User Manual

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.

The Manual is copyrighted. No part of this publication may be reproduced, distributed or used in any form without written permission.

Revision History

Version	Date	Modified Content
V1.0.0	2018.12	First draft
V1.1.0	2019.06	1. Modify programming barcode format 2. Added serial command set
V1.1.1	2019.07	1. Added sleep function 2. Added a new support code system (MSI, RSS-Limited, RSS-Expanded)
V1.1.2	2019.08	Default scan model changed from Manul mode- Edge Trigger to Manul mode- Level Trigger
V1.1.3	2019.11	1. Change: (1) Module size: Change from 21.4 mm x 12.5 mm x 11.8 mm to 21.4 mm x 12.38 mm x 11.8 mm (2) Steady direction duration:Default: 400ms changed to 0ms 2. Add functions: (1) Invoicing mode (Local Invoicing & Online Invoicing) (2) Control character output function (3) GS character replacement function (4) Device ID write-read function (5) The function of strengthening reading ability (6) Code32 prefix character A output function (7) Batch Programming
V1.1.4	2020.3	Add Features: (1) The positioning light is always on when taking pictures (2)Web Code Reading Enable/Disable (3) Trigger Command Answer Enable/Disable (4) Modify MSI to MSI Plessey (5) Supplementary Appendix E: Code ID List

V1.2.0	2021.03	(1) Add CRC Verification Code Description (2) Add Description of Related Tag Bits (3) Add HID-POS protocol description (4) Add port VID/PID description (5) Add continuous mode key pause switch setting code (6) Add with protocol output description information, effective only in UTF8 data format (7) Add analog keypad (keypad numeric and operator output) (8) Add a new code system Code ID (Mico QR and Hanxin Code) (9) Add and get all the information of device version (10) Add the SN number of the read chip (11) Add QR Mode 1 support (12) Add QR prefix (11) and Code128 prefix (11) output support (13) Add check processing of each code system and check bit output setting (14) Add the AI bracket output setting of GS1 Database related code system (15) Add new code system Mico QR and Chinese Sensible(HanXin) Code. (16) Add Instruction Related Examples (17) Change ID output information, add SN: product serial number/FID: manufacturer information/MID: product model user-defined information (18) Change the allowable reading length range of default open barcode: 4-20-->0-255 (19) Update Appendix G: Bulk Setup Command Parameter List (20) Fixed Read/Write Instruction Example Returns (21) Correct Write ID Instruction Format Description (22) Remove Mild Sleep (23)Change Symbol Contrast: ≥25% -->≥20%

Directory

Disclaimer....1
Revision History....2
Directory....4
Part I Product Description....8
Part II Configuration Instructions for Serial Port Commands....18
Chapter 1 Serial Commands....19
1.1 Operation of Reading Flag....19
1.2 Operation of Writing Flag....21
1.3 Flags Saved to Internal Flash Instructions....23
1.4 Flags Restored to Factory Settings....23
Chapter 2 Flags....25
Part III Configuration Instructions for Programming Barcode....48
Chapter 1 Operation Settings....49
1.1 Use of Programming Barcode....49
1.2 Restore Factory Defaults....50
1.3 User Default Settings....50
Chapter 2 Communication Interface....51
2.1 Selection of Communication Mode....51
2.1.1 Output Mode of Communication Port....51
2. 2 Serial Communication Interface....52
2.2.1 Baud Rate....52
2.2.2Parity Methods....53
2.3 Configuration of USB-HID Interface Related Parameter....54
2.3.1 Selection of HID Devices....54
2.3.2 Access Cycle of PC to HID Device....55
2.3.3 Timeout Before HID Release....55
2.3.4Timeout After HID Release....55
2.3.5 CapsLock Status Settings....56
2.3.6 Leading Key Output....56
Chapter 3 Scanning Mode....57
3.1 Manual Mode....57
3.1.1 Trigger Conditions....57
3.1.2 Decode Session Timeout....57
3.2 Command Trigger Mode....58

3.2.1 Decode Session Timeout....59
3.3 Continuous Mode....59
3.3.1 Timeout Between Decodes....59
3.3.2 Timeout between Decodes (Same Barcode)....60
3.3.3 Decode Session Timeout....61
3.3.4 Continuous mode key pause switch....61
3.4 Sense Mode....62
3.4.1 Decode Session Timeout....62
3.4.2 Timeout between Decodes....62
3.4.3 Timeout between Decodes (Same Barcode)....62
3.4.4 Sensitivity....62
3.4.5 Image Stabilization Timeout....63
Chapter 4 Filling Light....64
4.1 Fill Light....64
4.2 Positioning....64
Chapter 5 Prompt Output....66
5.1 Buzzer Master Switch....66
5.2 Buzzer Settings....66
5.2.1 Passive Buzzer....66
5.2.2 Active Buzze....66
5.3 Good Read Beep for Programming Barcode....67
5.5 Good Read LED/Beep....68
5.6 Data Output Encoding Format....69
5.7 Different Country Keyboard Settings....69
5.8 Virtual keyboard enable....71
5.9 Chinese output shielding....74
5.10 Analog keypad....74
5.10.1 Output of numeric function of keypad....74
5.10.2 Output of keypad operator function....74
5.11Image Mirroring Mode....75
5.12 Reverse Scanning Module....75
5.13 Invoicing mode....76
5.14 Read Device Version Information....76
5.15Write/Read Device ID....77
5.16Read Chip SN....78
Chapter 6 Prefix & Suffix....79
6.1 Prefix....79

