



# **SC400**

## **2D HandHeld Barcode Scanner**

### **Programming Manual**



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## 一、Disclaimer

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

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## 二、 Revision History

V1.0.0	Initial release.	Jan 13, 2014
V1.0.5	Setting correction.	Sep17, 2014
V1.0.6	Add OCR setting, add Index and page number with hyperlink	Feb 3, 2015

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# 1, Chapter 1 Getting Started

## 1.1 Introduction

The 2D barcode decoder chip uses advanced chip design & manufacturing, which significantly simplifies application design and delivers superior performance and solid reliability with low power consumption.

The SC400 support all mainstream 1D and standard 2D barcode symbologies (e.g., PDF417, QR Code M1/M2/Micro and Data Matrix) as well as GS1-DataBar™(RSS) (Limited/Stacked/Expanded versions). It can read barcodes on virtually any medium - paper, plastic card, mobile phones and LCD displays.

This compact, lightweight engine fits easily into even the most space-constrained equipments such as data collectors, meter readers, ticket validators and PDAs.

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## 1.2 About This Guide

This guide provides programming instructions for the SC400. Users can configure the SC400 by scanning the programming barcodes included in this manual.

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## 1.3 Barcode Scanning

The SC400 features fast scanning and decoding accuracy. Barcodes rotated at any angle can still be read with ease. When scanning a barcode, simply center the aiming beam or pattern projected by the SC400 over the barcode.

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## 1.4 Barcode Programming

### 1.5 Factory Defaults

Scanning the following barcode can restore the engine to the factory defaults. See Appendix 1: Factory Defaults Table for more information.

Note: Use this feature with discretion.



Restore All Factory Defaults

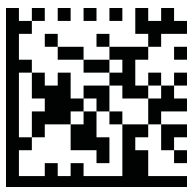
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## 2、Chapter 2 Communication Interfaces

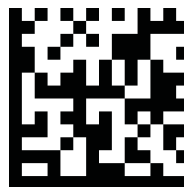
The SC400 provides a TTL-232 interface and a USB interface to communicate with the host device. The host device can receive scanned data and send commands to control the engine or to access/alter the configuration information of the engine via the TTL-232 or USB interface.

### 2.1 TTL-232 Cable Select

Before using Serial Communication interface, scanner must be set as TTL-232 cable. Please reset the scanner after set 232 cable



232 Cable



reset

---

## 2.2 TTL-232 Interface

Serial communication interface is usually used when connecting the engine to a host device (like PC, POS). However, to ensure smooth communication and accuracy of data, you need to set communication parameters (including baud rate, parity check, data bit and stop bit) to match the host device.

The serial communication interface provided by the engine is based on TTL-level signals. TTL-232 can be used for most application architectures. For those requiring RS-232, an external conversion circuit is needed. The conversion circuit is available only to some models.



Serial Communication

Default serial communication parameters are listed below. Make sure all parameters match the host requirements.

Parameter	Factory Default
Serial Communication	Standard TTL-232
Baud Rate	115200
Parity Check	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

---

## 2.3 Baud Rate

Baud rate is the number of bits of data transmitted per second. Set the baud rate to match the Host requirements.



2400



4800



9600



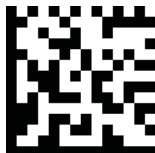
19200



38400



57600



115200

---

## 2.4 Data Bit & Parity Check & Stop Bit



None Parity / 8 Data Bits / 1 Stop Bit



None Parity / 7 Data Bits / 1 Stop Bit



None Parity / 7 Data Bits / 2 Stop Bits



Even Parity / 8 Data Bits / 1 Stop Bit



Even Parity / 7 Data Bits / 1 Stop Bit



Even Parity / 7 Data Bits / 2 Stop Bits



Odd Parity / 8 Data Bits / 1 Stop Bit



Odd Parity / 7 Data Bits / 1 Stop Bit

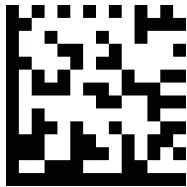


Odd Parity / 7 Data Bits / 2 Stop Bit

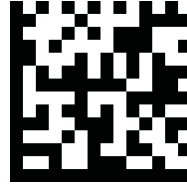
---

## 2.5 USB Interface

Before using USB Communication interface, scanner must be set as USB cable. Please reset the scanner after set USB cable.



