setting one by one may be complicated. The user can save all the information to be set into a QR code, and the device can complete multiple setting after reading the QR code.

The following are the guidelines for batch setup:

1. Batch processing setting code content format: @ WSM + "Parameter 1"; "Parameter 2";...... "Parameter n";

2. Please refer to Appendix G Batch Setting Code Content Parameter List for batch setting code content parameters.

3. A semicolon ";" is used between every two parameters Separate and end with an English semicolon. Note that there should be no space between the semicolon and the command.

4. Batch setting allow up to 30 parameters to be set simultaneously.

5. The setting content conforming to the batch processing setting code format is made into QR code in the code making software, and the setting code is read for batch setting.

For example: The programming barcodes of Enter Setup (parameter: 00000000), Sense Mode (parameter: 02000003), Positioning Light - ON when Photographing (parameter: 03000000), Decode Session Timeout-3000ms (parameter: 0202001E) and Disable Interleaved 2 of 5 (parameter: 070A0100). Then the batch processing setting code content is as follows:

@WSM00000000;02000003;03000000;0202001E;070A0100;

When batch setting is required, the setting can be completed by reading the finished batch setting code.

☞ Note:

1. When batch setting is carried out, the "setting code is turned on" must be ensured;

2. If the content of batch setting code does not conform to the setting code rules, or the setting parameters are not included in the list of settable parameters, the setting would fail.

Appendix

Appendix A: Digit Barcodes

0 ～ 9

0

1

2

3

4

5

6

7

8

9

A ～ F

A

B

C

D

E

F

Appendix B: Example of Parameter Settings

◆ Example 1: Modify the prefix to DATA

1. Query the character table to obtain the hexadecimal values corresponding to the four characters of

"DATA": "44", "41", "54", "41"

2. Scan "Enter Setup"; (If it has been enabled, you can skip this step)

3. Scan the programming barcode of "Modify Prefix"

4. Scan the Digit Barcodess of "4" "4" "4" "1" "5" "4" "4" "1"

5. Scan the programming barcode of "Save"

◆ Example 2: Modify the suffix to DATA

1. Query the character table to obtain the hexadecimal values corresponding to the four characters of

"DATA": "44", "41", "54", "41"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. Read the the programming barcode of "Modify Suffix" programming barcode

4. Read the Digit Barcodess of "4" "4" "4" "1" "5" "4" "4" "1"

5. Read the programming barcode of "Save"

◆ Example 3: Modify EAN13 Code ID to "A"

1. Query the character table to obtain the hexadecimal value corresponding to the "A" character: "41"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. Read the the programming barcode of "Modify EAN13 Code ID"

4. Read the Digit Barcodess of "4" "1" one by one.

5. Read the the programming barcode of "Save"

◆ Example 4:

[Tansmit the Start Data] If the decoding information is "1234567890ABC", the first 10 bytes

"1234567890" shall be output.

1. Query the character table to obtain the hexadecimal value corresponding to the "10" character:

"0A"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. Read the programming barcode of " Modify the Length for Start Data"

4. Read the Digit Barcodess of "0" "A" in turn.

5. Read the programming barcode of "Save"

6. Read the programming barcode of "Tansmit the Start Data "

◆　Example 5:

[Tansmit the End Data] If the decoding information is "1234567890ABC", the first 10 bytes

"1234567890" shall be output.

1. Query the character table to obtain the hexadecimal value corresponding to the "10" character:

"0A"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. Read the programming barcode of " Modify the Length for End Data"

4. Read the Digit Barcodess of "0" "A" in turn.

5. Read the programming barcode of "Save"

6. Read the programming barcode of "Tansmit the End Data"

◆　Example 6:

[Tansmit the Center Data] If the decoding information is "1234567890ABC1234567890", the

middle 3 bytes "ABC" shall be output.

1. Query the character table to obtain the hexadecimal value corresponding to the "10" character: "0A"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. Read the programming barcode of "Modify the Length for End Data"

4. Read the Digit Barcodess of "0" "A" in turn.

5. Read the programming barcode of "Save"

6. Read the programming barcode of "Modify the Length for Start Data"

7. Read the Digit Barcodess of "0" "A" in sequence.

8. Read the programming barcode of "Save"

9. Read the programming barcode of "Tansmit the Center Data"

◆　Example7: Modify the RF information to "FAIL"

1. Query the character table to obtain the hexadecimal value corresponding to the "FAIL" character:

"46" "41" "49" "4C"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. Read the programming barcode of "Modify RF Information"

4. Read the Digit Barcodess of "4" "A", "4", "1", "4", "9", "4", "C" in turns

5. Read the programming barcode of "Save"

◆ Example 8: Modify GS to replace the character with "D"

