2D Barcode Scanner

Setting Manual

***Company:** DongGuan DYscan Technology Co., Ltd

***Web:** www.dyscan.com

***Tel:** 86-755-21032537

***Add:** 21st floor, Longsheng Times Building, Industrial Road, Longhua District, Shenzhen, 518000, China

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Revision History

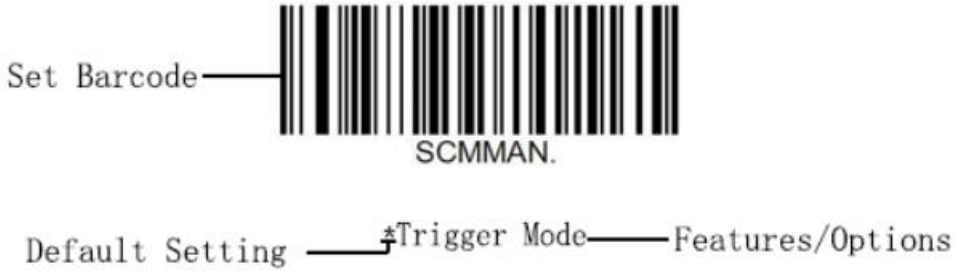
Version	Description	Data
V1.0	Initial Version	2018-09-21
V1.1	Added instruction list	2018-12-10
V1.11	update table of contents	2019-04-06

Table of Contents

Chapter1 System Settings

Introduction

The user can set the function of the barcode reader by scanning one or more setting barcodes。



Scanning Instructions

In the Trigger Mode, the scanning barcode operation steps are as follows

1. Hold down the trigger key of the barcode reader, the line of sight is activated, red red line of sight appears。

2. Align the red line of sight with the bar code center, move the bar code reader and adjust the distance between it and the bar code to find the best reading distance。

3. After hearing the successful prompt sound, and the red lighting line is extinguished, the reading is successful, and the barcode reader transmits the decoded data to the host.。

Note: During the reading process, you will find the distance between the barcode reader and the barcode within a certain range for the barcode of the same batch, and the reading success rate will be very high. This distance is the best reading distance.

Restore Defaults

All barcode readers have a factory default setting. Reading the "Restore default settings" barcode will restore all barcode reader property settings to the factory state. You are most likely to use this bar code in the following situations:

1、Error in barcode reader settings, such as barcode not recognized.

2、You have forgotten what settings were made for the barcode reader before, and you do not want to use the previous settings。

3、The bar code reader is set to use some infrequently used features and is used after completion。

Restore default settings

version

Use the scanner to scan the version number bar code, you can view the current bar coder version number information

version

Beep&LED Indications

Buzzer driving frequency

There are three levels of volume level to choose from, default: passive medium frequency

Active Medium Frequency

Passive low frequency

* Passive Medium Frequency

Passive High Frequency

Beep after Good Decode

The barcode reader will have a prompt sound after reading the barcode successfully. The user can set the switch off or turn on the prompt sound, and the default is to turn on the decoded sound.

*Beep after Good Decode

Do Not Beep after Good Decode

Startup Beep

If startup beep is enabled, the engine will beep after being turned on.

*Enable Startup Beep

Disable Startup Beep

Illumination&aiming

Illumination

The illumination lamp can provide auxiliary illumination for shooting and reading. The light beam irradiates the reading target, and improves the reading performance and the adaptability under weak environment illumination. Users can set it to one of the following states according to the application environment:

*Turn on Illumination

Turn off Illumination

Aiming light:

Aiming at the beam can help users find the best reading distance when shooting. Users can choose any of the following modes according to the application environment.

The default is to turn on the aiming light.

*Trun on Aiming light

Trun off Aiming light

Read Area Settings

For different applications, there will be some differences in the identifiable areas that users need, which can be set by scanning the following settings code.

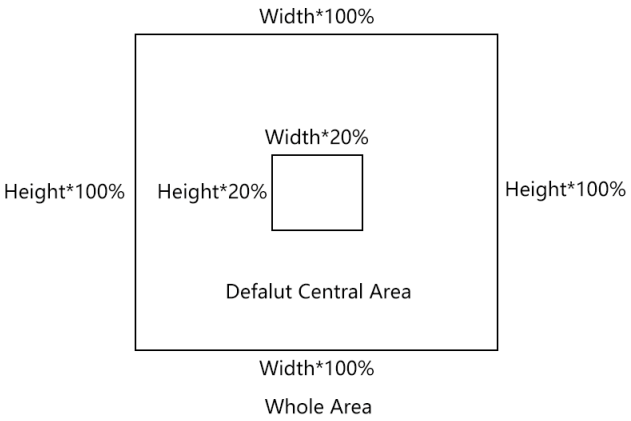
Global area

When the reading area is the whole area, the reading module will scan the barcode around the center first, and the barcode can be located in any position of the picture.

IMGREG0.

* Global area

Modify the size of the central area



The size of the commonly used central area can be set by scanning the following settings Code:

IMGREG4.

Central Area 20%

IMGREG3.

Central Area 40%

IMGREG2.

Central Area 60%

IMGREG1.

Central Area 80%

Image Flipping

Normal image

Left and right mirror image

up and down mirror image

Left&right and up&down mirror image

When the bar code appears to flip, it can scan the corresponding settings code into the mirror flip mode.

MIRLRE1.

Trun on image Flipping（Support normal and flip）

MIRLRE0.

* Trun on image Flipping（Only support normal）

Data encoding format

USB Chinese Output

In order to allow the host to print Chinese data in the specified encoding format, you can set it by reading "Data encoding format".

1: GBK (GB2312), suitable for Notepad, EXCEL and other software display.

2: UTF-8, suitable for WORD,QQ and other software display.

UTFENA0.

*GBK(GB2312)

UTFENA1.

UTF-8

Chinese output of serial port

When using serial interface, the recognition module can automatically recognize the two-dimensional code of GBK or UTF-8. The output defaults to GBK format. If you need UTF-8 Chinese output format, please read the following settings.

*GBK

UTF-8

Unicode（Big）

Unicode（Little）

VAT invoice automatic identification output function

Enable

*Disable

Chapter2 Communication setting

Introduction

When using this barcode to communicate with different hosts, you need to set the barcode reader to the corresponding communication interface mode.

The user can set the barcode scanner function by scanning one or more setting barcodes.

Users can choose to use USB-KBW, USB-COM, TTL / RS232 serial communication interface mode.

USB Mode

When using this barcode to communicate with different hosts, you need to set the barcode reader to the corresponding communication interface mode.

The user can set the barcode scanner function by scanning one or more setting barcodes.

Users can choose to use USB-KBW, USB-COM, TTL / RS232 serial communication interface mode.

USB-KBW Mode

In the mode of USB interface, there are two kinds of communication protocols to choose. The default mode is USB-KBW, that is, USB keyboard mode, which simulates USB keyboard to transmit data to the host.

*USB-KBW Mode

USB keyboard character delay

The slow speed of some hosts may lead to the loss of data reported by USB keyboard, which needs to be reduced. This is a multi-code configuration. First, scan the bar code below to enter the set mode, then scan the input value (the actual delay time is the input value * 2ms), and finally scan save to save. The default is 1, the maximum is 9 or 18ms.

