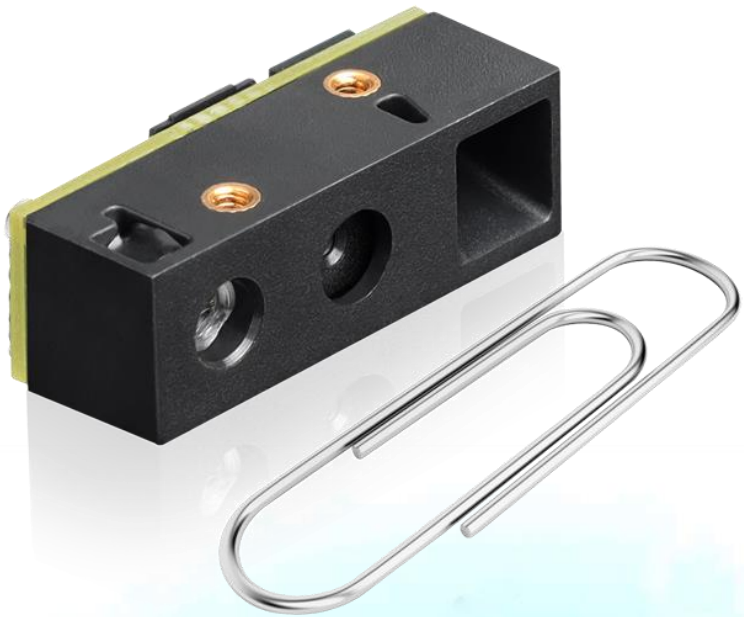
RTscan

— To be Reliable and Trusted —

User Guide

Barcode Scan Engine RT214D



User Guide

Contents

1 Introduction

1.1 About The Manual

This manual provides detailed instructions for setting up and using RT214D. Users can change or set up the interface, scan mode, beep and light, symbologies of RT214D by scanning the setting barcode in this manual.

The factory defaults table of RT214D is included in the appendix. It can meet the need of most cases; users do not need to make any modifications in most of the time.

1.2 Application

This user guide suitable for RT214D only.

1.3 Enter/Exit Setup

Scanning the Enter Setup barcode can enable the engine to enter the setup mode. Then you can scan programming barcodes to configure your engine.

Scanning the Exit Setup barcode will disable most of the programming barcode and you can only scan the Enter Setup barcode.

*Enter Setup

Exit Setup

Programming barcode data can be transmitted to the host device. Scan the appropriate barcode below to enable or disable the transmission of programming barcode data to the host device. If the engine is reboot, it will be reset to Do not Transmit Programming Barcode Data.

Transmit Programming Barcode Data

*Do Not Transmit Programming Barcode Data

1.4 Restore Factory Defaults

Attention: Please use the “Restore Factory Defaults” carefully. After scanning below programming barcode, the current setting will be lost and replaced by the factory defaults. Please refer to the appendix to get the factory defaults and function.

Exit Setup

Restore Factory Defaults

1.5 **Custom Defaults**

Besides the factory defaults, users can also save the settings of custom defaults.

Scanning the “Save as Custom Defaults” barcode can set the current settings as custom defaults. If there is custom defaults in the scan engine, it will be replaced by the current settings. Scanning the “Restore All Custom Defaults” barcode can reset all parameters to the custom defaults.

Attention: After restoring the factory defaults, the previously saved custom defaults will not be lost.

Save as Custom Defaults

Restore All Custom Defaults

2 Interface

RT214D scan engine connect the host device via TTL-232 or RS232 serial port and USB interface by emulation kit board (EVK board).

2.1 Serial Port Interface

Serial port interface is a common way to connect scan engine and host device. To use the serial port interface, the parameters between scan engine and host device must be completely matched to ensure good communication and correct data.

Serial port interface is based on TTL level signal. For RS-232, the conversion circuit needs to be used.

Switch To Serial Port

Below is the default parameter of serial port interface. When the parameter is different from that of the host device, you can scan the programming barcode to modify.

Parameter	Default
Interface	Standard TTL-232
Baud Rate	9600
Parity Type	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

2.1.1 Baud Rate

The unit of baud rate is bits per second. Below are the parameters you can select.

1200

2400

4800

*9600

14400

19200

38400

57600

115200

2.1.2 Parity Type

There are three ways, none, odd parity and even parity.

*None

Odd Parity

Even Parity

2.2 USB HID-KBW

When using the USB interface, you can make the scan engine simulate HID-KBW device. Then the scan engine will become a virtual keyboard to transfer data to host device.

*Switch To USB HID-KBW

2.2.1 Inter-keystroke Delay

There is time interval in the continually keystroke in the virtual keyboard. The time interval is from last keystroke release to the next keystroke press. The duration of inter-keystroke delay is 0~75ms. The default duration is 2ms. Please refer to appendix D to get setting guide.

*Default Delay

No Delay

Short Delay

Long Delay

Custom Delay

2.2.2 Polling Rate

The polling rate can be set up to be 1~10ms. The smaller the number is, the faster the scan engine can send the data to host device. If the host device lost some data, please increase the polling rate.

*1ms

2ms

3ms

4ms

5ms

6ms

7ms

8ms

9ms

10ms

2.2.3 Country Keyboard

The default keyboard is U.S. keyboard. If you choose other country keyboard, the barcode output method should be set to output the original data.

*U.S.

France

Italy

Germany

Spain

Turkey_Q

UK

Belgium

Portuguese-Portugal

Portuguese-Brazil

Hungary

Turkey_F

Greece

Sweden

Finland

Denmark

Czech Republic

Austria(German)

Italy(142)

Russian

Russian Typewriter

Arabic

Irish

Polish 214

Polish Programm

Dutch

Japan

Thailand

Croatia

Romania

Bulgaria

Slovakia

North Korea

Ukrainian

Switzerland(French)

Hebrew

Vietnamese

2.2.4 Alt Combination

In order to make the device input any ASCII character in any language (the hexadecimal value is between 0x00 and 0xFF), the virtual keyboard can be set to Alt combination modes. When using thoes modes, the speed will slow down because there is more data to be output.

You can choose one mode from below according to actual application needs.

Mode 1：Use Alt Combination Mode for the barcodes which the current scan engine keyboard doesn't support and the ASCII character whose hexadecimal value is between 0x20~0xFF.

Mode 2：Use Alt Combination Mode for the ASCII character whose hexadecimal value is between 0x20~0xFF.

Mode 3：Use Alt Combination Mode for the ASCII character whose hexadecimal value is between 0x00~0xFF.

Attention: If "Mode 3" and control character escape function are enabled at the same time, control characters (0x00~0x1F) will output Ctrl key combination.

*Disable

Mode 1

Mode 2

Mode 3

Exit Setup

2.2.5 Control Character Output

ASCII control characters with hexadecimal values between 0x00 and 0x1F can be set with escape output combined control keys, which can be used in applications where combined control keys are required. See Appendix E for the corresponding relationship between ASCII values and function keys or control combination keys.

If you need to mask the output of other control characters, you can also choose to set to output Enter and DownArrow, to mask other control characters, and only respond to output 0x07,0x0D output Enter and 0x0A output DownArrow.

*Disable

Escape Mode

Output Enter、DownArrow

In particular, the control character 0x0A can be set to different representations: Enter and DownArrow, which can be set as required.

*0x0A Represent DownArrow

0x0A Represent Enter

2.2.6 Convert Case

Scanning below programming barcode, you can convert upper case and lower case of A~Z.

*No Case Conversion

Upper Case and Lower Case Conversion

Convert All to Upper Case

Convert All to Lower Case

2.2.7 Character String End Sign

If the "\0" is set to be the character string end sign, when the "\0" appear, there will not be any data output after that.

Disable

*set "\0" to be the character string end sign

2.2.8 GS Characters Replacement

Since GS characters cannot be printed directly, the following replacement way can be set to replace GS characters with other characters for display.

Attention 1: This function is in conflict with GS1 AI function, and GS1 AI output rules must be prohibited before use.

Attention 2: The function of Replaced by Ç should be used in conjunction with the programming barcode of output original data and the Alt combination mode 1.

*Disable

Replaced by Ç

Replaced by |

Replaced by ^]

Replaced by]

Replaced by <GS>

2.2.9 CRLF Setting

According to different scenarios and code values, if you can't get the expected results by pressing the enter key. You can modify the settings of CR and LF through by scanning below barcodes.

