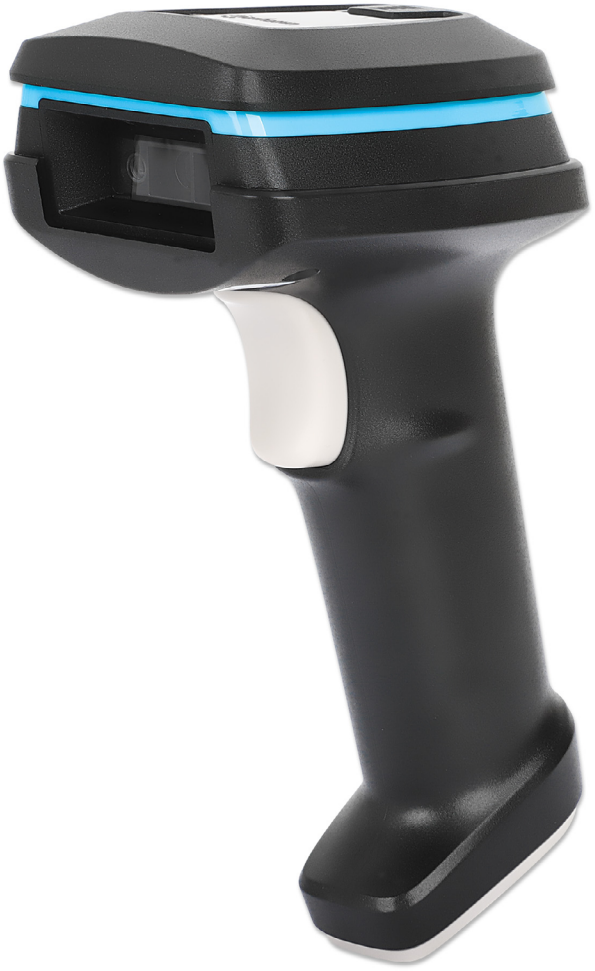
# 2D Long Range LED Barcode Scanner

# Advanced Programming Guide

Models **154116, 154185**



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Thank you for purchasing the Manhattan 2D Long Range LED Barcode Scanner.

Before using this product, carefully read the manual to understand its functions.





# TABLE OF CONTENTS

# CHAPTER 1 – COMPREHENSIVE SETTINGS

## 1.1. VERSION NUMBER

Use the scanner to scan the version number barcode, you will view the information of current scanner version

BeReCd
Version number

## 1.2. FACTORY DEFAULT

All scanners have a factory default setting. The scanner's properties will be set to the default state of the software with scanning the "Factory Default" setup code

BeQeCe
Factory Default

## 1.3. SOUND SETTINGS

### ALL SOUNDS

WaZaCb
On*

WaZaSa
Off

### POWER-ON SOUND

Turn on or turn off the beep sound when starting up

RaOdNa
On*

RaOdXa
Off





### SOUND OF READING NORMAL BARCODE SUCCESSFUL

RaDeXa
On*

RaDeNa
Off

### DURATION OF READING NORMAL BARCODE SUCCESSFUL

RaCeZa
Short

RaCePa
Normal*

### FREQUENCY OF SOUND

LbDeUb
Low frequency 1.6 KHz

LbDeEc
Low-medium frequency 2.0 KHz

LbDeAb
Low-medium frequency 2.7 KHz*

LbDeKb
Low-medium frequency 4.2 KHz

### VOLUME OF SOUND

BbDePb
Off

BbDeFb
Low

BbDeVa
Medium

BbDeLa
High*

## 1.4. INDICATOR LIGHT

RaBeYa
On*

RaBeOa
Off

## 1.5. ILLUMINATION LIGHT

GbWaHb
On*

GbWaNa
Off

## 1.6. AIMING LIGHT

GbWaZa
On*

GbWaPa
Off

GbWaJb
Always on

GbWaTb
Flashes

## 1.7. DATA FORMAT

### DATA OUTPUT FORMAT

The default is Codepage mode.

GbBbVa
Codepage Mode (Notepad, Excel)*

GbBbFb
Unicode Mode (Word)

GbBbPb
UTF-8 Mode

OdPbYac
European signal byte character





### TEXT OUTPUT IN DIFFERENT COUNTRIES

After setting the data output format, you need to determine the language system and barcode encoding format currently used by the user's PC, and then scan the following corresponding configuration codes according to the PC's language system and barcode encoding format. The default is the PC system language is CH, UTF8\GB2312 encoding.

| | |
|---|---|
| PC system language is CH<br>UTF-8/GB2312 encoding* | 0dPbLa |
| PC system language is CH<br>BIG 5 encoding | 0dPbIbc |
| PC system language is BIG 5<br>BIG 5 encoding | 0dPbPb |
| PC system language is CH<br>Shift-JIS encoding | 0dPbJbc |
| PC system language is JP<br>Shift-JIS encoding | 0dPbVa |
| PC system language is Korean<br>CP949 encoding | 0dPbFb |
| PC system language is Thai<br>CP874 encoding | 0dPbGbc |
| PC system language is Russia<br>KOI8-R encoding | 0dPbHbc |
| PC system language is Vietnamese<br>Win1258 encoding | 0dPbSbc |

## 1.8. IMAGE RECOGNITION SETTINGS

### INVERSE (REVERSE WHITE) SETTING 1

**Normal barcode:** dark barcode with light background.

**Inverted barcode:** light barcode with dark background.

CbQdRa
Normal Only*

CbQdLb
Inverse Only

CbQdBb
Normal + Inverse

**Note:** In order not to degrade scan performance, Inverse Only and Normal + Inverse will only apply to UPC-A/ UPC-E0/ UPC-E1/ EAN-8/ EAN-13. If you wish to read other inverse barcodes, refer to Inverse Barcode Setting 2.

### INVERSE BARCODE SETTING 2

PdZdQbc
All 1D Symbologies Inverse On

PdAeQbc
All 1D Symbologies Inverse Off*

PdBeQbc
All 2D Symbologies Inverse On

PdCeQbc
All 2D Symbologies Inverse Off*

## 1.9. QR URL CODE

Scan the setup code below to turn on or off the QR code generated by the URL.

WaQbPa
On*

WaQbZa
Off





# CHAPTER 2 – COMMUNICATION SETTINGS

## INTRODUCTION

When using this scanner to communicate with different hosts, you need to set the scanner to the corresponding communication interface mode. You can set the functions of scanner by scanning one or more setup barcodes. You can choose to use USB (USB-KBW, USB-COM), and TTL/ RS232 serial communication interface modes, etc.

## 2.1. USB KEYBOARD INTERFACE

The default is USB-KBW communication.

VbZcWag
USB-KBW*

## 2.2. NATIONAL KEYBOARD LAYOUT

The keyboard layout setting is applicable to the USB-KBW interface mode and the default is "American English keyboard".

JdCcTc
American English*

JdCcLbc
Greece (Greek)

JdCcGbc
Netherlands (Dutch)

JdCcJc
Spain (Spanish)

JdCcCbc
Switzerland (German)

JdCcLa
Brazil (Portuguese)

JdCcEbc
Denmark

JdCcDbc
England (British English)

JdCcZb
Italy (Italian)

JdCcFb
France (French)

JdCcBbc
Germany (German)

JdCcNbc
Hungary

JdCcRbc
Sweden (Swedish)

JdCcQbc
Slovak

JdCcIbc
Portugal(Portuguese)

JdCcSbc
Romania

JdCcWqc
Belgium (French)

JdCcTbc
Turkish-F

JdCcXac
Turkish-Q

JdCcObc
Poland (Polish)

JdCcQdc
Russia (Russian MS)

JdCcVac
Japan (Japanese)

JdCcGdc
Ukraine

JdCcYdc
Vietnam





## 2.3. OUTPUT MODE OF CONTROL CHARACTER

Output mode selection of control character (0x00-0x1F) in ASCII code:

**A. Output function key:** control characters are used as custom function keys.
See "Appendix-Control Character List" for specific functions.

**B. Output Ctrl combination key** (this function is used with prefixes and suffixes): Ctrl combination key outputs control characters. See "Appendix-Control Character List" for specific functions.