USB Keyboard Character Delay Settings

Setting step: Set the delay between characters to 10MS with a value of 5.

1. Scan the bar code of "USB Keyboard Character Keyboard Delay Settings" first.

2. Scan the data code "5" according to "Appendix-Data Code".

3. Finally, scan the "Save Settings" bar code of "Appendix-Save and Cancel Settings" to complete the settings.

Country/language keyboard layout selection

Different national languages correspond to the keyboard keys arrangement, symbols, etc. are different, the barcode scanner can be virtual according to the actual needs of different countries keyboard.

* USA/China（English）

Belgium

France

Germany

Finland

Italy

Japan, Korea, Korea, Thai, Malaysia

Spain

Turkish-F

Turkish-Q


KBDCTY10.

Sweden


KBDCTY5.

United Kingdom


KBDCTY7.

Denmark


KBDCTY11.

Norway


KBDCTY12.

Portugal


KBDCTY16.

Russia


KBDCTY15.

Hungary


KBDCTY17.

Czech


KBDCTY18.

Greece


KBDCTY19.

Slovakia


KBDCTY20.

Polish


KBDCTY21.

Hebrew


KBDCTY22.

Irish


KBDCTY23.

Cyrillic (Outer Mongolian)


KBDCTY24.

Dutch


KBDCTY25.

Ukrainian


KBDCTY26.

Canadian


KBDCTY27.

Icelandic


KBDCTY28.

Luxembourg


KBDCTY29.

Bulgarian


KBDCTY30.

Kazakh


KBDCTY31.

Lithuanian

Virtual Keyboard Enablation

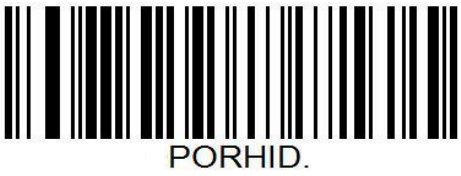
In order to be able to be used in more areas, we also provide virtual keyboard function, so that virtual keyboard can be output in any keyboard mode, but will relative loss of output efficiency. In addition, when using virtual keyboards, it is necessary to ensure that keypad numeric keys are effective.

*Turn on virtual keyboard

Turn off virtual keyboard

USB-HID Mode

Users can choose USB HID mode and standard full-speed USB 2.0 transport protocol to get faster transmission speed. Read the following "USB HID mode" bar code, switch to USB HID mode. Windows is the standard HID device



USB-HID

When using Linux system, the device is / dev / hidrawx. If the HID device accessed by the system only has this device, then: / dev / hidraw0.

USB-COM Mode

When the bar coder uses USB communication interface, but the host application program receives data by serial communication, it can be set to USB virtual serial communication mode. This function needs to install the corresponding driver on the host.

USB-COM

When using Linux system, the device is / dev / ttyACMx and X is the device number. If only one USB COM device is connected to the system, it is: / dev / ttyACM0.

TTL/RS232 mode

The serial communication interface is a common way to connect barcode and host devices and can be used to connect host devices such as PC and POS.

When using the serial communication interface of the barcode scanner, the barcode scanner and the host device must be completely matched in the configuration parameters of the serial communication protocol to ensure the accuracy of data transmit.

Serial Default :Rate 9600bps; Data 8, Stop 1, Paity none.

TTL/RS232

Parameter	default
Serial Communication Type	Standard TTL/RS232
Baud Rate	115200
Parity Type	None
Data Bits	8
Stop Bits	1

Baud rate

1200

2400

4800

9600

19200

38400

57600

*115200

Data Bit, Stop Bit, Check Bit

Default 8-bit data bit, 1-bit stop bit, no check bit

Chapter3 Reading Mode

Tirgger Mode

Set to Keyboard Holding Mode, press the button to trigger the reading, release the button to end the reading. If the reading time is longer than a single reading time, the reading will be finished.

*Trigger Mode

Continuous scanning mode

Users can also set the scanner as a continuous reading mode. After successful settings, the scanner is in a continuous scanning state. Without triggering, the reading engine immediately starts to read the code. When the successful output information of the reading code or the end of the single reading time, the reading engine waits for a period of time (settable) to automatically start the next reading code. If the following situation does not occur, the reader engine will work in the above way: during the reading process, the user can also click the trigger key to manually pause the reading. Clicking on the trigger key reads the engine to continue cyclic reading.

Continuous scanning mode

Same Barcode Output Settings

In continuous reading mode or image automatic sensing mode, when scanning the same code all the time, it can set whether the same code can be read only once, and the default time interval between the same code is 0.5 seconds continuous output.

The same code output only 1 times

Continuous output with same code without interval

* Continuous output of the same code, 0.5 seconds interval

Continuous output of the same code, 1 seconds interval

Sense Mode

After the setting is completed, there is no need to trigger, and the barcode reader starts detecting the change of the environment before the window. After the reading is complete, it stops and is in the monitoring state waiting for the next environmental change. In this mode, clicking the trigger button can also start reading.

Sense Mode

Sensitivity Level Setting

Configure the sensitivity of ordinary mobile detection mode and ultra-high sensitivity mobile detection mode, ranging from 1 to 255. The smaller the value, the higher the sensitivity, default 50.

Custom Sensitivity

Very High sensitivity

*High sensitivity

(Selection of very Dark Environment)

A little High sensitivity

(Selection of Dark Environment)

General sensitivity

(Selection of General Indoor Environment)

Low sensitivity

Chapter4 Data Editing

Introduction

After the barcode scanner is successfully decoded, the device will get a series of data, which can be numbers, English, symbols, etc. In application, we may not only need the barcode data information, or the barcode contains data information can not meet your requirement. For example, you may want to know which type of barcode you get from this string of data information or attach special data to the string data, which may not be included in the barcode data information.

Increasing these contents while making code, it is bound to increase the length of the barcode and the flexibility is not enough. It is not a good way.

At this moment, we think of artificially adding some contents before or after the barcode data information, and these added contents can be changed in real time according to the demand, and can be selectively added or masked. This is the prefix and suffix of barcode data information.

The method of adding prefixes and suffixes , can meet the requirement and need to modify the contents of the barcode information.

Note: Data editing format: <Code ID>< Custom Prefix > <barcode data> <custom suffix > <suffix>

Code ID Setting

In the process of using barcoder, you often need to know the types of barcodes that are currently scanned. We can use the Code ID prefix to identify the types of barcodes. Code ID corresponds to the bar code type. Refer to Appendix-Code ID. By default, Code ID is not transmitted.

For example, when scanning Code 128 barcode "123456" and setting the display Code ID, the output data is: "Code 128 ID: 06-123456", you can know that the barcode type is: code 128, code ID is: hexadecimal 06.

Transmit Code ID

*Not Transmit Code ID

Custom Prefix &Suffix

Step 1:

Scan the settings bar codes of "add prefix" or "add suffix"

Add prefix

Add suffix

Step 2:

According to the type of bar code that needs to be set, refer to the hexadecimal code corresponding to the corresponding bar code type of "Appendix-Code ID", and then search the corresponding data code according to "Appendix-Data Code" for scanning. Example: When prefix is added to Code 128 bar code type, the corresponding CODE ID hexadecimal data is 06. Scanning corresponding two data code barcodes "0" and "6" is enough. Scanning "F" and "F" means adding prefix or suffix to all bar code types.