6.2 Suffix 80
6.3 Code ID 80
6.3.1 Custom Code ID 80
6.3.2 Modify Code ID 81
6.4 Tail 83
6.5 Data Character 84
6.5.1 Date Character Interception 84
6.5.2 Modify the Length for Data 84
6.6 RF Information 85
6.7 Output Protocol 85
6.8 GS Character Replacement 86
6.9 Web address code recognition 87
Chapter 7 Quick Operation 88
7.1 Fast POS Mode 88
7.2 Serial Port & Full Codes On Mode 88
Chapter 8Symbologies 89
8.1 Global Shortcuts 89
8.1.1 Global Operations 89
8.1.2 Product Barcode Check Digit Output Enable 89
8.1.3 Enhancement of literacy 89
8.2 1D Symbologies 90
8.2.1 EAN 13 90
8.2.2 EAN 8 91
8.2.3 UPC-A 92
8.2.4 UPC-E0 94
8.2.5 UPC-E1 95
8.2.6 Code128 96
8.2.7 Code39 97
8.2.8 Code93 99
8.2.9 CodaBar 100
8.2.10 Interleaved 2 of 5 102
8.2.11 Industrial 25 103
8.2.12 Matrix 2 of 5 104
8.2.13 Code11 105
8.2.14 MSI Plessey 106
8.2.15 RSS-14 107
8.2.16 RSS-Limited 108

8.2.17 RSS-Expanded 109
8.3 Operation of 2D Symbologies 110
8.3.1 QR Code 110
8.3.2 Data Matrix (DM) 111
8.3.3 PDF417 111
8.3.4Mico QR 111
8.3.5Chinese Sensible(HanXin) Code 112
Chapter 9 Save and Cancle 113
9.1 Save 113
9.2 Cancel 113
Chapter 10 Batch Setting 114
Appendix 115
Appendix A: Digit Barcodes 115
0 ～ 9 115
A ～F 116
Appendix B: Example of Parameter Settings 117
Appendix C: Default Settings Table 120
Appendix D: Common Serial Commands 127
Appendix E: Code ID List 128
Appendix F: ASCII Table 129
Appendix G Batch Setting Code Content Parameter List 134

Part I Product Description

Chapter 1 Module Settings



☞The is a highly integrated, high-performance, video 2D bar code imaging module

☞The module is compact in size, making it flexible for a wide range of devices.

☞With advanced image recognition algorithms, the can easily scan all types of 1D barcodes and 2D barcodes.

☞ The has strong reading ability and is adaptable to a variety of demanding and complex environments. For example, in a variety of illumination environments, it performs excellently in reading code within the large temperature and humidity range.

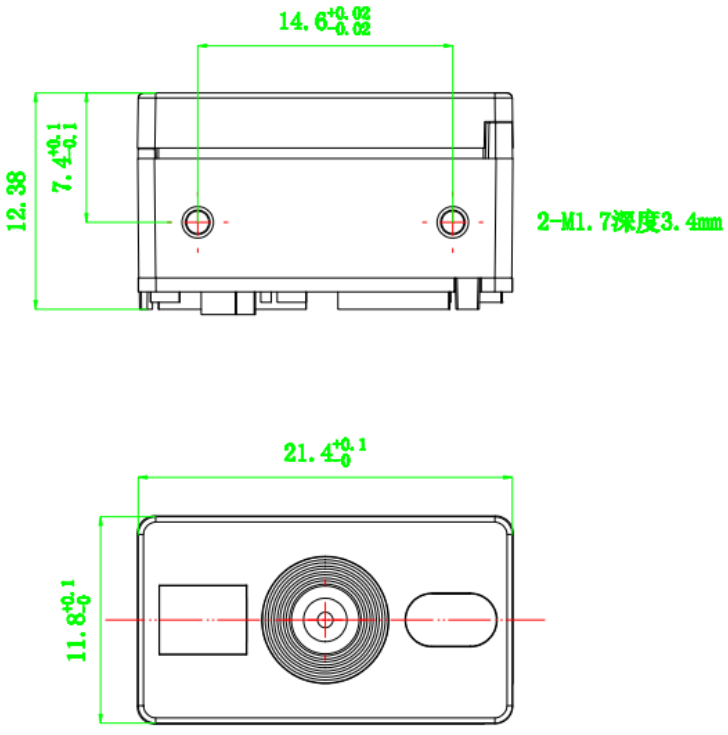
Chapter 2 Module Parameters

Scaning Code	Image Sensor		640 (Horizontal) X 480 (Vertical) CMOS
	Light Source		White light
	Horizontal View Angle		31 °
	Symbologies	2D	QR Code,PDF417,DataMatrix(ECC200),Chinese Sensible(HanXin) Code,,Mico QR
		1D	EAN13,EAN8,UPC-A,UPC-E0,UPC-E1,Code128,Code 39,Code93,CodaBar ,Interleaved 2 of 5,Industrial 25,Matrix 2 of 5,Code11,MSI Plessey,RSS-14, RSS-Limited, RSS-Expanded
	Depth of Field	EAN-13	4.0~20.0cm （13mil）
		Code128	4.5 ~ 25.0cm （15mil ）
		QR Code	4.0 ~ 18cm (15mil)
	Scan Angle		Roll:360 °; Pitch: ±60 °; Skew: ±60 °
	Resolution	1D	≥5mil
		2D	≥ 10mil
	Symbol Contrast		≥20%
Physical parameter	Weight		< 7g
	Dimensions		21.4mm x 12.5mm x 11.8mm
	Interface		TTL-232 / USB 2.0 Full Speed
	Voltage		DC +3.3V ±5%
	Current @DC 3.3V	Operating	120mA
		Sleep	500 μA
Environmental parameters	Operating Temperature		-20℃ ~ 60℃
	Storage Temperature		-40℃ ~ 70℃
	Working Humidity		