*Disable

CRLF replaced by CR

Single LF replaced by CR

CRLF、LF replaced by CR

2.3 USB Virtual Serial Port

If the scan engine uses USB communication interface, but the host device application program uses serial port to receive data, the scan engine can be set to USB virtual serial communication mode. And a appropriate driver needs to be installed in the host device. The interface is recommended for new application software. Based on HID interface, no driver is required.

Switch To USB Virtual Serial Port

2.4 USB HID-POS

Switch To HID-POS

Protocol Format：

- vid：0x26f1
- pid：0x8803

Data Format Sent From Host Device：

Byte	Content
0	Message ID（0x04）
1	Valid data length
2-61	Data
62	0x00, 1 byte reserved
63	0x00(no data after) 0x01(more data to follow)

Data Format Sent From Scan Device to Host Device:

Byte	Content
0	Message ID（0x02）
1	Valid data length
2-57	Data
58-62	0x00, 5 byte reserved
63	0x00(no data after) 0x01(more data to follow)

3 Scan Mode

3.1 Batch Mode

A trigger pull activates a round of multiple decode sessions. This round of multiple scans continues until you release the trigger. Rereading the same barcode is not allowed in the same round.

Batch Mode

3.2 Trigger Mode

In trigger mode, when the trigger control interface of the scan engine changes to trigger level, the scan engine starts to shoot and read. Within the time of “single reading duration”, if the control interface keeps trigger level, the scan engine will keep scanning barcode until scanning successfully. If the trigger level is cancelled or the single reading is timeout, the scan engine will stop shooting and reading. After scanning successfully, barcode will be output through interface. To start a new batch scanning, cancel the trigger level and restart it again.

*Trigger Mode

3.2.1 Level Mode Or Pulse Mode

A trigger pull activates a decode session. The decode session continues until a barcode is decoded or you release the trigger. Pulse Mode means the scan engine starts reading when detecting the trigger level and ends reading when scanning is successful or the single reading is timeout.

*Level Mode

Pulse Mode

3.2.2 Single Reading Duration

Single reading duration means the maximum time for shooting and reading when the control interface keeps trigger level in trigger mode. If it is timeout, the shooting and reading will stop no matter whether the reading is successfully or not. The duration of single reading is 1000~3600000ms and the default duration is 3000ms. About the custom duration, please refer to appendix D.

*3000ms

5000ms

Custom Modify Single Reading Duration

3.2.3 Idle Auto Sleep

In trigger mode, you can select auto sleep in idle time. “Idle” means no operation or communication is performed for a time period. The auto sleep can keep the scan engine stay in the low power consumption state. Sending trigger signal or communication can awake the scan engine.

Attention: This function only works in serial port interface.

*Disable Auto Sleep

Allow Auto Sleep

3.2.4 Idle Duration

The idle duration is 0~65535ms, the default duration is 500ms. Please refer to appendix D to learn how to set up.

*500ms

1000ms

Custom

3.2.5 Delay Of Scanning The Same Barcode

In order to avoid the same barcode being read for several times in a short time in the triggering mode, you can set a delay time in this mode so that the scan engine will read the same barcode after the delay time.

Delay of scanning the same barcode means the scan engine refuse to read the same barcode within the set time after reading a barcode. The scan engine can read and output data only after the set time.

Scan the “No Delay”, set to output the same barcode that scan engine has scanned.

If it is set to "Require delay for the same code reading" and "Disable re reading and reset after timeout ", the same barcode can only be read and output after exceeding the delay time of the same code reading.

If it is set to "Require delay for the same code reading" and "Enable re reading and reset after timeout ", the same barcode can only be read and output after exceeding the delay time of the same code reading and after no same barcode is read.

*No Delay

Delay

* Disable Re Reading And Reset After Timeout

Enable Re Reading And Reset After Timeout

Scanning below programming barcode, you can modify the delay time of scanning the same barcode. The delay time range is 0~65535ms, and the default delay time is 1500ms. If you select “No time limited”, the same barcode will not be output. Please refer to Appendix D to see how to make custom setting.

No Time Limited

1000ms

*1500ms

3000ms

5000ms

Custom

3.3 **Sense Mode**

The engine activates a decode session every time it detects a barcode presented to it. The decode session continues until a barcode is decoded or the decode session timeout expires. Reread Timeout can avoid undesired rereading of the same barcode in a given period of time. Sensitivity can change the Sense Mode's sensibility to changes in images captured. Image Stabilization Timeout gives the engine time to adapt to the ambient environment after it decodes a barcode and "looks" for another.

Sense Mode

3.3.1 Single Reading Duration

Single reading duration means the maximum time allowed to keep shooting and reading attempts before reading successfully after detecting the scene changes and the scan engine is ready to read. It will return to the monitoring state from the reading state after timeout. The setting range of single code reading duration is 1000~3600000ms, and the default duration is 3000ms. Please refer to Appendix D for the custom setting.

*3000ms

5000ms

Custom

3.3.2 Delay Of Scanning The Same Barcode

In order to avoid the same barcode being read for several times in a short time in the triggering mode, you can set a delay time in this mode so that the scan engine will read the same

barcode after the delay time.

Delay of scanning the same barcode means the scan engine refuse to read the same barcode within the set time after reading a barcode. The scan engine can read and output data only after the set time.

Scan the “No Delay”, set to output the same barcode that scan engine has scanned.

If it is set to "Require delay for the same code reading" and "Disable re reading and reset after timeout ", the same barcode can only be read and output after exceeding the delay time of the same code reading.

If it is set to "Require delay for the same code reading" and "Enable re reading and reset after timeout ", the same barcode can only be read and output after exceeding the delay time of the same code reading and after no same barcode is read.

*No Delay

Delay

* Disable Re Reading And Reset After Timeout

Enable Re Reading And Reset After Timeout

Scanning below programming barcode, you can modify the delay time of scanning the same barcode. The delay time range is 0~65535ms, and the default delay time is 1500ms. If you select “No time limited”, the same barcode will not be output. Please refer to Appendix D to see how to make custom setting.

No Time Limited

1000ms

*1500ms

3000ms

5000ms

Custom

3.3.3 Image Stabilization Duration

The range of image stabilization duration is 0~1600ms and the default duration is 60ms.

Please refer to Appendix D to see how to set up the image stabilization duration.

*60ms

500ms

1000ms

Custom

3.3.4 Sensitivity

Sensitivity specifies the degree of acuteness of the engine's response to changes in images captured. The higher the sensitivity, the lower requirement in image change is needed to trigger the engine. On the contrary, the lower the sensitivity, the higher requirement.

Medium Sensitivity

Low Sensitivity

* High Sensitivity

Enhanced Sensitivity

It is recommended not to use the following free setting methods when the above sensitivity has been set to adapt to the application.

Set the scene change threshold value freely means when the scene change reaches or exceeds the threshold value, it will be detected and recognized that the scene has enough changes, and then it will be turned into ready to read. The higher the sensitivity, the lower the scene change threshold value is required.

When the scene change threshold value is set very high, the sensitivity of the scan engine will be very low. For specific applications, please test first to determine the best threshold value.

The setting range of scene change threshold value is 1~50. When setting the scene change threshold value, data codes also need to be used. The default threshold value is 10. Please refer to Appendix D for setting method.

Modify The Scene Change Threshold Value

3.3.5 Stop Mode

Mode 1: In sense mode, after scanning the barcode successfully, the scan engine will turn off the light and re monitor the environment.
Mode 2: In sense mode, after scanning the barcode successfully, the scan engine will continue to scan and will not re monitor the environment until the scanning is not successful within the range of single scanning duration.

*Mode 1

Mode 2

3.4 Continuous Mode

The engine automatically starts one decode session after another. To suspend/resume barcode reading, simply press the trigger. Reread Timeout can avoid undesired rereading of the same barcode in a given period of time. Note that when switching to this mode by scanning the Continuous Mode barcode, the engine will stop the barcode reading for 3 seconds before starting scanning continuously.

Continuous Mode

3.4.1 Single Reading Duration

In continuous mode, single reading duration means the maximum duration of acquisition recognition before successful reading. After timeout, it will enter the interval of non acquisition recognition according to the setting. The setting range of single reading duration is 1000~3600000ms, and the default duration is 3000ms. Please refer to Appendix D to get setting up.