USB Cable



Reset

## 2.6 USB HID-KBW

When you connect the engine to the Host via a USB connection, you can enable the USB HID-KBW feature by scanning the barcode below. Then engine's transmission will be simulated as USB keyboard input. The Host receives keystrokes on the virtual keyboard. It works on a Plug and Play basis and no driver is required.

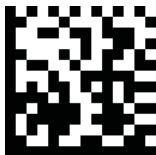


USB HID-KBW

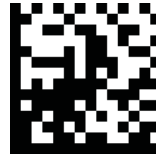
---

## 2.7 USB Country Keyboard Types

Keyboard layouts vary from country to country. The default setting is 1-U.S. keyboard.



1 - U.S.



2 - UK



3 - Denmark



4 - France



5 - Finland



6 - Turkey\_F



7 - Italy



8 - Norway



9 - Albania



10 - Belgium



11 – Bosnia



12 – Brazil



13 – Croatia



14 – Czech



15 –Dutch



16 – Estonia



17 – Germany



18 – Greek



19 – Hungary



20 – Irish



21 – Latvia



22-Lithuania



23 – Macedonia



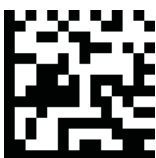
24 – Spain



25 – Poland



26 –Portugal



27 –Romania



28 –Russia

---

## 2.8 Convert Case

Scan the appropriate barcode below to convert barcode data to your desired case.



No Case Conversion



Convert All to Upper Case



Convert All to Lower Case

Example: When the Convert All to Lower Case feature is enabled, barcode data “AbC” is transmitted as “abc”.

---

## 2.9 USB COM Port Emulation

If you connect the engine to the Host via a USB connection, the USB COM Port Emulation feature allows the Host to receive data in the way as a serial port does. A driver is required for this feature.



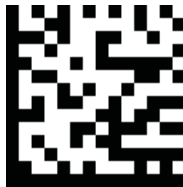
USB COM Port Emulation

---

## 3、 Chapter 3 General Configuration

### 3.1 Trigger Mode

If the Trigger Mode is enabled, you could activate the scanner by providing an external hardware trigger, or using a serial trigger command. When in manual trigger mode, the scanner scans until a barcode is read, or until the hardware trigger is released. When in serial mode, the scanner scans until a barcode has been read or until the deactivate command is sent.



Trigger Mode

---

## 3.2 Continue Mode

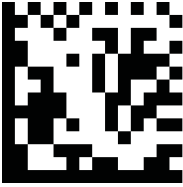
This set the scanner to work in Continue mode.



