element™

2D Bluetooth Scanner

User Guide v3.0

For P303BT, P135BT, P50BT Scanners

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.

Do not disassemble the device or remove the seal label from the device. Otherwise, Element Ltd. Does not assume responsibility for the warranty or replacement.

All pictures in this manual are for reference only and actual product may differ. Regarding to the product modification and update, Element Ltd reserves the right to make changes to any software or product to improve reliability, function, or design at any time without notice. Besides, the information contained herein is subject to change without prior notice.

The products depicted in this manual may include software copyrighted by Element Ltd or a third party. The user, corporation or individual, shall not duplicate, in whole or in part, distribute, modify, decompile, disassemble, decode, reverse engineer, rent, transfer or sublicense such software without prior written consent from the copyright holders.

Element Ltd. reserves the right to make final interpretation of the statement above.

Revision History

Revision	Issue Data	Description
V1.0	2020/3/1	Initial release.
V2.0	2022/11/10	Add FAQ.
V3.0	2024/5/29	Add data formatting.

Table of Contents

element

Preface

About This Manual

This manual mainly provides the function introduction and settings of the Element 2D Bluetooth Scanner of Element Ltd. by scanning the ***programming barcode***, the users can change the parameter settings of the products.

Chapter Outline

Chapter1 ***Product Overview*** : Introduce products' specifications, installation instructions, etc.

Chapter2 ***Bluetooth Settings*** : Introduces how to configure the parameters necessary for Bluetooth communication between the Bluetooth Scanner, Cradle and Host Device.

Chapter3 ***System Settings*** : Introduces how to set parameters for the scanner.

Chapter4 ***Prefix&Suffix*** : Introduces how to use prefix and suffix to customize scanned data.

Chapter5 ***Symbologies*** : Lists all compatible symbologies and describes how to configure the relevant parameters.

Chapter6 ***Data Formatter*** : Introduces how to customize scanned data with the data formatter.

Chapter7 ***Q&A*** : Provides output settings in Chinese.

Appendix : Provides ASCII Table, AIM ID, Code ID, etc.

Reading Tips

NOTICE Example Jump Link

element

Tools Download

The users can download the driver, Config Utility, user guide by visiting the website www.elementpos.co

Programming Barcode

①

0E01000. ②

Trigger Mode * ③

① The Trigger Mode Barcode

② The Trigger Mode Command

③ The description of the feature, * indicates factory defaults settings.

Generally, the scanner does not send the contents of the programming barcode to the host after scanning. If the user want to output the programming barcode information, it can be implemented by scanning the barcode below.

0249000.

Not Print Out *

0249001.

Print Out

Chapter 1 Product Overview

Introduction

Powered by area-imaging technology and Element 2D Barcoder Reader patented “Hercules” technology, the Element 2D Barcoder Reader 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 Element 2D Barcoder Reader over the barcode.

Products

This manual supports the following scanners:
P50BT
P303BT
P135BT

User Scenario

Retail Supermarket, Catering, Warehouse Management, Library Management, Distribution Centers, Manufacturing and Agricultural Materials Fields, etc.

Installation Instruction

Prepare the scanner

Step1: Hold the trigger of the scanner for 3 seconds, you will hear a high beep and the scanner is on.

1. It is recommended to charge before use. Place the scanner on the cradle or using the charging cable to connect the Bluetooth scanner for charging.
2. Scan the programming barcode “Power Off” to turn off the scanner.

Step2: Restore the Bluetooth scanner to factory Settings.

0D0100.

Restore All Factory Defaults

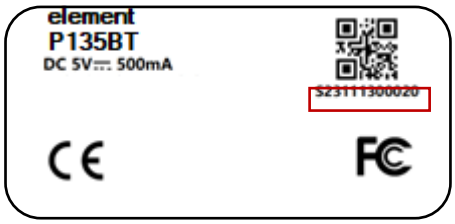
Connecting the scanner to the host

Generally, there are three ways to connect the Element 2D Bluetooth Scanner, Connect by searching for product's SN, Connect with Cradle and Connect with Dongle.

Connect by searching for product's SN

For Android, iOS device, Bluetooth-enabled PC users.

Step1: Check the serial number on the Bluetooth scanner's label.