*3000ms

5000ms

Custom

3.4.2 Interval Duration of Reading

Interval Duration of reading means the interval duration between two readings. No matter whether the reading is successful or failed, there will be an interval duration between the two readings, in which no acquisition reading is performed. The range of interval duration of reading is 0~65535ms, and the default duration is 1000ms. Please refer to Appendix D for custom setting method.

*500ms

1000ms

2000ms

5000ms

0ms

Custom

3.4.3 Delay Of Scanning The Same Barcode

In order to avoid the same barcode being read for several times in a short time in the triggering mode, you can set a delay time in this mode so that the scan engine will read the same barcode after the delay time.

Delay of scanning the same barcode means the scan engine refuse to read the same barcode within the set time after reading a barcode. The scan engine can read and output data only after the set time.

Scan the “No Delay”, set to output the same barcode that scan engine has scanned.

If it is set to "Require delay for the same code reading" and "Disable re reading and reset after timeout ", the same barcode can only be read and output after exceeding the delay time of the same code reading.

If it is set to "Require delay for the same code reading" and "Enable re reading and reset after timeout ", the same barcode can only be read and output after exceeding the delay time of the same code reading and after no same barcode is read.

*No Delay

Delay

* Disable Re Reading And Reset After Timeout

Enable Re Reading And Reset After Timeout

Scanning below programming barcode, you can modify the delay time of scanning the same barcode. The delay time range is 0~65535ms, and the default delay time is 1500ms. If you select “No time limited”, the same barcode will not be output. Please refer to Appendix D to see how to make custom setting.

No Time Limited

1000ms

*1500ms

3000ms

5000ms

Custom

3.5 **Command Trigger Mode**

In order to adapt to embedded devices better, scan engine can be configured into command mode. After sending the command of starting scanning, it will not stop scanning until receiving the command of stop scanning or the scanning is successful. In the serial port interface, this mode can be configured to enter the low power consumption state.

Command Mode

3.5.1 Single Reading Duration

The single reading duration is the continuous scanning duration after the scan engine starts scanning. If the reading is successful, the single reading duration is timeout, or the scan engine receives the stop reading command, the reading will stop.

And, if the single reading duration is set to 0, it means time is unlimited and the reading will not stop automatically unless the stop reading command is sent.

Please refer to Appendix D for custom setting method.

*0s

3s

5s

10s

Custom

4 Illumination and Aiming

4.1 Illumination

A group of LEDs are equipped in the engine to provide auxiliary lighting conditions. The light beam will focus on the target barcode to improve the scan performance, especially in the dark. Users can configure the illumination to make it adapt to different lighting conditions.

Normal：Illumination LEDs on the engine are turned on during image capture.

Always on：Illumination LEDs on the engine keep on after the engine is powered on.

Off：Illumination LEDs on the engine are off all the time.

*Normal

Off

Always On

4.2 Aiming

There is a projection device in the engine. It is used for projecting a special pattern, which means the center of the image. When capturing the image, project the pattern on the target barcode means the engine has aimed the target barcode, so that the scanning become easier.

Normal：The engine projects an aiming pattern only during barcode scanning/capture.

Always on：Aiming pattern is constantly on after the engine is powered on.

Off：Aiming pattern is off all the time.

*Normal

Off

Always On

5 Beeps And LED

5.1 All Beeps

The engine has power on beep, good read beep and programming barcode beep. By scanning below barcode, you can control all the beeps.

Off

*On

5.2 Power On Beep

The engine can be programmed to beep when it is powered on.

*On

Off

5.3 Good Read Beep

After successfully scanning barcode, a PWM signal from the engine will drive the circuit of the external buzzer to make sound. The beep can be setted to be on or off. The beep type and volume also can be setted. Please scan below programming barcode to set up.

*On

Off

5.3.1 Beep Type

Type 1

Type 2

*Type 3

5.3.2 Beep Volume

*High

Medium

Low

5.4 Programming Barcode Beep

When scanning the programming barcode, the beep can be setted to be on or off.

*On

Off

5.5 Good Read LED

*On

Off

Scanning below programming barcodes can set the amount of time that LED remain. The default time is 200ms. For custom time, please refer to appendix D.

100ms

* 200ms

Exit Setup

500ms

Custom

5.6 **Work Mode Of Good Read LED**

Scanning below barcode, you can set up the work mode of good read LED.

Work Mode 0: LED is off when the engine is turned on, and become on when scanning barcode successfully. After the set time, it will be off.

Work Mode 1: LED is on when the engine is turned on, and become off when scanning barcode successfully. After the set time, it will be on.

Work Mode 2：The good read LED is used as a fill light.

*Work Mode 0

Work Mode 1

Work Mode 2

5.7 **Not Good Read（NGR）Information**

The "Not Good Read Information" means the scan engine will output the special information set by user when the reading fails in some working modes. The user or program can adjust the follow-up operation according to that information.

Allow Output NGR Information

*Do Not Output NGR Information

Modify NGR Information

Scanning the following programming code will start to change the NGR information. This programming code needs to be configured in combination with the data code. If you directly scan the "save" of the data code, the length of the NGR information will be "zero". In this case, even if you request to send the NGR information, there will be no substantial information output, which may cause problems to the performance in use. Please set it carefully.

The allowed length of NGR information is 0~7 characters, and the character range is 0~255.

Modify NGR Information

6 Edit Data

The data read needs to be distinguished in many applications.

The code ID is usually used as the identification to distinguish data. In some special cases, prefix and terminator are also used.

The following operations can edit data:

- Before reading data, you can add start, Code ID and prefix
- Add suffix after reading data
- After all the above operation, you can add terminator

After configuration, the scan engine can output information in one of the following two formats:

[Start] + [Code ID] + [Prefix] + [DATA] + [Suffix] + [Terminator]

[Start] + [Prefix] + [Code ID] + [DATA] + [Suffix] + [Terminator]

Except that the information of DATA must be output, others are optional.

6.1 Comprehensive Setting

For all “Add” operations

The operations of "Add" means add start character, code ID, custom prefix information, custom suffix information, and terminator. The following "Allow all information to be added" and "Disable all information to be added" have effects on the above functions at the same time.

- "Allow all information to be added" means start, code ID, prefix, suffix, terminator, etc. will be allowed to be added in the output data.
- "Disable all information to be added": start, code ID, prefix, suffix, terminator, etc. will not be allowed to be added in the output data.

Allow All Information To Be Added

Disable All Information To Be Added

6.2 **Increase Length Of The Output Information**

This configuration is applicable to the non keyboard interface. Before the scan engine outputs data, add two bytes, including all other information.

*Do Not Output Decoding Length Information

Output Decoding Length Information

6.3 **Start**

*Do Not Use Start

Use STX To Be Start

6.4 **Subsequence Of Prefix And Code ID**

When both Code ID and Prefix are configured to be output, the output subsequence can be set up by scanning below two programming code, and other information will be output after them.

Code ID+Prefix

*Prefix+Code ID

6.5 **Prefix**

6.5.1 Add Prefix

Prefix is a string added before scanning barcode. The string can be custom modified by user.

Allow To Add Prefix

*Do Not Add Prefix

6.5.2 Modify Prefix

You can modify the prefix by scanning the "Modify Prefix" and scanning data code at the same time. Each prefix is represented by two hexadecimal values, and the prefix can be 16 characters at most. Please refer to Appendix C for the hexadecimal conversion table.

Modify Prefix

Example: Set “CODE” to be the custom prefix

1. Look up the ASCII table and get the hexadecimal value corresponding to the four characters "CODE": 43、4F、44、45;
2. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
3. Scanning “Modify Prefix”;
4. Scanning data code“4”“3”“4”“F”“4”“4”“4”“5”;
5. Scanning “Save”.

6.5.3 Modify Prefix According To Barcode Types

Modify Prefix According To Barcode Types

Example: Set “CODE” to be the custom prefix of QR code

1. Look up the appendix F to get that the hexadecimal value of QR code is 1A;
2. Look up the ASCII table and get the hexadecimal value corresponding to the four characters "CODE": 43、4F、44、45;
3. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
4. Scanning “Modify Prefix According To Barcode Types”;
5. Scanning data code of“1”“A”“4”“3”“4”“F”“4”“4”“4”“5”;
6. Scanning “Save”.

At the same time, you can directly set the “modify the prefix according to barcode types” according to the rule "S_CMD_051P [X] [Y]". [X] is the barcode type in Appendix 1, [Y] is the prefix, and it is hexadecimal data. Example: S_ CMD_ 051P1A434F4445.