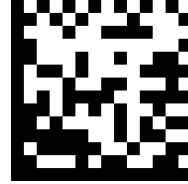
Continue Mode

---

### 3.4 Video Reverse

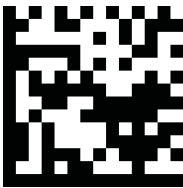


On

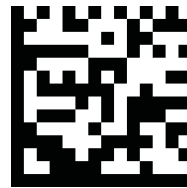


Off

### 3.5 Illumination



On



Off

### 3.6 Beeper – Good Read



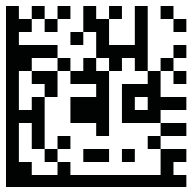
On



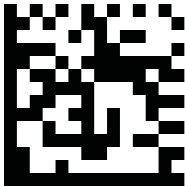
Off

---

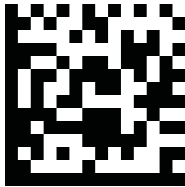
### 3.7 Beeper Tone – Good Read



Low

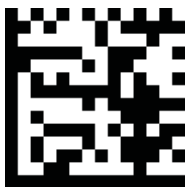


Middle



High

### 3.8 Beeper During-Good Read

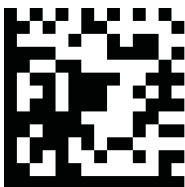


Normal

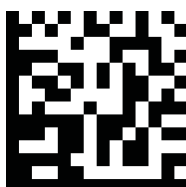


Short

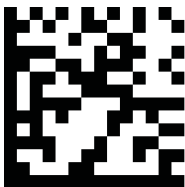
### 3.9 Beeper Number-Good Read



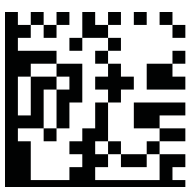
1



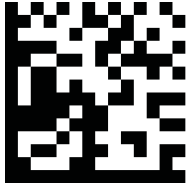
2



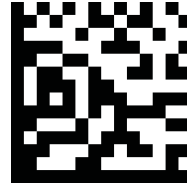
3



4

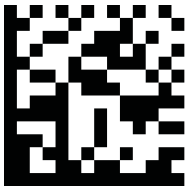


5

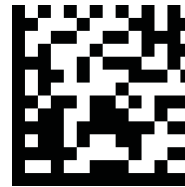


6

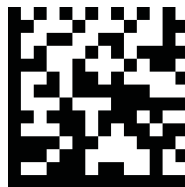
### 3.10 Barcode Scanning Delay



No Delay



Delay 500MS



Delay 2000ms

### 3.11 Ship Image



Ship Imag

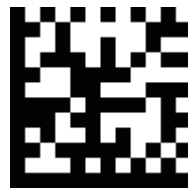
---

## 4、Chapter 4 Data Formatting

### 4.1 General Configuration



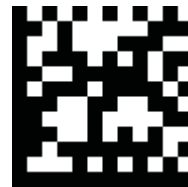
Add CR



Add LF



Add CRLF



Add TAB

---

## 5、Chapter 5 Symbologies

### 5.1 General Settings

#### Enable/Disable All Symbologies

If the Disable All Symbologies feature is enabled, the engine will not be able to read any non-programming barcodes except the programming barcodes.



Enable All Symbologies



Disable All Symbologies

---

## 5.2 1D Symbolologies

### 5.3 Code 128

Restore Factory Defaults



Restore the Factory Defaults of Code 128

**Enable/Disable Code 128**



Enable Code 128



Disable Code 128

Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .

Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command:

Max: 020A0325.

Min: 020A0210.

---

## 5.4 EAN-8

### Restore Factory Defaults



Restore the Factory Defaults of EAN-8

### Enable/Disable EAN-8



Enable EAN-8



Disable EAN-8

### Transmit Check Digit

EAN-8 is 8 digits in length with the last one as its check digit used to verify the accuracy of the data.



Transmit EAN -8 Check Digit



Don't Transmit EAN -8 Check Digit

### Add-On Code

An EAN-8 barcode can be augmented with a two-digit or five-digit add-on code on code to form a new one. In the examples below, the part surrounded by blue dotted line is an EAN-8 barcode while the part circled by red dotted line is add-on 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



EAN-8 Add-On Code Required



EAN-8 Add-On Code Not Required

## 5.5 ENA/JAN -8 Addenda Separator

When this feature is enabled, there is a space between the data from the barcode and the Data from the addenda. When this feature is disabled, there is no space.



Enable ENA/JAN -8 Addenda Separator



Disable ENA/JAN -8 Addenda Separator UPC

---

## 5.6 EAN-13

### Restore Factory Defaults



Restore the Factory Defaults of EAN-13

### Enable/Disable EAN-13

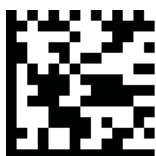


Enable EAN-13



Disable EAN-13

### Transmit Check Digit



Transmit EAN-13 Check Digit



Do Not Transmit EAN-13 Check Digit

### Add-On 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



EAN-8 Add -On Code Required



EAN-8 Add -On Code Not Required

## 5.7 ENA/JAN -8 Addenda Separator

When this feature is enabled, there is a space between the data from the barcode and the Data from the addenda. When this feature is disabled ,there is no space.



Enable ENA/JAN -8 Addenda Separator



Disable ENA/JAN -8 Addenda Separator

**ISBN**  
Restore Factory Default



Restore the Factory Defaults of ISBN



Enable ISBN



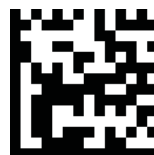
Disable ISBN

## 5.8 ISBN Translate

When enable this feature and is scanned,ENA13 Bookland symbols are translated into their equivalent ISBN number format.



Enable ISBN Translate



Disable ISBN Translate

**UPC-E**  
Restore Factory Defaults



Restore the Factory Defaults of UPC-E

Enable/Disable UPC-E0/E1



Enable UPC-E0



Disable UPC-E0



Enable UPC-E1



Disable UPC-E1

#### UPCE0 Check Digit



Enable UPC-E0 Check Digit



Disable UPC-E0 Check Digit

#### UPCE0 Expand

UPCE0 expand expands the UPCE code to the 12 digit,UPC-A format.