1. Query the character table to obtain the hexadecimal value corresponding to the "D" character: "44"

2. Read "Enter Setup"; (If it has been enabled, you can skip this step)

3. RRead the programming barcode of   "GS Character Replacement Enable"

4. Read the programming barcode of "GS Replacement Character Modification"

5. Read the data codes "4" and "4" in turn

6. Read the programming barcode of "Save"

Appendix C: Default Settings Table

Parameter		Default Setting	Remarks
Programming Barcode			
Function of Programming Barcode		Enter	
Communication Settings			
USB-HID	HID equipment selection	USB-KBW	
	PC to HID Device Access Cycle	1ms	Range:1～64ms
	Timeout Before HID Release	1ms	Range:1～63ms
	Timeout After HID Release	1ms	Range:1～63ms
	CapsLock Status	Off	
	HID Leading Key Output	Disable	
Scanning Module Parameter			
Default Scanning Module		Manual Mode	
Manual Mode	Trigger Mode	Level Trigger	
	Decode Session Timeout	5000ms	Range: 100ms ～ 25500ms, Step length 100ms, 0: means Infinite
	Deep Sleep	OFF	Deep Sleep Timeout: 0～3276700ms Step Size: 100ms
Command Trigger Mode	Triggering Conditions	Instruction Trigger	7E 00 08 01 00 02 01 AB CD
	Trigger command response	allowed	
	Decode Session Timeout	5000ms	Range: 100ms ～ 25500ms Step size 100ms

			0x00: Infinite
Continuous Mode	Timeout between Decodes	1000ms	Range: 0 ～ 25500ms Step size 100ms
	Timeout between Decodes (Same Barcode)	OFF	Delay time range: 100ms ～ 25500ms Step size 100ms 0x00: Infinite
	Decode Session Timeout	5000ms	Range: 100 ～ 25500ms Step size 100ms 0x00: infinit
	Continuous mode key pause switch	supports	
Sense Mode	Decode Session Timeout	5000ms	Range: 100 ～ 25500ms Step size 100ms 0x00: infinite
	Timeout between Decodes	1000ms	Range: 0 ～ 25500ms Step size 100ms
	Timeout between Decodes (Same Barcode)	OFF	Delay time range: 100ms ～ 25500ms Step size 100ms 0x00: infinite
	Sensitivity	Medium Sensitivity	Sensitivity parameters: 1/2 : 00-FF The more the parameter is, the less the sensitivity is.
	Image Stabilization Timeout	0ms	Range: 0 ～ 25500ms Step size 100ms
General Settings			
Fill Light / Positioning	Positioning Light	ON when Photographing	

Buzzer	Fill Light	ON when Photographing	
	Buzzer Setting	Passive Buzzer	
	Passive Buzzer	Intermediate Frequency	
	Active Buzzer	High level	Active high when working, Active low when idle
	Mute	OFF	
Setup Beep		ON	
Good Read Beep		ON	
Timeout of Good Read Beep		60ms	Range:0-255ms
Good Read LED		ON	
Good Read Beep of Programming Barcode		ON	
Data Output Encoding Format		GBK	
Keyboard		US.	
Virtual/Standard Keyboard		Standard	
Control character transmission		OFF	The virtual keyboard is off by default. When it is on, the control character is off by default
Image Mirror Flip		Disable	
Serial Port Analog HID Protocol		Disable	
Invoicing Mode		Enable and Local Invoicing Mode	
Data Editing			
Prefix		Disable	
Suffix		Disable	
CODE ID		Disable	
Tail		CR(0x0D)	
Date Character Interception		Transmit all Data	

RF Information	Disable	
Output Protocol	Raw Data	
GS Character Replacement	Disable	
Web address code recognition	Enable	
Code Setting		
Inverse Video	Disable	
Image Mirror Flip	Disable	
Product Barcode Check Digit	Enable	EAN13/EAN8/UPC-A/UPC-E0/UPC-E1
Enhancement of literacy	Disable	
EAN-13		
Read	Enable	
Add-On Code	Not Required	
2 Digit Add-On Code	Disable	
5 Digit Add-On Code	Disable	
Parity Bit Output	Enable	
EAN-8		
Read	Enable	
Add-On Code	Not Required	
2 Digit Add-On Code	Disable	
5 Digit Add-On Code	Disable	
Parity Bit Output	Enable	
UPC-A		
Read	Enable	
Add-On Code	Not Required	
2 Digit Add-On Code	Disable	
5 Digit Add-On Code	Disable	
UPC-A to EAN13	Disable	
Parity Bit Output	Enable	

UPC-E0		
Read	Enable	
Add-On Code	Not Required	
2 Digit Add-On Code	Disable	
5 Digit Add-On Code	Disable	
Parity Bit Output	Enable	
UPC-E1		
Read	Enable	
Add-On Code	Not Required	
2 Digit Add-On Code	Disable	
5 Digit Add-On Code	Disable	
Parity Bit Output	Enable	
Code128		
Read	Enable	
Set the Minimum Length	0	
Set the Maximum Length	255	
Add Prefix (11)-On	off	
Code 39		
Read	Enable	
Set the Minimum Length	0	
Set the Maximum Length	255	
Start Character	Disable	
Stop Character	Disable	
Code32	Disable	
Code32 prefix output	Enable	Premise: Code32 enable
FullAsc Mode	Disable	
Proces verification	No	
Parity bit output	Disable	
Code 93		