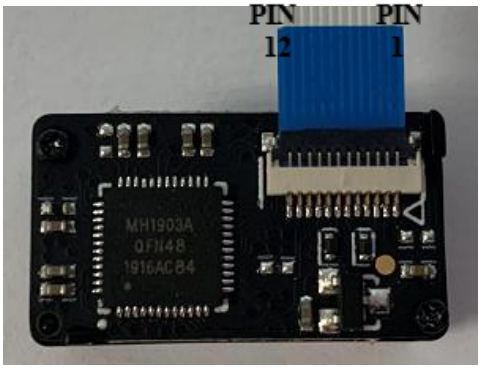
			5% RH~95% RH (Non-condensing)
Reliability	Anti-mechanical shock	Shock	5~200Hz, 10Grms, 3axes, 1.5Hr
		Fall	It can withstand falling from as high as 1.2 meters to the concrete floor.
	Heat Shock Resistance	Lowest Temperature	-20 ℃ (-4 ℉)
		Maximum Temperature	60 ℃ (140 ℉)
		Cycles	High Temperature: 30 minutes Low Temperature: 30 minutes
		Period	24h

Module Size Chart

(unit: mm)



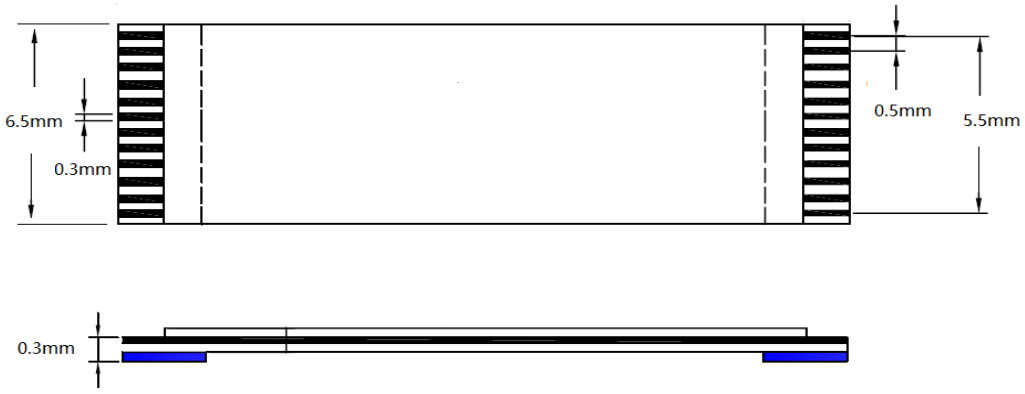
Chapter 3 Interface Description



The 12PIN interface definitions and signal descriptions for the are listed as follows.

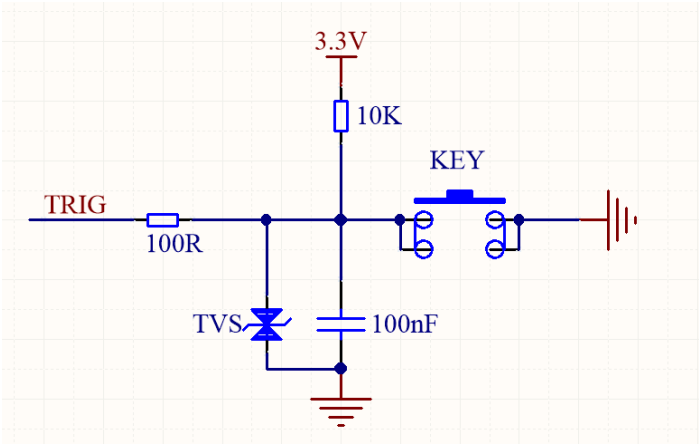
PIN	Input/Output	Definition	Description
PIN1	-	TEST1	Internal test pin Not Connect
PIN2	Power Supply	VCC	Input +3.3V
PIN3	Ground	GND	-
PIN4	Input	RX	TTL level 232 send receive data
PIN5	Output	TTL level 232 send receive data	TTL level 232 send data
PIN6	Input	D-	USB DN signal
PIN7	Output	D+	USB DP signal
PIN8	Ground	GND	-
PIN9	Output	BEEP	PWM controlled AC signal used to drive an external magnetic beeper Idle Low
PIN10	Output	DLED	Prompt light for successful decoding Idle Low
PIN11	-	TEST2	Internal Test Pin Not Connect.
PIN12	Input	TRIG	The signal to Trigger the module Active low

The requires a 12-pin FFC cable to be connected to the peripherals.