Step 3:

Scan the contents of prefix and suffix barcodes that need to be added. First refer to "Appendix-ASCII Code Table" to see the data characters that need to be added, then look at the two hexadecimal codes corresponding to the first column, and then refer to "Appendix-Data Code" to scan the barcode corresponding to the number one by one.

Step 4:

Repeat step three to add more prefix and suffix characters.

Step 5:

Scan the "Save Settings" barcode of "Appendix-Save and Cancel Settings" to complete the configuration

Delete prefix and suffix

Deleting prefix and suffix settings can delete prefixes that have been added to all or part of the barcode type.

Global settings

When using global settings, you can choose to delete the prefix and suffix of full code type. When scanning any of the following barcode types, the scanner will delete all prefixes and suffixes of all supported barcode types. When the suffix is deleted, the terminator suffix is also deleted.

Delete the prefix of all codes

delete the suffix of all codes

Custom Delete Prefix and Suffix Settings

When setting the settings with custom deletion suffixes, you can select a code type of prefix deletion operation. When using custom deletion suffixes operation, the terminator suffixes will not be deleted. The specific operation steps are as follows.

Note: When using custom deletion prefix and suffix, you can't select FF's global CODE ID to delete all barcode type prefix and suffix.

Step 1:

Scan settings barcodes for "Delete the prefix of one code" or "Delete the suffix of one code"

Delete the prefix of one code

Delete the suffix of one code

Step 2:

According to the type of bar code that needs to be set, refer to the hexadecimal code corresponding to the corresponding bar code type of "Appendix-Code ID", and then search the corresponding data code according to "Appendix-Data Code" for scanning.

Example: When the prefix is deleted for Code 128 barcode type, the corresponding CODE ID hexadecimal data is 06, and the corresponding two data barcodes "0" and "6" can be scanned.

Step 3

Scan the "Save Settings" bar code of "Appendix-Save and Cancel Settings" to complete the configuration

Hidden character

When users need to hide some barcode information, they can choose to turn on this function.

We decompose a bar code information [Transfer all data] into three parts. [Header Fields] [Intermediate Fields] [Tail Fields].

We can control the length of different fields, select the corresponding fields for output, to achieve the purpose of hiding characters.

*Transfer all data

Transfer header field

Transfer intermediate fields

Transfer tail field

Modify header field length

Scanning "Modify Header Field Length", ranging from 0 to 512 characters, when the length is longer than the length of the read data, output the complete read data length.

Modify Header Field Length

The operation steps are as follows:

1. Firstly, the number of barcodes that need to be output from the header field is analyzed. For example, "1234567890" needs to output the first six characters of "123456";

2. Scanning the bar code "Modify the length of header field";

3. Scan the "0" and "6" barcodes of "Appendix-Data Code" in turn.

4. Scan the "Appendix-Save and Cancel Settings" save settings bar code;

5. Scan the "Transfer Header Fields" bar code. Complete the configuration.

Modify the length of the intermediate field

When the user needs to choose to output the intermediate field of the barcode, we can operate the barcode to achieve the output of the intermediate field.

First, we need to modify the length of the header field and tail field, and then select the "Transfer intermediate field" bar code to complete the settings. The specific operation steps are as follows:

1. Firstly, the number of barcodes that need to be output in the header and tail fields is analyzed. For example, when "1234567890ABCD" needs to output five characters of "789AB" in the middle, the length of the front segment character is 6, and the length of the tail character is 1.

2. Scanning the bar code "Modify the length of header field";

3. Scan the "0" and "6" barcodes of "Appendix-Data Code" in turn.

4. Scan the "Modify the length of the tail field" bar code;

5. Scan the "0" and "1" barcodes of "Appendix-Data Code" in turn.

4. Scan the "Appendix-Save and Cancel Settings" save settings bar code;

5. Scan "Transfer Intermediate Field" barcode. Complete the configuration.

Modify tail field length

Scan "Modify the length of the tail field", ranging from 0 to 512 characters. When the length is longer than the length of the read data, output the complete read data length.

Modify tail field length

The operation steps are as follows:

1. Firstly, the number of barcodes that need to be output from the header field is analyzed. For example, "1234567890abc" needs to output six characters after "890abc";

2. Scan the "Modify the length of the tail field" bar code;

3. Scan the "0" and "6" barcodes of "Appendix-Data Code" in turn.

4. Scan the "Appendix-Save and Cancel Settings" save settings bar code;

5. Scan the "Transfer Tail Fields" bar code. Complete the configuration.

Suffix setting

The end character is used to mark the end of a complete data message. The suffix of end character must be the last content of a data transmit, then there will be no additional data. Difference between suffix of end character and customized suffix is that the contents and decoding information of the customized suffix , prefix and other contents can be formatted, but suffix of end character can’ t make it.

Add CR*

Delete CR

Add LF

Delete LF

AddTab

DeleteTab

Character conversion

By setting the character conversion function of the barcode scanner, the upper case and lower case conversions of the English letters of the barcode output data can be performed. For example, if the content of the barcode is aBC123, set the barcode to "all in lower case" and the data obtained by the host will be "abc123". The default is Normal output.

Normal（No Change）*

Upper（Capitalize）

Lower（All lowercase）

Inverse（Case inversion）

Note: This parameter is only valid in standard keyboard input mode and keyboard emulation input control character mode.

Chapter5. BarCode Parameter Settings

Introduction

Each type of barcode has its own unique properties,Through the setting code of this chapter, you can adjust the barcode reader to adapt to these property changes.The fewer types of barcodes that are enabled to enable reading,The faster the barcode reads.You can disable barcode scanners from reading barcode types that will not be used, to improve the performance of the barcode scanner.

Global setting

Enable/Disable 1D Symbologies

If the Disable 1D Symbologies feature is enabled, the engine will not be able to read any 1D barcodes.

Enable 1D Symbologies

Disable 1D Symbologies

Enable/Disable 2D Symbologies

If the Disable 2D Symbologies feature is enabled, the engine will not be able to read any 2D barcodes.

Enable 2D Symbologies

Disable 2D Symbologies

UPC-A

Enable/Disable UPC-A

*Eanble UPC-A

Disable UPC-A

Whether to transmit check bits or not

UPC-A bar code data is fixed to 13 characters, and the 13th bit is the check bit. It is used to check the correctness of all 13 characters, and the default is to transmit the check bit.

* Transfer Check Bit

Not Transfer Check Bit

Whether to transfer system characters

Transfer system character

* Not Transfer system character

UPC-A to EAN-13

Allow UPC-A to EAN-13

*Not Allow UPC-A to EAN-13

Whether to read additional bits

Additional bits refer to 2 or 5 digit barcodes added after the normal barcode, As shown below, the left blue line box is an ordinary bar code, the right side of the red box is an additional bit. The default is to turn off extra bits.