6.5.4 Delete All Prefix Setting

Delete All Prefix Setting

6.6 Code ID

6.6.1 Add Code ID

Users can use Code ID to identify different barcode types, and the code ID corresponding to each barcode type can be modified freely. The Code ID of all barcodes is one character and must be a letter, cannot be a number, invisible character, or punctuation mark.

Allow To Add Code ID

*Do Not Add Code ID

Scanning below programming barcode can restore the Code IDs of all barcode types to the default values. Please think carefully before setting.

Restore Code IDs Of All Barcode Types

6.6.2 Modify Code ID

The code ID of each barcode type can be modified independently by scanning the corresponding programming barcode and scanning the data code at the same time.\

Example: Modify PDF417 Code ID to be ‘p’:

1. Look up the table to get the hexadecimal value of ‘p’ is 70;
2. Scanning “Enter Setup”
3. Scanning “Modify PDF417 Code ID”;
4. Scanning the data code of“7”，“0”;
5. Scanning “Save”;
6. Scanning “Exit Setup”

Programming barcode of modifying Code IDs of each Barcode Type:

Modify PDF417 Code ID

Modify Code128 Code ID

Modify QR Code ID

Modify DM Code ID

Modify EAN8 Code ID

Modify EAN13 Code ID

Modify UPCE0 Code ID

Modify UPCE1 Code ID

Modify UPCA Code ID

Modify IATA25 Code ID

Modify Code 39 Code ID

Modify Code 93 Code ID

Modify Interleaved 2 of 5 Code ID

Modify Codabar Code ID

Modify Industrial 25 Code ID

Modify Matrix 25 Code ID

Modify Code 11 Code ID

Modify MSI Plessey Code ID

Modify Micro QR Code ID

Modify Code32 Code ID

Modify ISBN Code ID

Modify ISSN Code ID

Modify GS1 128 Code ID

Modify AIM 128 Code ID

Modify ISBT 128 Code ID

Modify Micro PDF417 Code ID

Modify Aztec Code ID

Modify GS1 DataBar Code ID

Modify GS1 DataBar Limited Code ID

Modify GS1 DataBar Expanded Code ID

Modify Plessey Code ID

Modify Maxicode Code ID

Modify Chinese-sensible Code ID

Modify DotCode Code ID

Modify Composite Code ID

6.7 **Suffix**

6.7.1 Add Suffix

The suffix is a string added after barcode information. Users can make custom modify.

Allow To Add Suffix

*Do Not Add Suffix

6.7.2 Modify Suffix

Scanning the "Modify Suffix", and scanning data code can modify the suffix. Each suffix character is represented by two hexadecimal values, and the suffix can be 16 characters at most. Please refer to Appendix C for the hexadecimal conversion table of character values.

Modify Suffix

Example: Set “CODE” to be the custom suffix

1. Look up the ASCII table and get the hexadecimal value corresponding to the four characters "CODE": 43、4F、44、45;
2. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
3. Scanning “Modify Suffix”;
4. Scanning data code of “4”, “3”, “4”, “F”, “4”, “4”, “4”, “5”;
5. Scanning “Save”;

6.7.3 Modify Suffix According To Barcode Types

Modify Suffix According To Barcode Types

Example: Set “CODE” to be the custom suffix of QR code

1. Look up the appendix F to get that the hexadecimal value of QR code is 1A;
2. Look up the ASCII table and get the hexadecimal value corresponding to the four characters "CODE": 43、4F、44、45;

3. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
4. Scanning “Modify Suffix According To Barcode Types”;
5. Scanning data code of“1”“A”“4”“3”“4”“F”“4”“4”“4”“5”;
6. Scanning “Save”.

At the same time, you can directly set the “modify suffix according to barcode types” according to the rule " S_CMD_057S[X][Y]". [X] is the barcode type in Appendix 1, [Y] is the prefix, and it is hexadecimal data. Example: S_CMD_057S1A434F4445.

6.7.4 Delete All Suffix Setting

Delete All Suffix Setting

6.8 Terminator

Terminator means the end of a complete data information and to indicate the complete end of a data output. The terminator is 1-7 characters.

6.8.1 Add Terminator

Scanning below programming barcodes can allow the scan engine add terminator or disable it.

*Allow To Add Terminator

Do Not Add Terminator

6.8.2 Modify Terminator

Scanning below programming barcodes, you can set the terminator to be “0x0D” or “0x0D, 0x0A”

*Add 0x0D To Be Terminator

Add 0x0D 0x0A To Be Terminator

Scanning both “Modify terminator” and data codes can modify the content of terminator.

When modifying the terminator, two hexadecimal values are used to represent characters, and two or four values are read sequentially to represent one character or two characters. See Appendix C for hexadecimal conversion of characters.

Modify Terminator

Example: Modify the terminator to be 0x0D

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Modify Terminator”
3. Scanning data code of “0”, “D”;
4. Scanning “Save”

6.8.3 Quick Configuration For Terminator

Turn Off Terminator

*Add CR

Add CRLF

Add LF

Add TAB

Add ETX

6.9 **Data**

6.9.1 Select Parts Of Data

Data consists of three parts: [Start][Center][End].

Users can scan below programming barcodes to select the output information that you need.

*Output All Parts Of Data

Only Output Start

Only Output End

Only Output Center

6.9.2 Modify The Length Of Data

Modify Length of Start

Modify Length of End

Scanning the corresponding programming barcode and data code can modify length, and the range is 0-255.

Example: Modify the length of Start to be 0x02.

1. The hexadecimal value of 0x02 is “0”, “2”;
2. Scanning “Enter Setup”;
3. Scanning “Modify Length of Start” ;
4. Scanning data code of “0”, “2”;
5. Scanning the “Save”.

6.9.3 Hide Some Parts Of Data

Data consists of three parts: [Start][Center][End].

User can scan below programming barcode to select the informatio that you want to hide.

*Disable To Hide Start

Enable To Hide Start

*Disable To Hide Center

Enable To Hide Center

*Disable To Hide End

Enable To Hide End

6.9.4 Select Parts Of Data According To Barcode Types

Through the following configurations, users can set up to hide parts of data and the set up the length of data, according to specific barcode type.

（1）Modify The Length Of Start

Modify The Length Of Start According To Barcode Types

Example: Modify the length of Start to be 0x02 according to QR code.

1. Look up the appendix F to get that the hexadecimal value of QR code is “1”, “A”;
2. The hexadecimal value of 0x02 is “0”, “2”;
3. Scanning “Modify The Length Of Start According To Barcode Types”
4. Scanning data code of “1”, “A”, “0”, “2”;
5. Scanning “Save”.

At the same time, you can directly set the “modify the length of Start according to barcode types” according to the rule " S_CMD_05CS[X][Y]". [X] is the barcode type in Appendix 1, [Y] is the length of Start, and it is hexadecimal data. X and Y both occupies 2 bytes. Example: S_CMD_05CS1A02.

（2）Modify The Length Of Center

Setting the length of both the Center and Start can output or hide the information from Start to Center. But you need to note that only one of the settings (setting the length of Center and setting the length of End) will be effective and the latest setting will prevail.

Modify The Length Of Center According To Barcode Types

At the same time, you can directly set the “modify the length of Center according to barcode types” according to the rule " S_CMD_05CC[X][Y]". [X] is the barcode type in Appendix 1, [Y] is the length of Start, and it is hexadecimal data. X and Y both occupies 2 bytes. Example: S_CMD_05CC1A02.

（3）Modify The Length Of End

Modify The Length Of End According To Barcode Types

At the same time, you can directly set the “modify the length of End according to barcode types” according to the rule " S_CMD_05CE[X][Y]". [X] is the barcode type in Appendix 1, [Y] is the length of Start, and it is hexadecimal data. X and Y both occupies 2 bytes. Example: S_CMD_05CE1A02.

6.9.5 Delete All Setting Of Length Of Data

Delete All Setting Of Length Of Data

6.10 Encoding Format

6.10.1 Data Input Encoding Format

If you need scan Chinese, please set the data input encoding format to be “Auto Identify GBK&UTF8”.

If you need scan Traditional Chinese, please set the data input encoding format to be “Auto Identify BIG5&UTF8”.

If you need scan Japanese, please set the data input encoding format to be “Auto Identify Shift-JIS&UTF8”.