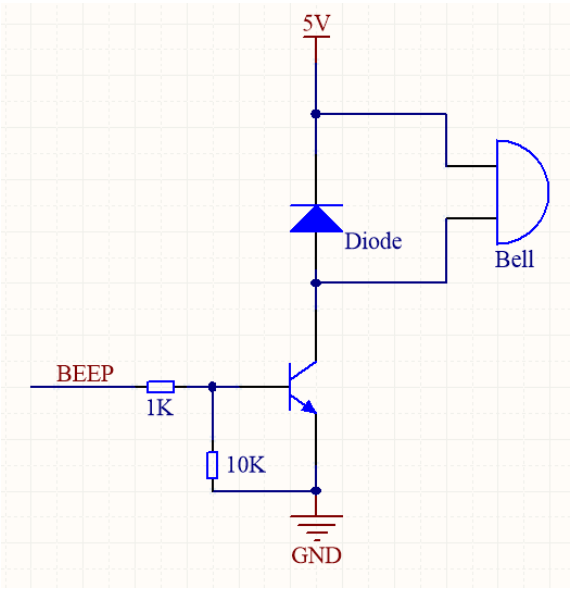


The power supply, TTL level, USB and other pins of the module are directly connected to external circuits. The trigger pin and buzzer pin require a drive circuit. Please refer to the following circuit design:

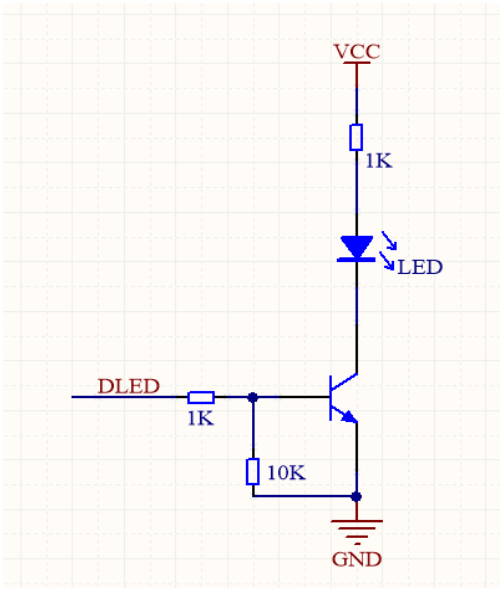
☞ Drive Circuit of Trigger Pin (TRIG):



☞ Drive Circuit of Passive Buzzer:



☞ Drive Circuit of DLED Pin:



The BEEP and DLED pins will give out a high pulse after successful decoding.

Note: When a good read occurs, the Beep pin produces a high level output for about 60ms and the DLED pin produces a high level output for about 100ms

Chapter 4 Requirements for Use

Environmental requirements

Working Temperature		-20℃ ~ 60℃
Storage Temperature		-40℃ ~ 70℃
Working Humidity		5%RH~95%RH（Not Coagulated）

ESD

Always exercise care when handling the engine outside its package. Be sure grounding wrist straps and properly grounded work areas are used.

Thermal Considerations

Electronic components in the will generate heat during the course of their operation. Operating the continuously for an extended period may cause temperatures to rise.

The following precautions should be taken into consideration when integrating the .

☞ Reserve sufficient space for good air circulation in the design.

☞ Avoid wrapping the with thermal insulation materials such as rubber.

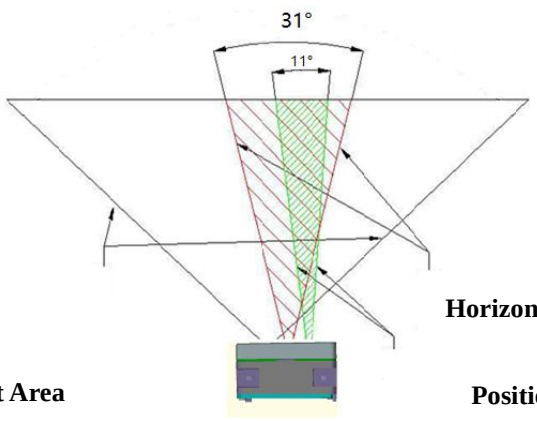
Ripple Noise

Image sensor and decoder chip are directly fed by the input power of . To ensure the image quality, a power supply with low ripple noise is needed..

Acceptable ripple range (peak-to-peak) : ≤50mV.

Optics

☞Distribution of Reading Area

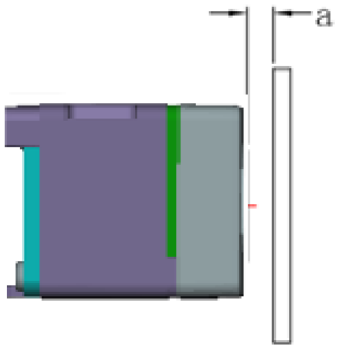


Horizontal Viewable Area

Fill Light Area **Positioning Area**

☞ Window placement

The window should be positioned properly and mounted close to the front of the engine (parallel) to let the illumination and aiming beams pass through as much as possible and no reflections back into the engine (reflections can degrade the reading performance).In order to reach better reading performance, the distance from the front of the engine housing to the nearest surface of the window should not exceed a (a =0.6mm) and the thickness of window should not exceed 2mm. The gap between the front of the module and the near end of the window is for protecting the module and window from external impact if falling.