Read	Enable	
Set the Minimum Length	0	
Set the Maximum Length	255	
CodaBar		
Read	Enable	
Set the Minimum Length	0	
Set the Maximum Length	255	
Start /Stop Character	Disable	
Interleaved 2 of 5		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify Format	None	
Parity bit output	Disable	
Industrial 25		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify Format	None	
Parity bit output	Disable	
Matrix 2 of 5		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify Format	None	
Parity bit output	Disable	
Code11		
Read	Disable	
Set the Minimum Length	4	

Set the Maximum Length	32	
Verify Format	1bit	
Parity bit output	Disable	
MSI Plessey		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify Format	Single Mod10	
Parity bit output	Disable	
RSS-14		
Read	Disable	
AI Output with Parentheses	with Parentheses	
RSS-Limited		
Read	Disable	
AI Output with Parentheses	with Parentheses	
RSS-Expanded		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
AI Output with Parentheses	with Parentheses	
Standard 2 of 5		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify	Off	
Parity bit output	Disable	

Plessey		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify	Off	
Parity bit output	Disable	
ChinaPost 25		
Read	Disable	
Set the Minimum Length	4	
Set the Maximum Length	32	
Verify	Off	
Parity bit output	Disable	
QR Code		
Read	Enable	
QR1mode	Disable	
Add Prefix (11)-On	Disable	
PDF417		
Read	Enable	
Data Matrix		
Read	Enable	
Multiple DM	Disable	
Micro QR		
Read	Enable	
Chinese Sensible(HanXin) Code		
Read	Disable	
Micro PDF417		
Read	Enable	
Code 16K		
Read	Disable	

Maxi Code		
Read	Disable	
Aztec		
Read	Disable	

Appendix D: Common Serial Commands

Function	Serial Command	Return Command
Manual Mode	7E 00 08 01 00 00 D4 FF 60	02 00 00 01 00 33 31
Command Trigger Mode	7E 00 08 01 00 00 D5 EF 41	02 00 00 01 00 33 31
Continuous Mode	7E 00 08 01 00 00 D6 DF 22	02 00 00 01 00 33 31
Sense Mode	7E 00 08 01 00 00 D7 CF 03	02 00 00 01 00 33 31
command mode trigger	7E 00 08 01 00 02 01 02 DA	02 00 00 01 00 33 31
Trigger command response allowed	7E 00 08 01 00 01 04 07 2C	02 00 00 01 00 33 31
Trigger command response disable	7E 00 08 01 00 01 84 96 A4	02 00 00 01 00 33 31
Timeout between Decodes-5s	7E 00 08 01 00 05 32 9D 7D	02 00 00 01 00 33 31
Decode Session Timeout-10s	7E 00 08 01 00 06 64 F2 1D	02 00 00 01 00 33 31
Set baud rate (115200bps)	7E 00 08 02 00 2A 1A 00 E4 7E	02 00 00 01 00 33 31
Saved to Internal Flash Instructions	7E 00 09 01 00 00 00 DE C8	02 00 00 01 00 33 31
Query baud rate (115200bps)	7E 00 07 01 00 2A 02 D8 0F	02 00 00 02 1A 00 82 D8
Flags Restored to Factory Settings	7E 00 09 01 00 00 FF C0 38	02 00 00 01 00 33 31
Tail (CRLF)	7E 00 08 01 00 60 21 4B F0	02 00 00 01 00 33 31
Save as Custom Defaults	7E 00 08 01 00 D9 56 E1 15	02 00 00 01 00 33 31
Restore Custom Defaults	7E 00 08 01 00 D9 55 D1 76	02 00 00 01 00 33 31

Appendix E: Code ID List

Barcode Type	Corresponding Tharacter	Flag Bit Address
EAN-13	d	0x91
EAN-8	d	0x92
UPC-A	c	0x93
UPC-E0	c	0x94
UPC-E1	c	0x95
Code 128	j	0x96
Code 39	b	0x97
Code 93	i	0x98
Codabar	a	0x99
Interleaved 2 of 5	e	0x9A
Industrial 2 of 5	D	0x9B
Matrix 2 of 5	v	0x9C
Code 11	H	0x9D
MSI Plessey	m	0x9E
GS1 Databar(RSS-14)	R	0x9F
GS1 Databar(RSS-Limited)	R	0xA0
GS1 Databar(RSS-Expanded)	R	0xA1
QR Code	Q	0xA2
Data Matrix	u	0xA3
PDF 417	r	0xA4
Micro QR	X	0xA5
Chinese Sensible(HanXin) Code	h	0xA6
Micro PDF417	R	0xA7
Standard 2 of 5	f	0xA8

Plessey	n	0xA9
ChinaPost 25	X	0xAA
Code 16K	X	0xAB
Code 49	X	0xAC
Maxi Code	x	0xAD
Aztec	z	0xAE