Enable UPC-E0 Expand



Disable UPC-E0 Expand

#### UPCE0 Addenda Required

When required is scanned, the scanner will only read UPC-E barcodes that have addenda.



Enable UPC-E0 Required



Disable UPC-E0 Required

#### UPCE0 Addenda Separator

---



Enable UPC -E0 Separator



Disable UPC-E0 Separator

### UPCE0 Number System

The number system digit of upc. Symbol is normally transmitted at the beginning of the scanned data ,but the unit can be programmed so it will not transmit it.



Enable UPC -E0 Number System



Disable UPC-E0 Number System

### UPCE0 Addenda



Enable 2 Digit Addenda



Disable 2 Digit Addenda



Enable 5 Digit Addenda



Disable 5 Digit Addenda

---

**UPC-A**  
**Restore Factory Defaults**



Restore the Factory Defaults of UPC-A

**Enable/Disable UPC-A**



Enable UPC-A



Disable UPC-A

**UPC-A Check Digit**



Enable UPC-A Check Digit



Disable UPC-A Check Digit

**UPC-A Addenda Required**

---

When required is scanned, the scanner will only read UPC-E barcodes that have addenda.

---



Enable UPC -A Required



Disable UPC -A Required

#### UPC-A Addenda Separator



Enable UPC -A Separator



Disable UPC -A Separator

#### UPC-A Number System

The number system digit of upc. Symbol is normally transmitted at the beginning of the scanned data ,but the unit can be programmed so it will not transmit it.

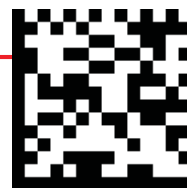
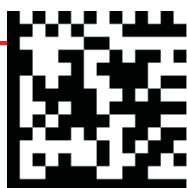


Enable UPC -A Number System



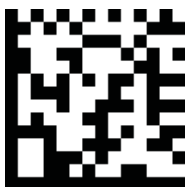
Disable UPC -A Number System

#### UPC-A Addenda



---

Enable 2 Digit Addenda



Disable 2 Digit Addenda



Enable 5 Digit Addenda

Disable 5 Digit

---

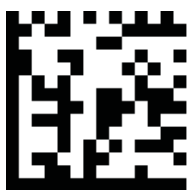
## 5.9 Interleaved 2 of 5

### Restore Factory Defaults



Restore the Factory Defaults of Interleaved 2 of 5

### Enable/Disable Interleaved 2 of 5



Enable Interleaved 2 of 5



Disable Interleaved 2 of 5

#### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .

Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command

Max: 02040425.

Min: 02040310.



No check Char



Validate not Transmit

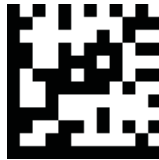


Validate and Transmit

---

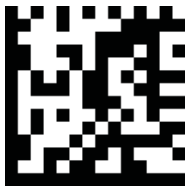
## 5.10 Matrix 2 of 5

### Restore Factory Defaults



Restore the Factory Defaults of Matrix 2 of 5

### Enable/Disable Matrix 2 of 5



Enable Matrix 2 of 5



Disable Matrix 2 of 5

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

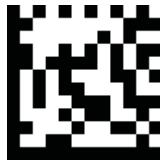
Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 02080310.  
Min: 0208025.

---

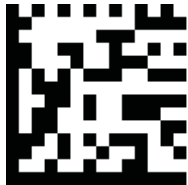
## 5.11 Industrial 2 of 5

### Restore Factory Defaults

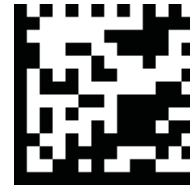


Restore the Factory Defaults of Industrial 2 of 5

### Enable/Disable Industrial 2 of 5



Enable Industrial 2 of 5



Disable Industrial 2 of 5

### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 02040425.  
Min: 02040310.