**C. ALT mode output control characters:** support full control character output in Chinese environment. See "Appendix-ASCII code table" for specific functions.

**D. Output Enter & DownArrow:** shield other control characters, only output:
0x07 output Enter, 0x0A output DownArrow, and 0x0D output Enter.

QbBbQa
Output function key*

QbBbAb
Output Ctrl combination key (Escape 1)

QbBbEc
Output Ctrl combination key (Escape 2)

QbBbKb
ALT mode output control characters

QbBbUb
Output Enter & Down Arrow

## 2.4. OUTPUT METHOD OF VIRTUAL KEYBOARD

Output mode of control character (0x20-0xFF) in ASCII code:

When the virtual keyboard is turned on, all characters between 0x20 and 0xFF will be output with virtual keyboard.

WaBbPa
Turn off virtual keyboard*

WaBbZa
Turn on virtual keyboard

## 2.5. CASE CONVERSION

BbLdOa
Conversion Off*

BbLdYa
All Upper

BbLdIb
All Lower

BbLdSb
Inverse

## 2.6. USB TRANSMISSION SPEED

OdJcVac
Normal* (10ms)

OdJcJc
Fast (5ms)

OdJcVa
Very Fast (1ms)

## 2.7. CAPS LOCK DETECTION

IbReQa
On*

IbReKb
Off

## 2.8. USB-COM VIRTUAL SERIAL PORT

When the scanner uses a USB connection, and at the same time you want the host to receive data through a serial port, you should use the USB virtual serial port. From the perspective of the host system interface, the scanner is connecting to the host through a serial port.

VbZcXag
USB-COM





## 2.9. TTL/RS232 SERIAL PORT INTERFACE

Serial communication interface is a common way to connect scanners and host devices. It can be used to connect host devices such as PC and POS machines. When the scanner uses the serial communication interface, the serial communication protocol parameter configuration must be completely matched between the scanner and the host device to ensure the accuracy of the transmitted data.

Default communication protocol of serial port interface: baud rate 9600, no check character.

VbZcNc
TTL/RS232

| Parameter | Default |
|---|---|
| Serial Communication Type | Standard TTL/RS232 |
| Baud Rate | 9600 |
| Parity Type | None |
| Data Bits | 8 |
| Stop Bits | 1 |

### SERIAL PORT TRANSMISSION SPEED (DELAY BETWEEN CHARACTERS)

This parameter is used to adjust the delay time between the barcode characters of the scanner. When the input host needs slower data transmission, scan the corresponding barcode below to increase the inter-character delay, which can adjust the transmission speed to improve the safety and integrity of the data output.

JdGeKbc
Low transmission speed: 25ms

JdGeVac
Medium transmission speed: 10ms

JdGeVa
High transmission speed: 1ms*

## BAUD RATE

The baud rate is the number of bits transmitted per second in serial data communication. The baud rate used by the scanner and the data receiving host must be consistent to ensure the accuracy of data transmission. The scanner supports the baud rates listed below in bit/s.

VbCdRdc
4800bps

VbCdSdc
9600bps*

VbCdUdc
19200bps

VbCdVdc
38400bps

VbCdWdc
57600bps

VbCdVac
115200bps





# CHAPTER 3 – READING MODE

## 3.1. TRIGGER MODE

You can set the scanning mode of the scanner according to your needs. The default reading mode is manual reading

VbBeJb
Trigger/Manual*

### TRIGGER MODE- KEY-PRESS TIMEOUT

Key-press timeout refers to the time-out period when the key is pressed and not released. If the barcode is not read within the time-out period, the barcode reading will end and wait for the next trigger.

UaZcCb
Unlimited

MdZcAbc
3 sec*

MdZcKbc
5 sec

MdZcJcc
10 sec

MdZcIdc
15 sec

MdZcVaHa
20 sec

## 3.2. CONTINUOUS READING MODE

After setting, the scanner will be in continuous scanning state without triggering and the scanning engine starts to scan the code immediately. When the scanning is successful or the single scanning time is over, the scanning engine will wait for a period of time (settable) and it will start next scanning automatically.

VbBeZa
Continuous

## CONTINUOUS - SAME BARCODE SCANNING DELAY

**Default:** 400ms

JdHeLa
No delay

JdHeVa
Delay 100ms

JdHeFb
Delay 200ms

JdHePb
Delay 300ms

JdHeZb
Delay 400ms*

JdHeNd
Delay 800ms

JdHeXac
Delay 1200ms

JdHeFbc
Delay 2000ms

## CONTINUOUS - DIFFERENT BARCODE SCANNING DELAY

**Default:** 300ms

JdIeLa
No delay

JdIeVa
Delay 100ms

JdIePb
Delay 300ms*

JdIeJc
Delay 500ms

JdIeVac
Delay 1000ms*

JdIeFbc
Delay 2000ms





# 3.3. INDUCTIVE / AUTO-SENSING READING MODE

VbBePa
Auto-sensing

## INDUCTION - SENSITIVITY

Sensitivity refers to the degree of change in the detection scene in the induction scanning mode. When the scanning module judges that the degree of scene change meets the requirements, it will switch from the monitoring state to the scanning state.

AcDbVa
High*

AcDbFb
Medium

AcDbPb
Low

# CHAPTER 4 – DATA EDITING

## INTRODUCTION

Data editing format: <Code ID><Custom prefix><Barcode data><Custom suffix><Terminator>

## 4.1. CODE ID PREFIX

The default is "Off"

WaFbRa
Off*

WaFbBb
On

## 4.2. AIM ID PREFIX

AIM means Automatic Identification Manufacturers.

Please refer to "Appendix-Code ID & AIM ID" for the barcode type corresponding to AIMID

QaXdQa
Off*

QaXdAb
On

## 4.3. GS CHARACTER CONVERSION

Output GS control characters as text characters.

McReLa
Not translate*

McReZb
Replaced by ]

McReFb
Replaced by |

McRePb
Replaced by ^]

McReTc
Replaced by [GS]

McReJc
Replaced by <GS>

McReDd
Replaced by #GS#





## 4.4. CUSTOM PREFIX

### SETTING FOR CUSTOM PREFIX

Add up to 10 characters for the custom prefix.

For setting steps, please refer to "Appendix-Customized Parameter Example"

BeReTd
Set custom prefix

### CLEAR CUSTOM PREFIX

Scan the "Clear custom prefix" barcode to clear all custom prefix characters.

BeReSd
Clear custom prefix

## 4.5. CUSTOM SUFFIX

### SETTING FOR CUSTOM SUFFIX

Add up to 10 characters for the custom suffix.

For setting steps, please refer to "Appendix-Examples of custom parameters"

BeReWd
Set custom suffix

### CLEAR CUSTOM SUFFIX

Scan the "Clear custom suffix" barcode to clear all set custom suffix characters.

BeReRd
Clear custom suffix

## 4.6. HIDE CHARACTERS

The function of hiding characters can realize the function of displaying only a certain segment of data by controlling different fields of the barcode content to achieve the function of hiding the data.

First, we divide a barcode data into three groups of head, middle, and tail data, and then set the length of the head, middle, and tail according to actual needs. Finally, set the fields that need to be displayed according to actual needs.

### HIDE LEADING CHARACTERS

WaQbCb
Hide leading characters: On

WaQbSa
Hide leading characters: Off*

### HIDDEN NUMBERS OF LEADING CHARACTER

The range is 1-255. For setting steps, please refer to "Appendix-Examples of custom parameters"

YdRbLa
Hidden Numbers of Leading Character

### HIDE MIDDLE CHARACTERS

WaQbBb
Hide middle characters: On

WaQbRa
Hide middle characters: Off*

### INITIAL POSITION OF HIDDEN MIDDLE CHARACTERS

If you want to hide the data after the third character (the position is 4th), the decimal value of the digital setup code is: "0", "0", "3".

For setting steps, please refer to "Appendix-Examples of custom parameters".

YdSbLa
Initial Position of Hidden Middle Characters





### HIDDEN NUMBERS OF MIDDLE CHARACTER

The range is 1-255. If you need to hide 16 characters, the decimal value of the number setup code is: "0", "1", "6". For setting steps, please refer to "Appendix-Data Code".