If the window is required to be in a tilted position, the above distance requirements should be met and tilt angle should ensure no reflections back into the lens.

☞Scratch Resistance and Coating

Since the module uses image acquisition to recognize, the window material and color selection should prefer index material of high light transmittance, low blur, and uniform refraction. At the same time, the scratches on the window will reduce the recognizing performance. It is suggested to use abrasion resistant window material or coating.

Chapter 5 Development Tools

The has development tools to support application development to meet rapid assessment and development needs.

DECODE_EVB

The DECODE_EVB is provided to help users to test and evaluate the , which contains beeper & beeper driver circuit, LED & LED driver circuit, TTL-232 to RS-232 converter,rigger & reset button,etc. The module can be connected to the DECODE_EVB via a 12-pin FFC cable type 1 (contacts on the same side). And USB connection or RS-232 connection can be used when connecting the DECODE_EVB to a host device.

Part II 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.

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:

```
unsigned int crc_cal_by_bit(unsigned char* ptr, unsigned int len)
{
unsigned int crc = 0;
while(len-- != 0)
{
for(unsigned char i = 0x80; i != 0; i /= 2)
{
crc *= 2;
if((crc&0x10000) !=0) //上一位 CRC 乘 2 后，若首位是 1，则除以 0x11021
crc ^= 0x11021;
if((*ptr&i) != 0) //如果本位是 1，那么 CRC = 上一位的 CRC + 本位/CRC_CCITT
crc ^= 0x1021;
}
ptr++;
}
return crc;
}
```

☞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:

```
unsigned int crc_cal_by_bit(unsigned char* ptr, unsigned int len)
{
unsigned int crc = 0;
while(len-- != 0)
{
for(unsigned char i = 0x80; i != 0; i /= 2)
{
crc *= 2;
if((crc&0x10000) !=0) //上一位 CRC 乘 2 后，若首位是 1，则除以 0x11021
crc ^= 0x11021;
if((*ptr&i) != 0) //如果本位是 1，那么 CRC = 上一位的 CRC + 本位/CRC_CCITT
crc ^= 0x1021;
}
ptr++;
}
return crc;
}
```

☞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 Table 1-1 for details.

Flag	0x0000
Data Bit	Function
Bit7	0: Good Read LED OFF 1: Good Read LED ON
Bit6	0: Mute ON 1: Mute OFF
Bit5-4	00: Positioning Light - always OFF 01: Positioning Light - ON when Photographing 10: Positioning Light - always ON 11: Positioning Light - always ON when Photographing
Bit3-2	00: Fill Light - always OFF 01: Fill Light - ON when Photographing 10/11: Fill Light - always ON
Bit1-0	00: Manual Mode 01: Command Trigger Mode 10: Continuous Mode 11: Sense Mode
Flag	0x0001
Bit7	Trigger command answer switch 0: Trigger command response allowed 1: Trigger command response disable
Bit6	Reserved
Bit5	Trigger Conditions 0: Level Trigger 1: Edge Trigger
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	0x0007
Data Bit	Function
Bit7	Automatic Deep Sleep Function 0: Exit 1: Enter
Bit6-0	Deep Sleep Timeout(high Bit14-8) Unit 100ms
Flag	0x0008
Data Bit	Function
Bit7-2	Deep Sleep Timeout (low Bit7-0) Unit 100ms
Flag	0x0009
Data Bit	Function
Bit7-2	Timeout Before 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
Bit7-2	Timeout After HID Release.Timeout = (Reg0x000C[7:2]) ms
Bit1	CapsLock Switch. 0: OFF 1: ON
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	Reserved
Bit3-2	Encoding format of Output data 00: GBK 01: UNICODE 10: Original Data 11: UTF8

Bit1-0	Output port mode 00: TTL-232 Serial Output 01: USB -HID 10: Serial & HID Simultaneous Output 11: Virtual Serial Port of USB
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: 10ms) 0x00-0xFF: 0-2550ms
Flag	0x0015
Bit7-2	Reserved
Bit1	Select ion of the Invoicing Mode 0: Local Invoicing Mode 1: Online Invoicing Mode
Bit0	Selection of HID Devices 0: KBW 1: POS
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 ReplacementCharacter 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: 0x09C4: Serial port baud rate is 1200 bps 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 Example: 9600 baud rate: 0x002A = 0x39, 0x002B = 0x01
Flag	0x002C
Data Bit	Function
Bit7-4	Reserved
Bit3	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 ofEAN13 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 ofEAN8Parity 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 ofUPC-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 ofUPC-E0Parity 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 ofUPC-E1Parity 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 NotTransmit 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	CodaBarTransmit Check Digit 0: Do NotTransmit 1: Transmit
Bit6-4	Reserved
Bit3-2	CodaBar Verification Processing 00: Do Not Process Verification 01: MOD 16 10: MOD 10 11: Double Check
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: DisableQR 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 NotTransmit 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 NotTransmit 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 5Verify Format Setting 0: None 1: MOD10
Bit1	Matrix 2 of 5Transmit Check Digit 0: Do NotTransmit 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 NotTransmit 1: Transmit
Bit0	Enable/Disable Code11 0: Disable Code11 1: Enable Code11
Flag	0x004A
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 PlesseyVerify Format Setting 0: Single Mod10 Check 1: Double Mod10 Check
Bit1	MSI PlesseyTransmit Check Digit 0: Do NotTransmit 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 forMSI 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-14AI Output with Parentheses 0: with Parentheses 1: Without Parentheses
Bit6-1	Reserved
Bit0	Enable/Disable RSS-14 0: Disable RSS-14 1: Enable RSS-14
Flag	0x0050
Data Bit	Function
Bit7	RSS-LimitedAI Output with Parentheses 0: with Parentheses 1: Without Parentheses
Bit6-1	Reserved
Bit0	Enable/Disable RSS-Limited 0: Disable RSS-Limited 1: Enable RSS-Limited
Flag	0x0051