---

# 5.12 Code 39

## Restore Factory Defaults



Restore the Factory Defaults of Code 39

## Enable/Disable Code 39



Enable Code 39



Disable Code 39

## Transmit Start/Stop Character



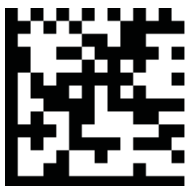
Transmit Start/Stop Character



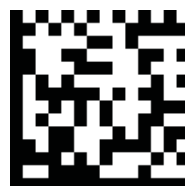
Do not Transmit Start/Stop Character

---

### Code 39 Check Character



No Check Char



Validate and Transmit



Validate no Transmit

### Code 39 Append



Enable Append



Disable Append

---

## 5.13 Code 39 Full ASCII



Enable Code 39 Full ASCII



Disable Code 39 Full ASCII



Code 39 Code page

**Codabar**

**Restore Factory Defaults**

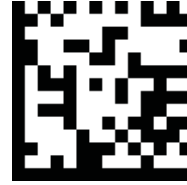


Restore the Factory Defaults of Codabar

**Enable/Disable Codabar**



Enable Codabar



Disable Codabar

#### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 02020625.  
Min: 02020510.

#### Transmit Start/Stop Character



Transmit Start/Stop Character



Do not Transmit Start/Stop Character

#### Codabar check Character



No Check Char



Validate and Transmit



Validate no Transmit

## 5.14 Code 93

### Restore Factory Defaults

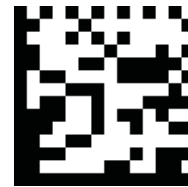


Restore the Factory Defaults of Code 93

### Enable/Disable Code 93



Enable Code 93



Disable Code 93

#### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

---

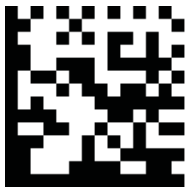
---

Programming command  
Max: 020D0325.  
Min: 020D0210.

**Code 93 Append**



Enable Code 93 Append



Disable Code 93 Append



Code93 Code page

**GS1-Databar (RSS)**

Restore Factory Defaults



Restore the Factory Defaults of GS1-Databar

---

## Enable/Disable GS1 Databar



Enable GS1-Databar



Disable GS1-Databar

## Code 11

### Restore Factory Defaults



Restore the Factory Defaults of Code 11

## Enable/Disable Code 11



Enable Code 11



Disable Code 11

## Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .

Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command

Max: 02090325.

Min: 02090210.

Code 11 Check Digit Required



1 Check Digit



2 Check Digit

5.15 Code 32



Enable Code 32



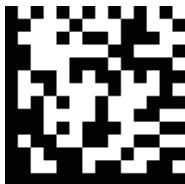
Disable Code 32

MSI  
Restore Factory Defaults



Restore the Factory Defaults of MSI

Enable/Disable MSI



Enable MSI



Disable MSI

---

## Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .

Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command

Max: 020E0410.

Min: 020E035.

## MSI Check Character



ValidateType10Transmit



ValidateType10ThenType11CharTransmit



ValidateType10ThenType11CharNoTransmit



ValidateType10NoTransmit



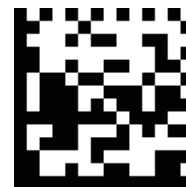
Validate2Type10NoTransmit



Validate2Type10CharTransmit



Validate2Type10CharNoTransmit



DisableMSICheck

---

## 6.1 2D Symbologies

### 6.2 PDF 417

Restore Factory Defaults



Restore the Factory Defaults of PDF 417

Enable/Disable PDF 417



Enable PDF 417

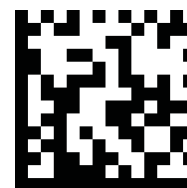


Disable PDF 417

Enable/Disable Macro PDF 417



Enable Macro PDF 417



Disable Macro PDF 417

Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.  
The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

---

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 020E0410.  
Min: 020E035.

## 6.3 QR Code

### Restore Factory Defaults

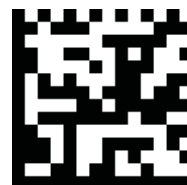


Restore the Factory Defaults of QR Code

### Enable/Disable QR Code



Enable QR Code



Disable QR C

#### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .

Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 02370310.  
Min: 0237025.

### QR Code Append

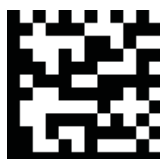


Enable QR code Append



Disable QR code Append

### QR Code Page



QR Code Page

---

## 6.4 Data Matrix

### Restore Factory Defaults



Restore the Factory Defaults of Data Matrix

### Enable/Disable Data Matrix



Enable Data Matrix



Disable Data Matrix

### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command

Max: 02360310.

Min: 0236025.