YdTbLa
Hidden Numbers of Middle character

### HIDE TRAILING CHARACTERS

WaQbAb
Hide trailing characters: On

WaQbQa
Hide trailing characters: Off*

### HIDDEN NUMBERS OF TRAILING CHARACTER

The range is 1-255. For setting steps, please refer to "Appendix-Examples of custom parameters".

YdUbLa
Hidden Numbers of Trailing Character

## 4.7. INSERT CUSTOM CHARACTERS

It supports inserting custom character at any position of the barcode, up to 10 bytes.

WaQbYb
Display custom characters: On

WaQbOa
Display custom characters: Off*

### INSERTION POSITION OF CUSTOM CHARACTER

If the position where the characters need to be inserted is 16 characters, the decimal value of the number setup code is: 0, 1, 6. For the setting steps, please refer to "Appendix-Data Code".

YdFcLa
Insertion Position of Custom Character

### CUSTOM CHARACTER TO INSERT

Set and insert custom characters, scan the custom characters to be set, the setting steps are similar to the custom prefixes and suffixes, please refer to "Appendix-Examples of custom parameters"

BeReYc
Custom Character to Insert

### CLEAR CUSTOM INSERT

BeReOd
Clear custom insert





## 4.8. CHARACTER REPLACEMENT

The character replacement function supports replacing any character (character being replaced) appearing in the barcode with another character that needs to be displayed.

For setting steps, please refer to "Appendix-Examples of custom parameters".

VdEeLa
Character to be replaced

VdFeLa
Replacement character

**Note:** If you need to clear the replacement character, set the "character to be replaced" to NULL, that is, the decimal is "000".

## 4.9. TERMINATOR

The terminator is used to mark the end of a complete data message. The terminator must be the last content when a piece of data is sent, and there will be no additional data after that.

LbKdGb
<CR>(0x0D)*

LbKdUc
<LF>(0x0A)

LbKdWa
<CR><LF>(0x0D,0x0A)

LbKdQb
<HT>(0x09)

LbKdAc
<CR><CR>(0x0D,0x0D)

LbKdKc
<CR><LF><CR><LF>(0x0D ,0x0A, 0x0D ,0x0A)

LbKdMa
NONE

# CHAPTER 5 – BARCODE PARAMETER SETTING

## 5.1. GLOBAL SETTING

GbYaXa
All barcode types: On

GbYaHb
All barcode types: Off

GbYaZa
1D barcode: On

GbYaJb
1D barcode: Off

GbYaBb
2D barcode: On

GbYaLb
2D barcode: Off

**Note:** The setup code will not be closed when closing all barcodes.





## 5.2. UPC-A

QaYaBb
On**

QaYaRa
Off

### TRANSMIT CHECK CHARACTER

The UPC-A barcode data is fixed to 12 characters, and the 12th digit is the check character, which is used to verify the correctness of all 12 characters. The default is transmitting check character.

QaTdCb
On**

QaTdSa
Off

### 2/5 ADDITIONAL DIGITS

Additional digits refer to the 2 or 5 digital barcodes appended to the normal barcode, as shown in the figure below. The blue wire frame on the left is the normal barcode, and the red wire frame on the right is the additional digit. The default is closing the additional digits.



QaIbCb
2 additional digits: On

QaIbSa
2 additional digits: Off**

QaIbBb
5 additional digits: On

QaIbRa
5 additional digits: Off**

## MANDATORY ADDITIONAL DIGITS

When scanning "mandatory additional digits", the scanner can only read barcodes with additional digits.

QaIbYa
On

QaIbOa
Off**

## ADDITIONAL DIGIT SEPARATOR

When this feature is enabled, there is a space between the barcode data and the additional data. When this feature is disabled, there are no spaces. Default is On.

QaIbXa
On**

QaIbNa
Off

## TRANSMIT SYSTEM CHARACTER

QaTdWa
On**

QaTdMa
Off

## CONVERT TO EAN-13

The default is no conversion.

QaTdVa
On

QaTdLa
Off**





# 5.3. UPC-E

QaYaVa
UPC-E0: On**

QaYaLa
UPC-E0: Off

WaYaVa
UPC-E1: On

WaYaLa
UPC-E1: Off**

## TRANSMIT CHECK CHARACTER

The UPC-E barcode data is fixed to 8 characters, and the 8th digit is the check character, which is used to verify the correctness of all 8 characters. The default is to transmit the check character.

QaTdBb
On**

QaTdRa
Off

## 2/5 ADDITIONAL DIGITS

Additional digits refer to the 2 or 5 digital barcodes appended to the normal barcode, as shown in the figure below. The blue wire frame on the left is the normal barcode, and the red wire frame on the right is the additional digit. The default is closing the additional digits.



QaIbCb
2 additional digits: On

QaIbSa
2 additional digits: Off**

QaIbBb
5 additional digits: On

QaIbRa
5 additional digits: Off**

## MANDATORY ADDITIONAL DIGITS

When scanning "mandatory additional digits", the scanner can only read barcodes with additional digits.

QaIbYa
On

QaIbOa
Off**

## ADDITIONAL DIGIT SEPARATOR

When this feature is enabled, there is a space between the barcode data and the additional data. When this feature is disabled, there are no spaces. Default is On.

QaIbXa
On**

QaIbNa
Off

## TRANSMIT SYSTEM CHARACTER

QaTdYa
On**

QaTdOa
Off

## CONVERT TO UPC-A

The default is not to convert.

QaTdAb
On

QaTdQa
Off**





# 5.4. EAN/JAN 8

QaYaZa
On**

QaYaPa
Off

## TRANSMIT CHECK CHARACTER

EAN/JAN 8 barcode data is fixed to 8 characters, the 8th digit is the check character, used to verify the correctness of all 8 characters, the default is transmit the check character.

QaXdVa
On**

QaXdLa
Off

## 2/5 ADDITIONAL DIGITS

Additional digits refer to the 2 or 5 digital barcodes appended to the normal barcode, as shown in the figure below. The blue wire frame on the left is the normal barcode, and the red wire frame on the right is the additional digit. The default is closing the additional digits.



QaIbCb
2 additional digits: On

QaIbSa
2 additional digits: Off**

QaIbBb
5 additional digits: On

QaIbRa
5 additional digits: Off**

## MANDATORY ADDITIONAL DIGITS

When scanning "mandatory additional digits", the scanner can only read barcodes with additional digits.

QaIbYa
On

QaIbOa
Off**

## ADDITIONAL DIGIT SEPARATOR

When this feature is enabled, there is a space between the barcode data and the additional data. When this feature is disabled, there are no spaces. Default is On.

QaIbXa
On**

QaIbNa
Off

## CONVERT TO EAN13

The EAN 8 barcode type supports conversion settings. After the extension is turned on, the barcode information is converted to 13 digits, and the type is converted to EAN13. The default is not to convert.

QaTdXa
On

QaTdNa
Off**





# 5.5. EAN/JAN 13

QaYaWa
On**

QaYaMa
Off

## TRANSMIT CHECK CHARACTER

EAN/JAN 13 barcode data is fixed to 13 characters, the 13th digit is the check character, used to verify the correctness of all 12 characters, the default is transmit check character.

QaXdXa
On**

QaXdNa
Off

## 2/5 ADDITIONAL DIGITS

Additional digits refer to the 2 or 5 digital barcodes appended to the normal barcode, as shown in the figure below. The blue wire frame on the left is the normal barcode, and the red wire frame on the right is the additional digit. The default is closing the additional digits.



QaIbCb
2 additional digits: On

QaIbSa
2 additional digits: Off**

QaIbBb
5 additional digits: On

QaIbRa
5 additional digits: Off**

### MANDATORY ADDITIONAL DIGITS

When scanning "mandatory additional digits", the scanner can only read barcodes with additional digits.


QaIbYa
On


QaIbOa
Off**

### ADDITIONAL DIGIT SEPARATOR

When this feature is enabled, there is a space between the barcode data and the additional data. When this feature is disabled, there are no spaces. Default is On.