UPC-A Add-on Code

Users can do additional setting by scanning following UPC-A code

Enable 2-Digit add-on Code

Disable 2-Digit add-on Code*

Enable 5-Digit add-on Code

Disable 5-Digit add-on Code*

Add-on Code Required

Add-on Code Not Required*

UPC-E

Enable/Disable UPC-E

*Enable UPC-E

Disable UPC-E

Whether to transmit check bits or not

UPC-E bar code data is fixed to 8 characters, and the 8th bit is the check bit. It is used to check the correctness of all 8 characters, and the default is not to transmit the check bit.

Transfer Check Bit

*Not transfer Check Bit

Whether to read additional bits

Additional bits refer to 2 or 5 digit barcodes added after the normal barcode, As shown below, the left blue line box is an ordinary bar code, the right side of the red box is an additional bit. The default is to turn off extra bits.

UPC-E Add-on Code

Users can do additional setting by scanning following UPC-E code

Enable 2-Digit add-on Code

*Disable 2-Digit add-on Code

Enable 5-Digit add-on Code

*Disable 5-Digit add-on Code

Add-on Code Required

*Add-on Code Not Required

UPC-E To UPC-A

Enable UPC-E to UPC-A

*Disable UPC-E to UPC-A

EAN-8

Enable/Disable EAN-8

*Enable EAN-8

Disable EAN-8

Whether to transmit check bits or not

EAN-8 bar code data is fixed to 8 characters, and the 8th bit is the check bit. It is used to check the correctness of all 8 characters. The default is to transmit the check bit.

*Transfer Check Bit

Not transfer Check Bit

Whether to read additional bits

Additional bits refer to 2 or 5 digit barcodes added after the normal barcode, as shown below，The left blue line box is an ordinary bar code，the right side of the red box is an additional bit. The default is to turn off extra bits.

EAN-8 Add-on Code

Users can do additional setting by scanning following EAN-8 code

Enable 2-Digit add-on Code

*Disable 2-Digit add-on Code

Enable 5-Digit add-on Code

*Disable 5-Digit add-on Code

Add-on Code Required

*Add-on Code Not Required

EAN-13

Enable/Disable EAN-13

*Enable EAN-13

Disable EAN-13

Whether to transmit check bits or not

EAN-13 barcode data is fixed to 13 characters, and the 13th bit is the check bit, which is used to check the correctness of all 13 characters. The default is to transmit the check bit.

*Transport check bits

Not Transfer check bits

Whether to read additional bits

Additional bits refer to 2 or 5 digit barcodes added after the normal barcode，as shown below, the left blue box is an ordinary bar code, and the right red box is an extra bit. The default is to turn off extra bits.

EAN-13 Add-on Code

Users can do additional setting by scanning following EAN-13 code

Enable 2-Digit add-on Code

*Disable 2-Digit add-on Code

Enable 5-Digit add-on Code

*Disable 5-Digit add-on Code

Add-on Code Required

*Add-on Code Not Required

Code 128

Enable/Disable Code 128

*Enable Code 128

Disable Code 128

Code 128 Recognition Length

Users can set the code 128 within a specific length range (0-80) to decode. The minimum length of Code 128 is 0 by default, and the maximum length is 80.

Code 128 Minimum Length Settings

Code 128 Maximum Length Settings

GS1-128(UCC/EAN-128)

Enable/Disable GS1-128

*Enable GS1-128

Disable GS1-128

GS1-128 Recognition Length

Users can set the code 128 within a specific length range (1-80) to decode. The minimum length of Code 128 is 0 by default, and the maximum length is 80.

GS1-128 最小长度设置

GS1-128 最大长度设置

Code 39

Enable/Disable Code 39

*Enable Code 39

Disable Code 39

Check Bit Settings

Code 39 barcode data is not mandatory to contain a check bit, if there is a check bit, it is the last character of the data. Check bits are values calculated from all data to verify the correctness of the data.

Set to "No Check" bar coder will normally transmit all bar code data.

Set to "check and transmit the check bits", the barcoder will check the last bit of the barcode. If the check passes, the check bits will be transmitted together as the last bit of the normal data. The failure of the check will prompt the failure of reading the code.

*No check

Check and transmit check bits

Check bits are not transmitted

Transmit Start/Stop Character

A character "*" as a start and stop character before and after the Code 39 barcode data，you can set whether the start and stop characters are transmitted together with the barcode data after the reading is successful.

Transmit Start/Stop Character

*Do not Transmit Start/Stop Character

Enable/Disable Code 39 Full ASCII

Code 39 data can include all ASCII characters, but the barcode reader only reads some ASCII characters by default，by setting, you can turn on the function of reading full ASCII characters，default Enable all ASCII characters.

Enable Code 39 Full ASCII

*Disable Code 39 Full ASCII

Code 93

Enable/Disable Code 93

*Enable Code 93

Disable Code 93

Code 93 Recognition Length

Users can set the code 93 within a specific length range (0-80) to decode. The minimum length of Code 93 is 0 by default, and the maximum length is 80.

Code 93 Minimum Length Settings

Code 93 Maximum Length Settings

Code 11

Enable/Disable Code 11

Enable Code 11

*Disable Code 11

Code 11 Recognition Length

Users can set the code 11 within a specific length range (1-80) to decode. The minimum length of Code 11 is 4 by default, and the maximum length is 80.

Code 11Minimum Length Settings

Code 11 Maximum Length Settings

Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5

*Enable Interleaved 2 of 5

Disable Interleaved 2 of 5

Check Bit Settings

Interleaved 2 of 5 bar code data is not mandatory to contain check bits. If there are check bits, it is the last character of the data. Check bits are values calculated from all data to verify the correctness of the data.

Set to "No Check" bar coder will normally transmit all bar code data.

Set to "check and transmit the check bits", the barcoder will check the last bit of the barcode. If the check passes, the check bits will be transmitted together as the last bit of the normal data. The failure of the check will prompt the failure of reading the code.

*No check

Check and transmit check bits

Check bits are not transmitted

Interleaved 2 of 5 Recognition Length

Users can set up to decode Interleaved 2 of 5 in a specific length range (2-80). The minimum length of Interleaved 2 of 5 defaults to 4 and the maximum length is 80.

Interleaved 2 of 5 Minimum Length Settings

Interleaved 2 of 5 Maximum Length Settings

Matrix 2 of 5

Enable/Disable Matrix 2 of 5

Enable Matrix 2 of 5

*Disable Matrix 2 of 5

Matrix 2 of 5 Recognition Length

Users can set up to decode Matrix 2 of 5 in a specific length range (1-80). The minimum length of Matrix 2 of 5 defaults to 4 and the maximum length is 80.

Matrix 2 of 5 Minimum Length Settings

Matrix 2 of 5 Maximum Length Settings

Industrial 2 of 5 & Standard 2 of 5(IATA)

Enable/Disable Industrial 2 of 5 & Standard 2 of 5

Enable Industrial 2 of 5

*Disable Industrial 2 of 5

Industrial 2 of 5 & Standard 2 of 5 Recognition Length

Users can set up to decode Industrial 2 of 5 & Standard 2 of 5 in a specific length range (1-48). The minimum length of Industrial 2 of 5 & Standard 2 of 5 defaults to 4 and the maximum length is 48.