Appendix F: ASCII Table

Hexadecimal	Decimal	Character
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)
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
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
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)

Appendix G: Batch Setting Code Content Parameter List

Function of Setting Code	Setting Code Content Parameter	Remark
Enable Settings	00000000	If the Settings code is off, you need to turn on the Settings code first
Disable Settings	00000001	
Not output setting code content	00000010	
Output setting code content	00000011	
Restore factory settings	00010000	
Save current settings as user default settings	00020000	
Restore to user default settings	00020001	
PC Keyboard	01000001	
USB Virtual Serial Port Mode	01000003	
HID-POS	01000004	
4800bps	01020271	
9600bps	01020139	
14400bps	010200D0	
19200bps	0102009C	
38400bps	0102004E	
57600bps	01020034	
115200bps	0102001A	
230400bps	0102000D	
460800bps	01020007	
921600bps	01020004	
NONE Parity	01030000	
ODD Parity	01030001	

EVEN Parity	01030002	
Access Cycle of PC to HID Device-1ms	01040001	For other durations, the last two parameters can be modified
Access Cycle of PC to HID Devic-3ms	01040003	
Access Cycle of PC to HID Devic5ms	01040005	
Access Cycle of PC to HID Devic-10ms	0104000A	
Timeout HID Release-1ms	01050001	For other durations, the last two parameters can be modified
Timeout HID Release-2ms	01050002	
Timeout HID Release-5ms	01050005	
Timeout HID Release-10ms	0105000A	
CapsLock-Off	01070000	
CapsLock-On	01070001	
Disable HID Leading Key Output	01080000	
Enable HID Leading Key Output	01080001	
Level Trigger	02000000	
Edge Trigger	02000001	
Command Trigger Mode	02000002	
Sense Mode	02000003	
No leave No read Mode	02000004	
Continuous Mode	02000005	
Decode Session Timeout-1000ms	0202000A	For other durations, the last two parameters can be modified
Decode Session Timeout-3000ms	0202001E	
Decode Session Timeout-5000ms	02020032	
Decode Session Timeout-10000ms	02020064	
Decode Session Timeout-Infinite	02020000	
Trigger command response allowed	020A0001	
Trigger command response disable	020A0000	
Continuous mode key pause is not	020A0010	
Continuous mode key pause supports	020A0011	

Timeout Between Decodes-No Timeout	02050000	For other durations, the last two parameters can be modified
Timeout Between Decodes-500ms	02050005	
Timeout Between Decodes-1000ms	0205000A	
Timeout Between Decodes-3000ms	0205001E	
Timeout Between Decodes-5000ms	02050032	
Timeout between Decodes (Same Barcode)-OFF	02060000	The duration parameter setting must first enable the timeout between Decodes
Timeout between Decodes (Same Barcode)-ON	02060001	
Timeout between Decodes (Same Barcode)-Infinite Delay	02070000	
Timeout between Decodes (Same Barcode)-500ms	02070005	For other durations, the last two parameters can be modified
Timeout between Decodes (Same Barcode)-1000ms	0207000A	
Timeout between Decodes (Same Barcode)-3000ms	0207001E	
Timeout between Decodes (Same Barcode)-5000ms	02070032	
Medium Sensitivity	0209640A	
Low Sensitivity	020932A0	
High Sensitivity	0209320A	
Enhanced Sensitivity	02093205	
Image Stabilization Timeout-0ms	02080000	For other durations, the last two parameters can be modified
Image Stabilization Timeout-100ms	02080001	
Image Stabilization Timeout-400ms	02080004	
Image Stabilization Timeout-1000ms	0208000A	
Image Stabilization Timeout-2000ms	02080014	

No Leave No Read Timeout-1000ms	020B000A	For other durations, the last two parameters can be modified
No Leave No Read Timeout-3000ms	020B001E	
No Leave No Read Timeout-5000ms	020B0032	
No Leave No Read Timeout-10000ms	020B0064	
Fill Light - ON when Photographing	03000000	
Fill Light - always ON	03000001	
Fill Light - always OFF	03000002	
Deep Sleep-ON	02030000	
Deep Sleep-OFF	02030001	
Mute _ ON	04000000	
Mute _ OFF	04000001	
Passive Buzzer	04010005	
Passive_Low Frequency	04010000	
Passive_Intermediate Frequency	04010001	
Passive_High Frequency	04010002	
Active Buzzer	04010006	
Active Buzzer-High Level	04010003	
Active Buzzer-Low Level	04010004	
Beep for Programming Barcode_ON	04020000	
Beep for Programming Barcode _OFF	04020001	
Startup Beep_ON	04030000	
Startup Beep_OFF	04030001	
Good Read LED_ON	04040000	
Good Read LED_OFF	04040001	
Good Read Beep_ON	04040002	
Good Read Beep_OFF	04040003	
Timeout of Good Read Beep-30ms	0404011E	For other durations, the last two parameters can be modified
Timeout of Good Read Beep-60ms	0404013C	