QaIbXa
On**


QaIbNa
Off

### CONVERT TO ISBN


QaJbCb
On


QaJbSa
Off**

### TRANSMIT ISBN CHECK CHARACTER


QaJbAb
On


QaJbQa
Off**

### CONVERT TO ISSN


RaVcCb
On


RaVcSa
Off**





## 5.6. ISSN


QaTdXa
On


QaTdNa
Off**

### TRANSMIT ISSN CHECK CHARACTER


RaVcAb
On


RaVcQa
Off**

## 5.7. CODE 128


QaXaYa
On**


QaXaOa
Off

### NUMBER OF RECOGNIZED CHARACTERS

The default number of Code128 is 0-80, and the scanner can be configured to only scan Code 128 barcodes whose number is between (including) the minimum number (0-80) and the maximum number (0-80).


XdIbLa
Minimum


XdJbLa
Maximum

## 5.8. GS1-128 (UCC/EAN 128)

RaYcVa
On**

RaYcLa
Off

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 0-80, and the scanner can be configured to only scan GS1-128 barcodes whose number is between (including) the minimum number (0-80) and the maximum number (0-80).

XdKbLa
Minimum

XdLbLa
Maximum

## 5.9. ISBT 128

### ISBT 128 CONNECT FUNCTION

TaCeCb
On

TaCeSa
Off**

**Note:** ISBT 128 is a subcategory of Code128, which can be turned on or off through the Code128 setting. The ISBT128 connection function is used to set whether to scan ISBT barcodes with additional digits. When the setting is enabled, ISBT 128 with or without additional digits can be scanned.

## 5.10. CODE 39

QaXaWa
On**

QaXaMa
Off





### CHECK CHARACTER

Code 39 barcode data is not mandatory to include a check character. If there is a check character, it is the last character of the data. The check character is a value calculated based on all data to check whether the data is correct.

The default is "No Check".

IbNePa
No Check**

IbNeZa
Check and Transmit

IbNeJb
Check but Not Transmit

### START AND END CHARACTERS

Code 39 barcode data has a character "*" before and after it is used as the start character and end character. You can set whether to transmit the start character and end character together with the barcode data after the barcode is successfully read.

QaVdVa
On

QaVdLa
Off**

### FULL ASCII CHARACTERS

QaYaCb
On

QaYaSa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 0-48, and the scanner can be configured to only scan Code 39 barcodes whose number is between (including) the minimum number (0-48) and the maximum number (0-48).

XdMbLa
Minimum

XdNbLa
Maximum

## 5.11. CODE 32 PHARMACEUTICAL (PARAF)

Code 32 is also named Code 32 Pharmaceutical, is a form of Code 39 barcode used by Italian pharmacies. This barcode is also called PARAF.

The output format of Code 32 is: * + A + 8 digits + 1 check digit + *.

QaYaAb
On

QaYaQa
Off**

### TRANSMIT CHECK CHARACTER

WaYaWa
On**

WaYaMa
Off

### CODE 32 ADD PREFIX "A"

QaVdXa
On

QaVdNa
Off**

## 5.12. CODE 93

QaXaXa
On**

QaXaNa
Off

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 0-80, and the scanner can be configured to only scan Code 93 barcodes whose number is between (including) the minimum number (0-80) and the maximum number (0-80).

XdEcLa
Minimum

XdFcLa
Maximum





## 5.13. CODE 11

QaWaYa
On

QaWaOa
Off**

### CHECK CHARACTER

Code 11 barcode data has check characters, which can be the last 1 or 2 characters of the data. The check character is a value calculated based on all data to check whether the data is correct.

SbOeXa
1 check character, On

SbOeNa
2 check characters, On**

SbOeRb
1 check character, Off

SbOeHb
2 check characters, Off

Off

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 2-80, and the scanner can be configured to only scan Code 11 barcodes whose number is between (including) the minimum number (2-80) and the maximum number (2-80).

XdObLa
Minimum

XdPbLa
Maximum

## 5.14. CODABAR (NW-7)

QaXaZa
On**

QaXaPa
Off

### CHECK CHARACTER

IbNeRa
No Check**

IbNeBb
Check and Transmit

IbNeLb
Check but Not Transmit

### START AND END CHARACTERS

QaVdCb
On

QaVdSa
Off**

### START AND END CHARACTERS FORMAT

Start and end characters of Codabar are allowed to be one of the four characters “A”, “B”, “C”, and “D”; the terminator is also allowed to be one of “T”, “N”, “*”, “ E”.

WaMbSa
ABCD/ABCD**

WaMbCb
ABCD/TN*E

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 2-60, and the scanner can be configured to only scan Codabar barcodes whose number is between (including) the minimum number (2-60) and the maximum number (2-60).

XdGcLa
Minimum

XdHcLa
Maximum





## 5.15. INTERLEAVED 2 OF 5

QaXaAb
On**

QaXaQa
Off

### CHECK CHARACTER

Interleaved 2 of 5 barcode data is not mandatory to include a check character. If there is a check character, it will be the last character of the data. The check character is a value calculated based on all data to check whether the data is correct. You can turn on or off the check according to your needs, and set whether to send check characters.

The code number of Interleaved 2 of 5 barcode must be an even number. The check character is included in the code. If it is an odd number, the first digit should be filled with 0.

The default is “No Check”

IbNeNa
No Check**

IbNeXa
Check and Transmit

IbNeHb
Check but Not Transmit

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-80, and the scanner can be configured to only scan Interleaved 2 of 5 barcodes whose number is between (including) the minimum number (1-80) and the maximum number (1-80).

XdSbLa
Minimum

XdTbLa
Maximum

## 5.16. INTERLEAVED 2 OF 5

QaWaAb
On**

QaWaQa
Off

### CHECK CHARACTER

Matrix 2 of 5 barcode data is not mandatory to include a check character. If there is a check character, it will be the last byte of the data. The check character is a value calculated from all data except the check character to check whether the data is correct.

The default is "No Check".

AbBbRa
No Check**

AbBbBb
Check and Transmit

AbBbLb
Check but Not Transmit

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-80, and the scanner can be configured to only scan Matrix 2 of 5 barcodes whose number is between (including) the minimum number (1-80) and the maximum number (1-80).

XdYbLa
Minimum

XdZbLa
Maximum





## 5.17. INDUSTRIAL 2 OF 5

QaXaVa
On**

QaXaLa
Off

### CHECK CHARACTER

The default number is 1-45, and the scanner can be configured to only scan Industrial 2 of 5 barcodes whose number is between (including) the minimum number (1-45) and the maximum number (1-45).

XdUbLa
Minimum

XdVbLa
Maximum

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-80, and the scanner can be configured to only scan Matrix 2 of 5 barcodes whose number is between (including) the minimum number (1-80) and the maximum number (1-80).

XdYbLa
Minimum

XdZbLa
Maximum

## 5.18. STANDARD 2 OF 5 (IATA 2 OF 5)

QaWaZa
On

QaWaPa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-45, and the scanner can be configured to only scan Standard 2 of 5 barcodes whose number is between (including) the minimum number (1-45) and the maximum number (1-45).

XdWbLa
Minimum

XdXbLa
Maximum

## 5.19. NEC 2 OF 5

SaYdWa
On

SaYdMa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 4-80, and the scanner can be configured to only scan NEC 2 of 5 barcodes whose number is between (including) the minimum number (4-80) and the maximum number (4-80).

XdAcLa
Minimum

XdBcLa
Maximum





## 5.20. MSI PLESSEY

QaYaXa
On

QaYaNa
Off**

### CHECK CHARACTER

MSI Plessey barcode data is not mandatory to include check characters. If there is a check character, it will be the last 1 or 2 characters of the data. The check character is a value calculated from all data except the check character to check whether the data is correct.

SbOeQa
No Check**

SbOeYc
Mode10 & Mode11 Check but Not Transmit

SbOeId
Two Mode10 Check but Not Transmit

SbOeKb
Mode10 & Mode11 Check and Transmit

SbOeAb
Mode10 Check and Transmit

SbOeUb
Two Mode10 Check and Transmit

SbOeOc
Mode10 Check but Not Transmit

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-255, and the scanner can be configured to only scan MSI Plessey barcodes whose number is between (including) the minimum number (1-255) and the maximum number (1-255).