Industrial 2 of 5 & Standard 2 of 5

Minimum Length Settings

Industrial 2 of 5 & Standard 2 of 5

Maximum Length Settings

Codabar（NW-7)

Enable/Disable Codabar

*Enable Codabar

*isable Codabar

Start and Stop Characters Settings

Transfer start and stop characters

*Not transfer start and stop characters

Codabar Recognition Length

Users can set the code abar within a specific length range (2-60) to decode. The minimum length of the code abar defaults to 4, and the maximum length is 60.

Codabar Minimum Length Settings

Codabar Maximum Length Settings

MSI

Enable/Disable MSI

Enable Plessey

*Disable Plessey

Check Bit Settings

* Validate type 10，but don’ t transmit

Validate type 10，and transmit

Validate 2 type 10 chars，but don’ t transmit

Validate 2 type 10 chars，and transmit

Validate type 10 then type 11 char，but don’ t transmit

Validate type 10 then type 11 char，and transmit

Disable MSI check

MSI Recognition Length

Users can set the MSI within a specific length range (4-48) to decode. The minimum length of MSI is 4 by default, and the maximum length is 48.

MSI Minimum Length Settings

MSI Maximum Length Settings

GS1 DataBar (RSS)

Enable/Disable GS1 DataBar

*Enable GS1 DataBar

Disable GS1 DataBar

GS1 DataBar Recognition Length

Users can set the MSI within a specific length range (4-74) to decode. The minimum length of MSI is 4 by default, and the maximum length is 74.

GS1 DataBar Minimum Length Settings

GS1 DataBar Maximum Length Settings

GS1 DataBar Limit

Enable/Disable GS1 DataBar Limited

*Enable GS1 DataBar Limited

Disable GS1 DataBar Limited

GS1 DataBar Expand

Enable/Disable GS1 DataBar Expand

*Enable GS1-DataBar Expand

Disable GS1-DataBar Expand

Datalogic 2 of 5(China Post)

Enable/Disable Datalogic 2 of 5

*Enable Datalogic 2 of 5

Disable Datalogic 2 of 5

QR Code

Enable/Disable QR Code

*Enable QR Code

Disable QR Code

Data Matrix

Enable/Disable Data Matrix

*Enable Data Matrix

Disable Data Matrix

PDF 417

Enable/Disable PDF 417

*Enable PDF 417

Disable PDF 417

Enable/Disable Micro PDF 417

*Enable Micro PDF 417

Disable Micro PDF 417

Aztec Code

Enable/Disable Aztec Code

Enable Aztec Code

*Disable Aztec Code

Chapter 6 Communication Command

Introduction

Users can send serial instructions from the host to set up the reading module. The normal communication between the reader module and the host device can only be realized when the communication parameters are fully matched. The default serial communication parameters of the reader module are: baud rate 115 200 bps, no check, 8 bit data, 1 bit stop bit, no flow control.

Command Format

The bar coder adopts the format of "prefix + instruction" as a set of instructions. Users can select strings or hexadecimal instructions to send, which can be used to control the bar coder.

Prefix：^_^ （ASCII： 0x5E，0x5F，0x5E）

Command： “Appendix-Command Table”

Command Format：Prefix+Command

Command Feedback

When the sending command succeeds, the scanner returns the ACK value: 06

When the sending command fails, the scanner returns the NAK value: 15

Trigger command

Open Scan [Character Type Send]: ^_^ SCAN.

Close Scan [Character Type Sending]: ^_^ SLEEP.

Or send through hexadecimal instructions in the following format:

Command sending is 5E 5F 5E 53 43 414E 2E

Command sending is 5E 5F 5E 53 4C 45 50 2E

Note: Open scan default timeout time is 8S

Example: Turn off decoded sound

Directive: BEPSUC0.

String: ^_^ BEPSUC0.

Hexadecimal: 5E 5F 5E 20 42 45 50 53 55 43 302E

Example: Custom prefix and suffix -

Add the prefix "Ab" suffix "99" to Code 128 barcode "123mn".

Description: Code128's Code ID is "06", Ab's hexadecimal ASCII is "41" and "61", and 99's hexadecimal ASCII is "39" and "39".

Set prefix: Command are sent as ^ PREADD064161.

Set the suffix: Instructions are sent as [Character Type Send]^_^ SUFADD063939.

Or send through hexadecimal instructions in the following format:

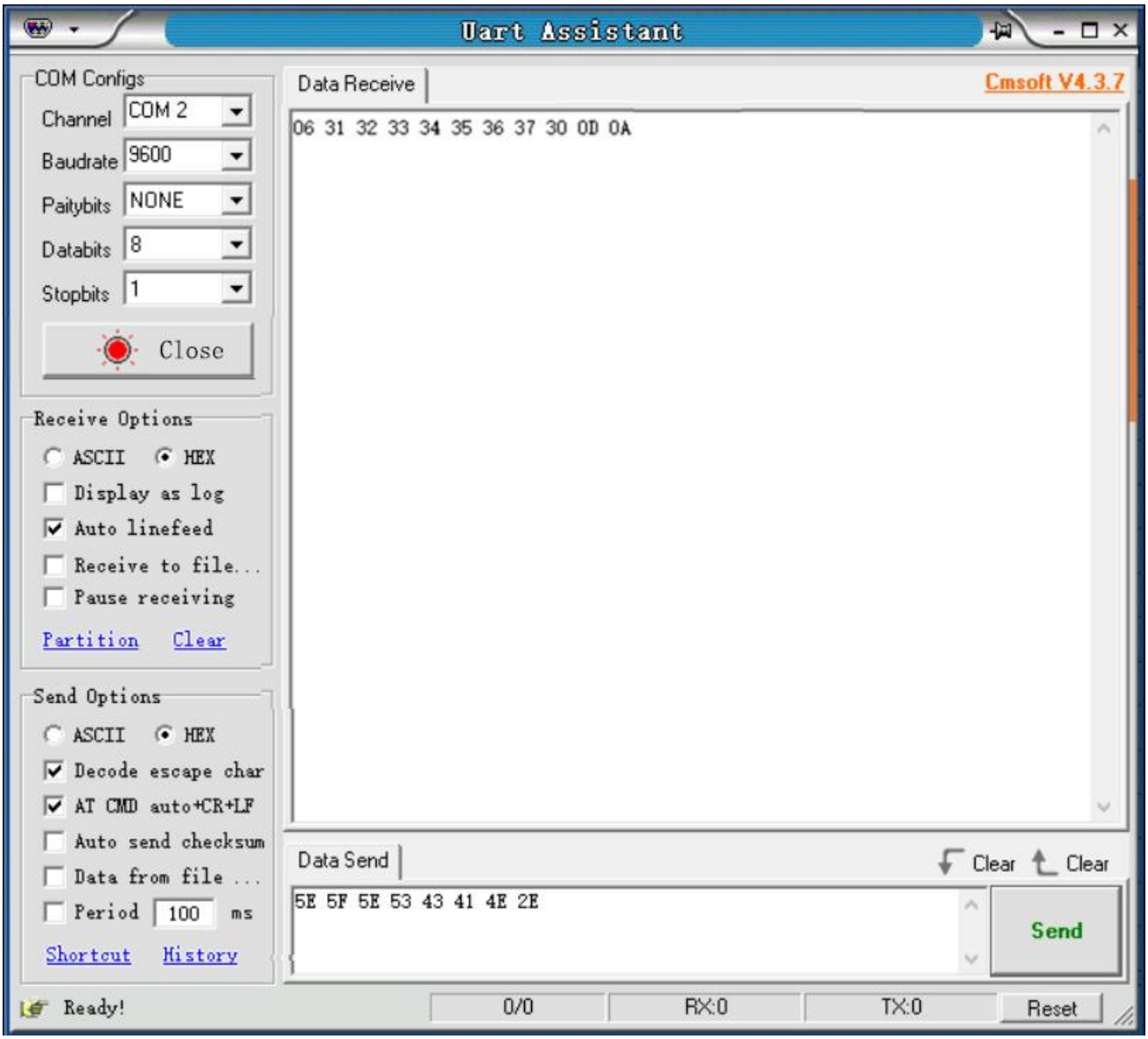
Command sending is 5E 5F 5E 50 52 45 41 44 44 30 36 34 31 36 31 2E