* Auto Identify GBK&UTF8

Auto Identify BIG5&UTF8

Auto Identify Shift-JIS&UTF8

6.10.2 Data Output Encoding Format

To enable the device to print data in the specified encoding format, you can set up the data output encoding format. Including GBK, UNICODE, BIG5 (Traditional Chinese) and Shift JIS (Japanese). The default format is GBK format.

*Output Encoding GBK (For Notebook/Excel)

Output Encoding UNICODE (For word)

Output Encoding BIG5(Traditional Chinese)

Output Encoding Shift-JIS(Japanese)

In addition, there are some application scenarios that need the scan engine output the following encoding formats. If you use other countries keyboard, the output format needs to be set to the original data output. When using the serial port to output data, you may need to convert the encoding format to UTF8.

Original Data Output

Output Encoding UTF8 (Serial Port)

6.11 **ECI Mode**

*Enable ECI Mode

Disable ECI Mode

6.12 **Invoice Mode**

*Enable Invoice Mode

Disable Invoice Mode

6.13 **QR Website Code**

Disable To Read QR Website Code

*Enable To Read QR Website Code

7 Symbologies Parameters

7.1 Overall Operation

7.1.1 Operation For All Symbologies

Scanning below programming barcodes can set up the operation for all symbologies that the scan engine supports, allow to scan all symbologies or disable that. When scanning all symbologies is disabled, only the QR programming barcode can be scanned.

Allow To Scan All Symbologies

Disable To Scan All Symbologies

Restore The Default Symbologies

7.1.2 Operation For All 1D Symbologies

Scanning below programming barcodes can set up the operation for all 1D symbologies that the scan engine supports, allow to scan all 1D symbologies or disable that.

Allow To Scan All 1D Symbologies

Disable To Scan All 1D Symbologies

7.1.3 Operation For All 2D Symbologies

Scanning below programming barcodes can set up the operation for all 2D symbologies that the scan engine supports, allow to scan all 2D symbologies or disable that.

Allow To Scan All 2D Symbologies

Disable To Scan All 2D Symbologies

7.2 **QR Programming Barcode Setting**

After the QR code system is closed, the scan engine can continue to read the QR code, but it will not output any information. Scan the following programming barcodes can configure whether the QR code system is actually configured. Note: If the “Actually Configure QR” is set up and the QR code system is turned off at the same time, the QR programming barcode will not be readable. Please use it with caution.

*Do Not Actually Configure QR

Actually Configure QR

7.3 **GS1 AI Setting**

In order to output the code value according to GS1 AI rules, it is also necessary to enable the GS1 AI rule function.

Enable GS1 AI Output Rule

* Disable GS1 AI Output Rule

7.4 **Reverse Color Code Setting**

If this configuration is enabled, the recognition speed will be affected. Please open it in the required scenario.

7.4.1 Operation For All Reverse Color Code

Allow To Read Reverse Color Code

*Disable To Read Reverse Color Code

7.4.2 1D Reverse Color Code Setting

Allow To Read 1D Reverse Color Code

*Disable To Read 1D Reverse Color Code

7.4.3 2D Reverse Color Code Setting

Allow To Read PDF417 Reverse Color Code

*Disable To Read PDF417 Reverse Color Code

Allow To Read DM Reverse Color Code

*Disable To Read DM Reverse Color Code

Allow To Read QR Reverse Color Code

*Disable To Read QR Reverse Color Code

Allow To Read Micro PDF417 Reverse Color Code

*Disable To Read Micro PDF417 Reverse Color Code

Allow To Read Aztec Reverse Color Code

*Disable To Read Aztec Reverse Color Code

Allow To Read Maxicode Reverse Color Code

*Disable To Read Maxicode Reverse Color Code

Allow To Read Chinese-sensible Code Reverse Color Code

*Disable To Read Chinese-sensible Code Reverse Color Code

Allow To Read DotCode Reverse Color Code

*Disable To Read DotCode Reverse Color Code

7.5 Code 128

7.5.1 Restore Defaulting Settings

Restore Default Settings Of Code 128

7.5.2 Allow/Disable To Read Code 128

* Allow To Read Code 128

Disable To Read Code 128

7.5.3 Set Up Length Limit

*Set Up Minimum Length Limit 00

Set Up Minimum Length Limit 04

Set Up Maximum Length Limit 32

* Set Up Maximum Length Limit 255

Custom Set Up Minimum Length

Custom Set Up Maximum Length

7.6 **EAN-8**

7.6.1 Restore Default Settings

Restore Default Setting of EAN8

7.6.2 Allow/Disable To Read EAN-8

* Allow To Read EAN-8

Disable To Read EAN-8

7.6.3 Output Verification

The data of EAN-8 must be 8 bytes, and the last one is verification.

*Output Verification

Do Not Output Verification

7.6.4 Extended Code

When setted to be "Read 2-digit extended code" or "Read 5-digit extended code", the scan engine can read the symbologies with/without extended code. When the scan engine is set to be "Do not read 2-digit extended code" or "Do not read 5-digit extended code", the extended code of the symbologies will not be read and output.

* Do Not Read 2-digit Extended Code

Read 2-digit Extended Code

* Do Not Read 5-digit Extended Code

Read 5-digit Extended Code

7.6.5 Extended Code Must Be Included

When the scan engine is set to be “extended code must be included”, it can only scan the symbologies with extended code.

*Not required

Extended Code Must Be Included

7.6.6 Allow/Disable To Transmit To EAN13

* Disable To Transmit EAN8 To EAN13

Allow To Transmit EAN8 To EAN13

7.7 EAN-13

7.7.1 Restore Default Settings

Restore Default Settings of EAN-13

7.7.2 Allow/Disable To Read EAN-13

* Allow To Read EAN-13

Disable To Read EAN-13

7.7.3 Output Verification

*Output Verification

Do Not Output Verification

7.7.4 Extended Code

When setted to be "Read 2-digit extended code" or "Read 5-digit extended code", the scan engine can read the symbologies with/without extended code. When the scan engine is set to be "Do not read 2-digit extended code" or "Do not read 5-digit extended code", the extended code of the symbologies will not be read and output.

* Do Not Read 2-digit Extended Code

Read 2-digit Extended Code

* Do Not Read 5-digit Extended Code

Read 5-digit Extended Code

7.7.5 Extended Code Must Be Included

When the scan engine is set to be “extended code must be included”, it can only scan the symbologies with extended code.

*Not required

Extended Code Must Be Included

7.7.6 Transmit EAN13 To ISBN

Other Configurations are the same as EAN13.

* Disable To Transmit EAN13 To ISBN

Allow To Transmit EAN13 To ISBN

7.7.7 Transmit EAN13 To ISSN

Other Configurations are the same as EAN13.

* Disable To Transmit EAN13 To ISSN

Allow To Transmit EAN13 To ISSN

7.8 UPCE0

7.8.1 Restore Default Settings

Restore Default Settings of UPCE0

7.8.2 Allow/Disable To Read UPCE0

* Allow To Read UPCE0

Disable To Read UPCE0

7.8.3 Output Verification

*Output Verification

Do Not Output Verification

Exit Setup

7.8.4 Output System Characters

*Output System Characters

Do Not Output System Characters

7.8.5 Extended Code

When setted to be "Read 2-digit extended code" or "Read 5-digit extended code", the scan engine can read the symbologies with/without extended code. When the scan engine is set to be "Do not read 2-digit extended code" or "Do not read 5-digit extended code", the extended code of the symbologies will not be read and output.

* Do Not Read 2-digit Extended Code

Read 2-digit Extended Code

* Do Not Read 5-digit Extended Code

Read 5-digit Extended Code

7.8.6 Extended Code Must Be Included

When the scan engine is set to be “extended code must be included”, it can only scan the symbologies with extended code.

*Not Required

Extended Code Must Be Included

7.8.7 Allow/Disable To Transmit To UPCA

* Disable To Transmit UPCE0 To UPCA

Allow To Transmit UPCE0 To UPCA

7.9 **UPCE1**

7.9.1 Restore Default Settings

Restore Default Setting of UPCE1

7.9.2 Allow/Disable To Read UPCE1

* Allow To Read UPCE1

Disable To Read UPCE1

7.9.3 Output Verification

*Output Verification

Do Not Output Verification

7.9.4 Output System Characters

*Output System Characters

Do Not Output System Characters

7.9.5 Extended Code

When setted to be "Read 2-digit extended code" or "Read 5-digit extended code", the scan engine can read the symbologies with/without extended code. When the scan engine is set to be "Do not read 2-digit extended code" or "Do not read 5-digit extended code", the extended code of the symbologies will not be read and output.