Timeout of Good Read Beep-90ms	0404015A	
Timeout of Good Read Beep-120ms	04040178	
Data Output Encoding Format-GBK	04050000	
Data Output Encoding Format--UTF8	04050001	
Data Output Encoding Format--Original Data	04050002	
Data Output Encoding Format--UNICODE	04050003	
Chinese output shielding-ON	04050100	
Chinese output shielding-OFF	04050101	
Keyboard-US.	04060000	
Keyboard-Czech	04060001	
Keyboard-French	04060002	
Keyboard-Germany	04060003	
Keyboard-Hungary	04060004	
Keyboard-Italy	04060005	
Keyboard-Japan	04060006	
Keyboard-Spain	04060007	
Keyboard-Turkey Q	04060008	
Keyboard-Turkey F	04060009	
Keyboard-Mexico (Latin America)	0406000A	
Standard Keyboard	04070000	
Virtual Keyboard	04070001	
Virtual Keyboard_Ctrl Mode	04070010	
Virtual Keyboard_Alt Mode	04070011	
Virtual Keyboard_Control Character Output Off	04070012	
Image Mirroring Mode-ON	04080000	
Image Mirroring Mode-OFF	04080001	
Video Reverse OFF	04090000	

Video Reverse ON	04090001	
Invoicing Mode Enable	040B0000	
Invoicing Mode Disable	040B0001	
Local Invoicing Mode	040B1000	
Online Invoicing Mode	040B1100	
Keypad Numeric Output-On	040C0000	
Keypad Numeric Output-Off	040C0001	
Keypad Operator Output-On	040C0002	
Keypad Operator Output-Off	040C0003	
Enable Prefixes	05000000	
Disable Prefixes	05000001	
Modify Prefix	05000002	
Enable Sufixes	05010000	
Disable Sufixes	05010001	
Modify Suffixes	05010002	
Enable CODE ID	05020000	
Disable CODE ID	05020001	
Restore Default CODE ID	05020002	
Modify EAN13 CODE ID	05030000	
Modify EAN8 CODE ID	05030001	
Modify UPC-A CODE ID	05030002	
Modify UPCE0 CODE ID	05030003	
Modify UPCE1 CODE ID	05030004	
Modify CODE128 CODE ID	05030005	
Modify CODE39 CODE ID	05030006	
Modify CODE93 CODE ID	05030007	
Modify CodaBar CODE ID	05030008	
Modify Interleaved 2 of 5 CODE ID	05030009	

Modify Industrial 25 CODE ID	0503000A	
Modify Matrix 2 of 5 CODE ID	0503000B	
Modify CODE11 CODE ID	0503000C	
Modify MSI Plessey CODE ID	0503000D	
Modify RSS-14 CODE ID	0503000E	
Modify Limitted RSS CODE ID	05030010	
Modify Expanded RSS CODE ID	05030011	
Modify QR CODE CODE ID	05030012	
Modify DataMatrix CODE ID	05030013	
Modify PDF417 CODE ID	05030014	
Modify Micro QR CODE ID	05030015	
Modify Chinese Sensible (HanXin) CODE ID	05030016	
Modify Micro PDF417 CODE ID	05030017	
Modify Standard 2 of 5 CODE ID	05030018	
Modify Plessey CODE ID	05030019	
Modify ChinaPost 25 CODE ID	0503001A	
Modify Code 16K CODE ID	0503001B	
Modify Code 49 CODE ID	0503001C	
Modify Maxi Code CODE ID	0503001D	
Modify Aztec CODE ID	0503001E	
Modify GS1 Composite CODE ID	0503001F	
Tail OFF	05040000	
CR Tail	05040001	
TAB Tail	05040002	
CRLF Tail	05040003	
Transmit all Data	05050000	
Transmit the Start Data	05050001	
Transmit the End Data	05050002	

Transmit the Center Data	05050003	
Modify the Length for Start Data	05050004	
Modify the Length for End Data	05050005	
Enable Transmitting RF Information	05060000	
Disable Transmitting RF Information	05060001	
Modify RF Information	05060002	
Raw Data	05070000	
With Protocol	05070001	
GS Character Replacement Enable	050A0000	
GS Character Replacement Disable	050A0001	
GS Alternate Character Modification	050A0002	
Enable Reading Of Web Address Codes	050B0000	
Disable Reading Of Web Address Codes	050B0001	
Disable AIM ID	050C0001	
Enable AIM ID	050C0000	
**CodeID+AIM+custom	050D0000	
AIM+CodeID+custom	050D0001	
AIM+custom+CodeID	050D0002	
CodeID+custom+AIM	050D0003	
custom+CodeID+AIM	050D0004	
custom+AIM+CodeID	050D0005	
Fast POS Mode	06000000	
Serial Port & Full Codes ON	06000001	
Enable All Symbologies	07000000	
Disable All Symbologies	07000001	
Enhancement of literacy prohibits	07000007	
Enhancement of literacy enable	07000008	
Enable Default Symbologies	07000002	