Command sending is 5E 5F 5E 53 55 46 41 44 44 30 36 33 39 33 39 2E

The final output data is "Ab123mn99"

Command Sending Example

Send hexadecimal command to control scan, send open scan command: 5E 5F 5E 53 43 41 4E 2E



Note: For detailed commands, please refer to Appendix-Command Table.

Chapter7 Appendix

Appendix – Default Settings Table

Parameter name	Default setting	Instruction Remark
Comprehensive settings		
Buzzer frequency	Passive Medium Frequency	Default on
Decoding voice	ON	
Startup Beep	ON	
Supplementary lighting	ON	
Aiming light	ON	
Reading area	Global area	
Mirror mode	OFF	
USB Chinese Output	GBK	
Chinese output of serial port	GBK	
Invoice mode	OFF	
Communication settings		
Communication mode	USB-KBW	
USB Character Key Delay	2MS	
Keyboard mode	美国	
Virtual Keyboard Function	ON	
Serial Port Baud Rate	115200	

Serial port check	无校验
Serial data bits	8 个
Serial Port Stop Bit	1 位
Reading mode	
Reading mode	Trigger mode
Continuous Reading Mode-Delay of Same Bar Code Reading	500MS
Induction mode-image stabilization time	500MS
Induction Mode-Sensitivity	high sensitivity
Instruction Trigger Mode-Single Reading Time	8s
Data editing	
Transfer Code ID	OFF
Ending Character Settings	CR
toggle case	OFF
Barcode parameter setting	
Allow reading of all one-dimensional barcodes	OFF
Allow to read all two-dimensional barcodes	OFF
1D Barcode Reverse	OFF
UPC-A	
Enable	ON
Transfer Check Bit	ON
Transfer system character	OFF
UPC-A to EAN-13	OFF

Enable 2-Digit add-on Code	OFF
Enable 5-Digit add-on Code	OFF
2-Digit Add-on Code Required	OFF
5-Digit Add-on Code Required	OFF
UPC-E	
Enable	ON
Transfer Check Bit	OFF
Enable 2-Digit add-on Code	OFF
Enable 5-Digit add-on Code	OFF
2-Digit Add-on Code Required	OFF
5-Digit Add-on Code Required	OFF
UPC-E to UPC-A	OFF
EAN-8	
Enable	ON
Transfer Check Bit	ON
Enable 2-Digit add-on Code	OFF
Enable 5-Digit add-on Code	OFF
2-Digit Add-on Code Required	OFF
5-Digit Add-on Code Required	OFF
EAN-13	
Enable	ON
Transfer Check Bit	ON
Enable 2-Digit add-on Code	OFF
Enable 5-Digit add-on Code	OFF
2-Digit Add-on Code Required	OFF
5-Digit Add-on Code Required	OFF
Code 128	
Enable	ON
GS1-128	
Enable	ON
Code 39	

Enable	ON	
Transmit Check Digit	OFF	
Transmit Start/Stop Character	OFF	
Enable Code 39 Full ASCII	OFF	
Code 93		
Enable	ON	
Code 11		
Enable	OFF	
Interleaved 2 of 5		
Enable	ON	
Transmit Check Digit	OFF	
Matrix 2 of 5		
Enable	OFF	
Industrial 2 of 5		
Enable	OFF	
Standard 2 of 5		
Enable	OFF	
Codabar		
Enable	OFF	
Transmit Start/Stop Character	OFF	
MSI Plessey		
Enable	OFF	
MSI Check	ON	Type10
GS1 DataBar		
Enable	ON	
GS1 DataBar Limit		
Enable	ON	
GS1 DataBar Expand		
Enable	ON	
Datalogic 2 of 5		
Enable	ON	

QR Code	
Enable	ON
Data Matrix Code	
Enable	ON
PDF 417 Code	
Enable	ON
Enable Micro PDF 417	ON
Aztec Code	
Enable	OFF

Appendix -Code ID

No.	Barcode type	Hex(0x)
1	All Barcode type	FF
2	EAN-13	01
3	EAN-8	02
4	UPC-A	03
5	UPC-E	04
6	GS1-128（UCC/EAN-128)	05
7	Code 128	06
8	Code 39	07
9	Codebar	08
10	Interleaved 2 of 5	09
11	Code 93	0A
12	Industrial 2 of 5/Standard 2 of 5(IATA)	0B
13	Matrix 2 of 5	0C
14	Datalogic 2 of 5（China Post)	0D
15	Code 11	0E
16	MSI	10
17	GS1 DataBar	11
18	GS1 Limit	12
19	GS1 DataBar Expand	13
20	PDF417	18
21	QR code	19
22	Data Matix	1A
23	Micro PDF417	1B
34	Aztec Code	1C

Appendix – Command Table

Note: Serial instructions need to be used in serial mode

Function	Serial Command(Char)	Instructions
1. Open Scan	SCAN.	
2. Close scan	SLEEP.	
3. Restore default settings	DEFALT.	
4. View version number	^DSPYFW.	
5. Buzzer Frequency - Active Drive	BEPPWM0.	
6. Buzzer Frequency - Passive Low Frequency	BEPPWM1.	
7. Buzzer Frequency - Passive Intermediate Frequency	BEPPWM2.	Default
8. Buzzer Frequency - Passive High Frequency	BEPPWM3.	
9. Turn on decoded sound	BEPSUC1.	Default
10. Turn off decoded sound	BEPSUC0.	
11. Turn on the boot prompt	BEPPWR1.	Default
12. Turn on prompt switch	BEPPWR0.	
13. Supplementary Light - Turn on	LAMENA1.	Default
14. Supplementary Light - Turn Off	LAMENA0.	
15. Aiming lights - turn on	AIMENA1.	Default
16. Aiming lights - turn off	AIMENA0.	
17. Reading area - full width	IMGREG0.	Default