QR Code Page

---

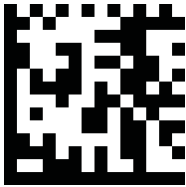
## 6.5 Maxicode

### Restore Factory Defaults



Restore the Factory Defaults of Maxicode

### Enable/Disable Maxicode



Enable Maxicode



Disable Maxicode

### Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command

Max: 02360310.

Min: 0236025.

---

# 6.6 Aztec

## Restore Factory Defaults



Restore the Factory Defaults of Aztec

## Enable/Disable Aztec



Enable Aztec



Disable AZtec

## Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.  
The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 02330610.  
Min: 0233055.

## Aztec Append



Enable Aztec Append



Disable Aztec Append

---

## OCR code



Enable OCR Code



Disable OCR Code

## Hanxin Restore Factory Defaults



Restore the Factory Defaults of Hanxin

## Enable/Disable Hanxin



Enable Hanxin



Disable Hanxin

## Message Length

Message length can be set to the maximum value, minimum value. The data between the maximum and the minimum is valid.

The maximum value and minimum value can be set using Programming command .  
Please check the programming command guide for the detail.

Example: Set the Barcode Message length of the minimum value is 10, the maximum value is 25,

Programming command  
Max: 02380310.  
Min: 023802

---

# 6.7 Postal Symbologies

China Postal Code  
Restore Factory Defaults



Restore the Factory Defaults of China Postal Code

Enable/Disable China Postal Code



Enable China Postal Code



Disable China Postal Code

Telepen  
Restore Factory Defaults



Restore the Factory Defaults of Telepen

Enable/Disable Telepen



Enable China Telepen



Disable China Telepen

## 7、Appendix

### 7.1 Appendix 1: Factory Defaults Table

Parameter		Factory Default	Remark
Programming Bar code			
Barcode Programming		Enable	
Programming Barcode Data		Enable	
Communication Settings			
Interface		USB HID-KBW	Options: TTL-232, USB HID-KBW, USB COM Port Emulation
TTL-232	Baud Rate	115200	
	Parity Check	None	
	Data Bit	8	
	Stop Bit	1	
	Hardware Flow Control	No flow control	
HID-KBW	USB Country Keyboard Type	U.S.	
	Convert Case	No conversion	
Scan Mode			
Scan Mode		Trigger mode	Options: Trigger mode, Sense mode, Continuous mode.
Trigger Mode	Decode Session Timeout	3000ms	Applicable to all three scan modes.
	Trigger Condition	Electric level	
	Auto Sleep	Enabled	
	Time Period from Idle to Sleep	500ms	
Sense Mode	Decode Session Timeout	3000ms	Applicable to all three scan modes.
	Image Stabilization Timeout	500ms	
	Operation after Good Decode	Pause after good decode	
	Timeout between Decodes (Same Barcode)	Disabled	
		1500ms	
	Threshold Value of Illumination Change	2	

Parameter		Factory Default	Remark
Illumination & Aiming			
Illumination		Normal	
Aiming		Normal	
Beep & LED Indications			
Startup Beep		Enabled	
Beep after Good Decode (Non-Programming Barcode)	Notification	Enabled	
	Beep Tone	B 3	
	Beep Volume	Loud	
Beep after Good Decode (Programming Barcode)		Enabled	
LED Notification for Good Decode		Enabled	
NGR (Not Good Read) Message		Do not transmit	
		None	
Data Formatting			
Prefix Sequence		Custom Prefix+Code ID+AIM ID	
Custom Prefix		Disabled	
		None	
AIM ID Prefix		Disabled	
Code ID Prefix		Disabled	
Custom Suffix		Disabled	
		None	
Terminating Character Suffix		Enabled	
		0x0D, 0x0A	Carriage Return /Line Feed

Parameter	Factory Default	Remark
Symbologies		
Video Reverse	Disabled	Applicable to all symbologies.
Code 128		
Code 128	Enabled	
Maximum Length	127	
Minimum Length	1	
GS1-128 ( UCC/EAN-128 )		
GS1-128	Enabled	
Maximum Length	127	
Minimum Length	1	
AIM-128		
AIM-128	Enabled	
Maximum Length	127	
Minimum Length	1	
EAN-8		
EAN-8	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Extend to EAN-13	Disabled	
EAN-13		
EAN-13	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
ISSN		
ISSN	Disabled	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	