Enable Transmit Check Digit	05090000	
Disable Transmit Check Digit	05090001	
Enable EAN13	07010000	
Disable EAN13	07010100	
EAN13 Add-On Code Required	07011000	
EAN13 Add-On Code Not Required	07011100	
Enable EAN13-2 Digit Add-On Code	07012000	
Disable EAN13-2 Digit Add-On Code	07012100	
Enable EAN13-5 Digit Add-On Code	07013000	
Disable EAN13-5 Digit Add-On Code	07013100	
Enable Transmission of EAN13 Parity Bits	07014000	
Disable Transmission of EAN13 Parity Bits	07014100	
Enable EAN8	07020000	
Disable EAN8	07020100	
EAN8 Add-On Code Required	07021000	
EAN8 Add-On Code Not Required	07021100	
Enable EAN8-2 Digit Add-On Code	07022000	
Disable EAN8-2 Digit Add-On Code	07022100	
Enable EAN8-5 Digit Add-On Code	07023000	
Disable EAN8-5 Digit Add-On Code	07023100	
Enable Transmission of EAN8 Parity Bits	07024000	
Disable Transmission of EAN8 Parity Bits	07024100	
Enable UPCA	07030000	
Disable UPCA	07030100	
UPCA Add-On Code Required	07031000	
UPCA Add-On Code Not Required	07031100	
Enable UPCA-2 Digit Add-On Code	07032000	
Disable UPCA-2 Digit Add-On Code	07032100	

Enable UPCA-5 Digit Add-On Code	07033000	
Disable UPCA-5 Digit Add-On Code	07033100	
Enable UPC-A to EAN13	05080000	
Disable UPC-A to EAN13	05080001	
Enable Transmission of UPCA Parity Bits	07034000	
Disable Transmission of UPCA Parity Bits	07034100	
Enable UPC-E0	07040000	
Disable UPC-E0	07040100	
UPC-E0 Add-On Code Required	07041000	
UPC-E0 Add-On Code Not Required	07041100	
Enable UPC-E0-2 Digit Add-On Code	07042000	
Disable UPC-E0-2 Digit Add-On Code	07042100	
Enable UPC-E0-5 Digit Add-On Code	07043000	
Disable UPC-E0-5 Digit Add-On Code	07043100	
Enable Transmission of UPC-E0 Parity Bits	07044000	
Disable Transmission of UPC-E0 Parity Bits	07044100	
Enable UPC-E1	07050000	
Disable UPC-E1	07050100	
UPC-E1 Add-On Code Required	07051000	
UPC-E1 Add-On Code Not Required	07051100	
Enable UPC-E1-2 Digit Add-On Code	07052000	
Disable UPC-E1-2 Digit Add-On Code	07052100	
Enable UPC-E1-5 Digit Add-On Code	07053000	
Disable UPC-E1-5 Digit Add-On Code	07053100	
Enable Transmission of UPC-E1 Parity Bits	07054000	
Disable Transmission of UPC-E1 Parity Bits	07054100	
Enable Code128	07060000	
Disable Code128	07060100	

Set the Minimum Length for Code128 to 0	07061000	For other durations, the last two parameters can be modified
Set the Minimum Length for Code128 to 4	07061004	
Set the Maximum Length for Code128 to 32	07061120	
Set the Maximum Length for Code128 to 255	070611FF	
Code128 Prefix (11)-On	07062000	
Code128 Prefix (11)-Off	07062100	
Enable Code39	07070000	
Disable Code39	07070100	
Set the Minimum Length for Code39 to 0	07071000	For other durations, the last two parameters can be modified
Set the Minimum Length for Code39 to 4	07071004	
Set the Maximum Length for Code39 to 32	07071120	
Set the Maximum Length for Code39 to 255	070711FF	
Output of Code39 Start Character	07072000	
Disable Output of Code39 Stop Character	07072100	
Output of Code39 Stop Character	07073000	
Disable Output of Code39 Stop Character	07073100	
Support Code32 Mode	07074000	
Disable Support Code32 Mode	07074100	
Output Code 32 Prefix A	07076000	
Disable Output Code 32 Prefix A	07076100	
Support FullAsc Mode	07075000	
Disable Support FullAsc Mode	07075100	
Code 39 Handles Verification	07077000	
Code 39 Does Not Handle Verification	07077100	
Code39 Outputs Parity Bits	07078000	
Code39 Does Not Output Parity Bits	07078100	
Enable Code93	07080000	
Disable Code93	07080100	