* Do Not Read 2-digit Extended Code

Read 2-digit Extended Code

* Do Not Read 5-digit Extended Code

Read 5-digit Extended Code

7.9.6 Extended Code Must Be Included

When the scan engine is set to be “extended code must be included”, it can only scan the symbologies with extended code.

*Not required

Extended Code Must Be Included

7.9.7 Allow/Disable To Transmit To UPCA

* Disable To Transmit UPCE1 To UPCA

Allow To Transmit UPCE1 To UPCA

7.10 **UPCA**

7.10.1 Restore Default Settings

Restore Default Settings of UPCA

7.10.2 Allow/Disable To Read UPCA

* Allow To Read UPCA

Disable To Read UPCA

7.10.3 Transmit UPCA To EAN13

*Disable To Transmit UPCA To EAN13

Allow To Transmit UPCA To EAN13

7.10.4 Output Verification

*Output Verification

Do Not Output Verification

7.10.5 Output System Characters

*Output System Characters

Do Not Output System Characters

7.10.6 Extended Code

When setted to be "Read 2-digit extended code" or "Read 5-digit extended code", the scan engine can read the symbologies with/without extended code. When the scan engine is set to be "Do not read 2-digit extended code" or "Do not read 5-digit extended code", the extended code of the symbologies will not be read and output.

* Do Not Read 2-digit Extended Code

Read 2-digit Extended Code

* Do Not Read 5-digit Extended Code

Read 5-digit Extended Code

7.10.7 Extended Code Must Be Included

When the scan engine is set to be “extended code must be included”, it can only scan the symbologies with extended code.

*Not required

Extended Code Must Be Included

7.11 Interleaved 2 of 5

7.11.1 Restore Default Settings

Restore Default Settings Of InterLeaved25

7.11.2 Allow/Disable To Read InterLeaved25

* Allow To Read InterLeaved25

Disable To Read InterLeaved25

7.11.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.11.4 Verification And Output Verification

The Interleaved 2 of 5 barcode does not require mandatory verification, and users can choose to use verification according to different applications. If it is set to “No Verification”, the scan engine will not verify the barcode data.

If it is set to "USS Verification But Not Output Verification", the scan engine will process USS verification, and the output data will not contain verification characters after passing the verification.

If it is set to "USS Verification And Output Verification", the scan engine will process USS verification, and the output data will contain verification characters after passing the verification.

If it is set to "OPCC Verification But Not Output Verification", the scan engine will process OPCC verification, and the output data will not contain verification characters after passing the verification.

If it is set to "OPCC Verification And Output Verification", the scan engine will process OPCC verification, and the output data will contain verification characters after passing the verification.

* No Verification

USS Verification But Not Output Verification

USS Verification And Output Verification

OPCC Verification But Not Output Verification

OPCC Verification And Output Verification

7.12 **Matrix 2 of 5**

7.12.1 Restore Default Settings

Restore Default Settings Of Matrix 25

7.12.2 Allow/Disable To Read Matrix 25

Allow To Read Matrix 25

* Disable To Read Matrix 25

7.12.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.12.4 Verification And Output Verification

* No Verification

Verification But Not Output Verification

Verification And Output Verification

7.13 Industrial 2 of 5

7.13.1 Restore Default Settings

Restore Default Settings Of Industrial 25

7.13.2 Allow/Disable To Read Industrial 25

Allow To Read Industrial 25

* Disable To Read Industrial 25

7.13.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.13.4 Verification And Output Verification

* No Verification

Verification But Not Output Verification

Verification And Output Verification

7.14 IATA 2 of 5

7.14.1 Restore Default Settings

Restore Default Settings Of IATA 25

7.14.2 Allow/Disable To Read IATA 25

Allow To Read IATA 25

* Disable To Read IATA 25

7.14.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Exit Setup

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.14.4 Verification And Output Verification

* No Verification

Verification But Not Output Verification

Verification And Output Verification

7.15 Code 39

7.15.1 Restore Default Settings

Restore Default Settings Of Code 39

7.15.2 Allow/Disable To Read Code 39

* Allow To Read Code 39

Disable To Read Code 39

Exit Setup

7.15.3 Output Start And Terminator

Output Start And Terminator

* Do Not Output Start And Terminator

7.15.4 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.15.5 Verification And Output Verification

* No Verification

Verification But Not Output Verification

Verification And Output Verification

7.15.6 Disable/Enable Code32

*Disable Code32

Enable Code32

7.15.7 Code32 Prefix

This configuration only take effect when Code32 is enabled.

Enable To Output Code32 Prefix

* Disable To Output Code32 Prefix

7.15.8 Code32 Output Verification

This configuration only take effect when Code32 is enabled.

Enable Code32 To Output Verification

* Disable Code32 To Output Verification

7.15.9 Full ASCII Support

The encoding method of Code 39 can include the representation of all ASCII characters. Through setting, the scan engine can support the barcode with full ASCII character.

*Disable Full ASCII

Enable Full ASCII

7.16 **Codabar**

7.16.1 Restore Default Settings

Restore Default Settings Of Codabar

7.16.2 Allow/Disable To Read Codabar

* Allow To Read Codabar

Disable To Read Codabar

7.16.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.16.4 Verification Mode And Output Verification

* No Verification

Mode 10 Verification And Output Verification

Mode 10 Verification But Not Output Verification

Mode 16 Verification And Output Verification

Mode 16 Verification But Not Output Verification

7.16.5 Output Start And Terminator

There is a character before and after the Codabar barcode data as the Start and the Terminator. The Start and the Terminator are one of the four characters "A", "B", "C", and "D". In addition, it is allowed to use the "T", "N", "*", and "E" to represent the Terminator. You can set not to output Start and Terminator or one of the four formats.

Do Not Output Start And Terminator

*Output The Start ABCD/Terminator ABCD

Output The Start ABCD/Terminator TN*E

Output The Start abcd/Terminator abcd

Output The Start abcd/Terminator tn *e

7.17 Code 93

7.17.1 Restore Default Settings

Restore Default Settings Of Code 93

7.17.2 Allow/Disable To Read Code 93

* Allow To Read Code 93

Disable To Read Code 93

7.17.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.18 Code 11

7.18.1 Restore Default Settings

Restore Default Settings Of Code 11

7.18.2 Allow/Disable To Read Code 11

Allow To Read Code 11

* Disable To Read Code11

7.18.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.18.4 Verification Mode And Output Verification

No Verification

1 bit check if the data does not exceed 10 bits, 2 bits check if the data exceeds 10 bits, and transmit check bits

*1 bit check if the data does not exceed 10 bits, 2 bits check if the data exceeds 10 bits, and do not transmit