Data Bit	Function
Bit7	RSS-ExpandedAI Output with Parentheses 0: with Parentheses 1: Without Parentheses
Bit6-1	Reserved
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	0x0058
Data Bit	Function
Bit7-1	Reserved
Bit0	Mico QR 0: Disable 1: Enable
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: RFCharacter Value, Up to 15Byte
Flag	0x0091 – 0x00A5
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 F 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 forEnd Data 0x00-0xFF: 0-255 characters
Flag	0x00D9(Write-OnlyFlag)
Data Bit	Function
Bit7-0	Function Flag 0x50: Restore Factory Defaults 0x55: Restore Custom Defaults 0x56: Save as Custom Defaults 0xA5: Deep sleep, Device can be waken up through serial port interrupt, and the serial port command is invalid (this function is valid only for manual mode) 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 0x01: .....
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 0x64: V1.00 0x6E: V1.10 0x78: V1.20 0x82: V1.30 0x8C: V1.40 .....
Flag	0x00E3 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Year (Add 2000 to the value to epresent the year) 0x12: 2018 0x13: 2019 .....
Flag	0x00E4 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Month (This value represents Month X) 0x09: Sep. 0x0A: Oct. 0x0B: Nov. .....
Flag	0x00E5 (Read-Only Flag)
Data Bit	Function
Bit7-0	Software Date (This value represents Date) 0x0A: 10th 0x0B: 11st .....

Part III Configuration Instructions for Programming Barcode

Chapter 1 Operation Settings

The factory default settings of the 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.



**Enter Setup Exit Setup

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 paramet.

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 DefaultsRestore Custom Defaults

Chapter 2 Communication Interface

The scanning module provides a TTL-232 serial communication interface and a USB interface (optional function) for communication with the host. The reading data can be received through the communication interface.

2.1 Selection of Communication Mode

The USB-HID mode is default for communication. Users can switch between communication port output modes by reading code settings (TTL-232 Serial Port Mode / Virtual Serial Port / USB-HID Mode). When USB output and serial port output are needed at the same time, you can select the HID & TTL Simultaneous Output Mode by reading the programming barcode. When users switch communication mode, it is necessary to wait for the device initialization to complete before performing related operations.

☞ 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.

☞ Note1::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	0x1FC9	0x5AA7
HID-POS	0x1FCA	0x5AA8

2.1.1 Output Mode of Communication Port

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



TTL-232 Serial Port Mode ****USB-HID Mode**



USB Virtual Serial Port Mode **HID & TTL Simultaneous Mode**

2.2 Serial Communication Interface

The serial communication interface is a common way to connect the scanning module to the host device. When the serial communication interface in running, the communication module must be completely matched with the host device to ensure smooth communication and correct content.

The serial communication interface provided by the scanning module are TTL -level signals. TTL-232 can be used for most application architectures.For those requiring RS-232, an external conversion circuit is needed.

The default serial communication parameters of the scanning module are as follows. When they are inconsistent with the host device, they can be modified by reading the programming barcode.

Default communication parameters of TTL-232:

Parameter	Default
Serial Communication Type	TTL-232
Baud Rate	9600
Parity Type	None
Data Bits	8
Stop Bits	1

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**

2.2.2Parity Methods

There are 3 alternative parity methods, as follows:



****None**



ODD Parity **Even Parity**

2.3Configuration of USB-HID Interface Related Parameter

2.3.1 Selection of HID Devices

When the product is set as HID devices,it could be two different devices。Users can scan the following programming barcode to set.



**HID-KBW HID-POS

HID-POS acquire scan data

After scanning and decoding a barcode, the device would send the following input message.

Data reception								
	Bit							
Byte	7	6	5	4	3	2	1	0
0	Message ID=0x02							
1	Bar Code 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)							

2.3.2 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

2.3.3 Timeout Before HID Release

After reading the following programming barcode, you can modify the timeout before the HID is released (that is, the timeout from valid message to release message). The timeout is from 1ms to 63ms.



**1ms 2ms



5ms 10ms

2.3.4Timeout After HID Release

After reading the following programming barcode, you can modify the timeout after the HID is released (that is, the timeout from the release of the message to the next valid message). The timeout is from 1ms to 63ms.



**1ms 2ms



5ms 10ms

2.3.5 CapsLock Status Settings



** CapsLock-Off CapsLock-On

2.3.6 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 OutputEnable HID Leading Key Output

Chapter 3 Scanning Mode

3.1 Manual Mode

Manual mode is a default scanning module. In manual mode, press the trigger button, the scanning module starts shooting and reading. In the limited duration of "Decode Session Timeout". After successful reading, the scanning module will output the scanned content through the communication interface and stop reading, if you need to one more reading, you need to re-trigger the button. If the reading exceeds the length of a single reading in time duration, the shooting and reading will be stopped.