Parameter	Factory Default	Remark
ISBN		
ISBN	Enabled	
ISBN Format	ISBN-13	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
UPC-E		
UPC-E	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Extend to UPC-A	Disabled	
System Character "0"	Do not transmit	
UPC-A		
UPC-A	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Preamble Character "0"	Do not transmit	
Interleaved 2 of 5		
Interleaved 2 of 5	Enabled	
Parity Check	None	
Check Digit	Do not transmit	
Maximum Length	100	
Minimum Length	6	
ITF-6		
ITF-6	Disabled	
Check Digit	Do not transmit	

Parameter	Factory Default	Remark
ITF-14		
ITF-14	Enabled	
Check Digit	Do not transmit	
Matrix 2 of 5		
Matrix 2 of 5	Disabled	
Parity Check	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
Industrial 2 of 5		
Industrial 2 of 5	Enabled	
Parity Check	None	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
Standard 2 of 5		
Standard 2 of 5	Enabled	
Parity Check	None	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
Code 39		
Code 39	Enabled	
Parity Check	None	
Check Digit	Do not transmit	
Start/Stop Character	Transmit	
Code 39 Full ASCII	Enabled	
Maximum Length	127	
Minimum Length	4	

Parameter	Factory Default	Remark
Codabar		
Codabar	Enabled	
Parity Check	None	
Check Digit	Do not transmit	
Start/Stop Character	Do not transmit	
Start/Stop Character Format	ABCD/ABCD	
Maximum Length	127	
Minimum Length	1	
Code 93		
Code 93	Enabled	
Parity Check	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	3	
GS1 Databar		
GS1 Databar	Enabled	
Application Identifier "01"	Transmit	
Code 11		
Code 11	Enabled	
Parity Check	One check digit, MOD11	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	
Plessey		
Plessey	Enabled	
Parity Check	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	1	

---

Parameter	Factory Default	Remark
MSI-Plessey		
MSI-Plessey	Enabled	
Parity Check	One check digit, MOD10	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	
PDF 417		
PDF 417	Enabled	
Maximum Length	2710	
Minimum Length	1	
QR Code		
QR Code	Enabled	
Micro QR	Enabled	
Maximum Length	7089	
Minimum Length	1	
Data Matrix		
Data Matrix	Enabled	
Rectangular Barcode	Enabled	
Mirror Image	Decode	
Maximum Length	3116	
Minimum Length	1	

## 7.2 Appendix 2: AIM ID Table

Symbology	AIM ID	Remark
EAN-13	JE0	Standard EAN-13
	JE3	EAN-13 + 2/5-Digit Add-On Code
EAN-8	JE4	Standard EAN-8
	JE4...JE1...	EAN-8 + 2-Digit Add-On Code
	JE4...JE2...	EAN-8 + 5-Digit Add-On Code
UPC-E	JE0	Standard UPC-E
	JE3	UPC-E + 2/5-Digit Add-On Code
UPC-A	JE0	Standard UPC-A
	JE3	UPC-A + 2/5-Digit Add-On Code
Code 128	JC0	Standard Code 128
GS1-128 (UCC/EAN-128)	JC1	FNC1 is the character right after the start character
AIM-128	JC2	FNC1 is the 2nd character after the start character
ISBT-128	JC4	
Interleaved 2 of 5	Jl0	No parity check
	Jl1	Transmit check digit after parity check
	Jl3	Do not transmit check digit after parity check
ITF-6	Jl1	Transmit check digit
	Jl3	Do not transmit check digit
ITF-14	Jl1	Transmit check digit
	Jl3	Do not transmit check digit
Industrial 2 of 5	JS0	Not specified
Standard 2 of 5	JR0	No parity check
	JR8	One check digit, MOD10; do not transmit check digit
	JR9	One check digit, MOD10; transmit check digit
Code 39	JA0	Transmit barcodes as is; Full ASCII disabled; no parity check
	JA1	One check digit, MOD43; transmit check digit
	JA3	One check digit, MOD43; do not transmit check digit
	JA4	Full ASCII enabled; no parity check
	JA5	Full ASCII enabled; transmit check digit
	JA7	Full ASCII enabled; do not transmit check digit
Codabar	JF0	Standard Codabar
	JF2	Transmit check digit after parity check
	JF4	Do not transmit check digit after parity check