Fixed 1-bit check, transmit check bit

check bits

Fixed 1-bit check, do not transmit check bit

Fixed 2-bit check, transmit check bit

Fixed 2-bit check, do not transmit check bit

7.19 **MSI Plessey**

7.19.1 Restore Default Settings

Restore Default Settings Of MSI Plessey

7.19.2 Allow/Disable To Read MSI Plessey

Allow To Read MSI Plessey

* Disable To Read MSI Plessey

7.19.3 Set Length Limit

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Exit Setup

Set Maximum Length Limit 32

Custom Set Minimum Length

* Set Maximum Length Limit 255

Custom Set Maximum Length

7.19.4 Verification Mode And Output Verification

No Verification

Mode 10 check, transmit check bit

* Mode 10 check, do not transmit check bit

Mode 11 check, transmit check bit

Mode 11 check, do not transmit check bit

Mode 10、10 check, transmit check bit

Mode 10、10 check, do not transmit check bit

Mode 11、10 check, transmit check bit

Mode 11、10 check, do not transmit check bit

7.20 **GS1 DataBar**

* Allow To Read GS1 DataBar

Disable To Read GS1 DataBar

7.21 **GS1 DataBar Limited**

* Allow To Read GS1 DataBar Limited

Disable To Read GS1 DataBar Limited

7.22 **GS1 DataBar Expanded**

* Allow To Read GS1 DataBar Expanded

Disable To Read GS1 DataBar Expanded

7.23 **Plessey**

7.23.1 Restore Default Settings

Restore Default Settings Of Plessey

7.23.2 Allow/Disable To Read Plessey

* Disable To Read Plessey

Allow To Read Plessey

7.23.3 Set Length Limit

Exit Setup

* Set Minimum Length Limit 00

Set Minimum Length Limit 04

Set Maximum Length Limit 32

* Set Maximum Length Limit 255

Custom Set Minimum Length

Custom Set Maximum Length

7.23.4 Output Verification

Output Verification

* Do Not Output Verification

7.24 Febraban

7.24.1 Type ITF25

Allow To Read Type ITF25 Febraban

* Disable To Read Type ITF25 Febraban

7.24.2 Type Code128

Allow To Read Type Code128 Febraban

* Disable To Read Type Code128 Febraban

7.24.3 Verification Character Setting

Turn On Febraban Verification

* Turn Off Febraban Verification

7.25 Composite

Allow To Read Composite

* Disable To Read Composite

7.26 PDF 417

* Allow To Read PDF 417

Disable To Read PDF 417

7.27 QR Code

* Allow To Read QR

Disable To Read QR

7.28 Micro QR

Allow To Read Micro QR

* Disable To Read Micro QR

Exit Setup

7.29 **Data Matrix**

* Allow To Read Data Matrix

Disable To Read Data Matrix

7.30 **Micro PDF417**

Allow To Read Micro PDF417

* Disable To Read Micro PDF417

7.31 **Aztec**

* Allow To Read Aztec

Disable To Read Aztec

7.32 **Maxicode**

Allow To Read Maxicode

* Disable To Read Maxicode

7.33 **Chinese-sensible Code**

Allow To Read Chinese-sensible Code

* Disable To Read Chinese-sensible Code

7.34 **DotCode**

Allow To Read DotCode

*Disable To Read DotCode

8 Data Code

8.1 **Data Code 0~F**

Data Code 0

Data Code 1

Data Code 2

Data Code 3

Data Code 4

Data Code 5

Data Code 6

Data Code 7

Data Code 8

Data Code 9

Data Code A

Data Code B

Data Code C

Data Code D

Data Code E

Data Code F

8.2 **Save Or Cancel**

After scanning the data code, scan the “Save” to save the read data. If there is an error when scanning the data code, besides resetting, you can also cancel the wrong data.

For example, you scan a programming code and then scan data code "1", "2" and "3". If you scan "Cancel One Bit data Of Previous Reading", the last read data code "3" will be cancelled. If you scan "Cancel The Data String Of Previous Reading", the read data code "1", "2" and "3" will be cancelled. If you scan "Cancel The Current Setting", the read data code will be cancelled together with the programming code.

Save

Cancel One Bit data Of Previous Reading

Cancel The Data String Of Previous Reading

Cancel The Current Setting

9 Get Device Information

Get Product Version Number

Appendix A: Factory Defaults Table

Parameter		Factory Default	Remarks
System Settings			
Programming Barcode		Enter Setup	
Transmit Programming Barcode Data		Disable	
Communication Interface		Keyboard	
TTL-232	Baud Rate	9600	
	Parity Check	None	
	Data Bits	8	
	Stop Bits	1	
	Hard Ware Flow Control	None	
HID-KBW	HID-KBW Keyboard Layout	US Keyboard	
	HID-KBW Inter-Keystroke Delay	2ms	
	Polling Rate	1ms	
Mode Parameter			
Default Scan Mode		Trigger Mode	You can choose: batch mode, trigger mode, sense mode and continuous mode.
Trigger Mode	Single Reading Duration	3000ms	Range: 1000~3600000ms
	Trigger Condition	Electrical Level	
	Delay Of Scanning The Same Barcode	No Delay	
	Re Reading And Reset After Timeout	Do Not Reset	
	Delay time of scanning the same barcode	1500ms	
Sense Mode	Single Reading Duration	3000ms	Range: 1000~3600000ms
	Image Stabilization Duration	60ms	Range: 0~1600ms
	Delay Of Scanning The Same Barcode	No Delay	
	Re Reading And Reset After Timeout	Do Not Reset	
	Delay time of scanning the same barcode	1500ms	Range: 0~65535ms
	Scene Change Threshold Value	10	Range: 1~50

Continuous Mode	Single Reading Duration	3000ms	Range: 1000~3600000ms
	Interval Duration of Reading	500ms	Range: 0~65535ms
	Delay Of Scanning The Same Barcode	No Delay	
	Re-reading And Reset After Timeout	Do Not Reset	
	Delay time of scanning the same barcode	1500ms	Range: 0~65535ms
Illumination And Aiming			
Illumination		Normal	
Aiming		Normal	
Beeps And LED			
Power On Beep		On	
Parameter		Factory Default	Remarks
Good Read Beep	On/Off	On	
	Beep Type	Type 3	
	Beep Volume	High	
Programming Barcode Beep		On	
Good Read LED		On	
NGR	Output Information	Do Not Output	
	Information	None	
Edit Data			
Subsequence Of Prefix And Code ID		Prefix Before Code ID	
Add Prefix		Disable	
Prefix Information		None	
Add Code ID		Disable	
Add Suffix		Disable	
Suffix Information		None	
Add Terminator		Allow	
Terminator Information		0x0D	
Select Parts Of Data		Output All Parts Of Data	
Modify The Length Of Data		0	Range: 0~255
Data Output Encoding Format		GBK	GBK, UTF8, UNICODE, Original Data Output are optional
ECI Mode		support	
Invoice Mode		support	
Symbologies Parameters			
Code128			
Read		Allow	
Maximum Length		255	
Minimum Length		0	

EAN-8		
Read	Allow	
Output Verification	Output	
2-digit extended code	Do Not Read	
5-digit extended code	Do Not Read	
Extended Code Must Be Included	Not Require	
Transmit EAN8 To EAN13	Disable	
EAN-13		
Read	Allow	
Output Verification	Output	
2-digit extended code	Do Not Read	
5-digit extended code	Do Not Read	
Extended Code Must Be Included	Not Require	
Parameter	Factory Default	Remarks
Transmit EAN13 To ISBN	Disable	
Transmit EAN13 To ISSN	Disable	
UPCE0		
Read	Allow	
Output Verification	Output	
Output System Characters	Output	
2-digit extended code	Do Not Read	
5-digit extended code	Do Not Read	
Extended Code Must Be Included	Not Require	
Transmit UPCE0 To UPCA	Disable	
UPCE1		
Read	Allow	
Output Verification	Output	
Output System Characters	Output	
2-digit extended code	Do Not Read	
5-digit extended code	Do Not Read	
Extended Code Must Be Included	Not Require	
Transmit UPCE1 To UPCA	Disable	
UPCA		
Read	Allow	
Transmit UPCA To EAN13	Disable	
Output Verification	Output	
2-digit extended code	Do Not Read	
5-digit extended code	Do Not Read	
Extended Code Must Be Included	Not Require	
Output System Characters	Output	
Interleaved 2 of 5		
Read	Allow	
Verification	No Verification	
Output Verification	Do Not Output	

Maximum Length	255	
Minimum Length	0	
Matrix 2 of 5		
Read	Disable	
Verification	No Verification	
Output Verification	Do Not Output	
Maximum Length	255	
Minimum Length	0	
Industrial 2 of 5		
Read	Disable	
Parameter	Factory Default	Remarks
Verification	No Verification	
Output Verification	Do Not Output	
Maximum Length	255	
Minimum Length	0	
IATA25		
Read	Disable	
Verification	No Verification	
Output Verification	Do Not Output	
Maximum Length	255	
Minimum Length	0	
Code 39		
Read	Allow	
Verification	No Verification	
Output Verification	Do Not Output	
Output Start And Terminator	Do Not Output	
Support Full ASCII	Do Not Support	
Convert To Code 32	Do Not Convert	
Code32 Output Prefix	Do Not Output	
Code32 Output Verification	Do Not Output	
Maximum Length	255	
Minimum Length	0	
Codabar		
Read	Allow	
Verification	No Verification	
Output Verification	Do Not Output	
Output Start And Terminator	Do Not Output	
Format Of Start And Terminator	ABCD/ABCD	
Maximum Length	255	
Minimum Length	0	
Code 93		
Read	Allow	
Maximum Length	255	
Minimum Length	0	