XdCcLa
Minimum

XdDcLa
Maximum

## 5.21. TELEPEN

QaWaCb
On

QaWaSa
Off**

### TELEPEN CHARACTER FORMAT

QaWaBb
Number Format

QaWaRa
Number + Letter Format**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-60, and the scanner can be configured to only scan Telepen barcodes whose number is between (including) the minimum number (1-60) and the maximum number (1-60).

XdQbLa
Minimum

XdRbLa
Maximum

## 5.22. FEBRABAN

### ITF 25 TYPE

WaNbVa
On

WaNbLa
Off**

### CODE 128 TYPE

WaNbWa
On

WaNbMa
Off**

### CHECK CHARACTER

WaNbXa
Check

WaNbNa
No check**





## 5.23. GS1 DATABAR 14 (RSS-14)

QaAbYa
On**

QaAbOa
Off

**Note:** GS1 DataBar 14 si also known as GS1 Databar Omnidirectional, RSS-14

## 5.24. GS1 DATABAR LIMITED (RSS-LIMITED)

QaAbZa
On**

QaAbPa
Off

**Note:** GS1 DataBar Limited is also known as RSS-Limited

## 5.25. GS1 DATABAR EXPANDED (RSS-EXPANDED)

QaAbAb
On**

QaAbQa
Off

**Note:** GS1 DataBar Expanded is also known as RSS-Expanded

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 4-74, and the scanner can be configured to only scan GS1 Databar Expanded barcodes whose number is between (including) the minimum number (4-74) and the maximum number (4-74).

XdIcLa
Minimum

XdJcLa
Maximum

## 5.26. QR CODE

QaCbXa
On**

QaCbNa
Off

### QR CODE NORMAL/REVERSE

QaCbOa
Normal only**

QaCbYa
Normal + Reverse

### QR CODE APPEND

SaOcBb
QR Code Append ON

SaOcRa
QR Code Append Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-7089, and the scanner can be configured to only scan QR Code whose number is between (including) the minimum number (1-7089) and the maximum number (1-7089).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdYdLa
Minimum Number (Low Byte)

XdZdLa
Minimum Number (High Byte)

XdAeLa
Maximum Number (Low Byte)

XdBeLa
Maximum Number (High Byte)

## 5.27. MICRO QR CODE

QaCbAb
On**

QaCbQa
Off





### MICRO QR CODE NORMAL/REVERSE

QaCbRa
Normal Only**

QaCbBb
Normal + Reverse

## 5.28. DATA MATRIX

QaBbYa
On**

QaBbOa
Off

### DATA MATRIX RECTANGULAR CODE

QaBbWa
On

QaBbMa
Off**

### DATA MATRIX NORMAL/REVERSE

QaBbNa
Normal only**

QaBbXa
Normal + Reverse

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-3116, and the scanner can be configured to only scan DataMatrix whose number is between (including) the minimum number (1-3116) and the maximum number (1-3116).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdUdLa
Minimum Number (Low Byte)

XdVdLa
Minimum Number (High Byte)

XdWdLa
Maximum Number (Low Byte)

XdXdLa
Maximum Number (High Byte)

## 5.29. PDF 417

QaWaVa
On**

QaWaLa
Off

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-2750, and the scanner can be configured to only scan PDF 417 whose number is between (including) the minimum number (1-2750) and the maximum number (1-2750).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdGdLa
Minimum Number (Low Byte)

XdHdLa
Minimum Number (High Byte)

XdIdLa
Maximum Number (Low Byte)

XdJdLa
Maximum Number (High Byte)

## 5.30. MICRO PDF 417

QaAbCb
On

QaAbSa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-366, and the scanner can be configured to only scan Micro PDF 417 whose number is between (including) the minimum number (1-366) and the maximum number (1-366).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdKdLa
Minimum Number (Low Byte)

XdLdLa
Minimum Number (High Byte)

XdMdLa
Maximum Number (Low Byte)

XdNdLa
Maximum Number (High Byte)





## 5.31. MAXICODE

QaCbZa
On

QaCbPa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-150, and the scanner can be configured to only scan MaxiCode whose number is between (including) the minimum number (1-150) and the maximum number (1-150).

XdSdLa
Minimum

XdTdLa
Maximum

## 5.32. AZTEC CODE

QaCbVa
On

QaCbLa
Off**

### AZTECCODE NORMAL/REVERSE

QaCbMa
Normal Only**

QaCbWa
Normal + Reverse

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-3832, and the scanner can be configured to only scan Aztec Code whose number is between (including) the minimum number (1-3832) and the maximum number (1-3832).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdOdLa
Minimum Number (Low Byte)

XdPdLa
Minimum Number (High Byte)

XdQdLa
Maximum Number (Low Byte)

XdRdLa
Maximum Number (High Byte)

## 5.33. HANXIN CODE

SaRdWa
On

SaRdMa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-7883, and the scanner can be configured to only scan HanXin Code whose number is between (including) the minimum number (1-7883) and the maximum number (1-7883).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdCeLa
Minimum Number (Low Byte)

XdDeLa
Minimum Number (High Byte)

XdEeLa
Maximum Number (Low Byte)

XdFeLa
Maximum Number (High Byte)

## 5.34. DOT CODE

WaMbBb
On

WaMbRa
Off**

## 5.35. GRID MATRIX

WaMbAb
On

WaMbQa
Off**

## 5.36. CHINA POST CODE

QaZaBb
On

QaZaRa
Off**

**Note:** China Post Code is also known as Hong Kong 2 of 5.





## 5.37. KOREA POST CODE

SaFdVa
On

SaFdLa
Off**

## 5.38. AUSTRALIAN POST

SaGdCb
On

SaGdSa
Off**

## 5.39. BRITISH POST

SaGdVa
On

SaGdLa
Off**

## 5.40. USPS INTELLIGENT MAIL

SaIdYa
On

SaIdOa
Off**

## 5.41. JAPANESE POST

SaGdBb
On

SaGdRa
Off**

## 5.42. PLANET CODE

SaGdZa
On

SaGdPa
Off**

## 5.43. POSTNET CODE

SaGdYa
On

SaGdOa
Off**

## 5.44. GS1 COMPOSITE CODE

RaUcBb
On

RaUcRa
Off**

### GS1-128 COMPOSITE

RaUcAb
On

RaUcQa
Off**

### UPC COMPOSITE

YaNbZa
On

YaNbPa
Off**

### NUMBER OF RECOGNIZED CHARACTERS

The default number is 1-2435, and the scanner can be configured to only scan GS1 Composite Code whose number is between (including) the minimum number (1-2435) and the maximum number (1-2435).

Minimum Number = Minimum Number high byte * 256 + Minimum Number low byte

Maximum Number = Maximum Number high byte * 256 + Maximum Number low byte

XdKcLa
Minimum Number (Low Byte)

XdLcLa
Minimum Number (High Byte)

XdMcLa
Maximum Number (Low Byte)

XdNcLa
Maximum Number (High Byte)





## 5.45. OCR-B

SaBdCb
OCR On

SaBdSa
OCR Off**

### ID/PASSPORT OCR-B

SaBdWa
For Passport OCR

SaBdMa
For ID Card**

### CHECK CHARACTER

TaDeBb
OCR Passport Checksum Ignore Enable

TaDeRa
OCR Passport Checksum Ignore Disable**

# CHAPTER 6 – APPENDIX

## 6.1. APPENDIX: DATA CODE

The data code is used to configure the prefix and suffix. When using the data code, it needs to be used in conjunction with "Appendix-Enter/Exit Data Code Setting Mode".

0 4 7

1 5 8

2 6 9

3

## 6.2. APPENDIX: ENTER/EXIT DATA CODE SETTING MODE

When the user configures the prefix and suffix, you need to scan the "enter/exit data code setting mode" setup code first to enter the setting data code mode. After entering the data code configuration mode, only scanning the variable-number configuration code is valid. To set other configuration codes, you need to exit the data code setting mode first.