18. Reading Area - Center 20%	IMGREG4.	
19. Reading Area - Center 40%	IMGREG3.	
20. Read Area - Center 60%	IMGREG2.	
21. Reading Area - Center 80%	IMGREG1.	
22. Open mirror flip	MIRLRE1.	
23. Close mirror flip	MIRLRE0.	Default
24. USB-GBK Data Format	UTFEAN0.	Default
25. USB-UTF-8 Data Format	UTFEAN1.	
26. Serial Port-GBK Data Format	232UTF0.	Default
27. Serial Port-UTF-8 Data Format	232UTF1.	
28. Serial Port-Unicode-BIG Data Format	232UTF2.	
29. Serial Port-Unicode-Little Data Format	232UTF3.	
30. Invoice Mode Opening	SPCINV1.	
31. Invoice Mode Closed	SPCINV0.	Default
32. Communication mode-USB-KBW	PORKBD.	Default
33. Character Delay in USB Keyboard	PORDLY.	Custom Settings
34. Open virtual keyboard	KBDVIR1.	Default
35. Turn off the virtual keyboard	KBDVIR0.	
36. Communication Mode-USB-HID	PORHID.	
37. Communication mode-USB-COM	PORVIC.	
38. Communication mode - TTL/RS232	POR232.	

39. Baud rate - 1200 BPS	232BAD2.	
40. Baud rate - 2400 BPS	232BAD3.	
41. Baud rate - 4800 BPS	232BAD4.	
42. Baud rate - 9600 BPS	232BAD5.	
43. Baud rate - 19200 BPS	232BAD6.	
44. Baud rate - 38400 BPS	232BAD7.	
45. Baud rate - 57600 BPS	232BAD8.	
46. Baud rate - 115 200 BPS	232BAD9.	Default
47. Manual Reading Mode	SCMMAN.	Default
48. Continuous Reading Model	SCMCNT.	
49. Continuous Read Mode - Same Bar Code Output Only Once	CNTALW0.	
50. Continuous Reading Mode - Continuous Output with Same Code, No Interval	CNTALW1.	
51. Continuous Read Mode - Continuous Output with Same Code, Interval 0.5 seconds	CNTALW2.	
52. Continuous Read Mode - Continuous Output with Same Code, 1 Second Interval	CNTALW3.	
53. Inductive Reading Model	SCMMDH.	
54. Custom Sensitivity	MDTTHR.	Custom Settings
55. Sensitivity - Extremely high	MDTTHR15.	

56. Sensitivity-high	MDTTHR20.	Default
57. Sensitivity - on the high side	MDTTHR30.	
58. Sensitivity - General	MDTTHR50.	
59. Sensitivity - Low	MDTTHR100.	
60. Transfer CODE ID	CIDENA1.	
61. No CODE ID is transmitted	CIDENA0.	Default
62. add prefix	PREADD.	Custom Settings
63. Add Suffix	SUFADD.	Custom Settings
64. Delete prefixes for all codes	PRECLA.	
65. Delete all code suffixes	SUFCLA.	
66. Delete the prefix of a code system	PREDEL.	Custom Settings
67. Delete the suffix of a code system	SUFDEL.	Custom Settings
68. Transfer of whole data	SECALL.	
69. Transfer header field	SECSTR.	
70. Transfer intermediate fields	SECCEN.	
71. Transfer tail field	SECEND.	
72. Modify header field length	SECSNB.	Custom Settings

73. Modify tail field length	SECENB.	Custom Settings
74. Ender Settings - Add CR	SUFACR.	Default
75. Ender Settings - Delete CR	SUFDCR.	
76. Ender Settings - Add LF	SUFALF.	
77. Ender Settings - Delete LF	SUFDLF	
78. Ender Settings - Add TAB	SUFATB.	
79. Ender Settings - Delete TAB	SUFDTB.	
80. Keyboard case-to-case conversion-no conversion	KBDCNV0.	Default
81. Keyboard case-to-case conversion - full capitalization	KBDCNV1.	
82. Keyboard case-to-case conversion - all lowercase	KBDCNV2.	
83. Keyboard case-to-case conversion	KBDCNV3.	
84. Allow reading of all one-dimensional barcodes	ODCENA.	
85. Prohibit reading all one-dimensional barcodes	ODCDIS.	
86. Allow to read all two-dimensional barcodes	AQRENA.	
87. No reading of all two-dimensional barcodes	AQRDIS.	
88. Permission to read UPC-A	UPAENA1.	Default
89. Prohibit reading UPC-A	UPAENA0.	
90. UPC-A Transport Check Bit	UPACHK1.	Default
91. UPC-A does not transmit check bits	UPACHK0.	
92. UPC-A Transport System Characters	UPASCT1.	

93. UPC-A does not transmit system characters	UPASCT0.	Default
94. Allow UPC-A to switch to EAN-13	UPAT131.	
95. Prohibit UPC-A to EAN-13	UPAT130.	Default
96. UPC-A opens two additional bits	UPAEX21.	
97. UPC-A closes two additional bits	UPAEX20.	Default
98. UPC-A Opens 5-bit Additional Bits	UPAEX51.	
99. UPC-A turns off five additional bits	UPAEX50.	Default
100. UPC-A Forces Inclusion of Additional Bits	UPANED1.	
101. UPC-A does not force the inclusion of additional bits	UPANED0.	Default
102. Permission to read UPC-E	UPEENA1.	Default
103. Understanding UPC-E is prohibited	UPEENA0.	
104. UPC-E Transport Check Bit	UPECHK1.	
105. UPC-E does not transmit check bits	UPECHK0.	Default
106. UPC-E opens two additional bits	UPEEX21.	
107. UPC-E closes two additional bits	UPEEX20.	Default
108. UPC-E opens five additional bits	UPEEX51.	
109. UPC-E closes five additional bits	UPEEX50.	Default
110. UPC-E Forces Inclusion of Additional Bits	UPENED1.	
111. UPC-E does not force the inclusion of additional bits	UPENED0.	Default
112. Allow UPC-E to be transferred to UPC-A	UPEEXP1.	

113. Prohibit UPC-E to UPC-A	UPEEXP0.	Default
114. Read EAN-8 Allowed	EA8ENA1.	Default
115. Prohibit reading EAN-8	EA8ENA0.	
116. EAN-8 Transport Check Bit	EA8CHK1.	Default
117. EAN-8 does not transmit check bits	EA8CHK0.	
118. EAN-8 opens two additional bits	EA8EX21.	
119. EAN-8 turns off two additional bits	EA8EX20.	Default
120. EAN-8 Opens 5-bit Additional Bits	EA8EX51.	
121. EAN-8 turns off five additional bits	EA8EX50.	Default
122. EAN-8 Forces Inclusion of Additional Bits	EA8NED1.	
123. EAN-8 does not force the inclusion of additional bits	EA8NED0.	Default
124. Read EAN-13 Allowed	E13ENA1.	Default
125. Prohibit reading EAN-13	E13ENA0.	
126. EAN-13 Transport Check Bit	E13CHK1.	Default
127. EAN-13 does not transmit check bits	E13CHK0.	
128. EAN-13 opens two additional bits	E13EX21.	
129. EAN-13 turns off two additional bits	E13EX20.	Default
130. EAN-13 opens five additional bits	E13EX51.	
131. EAN-13 Closes 5-bit Additional Bits	E13EX50.	Default
132. EAN-13 Mandatory Inclusion of Additional Bits	E13NED1.	
133. EAN-13 does not force the inclusion of additional	E13NED0.	Default