Code11		
Read	Disable	
Maximum Length	255	
Minimum Length	0	
Verification And Output Verification	1 bit check if the data does not exceed 10 bits, 2 bits check if the data exceeds 10 bits, and do not transmit check bits	
Parameter	Factory Default	Remarks
MSI Plessey		
Read	Disable	
Maximum Length	255	
Minimum Length	0	
Verification And Output Verification	Mode 10 check, do not transmit check bit	
PDF417		
Read	Allow	
QR		
Read	Allow	
Micro QR		
Read	Disable	
Data Matrix		
Read	Allow	
Micro PDF417		
Read	Disable	
Aztec		
Read	Allow	
Reverse Color Code	Disable	
GS1 DataBar		
Read	Allow	
GS1 DataBar Limited		
Read	Allow	
GS1 DataBar Expanded		
Read	Allow	
Plessey		
Read	Disable	
Maximum Length	255	
Minimum Length	0	
Verification And Output Verification	Do Not Output Verification	
Febraban		
Read	Disable	
Composite		
Read	Disable	

Maxicode		
Read	Disable	
Chinese-sensible Code		
Read	Disable	
DotCode		
Allow To Read	Disable	

Appendix B: Code ID Table

条码类型	Code ID
Code128	j
EAN-8	d
EAN-13	d
UPC-E0	c
UPC-E1	c
UPCA	c
Interleaved 2 of 5	e
Matrix 2 of 5	v
Industrial 2 of 5	D
IATA25	s
Code 39	b
Codabar	a
Code 93	i
PDF417	r
QR	Q
Data Matrix	u
Code 11	H
MSI Plessey	J
Micro QR	Q
Code32	b
ISBN	d
ISSN	d
MicroPDF417	s
Aztec	z
GS1 128	j
AIM 128	f
ISBT 128	F
GS1 DataBar	R
GS1 DataBar Limited	R
GS1 DataBar Expanded	R
Plessey	p
Maxicode	x
Chinese-sensible Code	h
DotCode	d
Combined Code	m

Appendix C： ASCII Table

Hex	Dec	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)
Hex	Dec	Character	
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	
Hex	Dec	Character	
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
Hex	Dec	Character
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 D：Parameters Configuration Example

The methods in the following examples use programming barcodes to set parameters. "Scanning 'xxxxx'" in the text refers to scanning the programming barcodes of this function.

How To Modify The Single Reading Duration

Example: Set up the single reading duration to be 1500ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Custom Modify The Single Reading Duration”;
3. Scanning Data Code “1”, “5”, “0”, “0”;
4. Scanning “Save”;
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Set Up Idle Duration

Example: Set up the idle duration to be 500ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Custom Set Up The Idle Duration”;
3. Scanning Data Code “5”, “0”, “0”;
4. Scanning “Save”;
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Set Up Image Stabilization Duration

Example: Set up the image stabilization duration to be 500ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Modify The Image Stabilization Duration”;
3. Scanning Data Code “5”, “0”, “0”;
4. Scanning “Save”;
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Modify The Delay Time Of Scanning The Same Barcode

Example: Set up the delay time of scanning the same barcode to be 1000ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Custom Modify The Delay Time Of Scanning The Same Barcode”;

3. Scanning Data Code “1”, “0”, “0”, “0”;
4. Scanning “Save”;
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Set Up The Scene Change Threshold Value

Example: Set up the scene change threshold value to be 4.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Modify The Scene Change Threshold Value”;
3. Scanning Data Code “4”;
4. Scanning “Save”;
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Set Up The Interval Duration of Reading

Example: Set up the interval duration of reading to be 500ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Custom Modify The Interval Duration of Reading”;
3. Scanning Data Code “5”, “0”, “0”;
4. Scanning “Save”;
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Modify Prefix Or Suffix

Example: Set “CODE” to be the custom prefix.

1. Look up the ASCII table and get the hexadecimal value corresponding to the four characters "CODE": 43、4F、44、45;
2. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
3. Scanning “Modify Prefix”;
4. Scanning Data Code “4”,“3”,“4”,“F”,“4”,“4”,“4”,“5”;
5. Scanning “Save”.
6. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Modify Terminator

Example: Modify the terminator to be 0x0D

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Modify Terminator”

3. Scanning Data Code “0”, “D”;
4. Scanning “Save”
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Modify Code ID

Example: Modify PDF417 Code ID to be ‘p’:

1. Look up the table to get the hexadecimal value of ‘p’ is 70;
2. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
3. Scanning “Modify PDF417 Code ID”;
4. Scanning Data Code “7”, “0”;
5. Scanning “Save”;
6. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Modify NGR Information

Example: Modify NGR Information to be “!ERR”.

1. Look up the table to get the hexadecimal value of “!ERR” is 21, 45, 52, 52;
2. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
3. Scanning “Modify NGR Information”;
4. Scanning Data Code “2”, “1”, “4”, “5”, “5”, “2”, “5”, “2”;
5. Scanning “Save”;
6. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Set Up The Maximum Or Minimum Length Limit

Tips: The maximum length limit of any 1D barcode shall not exceed 127. If the maximum length is less than the minimum length, only the barcode with these two lengths can be read; If the maximum length is equal to the minimum length, only this length is supported.

Example: The Code 128 type is limited to read symbols with a minimum of 8 bytes and a maximum of 12 bytes.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Set Up Minimum Length Limit” of Code 128;
3. Scanning Data Code “8”;
4. Scanning “Save”;
5. Scanning “Set Up Maximum Length Limit” of Code 128;
6. Scanning Data Code “1”;
7. Scanning Data Code “2”;
8. Scanning “Save”;
9. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Set Up Inter-keystroke Delay

Example: Set up the inter-keystroke delay to be 15ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Custom Modify The Inter-keystroke Delay”
3. Scanning Data Code “1”, “5”;
4. Scanning Data Code “Save”
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

How To Modify The LED Remained Time

Example: Modify the LED remained time to be 200ms.

1. Scanning “Enter Setup” (Please ignore this step if the “Enter Setup” is ready);
2. Scanning “Custom Modify The Inter-keystroke Delay”
3. Scanning Data Code “2”, “0”, “0”;
4. Scanning Data Code “Save”
5. Scanning “Exit Setup”. (Please ignore this step if you need to set up more parameters.)

Appendix E：ASCII Function Key Mapping Table

Dec	Hex	Function Key Mapping Disabled	Ctrl+ASCII
0	00	Null	Ctrl+2
1	01	Keypad Enter	Ctrl+A
2	02	Caps Lock	Ctrl+B
3	03	Null	Ctrl+C
4	04	Null	Ctrl+D
5	05	Null	Ctrl+E
6	06	Null	Ctrl+F
7	07	Enter	Ctrl+G
8	08	Left Arrow	Ctrl+H
9	09	Horizontal Tab	Ctrl+I
10	0A	Down Arrow	Ctrl+J
11	0B	Vertical Tab	Ctrl+K
12	0C	Backspace	Ctrl+L
13	0D	Enter	Ctrl+M
14	0E	Insert	Ctrl+N
15	0F	Esc	Ctrl+O
16	10	F11	Ctrl+P
17	11	Home	Ctrl+Q
18	12	Print Screen	Ctrl+R
19	13	Delete	Ctrl+S
20	14	tab+shift	Ctrl+T
21	15	F12	Ctrl+U
22	16	F1	Ctrl+V
23	17	F2	Ctrl+W
24	18	F3	Ctrl+X
25	19	F4	Ctrl+Y
26	1A	F5	Ctrl+Z
27	1B	F6	Ctrl+[
28	1C	F7	Ctrl+\
29	1D	F8	Ctrl+]
30	1E	F9	Ctrl+6
31	1F	F10	Ctrl+_

Appendix F：Symbology ID Table

Symbology	Hex
EAN13	0x01
EAN8	0x02
UPCA	0x03
UPCE0	0x04
UPCE1	0x05
CODE128	0x06
CODE39	0x07
CODE93	0x08
CODABAR	0x09
ITF	0x0A
INDUSTRIAL25	0x0B
MATRIX25	0x0C
IATA25	0x0D
CODE11	0x0E
MSI_PLESSEY	0x0F
GS1_DATABAR_14	0x10
GS1_DATABAR_LIMITED	0x11
GS1_DATABAR_EXPANDED	0x12
PLESSEY	0x13
CODE32	0x14
ISBN	0x15
ISSN	0x16
GS1128	0x17
AIRT214D28	0x18
ISBT128	0x19
QR	0x1A
PDF417	0x1B
DM	0x1C
MICRO_QR	0x1D
MICRO_PDF417	0x1E
AZTEC	0x1F
MAXICODE	0x20
COMPOSITE	0x21
HANXIN	0x22
DOTCODE	0x23
All Type	0xFF

For Any Technical Support, please contact us at: support@rtscan.net.

Thanks!