The serial number of the Bluetooth scanner is marked in the red box.

Step2: Scan the programming barcode below.

SX00

Bluetooth Keyboard

Step3: Turn on the Bluetooth function of your device, search for the scanner named after the serial number and tap to connect. Once the pairing is successfully, the LED on the scanner will flash blue and the scanner will beep once.

.

1. The scanner will be discoverable in 120s. the user needs to scan the Bluetooth Keyboard again after more than 120 seconds.
2. In this way, the scanner can automatically reconnect to the current host device after it reboot.

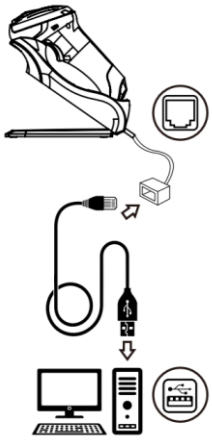
Connect with Cradle

For PC, POS users, you can choose a USB or RS-232 cable to connect the cradle to the host. If you use a USB cable to connect the cradle to the host, you can ignore step 3.

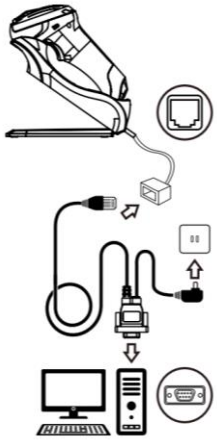
Step1: Plug the RJ45 connector of the USB/RS-232 cable into the data port on the Cradle.

Step2: Plug the USB connector of the USB/RS-232 cable into the USB port on the Host.

Step3: Plug the supplied power adapter into the power jack on the RS-232 cable.



(Using USB cable)



(Using RS-232 cable)

When the cradle is connected through an RS-232 cable, the Baud Rate and Data Bit&Parity Check&Stop Bit of the cradle must be set to the same as that of the Host.

Step4: Scan the address barcode at the bottom of the cradle. Waiting for the connection to be established, the LED on the cradle will turn blue when the connect is complete.

The scanner will automatically reconnect to the current host after it reboot.

Connect with Dongle

For PC, POS users

Step1: Plug the Element USB Dongle into your PC.

Step2: Scan the address barcode on the Dongle. Waiting for the connection to be established, the LED on the Dongle will turn blue when the connect is complete.

Use of products

Scan the programming barcode below to instantly upload the barcode.

SX17

Synchronous Transmission Mode *

Connect by searching for product's SN

When the scanner is connected to the host by searching for product's SN, the steps are as follow:

Step1: Scan the programming barcode Bluetooth Keyboard.

Step2: Open a notepad, put the cursor in the blank.

Step3: Press and hold the trigger.

Step4: Center the aiming pattern on the barcode.

If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be displayed in the notepad that open in *step 2*; If it cannot be decoded, the scanner will release the trigger after 30 seconds, the illumination and aiming will go off, and the scanning will stop.

Connect with Cradle/Dongle

1. When the scanner is connected to the host with Dongle or Cradle via USB cable, there are three communication methods.

a. Cradle/Dongle USB HID-KB

Step1: Scan the programming barcode Cradle/Dongle USB HID-KB.

Step2: Open a notepad, put the cursor in the blank.

Step3: Press and hold the trigger.

Step4: Center the aiming pattern on the barcode.

If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be displayed in the notepad that open in *step 2*; If it cannot be decoded, the scanner will release the trigger after 30 seconds, the illumination and aiming will go off, and the scanning will stop.

b. Cradle/Dongle USB COM Port Emulation

Step1: Scan the programming barcode Cradle/Dongle USB COM Port Emulation.

Step2: Open the ElementConfig, select the correct port, connect the scanner.

Step3: Press and hold the trigger.

Step4: Center the aiming pattern on the barcode.

If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be displayed in the *Data Terminal* of the ElementConfig; If it cannot be decoded, the scanner will release the trigger after 30 seconds, the illumination and aiming will go off, and the scanning will stop.

c. Cradle USB HID-POS

Step1: Scan the programming barcode Cradle USB HID-POS.

Step2: Open the POS tool, select the correct port, connect the scanner.

Step3: Press and hold the trigger.

Step4: Center the aiming pattern on the barcode.