Symbology	AIM ID	Remark
Code 93	JG0	Standard Code 93
Code 11	JH0	One check digit MOD11; transmit check digit
	JH1	Two check digits, MOD11/MOD11; transmit check digit
	JH3	Do not transmit check digit after parity check
	JH9	No parity check
GS1-DataBar (RSS)	Je0	Standard GS1-DataBar
Plessey	JP0	Standard Plessey
MSI-Plessey	JM0	One check digit, MOD10; transmit check digit
	JM1	One check digit, MOD10; do not transmit check digit
	JM8	Two check digits
	JM9	No parity check
Matrix 2 of 5	JX0	Specified by the manufacturer
	JX1	No parity check
	JX2	One check digit, MOD10; transmit check digit
	JX3	One check digit, MOD11; do not transmit check digit
ISBN	JX4	Standard ISBN
ISSN	JX5	Standard ISSN
PDF417	JL0	Comply with 1994 PDF417 specifications
Data Matrix	Jd0	ECC000 - ECC140
	Jd1	ECC200
	Jd2	ECC200, FNC1 is the 1st or 5th character after the start character
	Jd3	ECC200, FNC1 is the 2nd or 6th character after the start character
	Jd4	ECC200, ECI included
	Jd5	ECC200, FNC1 is the 1st or 5th character after the start character, ECI included
	Jd6	ECC200, FNC1 is the 2nd or 6th character after the start character, ECI included
QR Code	JQ0	QR1
	JQ1	2005 version, ECI excluded
	JQ2	2005 version, ECI included
	JQ3	QR Code 2005, ECI excluded, FNC1 is the 1st character after the start character
	JQ4	QR Code 2005, ECI included, FNC1 is the 1st character after the start character
	JQ5	QR Code 2005, ECI excluded, FNC1 is the 2nd character after the start character
	JQ6	QR Code 2005, ECI included, FNC1 is the 2nd character after the start character

Reference: ISO/IEC 15424:2008 Information technology – Automatic identification and data capture techniques – Data Carrier

Identifiers (including Symbology Identifiers).

---

## 7.3 Appendix 3: Code ID Table

Symbology	Code ID
Code 128	j
GS1-128(UCC/EAN-128)	j
AIM-128	f
EAN-8	d
EAN-13	d
ISSN	n
ISBN	B
UPC-E	c
UPC-A	c
Interleaved 2 of 5	e
ITF-6	e
ITF-14	e
Matrix 2 of 5	v
Industrial 2 of 5	D
Standard 2 of 5	s
Code 39	b
Codabar	a
Code 93	i
Code 11	H
Plessey	p
MSI-Plessey	m
GS1 Databar	R
PDF417	r
QR Code	Q
Data Matrix	u

---

## 7.4 Appendix 4: ASCII Table

Hex	Dec	Char
00	0	NUL (Null char.)
01	1	SOH (Start of Header)
02	2	STX (Start of Text)
03	3	ETX (End of Text)
04	4	EOT (End of Transmission)
05	5	ENQ (Enquiry)
06	6	ACK (Acknowledgment)
07	7	BEL (Bell)
08	8	BS (Backspace)
09	9	HT (Horizontal Tab)
0a	10	LF (Line Feed)
0b	11	VT (Vertical Tab)
0c	12	FF (Form Feed)
0d	13	CR (Carriage Return)
0e	14	SO (Shift Out)
0f	15	SI (Shift In)
10	16	DLE (Data Link Escape)
11	17	DC1 (XON) (Device Control 1)
12	18	DC2 (Device Control 2)
13	19	DC3 (XOFF) (Device Control 3)
14	20	DC4 (Device Control 4)
15	21	NAK (Negative Acknowledgment)
16	22	SYN (Synchronous Idle)
17	23	ETB (End of Trans. Block)
18	24	CAN (Cancel)
19	25	EM (End of Medium)
1a	26	SUB (Substitute)
1b	27	ESC (Escape)
1c	28	FS (File Separator)
1d	29	GS (Group Separator)

---

Hex	Dec	Char
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)

---

Hex	Dec	Char
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)




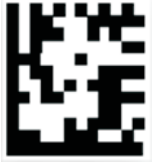








---

---

Hex	Dec	Char
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)

---

# 7.5 Appendix 5: Digit Barcodes

0	1	2	3
			
4	5	6	7
			
8	9	A	B
			
C	D	E	F