bits		
134. Allowing Code 128 to be read	128ENA1.	Default
135. Prohibit reading Code 128	128ENA0.	
136. Code 128 Minimum Length Settings	C128MI.	Custom Settings
137. Code 128 Maximum Length Settings	C128MX.	Custom Settings
138. Read GS1-128 Allowed	GS1ENA1.	Default
139. Prohibit reading GS1-128	GS1ENA0.	
140. GS1-128 Minimum Length Settings	U128MI.	Custom Settings
141. Maximum Length Settings for GS1-128	U128MX.	Custom Settings
142. Allowing Code 39 to be read	C39ENA1.	Default
143. Prohibit reading Code 39	C39ENA0.	
144. Code 39 is unchecked	C39CHK0.	Default
145. Code 39 Check and Transfer Check	C39CHK2.	
146. Code 39 check, no transfer check	C39CHK1.	
147. Code 39 Transfers Starter and Terminator	C39STE1.	
148. Code 39 does not transmit start and stop characters	C39STE0.	Default
149. Code 39 Recognizes All ASCII Characters	C39FEN1.	

150. Code 39 does not recognize all ASCII characters	C39FEN0.	Default
151. Code 39 Minimum Length Settings	C39MIN.	
152. Code 39 Maximum Length Settings	C39MAX..	
153. Allowing Code 93 to be read	C93ENA1.	Default
154. Prohibit reading Code 93	C93ENA0.	
155. Code 93 Minimum Length Settings	C93MIN.	
156. Code 93 Maximum Length Settings	C93MAX..	
157. Allow reading of Code 11	C11ENA1.	Default
158. Prohibit reading Code 11	C11ENA0.	
159. Code 11 Minimum Length Settings	C11MIN.	
160. Code 11 Maximum Length Settings	C11MAX..	
161. Permission to read Interleaved 2 of 5	I25ENA1.	
162. Prohibit reading Interleaved 2 of 5	I25ENA0.	Default
163. Interleaved 2 of 5 without verification	I25CHK0.	Default
164. Interleaved 2 of 5 checks and transmit checks	I25CHK2.	
165. Interleaved 2 of 5 checks, no transmission checks	I25CHK1.	
166. Interleaved 2 of 5 Minimum Length Settings	I25MIN.	
167. Interleaved 2 of 5 Maximum Length Settings	I25MAX.	
168. Permission to read Matrix 2 of 5	M25ENA1.	
169. Prohibit reading Matrix 2 of 5	M25ENA0.	Default
170. Matrix 2 of 5 Minimum Length Settings	M25MIN.	
171. Matrix 2 of 5 Maximum Length Settings	M25MAX..	

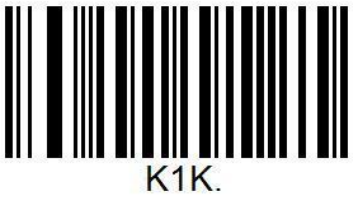
172. Permission to read Industrial 2 of 5	ID25ENA1.	
173. Prohibit reading Industrial 2 of 5	ID25ENA0.	Default
174. Industrial 2 of 5 Minimum Length Settings	ID25MIN.	
175. Industrial 2 of 5 Maximum Length Settings	ID25MAX..	
176. Allowing Codabar to be read	CDBENA1.	Default
177. Prohibit reading Codabar	CDBENA0.	
178. Codabar transmits start and end characters	CDBSTE1.	
179. Codabar does not transmit start and terminator	CDBSTE0.	Default
180. Codabar Minimum Length Settings	CDBMIN.	
181. Codabar Maximum Length Settings	CDBMAX..	
182. Allowing MSI to be read	MSIENA1.	
183. Prohibit reading MSI	MSIENA0.	Default
184. Validate type 10, but don't transmit	MSICHK0.	Default
185. Validate type 10, and transmit	MSICHK1.	
186. Validate 2 type 10 chars, but don't transmit	MSICHK2.	
187. Validate 2 type 10 chars, and transmit	MSICHK3.	
188. Validate type 10 then type 11 char, but don't transmit	MSICHK4.	
189. Validate type 10 then type 11 char, and transmit	MSICHK5.	
190. Disable MSI check	MSICHK6.	
191. MSI Minimum Length Settings	MSIMIN.	
192. MSI Maximum Length Settings	MSIMAX.	

193. Allow read GS1 DataBar (RSS)	GS1DBE1.	Default
194. Prohibit reading GS1 DataBar (RSS)	GS1DBE0.	
195. MSI Minimum Length Settings	GSEMIN.	
196. MSI Maximum Length Settings	GSEMAX.	
197. Allow read GS1 DataBar Limit	GSLENA1.	Default
198. Prohibit reading GS1 DataBar Limit	GSLENA0.	
199. Allow read GS1 DataBar Expand	GSEENA1.	Default
200. Prohibit reading GS1 DataBar Expand	GSEENA0.	
201. Permission to read China Post	D25ENA1.	Default
202. No Reading of China Post	D25ENA0.	
203. Permission to read QRCode	QRCENA1.	Default
204. Prohibit reading QRCode	QRCENA0.	
205. Allowing Data Matrix to be read	DMCENA1.	Default
206. Prohibit reading Data Matrix	DMCENA0.	
207. Permission to read PDF 417	PDFENA1.	Default
208. Prohibit reading PDF 417	PDFENA0.	
209. Permission to read Micro PDF 417	MCFENA1.	Default
210. Prohibit reading Micro PDF 417	MCFENA0.	
211. Allow Aztec to be read	AZTENA1.	
212. Prohibit reading Aztec	AZTENA0.	Default

Appendix - Digit Barcodes

The parameter requires the exact value Scan the appropriate digital setting code.

0



1

2

3

4

5

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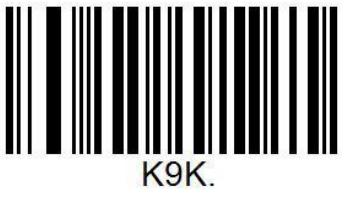
7

8



9

KAK.

A

KBK.

B

KCK.

C

KDK.

D

KEK.

E

KFK.

F

Appendix – Save and Cancel BarCodes

Change the selection or cancel an incorrect input and scan the bar code below.

Save

Cancel

Appendix – ASCII Table

Hexadecimal	ASCII value	character
00	00	NUL (Null char.)
01	01	SOH (Start of Header)
02	02	STX (Start of Text)
03	03	ETX (End of Text)
04	04	EOT (End of Transmission)
05	05	ENQ (Enquiry)
06	06	ACK (Acknowledgment)
07	07	BEL (Bell)
08	08	BS (Backspace)
09	09	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) XON)
12	18	DC2 (Device Control 2)

13	19	DC3 (XOFF) (Device Control 3) (XOFF)
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)