BeReGe
Enter/Exit data code setting mode





## 6.3. APPENDIX: EXAMPLES OF CUSTOM PARAMETERS

### EXAMPLE: ADD PREFIX AND SUFFIX SETTINGS

**For example: add a custom prefix of XY to all barcode types**

**Step 1:** check the "Appendix-ASCII Code Table" to check that the three-digit decimal value corresponding to the character XY that needs to be prefixed is 088,089.

**Step 2:** Scan the "Enter/Exit Data Code Setting Mode" setup code in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 3:** Scan the "Set custom prefix" setup code:

BeReTd
Set custom prefix

**Step 4:** Scan "0", "8" and "8" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 8 8

**Step 5:** Scan the "Set custom prefix" setup code:

BeReTd
Set custom prefix

**Step 6:** Scan "0", "8" and "9" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 8 9

**Step 7:** Scan the "Enter/Exit Data Code Setting Mode" setup code in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Note:** You can set up to 10 custom prefixes. Repeat the second and third steps to set multiple prefixes. After each prefix is set, it will automatically switch to the next prefix setting (1-10 from left to right). After setting the 10th, it will automatically jump to the first prefix setting.

## EXAMPLE: SET THE LENGTH OF 1D CODE

**Note:**

1. Minimum length> maximum length, any length of the code system can be decoded.

2. Minimum length = maximum length, the decodable length of the code system is fixed to the set value.

3. Some QR codes have no high and low byte settings, you can also refer to this step

**For example: set the reading length of Code 128 to 6-15 digits.**

**Step 1:** First confirm that the three-digit decimal values corresponding to 6 and 15 are 006 and 015.

**Step 2:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 3:** Scan the "Minimum" setup code of Code 128:

XdIbLa
Minimum

**Step 4:** Scan "0", "0" and "6" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively).):

0

0

6





**Step 5:** Scan the "Maximum" setup code of Code 128:

XdJbLa
Maximum

**Step 6:** Scan "0", "1" and "5" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0

1

5

**Step 7:** Scan the "Enter/Exit Data Code Setting Mode" setup code in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

## EXAMPLE: SET THE LENGTH OF THE QR CODE

**Note:**

1. Minimum length > maximum length, any length of the code system can be decoded.

2. Minimum length = maximum length, the decodable length of the code system is fixed to the set value.

**For example: set the QR Code reading length to 20-300 digits.**

The 2D code length setting is essentially the same as the 1D code length setting, but the minimum/maximum length setting of the 2D code may be greater than 255, so the length needs to be divided into two settings.

For example, when the maximum length of QR is 300, you need to simply decompose the maximum length value before setting, and divide 300 into high and low bytes, then the high byte is 300/256 = 1 (divided up), and the low byte is 300% 256=44 (take the remainder). If the maximum length <256, the high byte is 0.

XdYdLa
Minimum Number (Low Byte)

XdZdLa
Minimum Number (High Byte)

XdAeLa
Maximum Number (Low Byte)

XdBeLa
Maximum Number (High Byte)

**Step 1:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 2:** Scan the QR Code "Minimum Number (High Byte)" setup code:

XdZdLa
Minimum Number (High Byte)





**Step 3:** Scan "0", "0" and "0" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 0 0

**Step 4:** Scan the QR Code "Minimum Number (low byte)" setup code:

XdYdLa
Minimum Number (Low Byte)

**Step 5:** Scan "0", "2" and "0" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 2 0

**Step 6:** Scan the QR Code "Maximum Number (High Byte)" setup code:

XdBeLa
Maximum Number (High Byte)

**Step 7:** Scan "0", "4" and "4" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 4 4

**Step 8:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix to complete the setting (the buzzer sounds 3 times):

BeReGe
Enter/Exit data code setting mode

## EXAMPLE: HIDDEN CHARACTER SETTINGS

**For example: set to hide the first 3 characters of the barcode**

Example: 1616abcd

1616abcd

The original content of the barcode is: 1616abcd, output 6abcd after setting the hidden 3 characters in the head.

**Step 1:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 2:** Scan the setup code of "Hidden Numbers of Leading Character":

YdRbLa
Hidden Numbers of Leading Character

**Step 3:** Scan "0", "0" and "3" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 0 3

**Step 4:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix to complete the setting (the buzzer sounds 3 times):

BeReGe
Enter/Exit data code setting mode





**Step 5:** Scan the "Hide leading characters: On" setup code:

WaQbCb
Hide leading characters: On

## EXAMPLE: INSERT CUSTOM CHARACTER

**For example: Insert X after 4 characters**

From "Appendix-ASCII Code Table", "4" means "004", "X" means "088".

1616abcd

Original content is: 1616abcd, output is: 1616Xabcd.

**Step 1:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 2:** Scan the "Insertion Position of Custom Character" setup code

YdFcLa
Insertion Position of Custom Character

**Step 3:** Scan "0", "0" and "4" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 0 4

**Step 4:** Scan the "Custom Character to Insert" setup code:

BeReYc
Custom Character to Insert

**Step 5:** Scan "0", "8" and "8" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 8 8

**Step 6:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix to complete the setting (the buzzer sounds 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 7:** Scan the "Display custom characters: On" setup code:

WaQbYb
Display custom characters: On

## EXAMPLE: CHARACTER REPLACEMENT

**For example: replace the 6 appearing in the sample barcode with the letter X.**

Appendix-ASCII code table: 6 = 054; X = 088.

1616abcd

The original content of the barcode is: 1616abcd, output 1X1Xabcd after setting.





**Step 1:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

**Step 2:** Scan the "Character to be replaced" setup code:

VdEeLa
Character to be replaced

**Step 3:** Scan "0", "5" and "4" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 5 4

**Step 4:** Scan the "Replacement character" setup code:

VdFeLa
Replacement character

**Step 5:** Scan "0", "8" and "8" of "Appendix-Data Code" in turn to set the code. (Every three is a group, the buzzer sounds 1, 2 and 3 respectively):

0 8 8

**Step 6:** Scan the setup code of "Enter/Exit Data Code Setting Mode" in the appendix (the buzzer will sound 3 times):

BeReGe
Enter/Exit data code setting mode

## 6.4. APPENDIX: DEFAULT SETTING TABLE

| Parameter Name | Default Setting | Description |
|---|---|---|
| **Comprehensive Settings** | | |
| Turn on all sound | On | |
| Turn on boot sound | On | |
| Duration of successful decoding tone | Normal | |
| Decoding successful prompt audio rate | 2.7 KHz | |
| Decoding successful prompt tone volume | High | |
| Turn on the indicator light for successful barcode reading | On | |
| Turn on the fill light | On | |
| Data output format | Codepage | |
| Text output in different countries | UTF-8/GB2312 coding | |
| Image inversion | Normal | |
| All 1D barcodes are inverted | Off | |
| All 2D barcodes are inverted | Off | |
| **Communication Settings** | | |
| Interface Mode | USB-KBW | |
| Keyboard Mode | American English | |
| Control character output mode | Output function keys | |
| Open virtual keyboard | Off | |
| Case Conversion | Off | Normal |
| USB Transfer Speed | Normal | |
| Caps Lock Detection | On | |
| Serial Port Transmission Speed | Fast | |
| Baud rate | 9600 | |
| Serial Verification | No verification | |
| Data bit | 8 bits | |
| Stop bit | 1 bit | |
| **Reading Mode** | | |
| Reading mode | Trigger | |
| Continuous reading-the same barcode reading delay | On | 400 ms |
| Induction Reading Mode-Induction Sensitivity | High | |





| Parameter Name | Default Setting | Description |
|---|---|---|
| **Data Editing** | | |
| Send Code ID | Off | |
| Send AIM ID | Off | |
| Custom Predix | Off | |
| Custom suffix | Off | |
| Hide head characters | Off | |
| Hide middle characters | Off | |
| Hide trailing characters | Off | |
| Display insert custom characters | Off | |
| Terminator | CR | |
| **Barcode Parameter Settings** | | |
| Open all barcodes | Off | |
| **UPC-A** | | |
| Allow reading | On | |
| Send check character | On | |
| 2 additional digits | Off | Normal |
| 5 additional digits | Off | |
| Mandatory additional digits, 2 additional digits | Off | |
| Mandatory additional digits, 5 additional digits | Off | |
| Send system character | On | |
| Open separator | On | |
| Convert to EAN-13 | Off | |
| **UPC-E** | | |
| Allow reading UPC-E0 | On | |
| Allow reading UPC-E1 | Off | |
| Send check character | On | |
| 2 additional digits | Off | |
| 5 additional digits | Off | |
| Mandatory additional digits, 2 additional digits | Off | |
| Mandatory additional digits, 5 additional digits | Off | |
| Open separator | On | |
| Send system character | On | System Character |
| Convert to UPC-A | Off | |