Manual Mode

3.1.1 Trigger Conditions

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

3.1.2 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.

Trigger command answer switch

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



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.



Infinite Delay 500ms



1000ms 3000ms 5000ms

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.

3.3.4Continuous 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 3.2.1 Timeout between Decodes to set.

3.4.3 Timeout between Decodes (Same Barcode)

For setting Timeout between Decodes (Same Barcode), please refer to the programming barcode in

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

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

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

4.2 Positioning

The scanning module has an auxiliary device for positioning, which projects a pointing line during shooting to remind users of reading the center of the scene image captured by the module.

☞ Positioning Light - ON when Photographing : the positioning light is lit up during shooting and goes out when there is no shooting.

☞Positioning light -always ON when Photographing : the positioning light is always on when taking pictures and goes out at other times.

☞ Positioning Light - always ON: the positioning light continues to illuminate after the scanning

module is turned on.

☞ Positioning Light - always OFF : the positioning light does not illuminate in any cases.



**Positioning Light - ON when PhotographingPositioning light -always ON when Photographing



Positioning Light - always ON

Positioning Light - always OFF

Chapter 5Prompt 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 QTurkey F



Mexico (Latin America)

5.8 Virtual keyboard enable

Inorder 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.



** Control character output off



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 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

5.11Image 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.

5.12 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

5.13 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.

5.14Read 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

5.15Write/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

5.16Read 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 Code ID

Modify RSS 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 Mico QR Code ID Modify Chinese Sensible(HanXin) Code ID

6.4 Tail



Tail OFF **CR Tail (0x0D)



TAB Tail (0x09) CRLF Tail (0x0D 0x0A)

6.5 Data Character

6.5.1 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.



** Transmit all Data

Tansmit the Start Data



Tansmit the END Data

Tansmit the Center Data

6.5.2 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.



Modify the Length for Start Data

Modify the Length for End Data

6.6 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.

6.7 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

6.8 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

6.9 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

DisablerReading Of Web Address Codes

Chapter 7 Quick Operation

7.1 Fast POS Mode

POS Mode features:

- Scan mode: Command Trigger Mode
- Communication port: Serial Port
- Startup Beep OFF
- Tail OFF

Users can quickly configure the reading device to work in POS Mode by reading the following programming barcode.

Fast POS Mode

7.2 Serial Port & Full Codes On Mode

In order to facilitate the quick configuration and switch to the serial port and full codes open mode during the secondary development process, you can realize the quick configuration function by reading the following programming barcodes.

Serial Port & Full Codes ON

Chapter 8Symbologies

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 prohibits 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 ofEAN13 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 ofEAN8Parity Bits Disable Transmission of EAN8Parity Bits

8.2.3 UPC-A

4. 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

5. Check bit Output Function Enable and Disable



** Enable Transmission of UPCAParity Bits Disable Transmission of UPCAParity 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-E0Parity Bits Disable Transmission of UPC-E0Parity 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-E1Parity Bits Disable Transmission of UPC-E1Parity 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 outputsthe prefix A by reading the following programming barcodes.



**the output of Code 32prefix ADisable output of Code 32prefix 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

8. 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.



Enable Matrix 2 of 5 ** Disable Matrix 2 of 5

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.



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 Matrix 2 of 5 processes verification by reading the following setting code.



Matrix 2 of 5 Verification Format Mod10

** Matrix 2 of 5 Verification Format NONE

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 Plesseyto 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 Plesseyprocesses 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 PlesseyOutputs 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

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

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

8.3 Operation of 2D Symbologies

8.3.1 QR Code

1. Enable or DisableQRCode

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 eQRbarcode 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

8.3.4Mico 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

8.3.5Chinese Sensible(HanXin) Code

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



EnableChinese Sensible(HanXin) Code ** DisableChinese Sensible(HanXin) Code

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"; ..... "Parametern";

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 ofEnter Setup (parameter: 00000000), Sense Mode (parameter: 02000003), Positioning Light - ON when Photographing (parameter: 03000000), Decode Session Timeout-3000ms (parameter: 0202001E) andDisable 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;

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			
Communication Mode		USB-HID	
TTL-232	Serial Port Baud Rate	9600bps	
	Serial Parity Bits	None	Range:1～64ms
	Serial Data Bits	8	Range:1～63ms
	Serial Port Stop	1	Range:1～63ms
	Hardware Flow Control	None	
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	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	

	Fill Light	ON when Photographing	
Buzzer	Buzzer Setting	Passive Buzzer	
	Passive Buzzer	Intermediate Frequency	
	ActiveBuzzer	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	
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	
Code32prefix output	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	
QR Code		
Read	Enable	
QR1mode	Disable	
Add Prefix (11)-On	Disable	
PDF417		
Read	Enable	
Data Matrix		

Read	Enable	
Multiple DM	Disable	
Mico QR		
Read	Enable	
Chinese Sensible(HanXin) Code		
Read	Disable	