Set the Minimum Length for Code93 to 0	07081000	
Set the Minimum Length for Code93 to 4	07081004	For other durations, the last two parameters can be modified
Set the Maximum Length for Code93 to 32	07081120	
Set the Maximum Length for Code93 to 255	070811FF	
Enable Codabar	07090000	
Disable Codabar	07090100	
Set the Minimum Length for Codabar to 0	07091000	
Set the Minimum Length for Codabar to 4	07091004	For other durations, the last two parameters can be modified
Set the Maximum Length for Codabar to 32	07091120	
Set the Maximum Length for Codabar to 255	070911FF	
Output of CodaBar Start/Stop Character	07092000	
Disable Output of CodaBar Start/Stop Character	07092100	
CodaBar Do Not Process Verification	07093000	
CodaBar Mod10 Check	07093100	
CodaBar Mod16 Check	07093200	
CodaBar Double Check	07093300	
CodaBar Parity Bit Output	07094000	
CodaBar Parity Bit Not Output	07094100	
Enable Interleaved 2 of 5	070A0000	
Disable Interleaved 2 of 5	070A0100	
Set the Minimum Length for Interleaved 2 of 5 to 0	070A1000	
Set the Minimum Length for Interleaved 2 of 5 to 4	070A1004	For other durations, the last two parameters can be modified
Set the Maximum Length for Interleaved 2 of 5 to 32	070A1120	
Set the Maximum Length for Interleaved 2 of 5	070A11FF	

to 255		
Interleaved 2 of 5 Verification Format Mod10	070A2000	
Interleaved 2 of 5 Verification Format NONE	070A2100	
Interleaved 2 of 5 Outputs Parity Bits	070A3000	
Interleaved 2 of 5 Does Not Output Parity Bits	070A3100	
Enable Industrial 2 of 5	070B0000	
Disable Industrial 2 of 5	070B0100	
Set the Minimum Length for Industrial 25to 0	070B1000	
Set the Minimum Length for Industrial 25to 4	070B1004	For other durations, the last two parameters can be modified
Set the Maximum Length for Industrial 25to 32	070B1120	
Set the Maximum Length for Industrial 25to 255	070B11FF	
Industrial 25Verification Format Mod10	070B2000	
Industrial 25Verification Format NONE	070B2100	
Industrial 25Outputs Parity Bits	070B3000	
Industrial 25Does Not Output Parity Bits	070B3100	
Enable Matrix 2 of 5	070C0000	
Disable Matrix 2 of 5	070C0100	
Set the Minimum Length for Matrix 2 of 5to 0	070C1000	
Set the Minimum Length for Matrix 2 of 5to 4	070C1004	For other durations, the last two parameters can be modified
Set the Maximum Length for Matrix 2 of 5to 32	070C1120	
Set the Maximum Length for Matrix 2 of 5to 255	070C11FF	
Matrix 2 of 5Verification Format Mod10	070C2000	
Matrix 2 of 5Verification Format NONE	070C2100	
Matrix 2 of 5Outputs Parity Bits	070C3000	
Matrix 2 of 5Does Not Output Parity Bits	070C3100	

Enable Code11	070D0000	
Disable Code11	070D0100	
Set the Minimum Length for Code11 to 0	070D1000	For other durations, the last two parameters can be modified
Set the Minimum Length for Code11 to 4	070D1004	
Set the Maximum Length for Code11 to 32	070D1120	
Set the Maximum Length for Code11 to 255	070D11FF	
Code11 Verification Format 1bit	070D2000	
Code11 Verification Format 2bit	070D2100	
Code11 Outputs Parity Bits	070D3000	
Code11 Does Not Output Parity Bits	070D3100	
Enable MSI Plessey	070E0000	
Disable MSI Plessey	070E0100	
Set the Minimum Length for MSI Plessey to 0	070E1000	For other durations, the last two parameters can be modified
Set the Minimum Length for MSI Plessey to 4	070E1004	
Set the Maximum Length for MSI Plessey to 32	070E1120	
Set the Maximum Length for MSI Plessey to 255	070E11FF	
MSI Plessey Verification Format Single Mod10	070E2000	
MSI Plessey Verification Format Double Mod10	070E2100	
MSI Plessey Outputs Parity Bits	070E3000	
MSI Plessey Does Not Output Parity Bits	070E3100	
Enable RSS-14	070F0000	
Disable RSS-14	070F0100	
Enable Transmission of RSS-14 Parity Bits	070F4000	
Disable Transmission of RSS-14 Parity Bits	070F4100	

RSS-14 AI Output with Parentheses	070F5000	
RSS-14 AI Output Without Parentheses	070F5100	
Enable RSS-Limited	070F1000	
Disable RSS-Limited	070F1100	
Enable Transmission of RSS-Limited Parity Bits	070F6000	
Disable Transmission of RSS-Limited Parity Bits	070F6100	
RSS-Limited AI Output Without Parenthese	070F7000	
RSS-Limited AI Output with Parentheses	070F7100	
Enable RSS-Expanded	070F2000	
Disable RSS-Expanded	070F2100	
Enable Transmission of RSS-Expanded Parity Bits	070F8000	
Disable Transmission of RSS-Expanded Parity Bits	070F8100	
RSS-Expanded AI Output Without Parentheses	070F9000	
RSS-Expanded AI Output with Parentheses	070F9100	
Set the Minimum Length for RSS to 0	070F3000	For other durations, the last two parameters can be modified
Set the Minimum Length for RSS to 4	070F3004	
Set the Maximum Length for RSS to 32	070F3120	
Set the Maximum Length for RSS to 255	070F31FF	
Enable Standard 2 of 5	07200000	
Disable Standard 2 of 5	07200100	
Set the Minimum Length for Standard 2 of 5 to 0	07201100	For other durations, the last two parameters can be modified
Set the Minimum Length for Standard 2 of 5 to 4	07201104	