| Parameter Name | Default Setting | Description |
|---|---|---|
| **EAN-8** | | |
| Allow reading | On | |
| Send check character | On | |
| 2 additional digits | Off | |
| 5 additional digits | Off | |
| Mandatory additional digits, 2 additional digits | Off | |
| Mandatory additional digits, 5 additional digits | Off | |
| Open Separator | On | |
| Convert to EAN-13 | Off | |
| **EAN-13** | | |
| Allow reading | On | |
| Send check character | On | |
| 2 additional digits | Off | Normal |
| 5 additional digits | Off | |
| Mandatory additional digits, 2 additional digits | Off | |
| Mandatory additional digits, 5 additional digits | Off | |
| Open Separator | On | |
| Convert to ISBN | Off | |
| Send ISBN Check Character | Off | |
| **Code 128** | | |
| Allow reading | On | |
| Default reading length | 0-80 | |
| **GS 1-128** | | |
| Allow reading | On | |
| Default reading length | 0-80 | |
| **ISBT 128** | | |
| Allow reading | Off | |
| **Code 39** | | |
| Allow reading | On | |
| MOD43 Check | Off | |
| Send check character | Off | |
| Send start and end character | Off | |
| Full ASCII | Off | |
| Default reading length | 0-48 | |





| Parameter Name | Default Setting | Description |
|---|---|---|
| **Code 32** | | |
| Allow reading | Off | |
| Send check character | On | |
| Add A before the barcode | Off | |
| **Code 93** | | |
| Allow reading | On | |
| Default reading length | 0-80 | |
| **Code 11** | | |
| Allow reading | Off | |
| Open check character | On | 1 check character |
| Send check character | On | |
| Default reading length | 2-80 | |
| **Codabar** | | |
| Allow reading | On | |
| Open check character | Off | |
| Send check character | Off | |
| Send start and end character | Off | |
| Start and end character format | ABCD/ABCD | |
| Default reading length | 2-60 | |
| **Interleaved 2 of 5** | | |
| Allow reading | On | |
| Open check character | Off | |
| Send check character | Off | |
| Default reading length | 1-80 | |
| **Matrix 2 of 5** | | |
| Allow reading | On | |
| Open check character | Off | |
| Default reading length | 1-80 | |
| **Industrial 2 of 5** | | |
| Allow reading | On | |
| Default reading length | 1-80 | |
| **Standard 2 of 5** | | |
| Allow reading | Off | |
| Default reading length | 1-45 | |

| Parameter Name | Default Setting | Description |
|---|---|---|
| **MSI Plessey** | | |
| Allow reading | Off | |
| Open check character | Off | |
| Send check character | Off | |
| Default reading length | 1-255 | |
| **Telepen** | | |
| Allow reading | Off | |
| Character Type | Letter type | |
| Default reading length | 1-60 | |
| **RSS-14** | | |
| Allow reading | On | |
| **RSS-Limited** | | |
| Allow reading | On | |
| **RSS-Expanded** | | |
| Allow reading | On | |
| Default reading length | 4-74 | |
| **QR Code** | | |
| Allow reading | On | |
| Reverse reading | Off | |
| Default reading length | 1-7089 | |
| QR URL Code | On | |
| **Micro QR Code** | | |
| Allow reading | On | |
| Reverse reading | Off | |
| **Data Matrix** | | |
| Allow reading | On | |
| Allow reading rectangular codes | Off | |
| Reverse reading | Off | |
| Default reading length | 1-3116 | |
| **PDF 417** | | |
| Allow reading | On | |
| Default reading length | 1-2750 | |





| Parameter Name | Default Setting | Description |
|---|---|---|
| **Micro PDF 417** | | |
| Allow reading | Off | |
| Default reading length | 1-366 | |
| **MaxiCode** | | |
| Allow reading | Off | |
| Default reading length | 1-150 | |
| **Aztec** | | |
| Allow reading | Off | |
| Reverse reading | Off | |
| Default reading length | 1-3832 | |
| **HanXin Code** | | |
| Allow reading | Off | |
| Default reading length | 1-7883 | |
| **Dot Code** | Off | |
| **Grid Matrix** | Off | |
| **China Post Code** | Off | |
| **Korea Post Code** | Off | |
| **Australian Post Code** | Off | |
| **British Post Code** | Off | |
| **USPS Intelligent Mail Code** | Off | |
| **Japanese Post** | Off | |
| **Planet Code** | Off | |
| **Postnet Code** | Off | |
| **GS1 Composite Code** | | |
| Allow reading | Off | |
| Default reading length | 1-2435 | |
| **OCR-B** | | |
| Allow reading | Off | |
| ID/Passport OCR-B | ID | |

## 6.5. APPENDIX: CODE ID & AIM ID

| # | Barcode Type | Code ID | AIM ID | Description |
|---|---|---|---|---|
| 1 | Code 128 | A | ]C0 | |
| 2 | GS1 128 | B | ]C1 | |
| 3 | EAN-8 | C | ]E4 | |
| 4 | EAN-8 with Add-on | C | ]E3 | |
| 5 | EAN-13 | D | ]E0 | |
| 6 | EAN-13 with Add-on | D | ]E3 | |
| 7 | UPC-E | E | ]E0 | |
| 8 | UPC-E with Add-on | E | ]E3 | |
| 9 | UPC-A | F | ]E0 | |
| 10 | UPC-A with Add-on | F | ]E3 | |
| 11 | UPC-E1 | E | ]X0 | |
| 12 | ISBN | d | ]E0 | |
| 13 | Code11 | 1 | ]Hm | m: 0,1,3 |
| 14 | Code39 Base32 | f | ]X0 | |
| 15 | Interleaved 2 of 5 | G | ]Im | m: 0,1,3 |
| 16 | Industrial 2 of 5 | h | ]S0 | |
| 17 | Standard 2 of 5 | H | ]R0 | |
| 18 | Code 39 | I | ]Am | m: 0,1,3,4,5,7 |
| 19 | Codabar | J | ]Fm | m: 0,2,4 |
| 20 | MSI Plessey | K | ]Mm | m: 0,1,2,3,5,6,7 |
| 21 | Code 93 | L | ]G0 | |
| 22 | GS1 Databar Omnidirectional | M | ]e0 | |
| 23 | GS1 Databar Limited | [ | ]e0 | |
| 24 | GS1 Databar Expanded | ] | ]e0 | |
| 25 | HongKong 2 of 5 (China Post) | P | ]X9 | |
| 26 | Matrix 2 of 5 | Q | ]X0 | |
| 27 | PDF417 | N | ]Lm | |
| 28 | Micro PDF417 | O | ]Lm | |
| 29 | Hanxin | S | ]XH | |
| 30 | AztecCode | T | ]zm | |
| 31 | QR code | U | ]Qm | |
| 32 | Micro QR | U | ]Qm | |
| 33 | Data Matrix | V | ]dm | |
| 34 | Maxi Code | W | ]Um | |
| 35 | GS1 Composite Code | M/[/] / … | ]e0 | |
| 36 | Telepen | 8 | ]Bm | |
| 37 | Dot Code | C | ]tm | |
| 38 | Grid Matrix | x | ]g0 | |

**Note:** The CodeID of GS1 Composite Code depends on the type of composite code.





## 6.6. APPENDIX: CONTROL CHARACTER LIST

**Note:** 0-31 of the ASCII code table are the control characters in different interface modes. The scanner can use the relevant settings to achieve the functions of the following table.