Appendix D: Common Serial Commands

Function	Serial Command	Return Command
Manual Mode	7E 00 08 01 00 00D4 FF 60	02 00 00 01 00 33 31
Command Trigger Mode	7E 00 08 01 00 00D5 EF 41	02 00 00 01 00 33 31
Continuous Mode	7E 00 08 01 00 00D6 DF 22	02 00 00 01 00 33 31
Sense Mode	7E 00 08 01 00 00D7 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 0532 9D 7D	02 00 00 01 00 33 31
Decode Session Timeout-10s	7E 00 08 01 00 0564 A7 4E	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
Flags Restored to Factory Settings	7E 00 09 01 00 00 FF C0 38	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
Tail (CRLF)	7E 00 08 01 00 60 21 4B F0	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
Mico QR	X	0xA5
Chinese Sensible(HanXin) Code	h	0xA6

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
Enter Setup	00000000	If the Settings code is off, you need to turn on the Settings code first
TL-232 Serial Output	01000000	
USB-HID	01000001	
USB Virtual Serial Port Mode	01000002	
Serial & HID Simultaneous Output	01000003	
HID-KBW	01010000	
HID-POS	01010001	
1200bps	010209C4	
4800bps	01020271	
9600bps	01020139	
14400bps	010200D0	
19200bps	0102009C	
38400bps	0102004E	
57600bps	01020034	
115200bps	0102001A	
NONE Parity	01030000	
ODD Parity	01030001	
EVENParity	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 Before HID Release-1ms	01050001	For other durations, the last two

Timeout Before HID Release-2ms	01050002	parameters can be modified
Timeout Before HID Release-5ms	01050005	
Timeout Before HID Release-10ms	0105000A	
Timeout After HID Release-1ms	01060001	For other durations, the last two parameters can be modified
Timeout After HID Release-2ms	01060002	
Timeout After HID Release-5ms	01060005	
Timeout After HID Release-10ms	0106000A	
CapsLock-Off	01070000	
CapsLock-On	01070001	
Disable HID Leading Key Output	01080000	
Enable HID Leading Key Output	01080001	
Manual Mode	02000000	
Level Trigger	02010000	
Edge Trigger	02010001	
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	
Command Trigger Mode	02000001	
Continuous Mode	02000002	
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	
Sense Mode	02000003	
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	

Fill Light - ON when Photographing	03000000	
Fill Light - always ON	03000001	
Fill Light - always OFF	03000002	
Positioning Light - ON when Photographing	03010000	
Positioning light -always ON when Photographing	03010003	
Positioning Light - always ON	03010001	
Positioning Light - always OFF	03010002	
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

Timeout of Good Read Beep-60ms	0404013C	parameters can be modified
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 Keyboar_Alt Mode	04070011	
Virtual Keyboar_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 QRCODE CODE ID	05030012	
Modify DataMatrix CODE ID	05030013	
Modify PDF417 CODE ID	05030014	
Modify Mico QR CODE ID	05030015	
Modify Chinese Sensible(HanXin) CODE ID	05030016	
Tail OFF	05040000	
CR Tail	05040001	
TAB Tail	05040002	
CRLF Tail	05040003	
Transmit all Data	05050000	
Tansmit the Start Data	05050001	
Tansmit the END Data	05050002	
Tansmit 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	
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 ofEAN13 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 ofEAN8Parity Bits	07024000	
Disable Transmission of EAN8Parity 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 Transmission ofUPCAParity Bits	07034000	
Disable Transmission of UPCAParity Bits	07034100	
Enable UPC-A to EAN13	05080000	
Disable UPC-A to EAN13	05080001	
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 ofUPC-E0Parity Bits	07044000	
Disable Transmission of UPC-E0Parity 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 ofUPC-E1Parity Bits	07054000	
Disable Transmission of UPC-E1Parity 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 32Prefix A	07076000	
Disable Output Code 32Prefix 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	For other durations, the last two parameters can be modified
Set the Minimum Length for Code93 to 4	07081004	
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	For other durations, the last two parameters can be modified
Set the Minimum Length for Codabar to 4	07091004	
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	For other durations, the last two parameters can be modified
Set the Minimum Length for Interleaved 2 of 5 to 4	070A1004	
Set the Maximum Length for Interleaved 2 of 5 to 32	070A1120	
Set the Maximum Length for Interleaved 2 of 5 to 255	070A11FF	
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 Interleaved 2 of 5	070B0000	
Disable Interleaved 2 of 5	070B0100	
Set the Minimum Length for Industrial 25to 0	070B1000	For other durations, the last two parameters can be modified
Set the Minimum Length for Industrial 25to 4	070B1004	
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 Interleaved 2 of 5	070C0000	
Disable Interleaved 2 of 5	070C0100	
Set the Minimum Length for Matrix 2 of 5to 0	070C1000	For other durations, the last two parameters can be modified
Set the Minimum Length for Matrix 2 of 5to 4	070C1004	
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	
RSS-14 AI Output with Parentheses	070F5000	
RSS-14 AI Output Without Parentheses	070F5100	
Enable RSS-Limited	070F1000	
Disable RSS-Limited	070F1100	
RSS-Limited AI Output Without Parenthese	070F7000	
RSS-Limited AI Output with Parentheses	070F7100	
Enable RSS-Expanded	070F2000	
Disable RSS-Expanded	070F2100	
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 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	
EnableMico QR	07190000	
DisableMico QR	07190100	
EnableChinese Sensible(HanXin) Code	07170000	
DisableChinese Sensible(HanXin) Code	07170100	
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	