Set the Maximum Length for Standard 2 of 5 to 32	07201120	
Set the Maximum Length for Standard 2 of 5 to 255	072011FF	
Standard 2 of 5 Verification-On	07202000	
Standard 2 of 5 Verification-Off	07202100	
Standard 2 of 5 Outputs Parity Bits	07203000	
Standard 2 of 5 Does Not Output Parity Bits	07203100	
Enable Plessey	07210000	
Disable Plessey	07210100	
Set the Minimum Length for Plessey to 0	07211100	
Set the Minimum Length for Plessey to 4	07211104	For other durations, the last two parameters can be modified
Set the Maximum Length for Plessey to 32	07211120	
Set the Maximum Length for Plessey to 255	072111FF	
Plessey Verification-On	07212000	
Plessey Verification-Off	07212100	
Plessey Outputs Parity Bits	07213000	
Plessey Does Not Output Parity Bits	07213100	
Enable ChinaPost 25	07220000	
Disable ChinaPost 25	07220100	
Set the Minimum Length for ChinaPost 25 to 0	07221100	
Set the Minimum Length for ChinaPost 25 to 4	07221104	
Set the Maximum Length for ChinaPost 25 to 32	07221120	For other durations, the last two parameters can be modified
Set the Maximum Length for ChinaPost 25 to 255	072211FF	
ChinaPost 25 Verification-On	07222000	
ChinaPost 25 Verification-Off	07222100	

ChinaPost 25 Outputs Parity Bits	07223000	
ChinaPost 25 Does Not Output Parity Bits	07223100	
Enable Code16K	07230000	
Disable Code16K	07230100	
Set the Minimum Length for Code16K to 0	07231100	For other durations, the last two parameters can be modified
Set the Minimum Length for Code16K to 4	07231104	
Set the Maximum Length for Code16K to 32	07231120	
Set the Maximum Length for Code16K to 255	072311FF	
Enable Code49	07240000	
Disable Code49	07240100	
Set the Minimum Length for Code49 to 0	07241100	For other durations, the last two parameters can be modified
Set the Minimum Length for Code49 to 4	07241104	
Set the Maximum Length for Code49 to 32	07241120	
Set the Maximum Length for Code49 to 255	072411FF	
Enable QR	07140000	
Disable QR	07140100	
Enable QR Mode1	07141000	
Disable QR Mode1	07141100	
QR Prefix (11)-On	07142000	
QR Prefix (11)-Off	07142100	
Enable DM	07150000	
Disable DM	07150100	
Enable Multiple DM	07151000	
Disable Multiple DM	07151100	
Enable PDF417	07160000	
Disable PDF417	07160100	
Enable Chinese Sensible(HanXin) Code	07170000	
Disable Chinese Sensible(HanXin) Code	07170100	

Enable Micro PDF417	07180000	
Disable Micro PDF417	07180100	
Enable Micro QR	07190000	
Disable Micro QR	07190100	
Enable Maxi Code	071A0000	
Disable Maxi Code	071A0100	
Enable Aztec	071B0000	
Disable Aztec	071B0100	
Enable GS1 Composite	071C0000	
Disable GS1 Composite	071C0100	
Save	08000000	
Cancel the Last Digit	08000001	
Cancel All Digits	08000002	
Cancel Current Setting	08000003	
0	08010000	
1	08010001	
2	08010002	
3	08010003	
4	08010004	
5	08010005	
6	08010006	
7	08010007	
8	08010008	
9	08010009	
A	0801000A	
B	0801000B	
C	0801000C	
D	0801000D	

E	0801000E	
F	0801000F	

Appendix H: AIM ID List

Barcode Type	AIMID	Possible aim ID qualification parameters
Code128	]C	0、1
EAN8	]E4	
EAN8 with Addon	]E3	
EAN13	]E0	
EAN13 with Addon	]E3	
UPCA	]E0	
UPCA with Addon	]E3	
UPCE	]E0	
UPCE with Addon	]E3	
Code39	]A	0、1、3、4、5、7
Code93	]G0	
Codabar	]F	0、2、4
Code11	]H	0、1、3
RSS	]e0	
RSS-Limited	]e0	
RSS-Expanded	]e0	
Industrial2of5	]S0	
Interleaved2of5	]I	0、1、3
Matrix2of5	]X0	
MSI Plessey	]M	0、1
QR Code	]Q	0、1、2、3
PDF417	]L0	
DataMatrix	]d	0、1、2、4、5
China Post 25	]X0	
Code16K	]K0	
Plessey	]P0	

Standard2of5	]R0	
Aztec	]z	0、1
Chinese-sensible code	]X0	
Maxicode	]U	0、1
MicroQR	]Q1	
MicroPDF417	]L0	