| Hexadecimal | ASCII (Decimal) | Corresponding key value (Function key operation) | Corresponding key value (Ctrl key operation, Escape 1) | Corresponding key value (Ctrl key operation, Escape 2) |
|---|---|---|---|---|
| 00 | 00 | Null | Ctrl+2 | Ctrl+@ |
| 01 | 01 | Keypad Enter | Ctrl+A | Ctrl+A |
| 02 | 02 | Caps Lock | Ctrl+B | Ctrl+B |
| 03 | 03 | Right Arrow | Ctrl+C | Ctrl+C |
| 04 | 04 | Up Arrow | Ctrl+D | Ctrl+D |
| 05 | 05 | Null | Ctrl+E | Ctrl+E |
| 06 | 06 | Null | Ctrl+F | Ctrl+F |
| 07 | 07 | Enter | Ctrl+G | Ctrl+G |
| 08 | 08 | Left Arrow | Ctrl+H | Backspace |
| 09 | 09 | Horizontal Tab | Ctrl+I | Tab |
| 0A | 10 | Down Arrow | Ctrl+J | Enter |
| 0B | 11 | Vertical Tab | Ctrl+K | Ctrl+K |
| 0C | 12 | Backspace | Ctrl+L | Ctrl+L |
| 0D | 13 | Enter | Ctrl+M | Enter |
| 0E | 14 | Insert | Ctrl+N | Ctrl+N |
| 0F | 15 | Esc | Ctrl+O | Ctrl+O |
| 10 | 16 | F11 | Ctrl+P | Ctrl+P |
| 11 | 17 | Home | Ctrl+Q | Ctrl+Q |
| 12 | 18 | Print Screen | Ctrl+R | Ctrl+R |
| 13 | 19 | Delete | Ctrl+S | Ctrl+S |
| 14 | 20 | Tab+Shift | Ctrl+T | Ctrl+T |
| 15 | 21 | F12 | Ctrl+U | Ctrl+U |
| 16 | 22 | F1 | Ctrl+V | Ctrl+V |
| 17 | 23 | F2 | Ctrl+W | Ctrl+W |
| 18 | 24 | F3 | Ctrl+X | Ctrl+X |
| 19 | 25 | F4 | Ctrl+Y | Ctrl+Y |
| 1A | 26 | F5 | Ctrl+Z | Ctrl+Z |
| 1B | 27 | F6 | Ctrl+[ | Ctrl+[ |
| 1C | 28 | F7 | Ctrl+\ | Ctrl+\ |
| 1D | 29 | F8 | Ctrl+] | Ctrl+] |
| 1E | 30 | F9 | Ctrl+6 | Ctrl+^ |
| 1F | 31 | F10 | Ctrl+ - | Ctrl+_ |

## 6.7. APPENDIX: ASCII CODE TABLE

**Note:** 0-31 of ASCII code table are invisible characters, 32-127 are visible characters

| Hexa-deci-mal | ASCII (Deci-mal) | Character | Hexa-deci-mal | ASCII (Deci-mal) | Character |
|---|---|---|---|---|---|
| 00 | 00 | NUL (Null char.) | 20 | 32 | SP (Space) |
| 01 | 01 | SOH (Start of Header) | 21 | 33 | ! (Exclamation Mark) |
| 02 | 02 | STX (Start of Text) | 22 | 34 | " (Double Quote) |
| 03 | 03 | ETX (End of Text) | 23 | 35 | # (Number Sign) |
| 04 | 04 | EOT (End of Transmission) | 24 | 36 | $ (Dollar Sign) |
| 05 | 05 | ENQ (Enquiry) | 25 | 37 | % (Percent) |
| 06 | 06 | ACK (Acknowledgment) | 26 | 38 | & (Ampersand) |
| 07 | 07 | BEL (Bell) | 27 | 39 | ` (Single Quote) |
| 08 | 08 | BS (Backspace) | 28 | 40 | ( (Left / Opening Parenthesis) |
| 09 | 09 | HT (Horizontal Tab) | 29 | 41 | ) (Right / Closing Parenthesis) |
| 0A | 10 | LF (Line Feed) | 2A | 42 | * (Asterisk) |
| 0B | 11 | VT (Vertical Tab) | 2B | 43 | + (Plus) |
| 0C | 12 | FF (Form Feed) | 2C | 44 | , (Comma) |
| 0D | 13 | CR (Carriage Return) | 2D | 45 | - (Minus / Dash) |
| 0E | 14 | SO (Shift Out) | 2E | 46 | . (Dot) |
| 0F | 15 | SI (Shift In) | 2F | 47 | / (Forward Slash) |
| 10 | 16 | DLE (Data Link Escape) | 30 | 48 | 0 |
| 11 | 17 | DC1 (XON) (Device Control 1) | 31 | 49 | 1 |
| 12 | 18 | DC2 (Device Control 2) | 32 | 50 | 2 |
| 13 | 19 | DC3 (XOFF) (Device Control 3) | 33 | 51 | 3 |
| 14 | 20 | DC4 (Device Control 4) | 34 | 52 | 4 |
| 15 | 21 | NAK (Negative Acknowledgment) | 35 | 53 | 5 |
| 16 | 22 | SYN (Synchronous Idle) | 36 | 54 | 6 |
| 17 | 23 | ETB (End of Trans. Block) | 37 | 55 | 7 |
| 18 | 24 | CAN (Cancel) | 38 | 56 | 8 |
| 19 | 25 | EM (End of Medium) | 39 | 57 | 9 |
| 1A | 26 | SUB (Substitute) | 3A | 58 | : (Colon) |
| 1B | 27 | ESC (Escape) | 3B | 59 | ; (Semi-colon) |
| 1C | 28 | FS (File Separator) | 3C | 60 | < (Less Than) |
| 1D | 29 | GS (Group Separator) | 3D | 61 | = (Equal Sign) |
| 1E | 30 | RS (Request to Send) | 3E | 62 | > (Greater Than) |
| 1F | 31 | US (Unit Separator) | 3F | 63 | ? (Question Mark) |





| Hexa-deci-mal | ASCII (Deci-mal) | Character | Hexa-deci-mal | ASCII (Deci-mal) | Character |
|---|---|---|---|---|---|
| 40 | 64 | @ (AT Symbol) | 60 | 96 | ‘ (Grave Accent) |
| 41 | 65 | A | 61 | 97 | a |
| 42 | 66 | B | 62 | 98 | b |
| 43 | 67 | C | 63 | 99 | c |
| 44 | 68 | D | 64 | 100 | d |
| 45 | 69 | E | 65 | 101 | e |
| 46 | 70 | F | 66 | 102 | f |
| 47 | 71 | G | 67 | 103 | g |
| 48 | 72 | H | 68 | 104 | h |
| 49 | 73 | I | 69 | 105 | i |
| 4A | 74 | J | 6A | 106 | j |
| 4B | 75 | K | 6B | 107 | k |
| 4C | 76 | L | 6C | 108 | l |
| 4D | 77 | M | 6D | 109 | m |
| 4E | 78 | N | 6E | 110 | n |
| 4F | 79 | O | 6F | 111 | o |
| 50 | 80 | P | 70 | 112 | p |
| 51 | 81 | Q | 71 | 113 | q |
| 52 | 82 | R | 72 | 114 | r |
| 53 | 83 | S | 73 | 115 | s |
| 54 | 84 | T | 74 | 116 | t |
| 55 | 85 | U | 75 | 117 | u |
| 56 | 86 | V | 76 | 118 | v |
| 57 | 87 | W | 77 | 119 | w |
| 58 | 88 | X | 78 | 120 | x |
| 59 | 89 | Y | 79 | 121 | y |
| 5A | 90 | Z | 7A | 122 | z |
| 5B | 91 | [ (Left / Opening Bracket) | 7B | 123 | { (Left/ Opening Brace) |
| 5C | 92 | \ (Back Slash) | 7C | 124 | \| (Vertical Bar) |
| 5D | 93 | ] (Right / Closing Bracket) | 7D | 125 | } (Right/Closing Brace) |
| 5E | 94 | ^ (Caret / Circumflex) | 7E | 126 | ~ (Tilde) |
| 5F | 95 | _ (Underscore) | 7F | 127 | DEL (Delete) |

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