If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be displayed in the POS tool; if it cannot be decoded, the scanner will release the trigger after 30 second, the illumination and aiming will go off, and the scanning will stop.

2. When the scanner is connected to the host with Cradle via RS-232 cable, the steps are as follow:

Step1: Open ElementConfig utility, select the correct port, baud rate and parity check&data bit&stop bit, connect the scanner.

Step2: Press and hold the trigger.

Step3: Center the aiming pattern on the barcode.

If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be displayed in the *Data Terminal* of the ElementConfig; If it cannot be decoded, the scanner will release the trigger after 30 seconds, the illumination and aiming will go off, and the scanning will stop.

Power Off

Scan the programming barcode as below, the scanner can be turned off.

SX03

Power Off

Query The Product Information

Display The Cradle/Dongle Version

Scanning the programming barcode below can display the version of the Cradle or Dongle.

Display The Cradle/Dongle Version

Display The Bluetooth Hardware Version

Scanning the programming barcode below can display the Bluetooth hardware version.

Display The Bluetooth Hardware Version

Display The Decoder Version

Scanning the programming barcode below can display the firmware version of the decoder.

Display The Decoder Version

Display The Battery Level

Scanning the programming barcode below can display the battery level.

Display The Battery Level

Chapter 2 Bluetooth Settings

Bluetooth Scanner

Factory Defaults

Scan the programming barcode below can restore the scanner to the factory defaults.

Restore All Factory Defaults (Scanner)

Please use this feature with discretion.

Bluetooth Keyboard

Bluetooth Keyboard *

Bluetooth Serial Port

Bluetooth Serial Port

Cradle/Dongle Settings

Factory Defaults

Scan the programming barcode below can restore the Cradle or Dongle to the factory defaults.

Restore All Factory Defaults (Cradle/Dongle)

Please use this feature with discretion.

Cradle/Dongle USB HID-KB

When you connect cradle to the host, you can enable the *Cradle/Dongle USB HID-KB* by scanning the programming barcode below. Then cradle's transmission will be simulated as keyboard input. The host receives keystrokes on the virtual keyboard. It works on a Plug and Play basis and no driver is required.

Cradle/Dongle USB HID-KB

Cradle/Dongle USB COM Port Emulation

When you connect cradle to the host, the *Cradle/Dongle USB COM Virtual Port* allows the host to receive data in the way as a serial port does.

Cradle/Dongle USB COM Port Emulation

If needed, visit www.elementpos.co to download and install the driver.

Cradle USB HID-POS

When you connect cradle to the host and want to use the scanner on the POS, you can scan the programming barcode below to switch.

SX060802131.

Cradle USB HID-POS

RS-232 Communication

When the cradle uses the RS-232 communication interface, the communication parameters between the cradle and the host must be fully matched to ensure that the communication and output are correct.

Baud Rate

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

SX0607023.

2400

SX0607024.

4800

SX0607025.

9600

SX0607026.

19200

SX0607027.

38400

SX0607028.

57600

SX0607029.

115200 *

Data Bit & Parity, Check & Stop Bit

SX0607032.

None Parity/8 Data Bits/1 Stop Bit

SX0607030.

None Parity/7 Data Bits/1 Stop Bit

SX0607031.

None Parity/7 Data Bits/2 Stop Bits

SX0607035.

Even Parity/8 Data Bits/1 Stop Bit

SX0607033.

Even Parity/7 Data Bits/1 Stop Bit

SX0607034.

Even Parity/7 Data Bits/2 Stop Bits

SX0607038.

Odd Parity/8 Data Bits/1 Stop Bit

SX0607036.

Odd Parity/7 Data Bits/1 Stop Bit

SX0607037.

Odd Parity/7 Data Bits/2 Stop Bits

Some products only support *None Parity/8 Data Bits/1 Stop Bit*.

Standby Time

The scanner will power off if no operation is done within the *standby time*.


SX1A

10min


SX10

30min


SX05

1H *


SX07

Never Power Off

Keyboard Type


SX0D

USB HID (Windows/Android)


SX0E

USB HID (Mac/iOS)

Input Method


SX45

Switch Input Method (Android/Windows)


SX47

Switch Input Method (iOS/Windows)

iOS Popup/Hide Virtual Keyboard

When the scanner is connected to the iPhone, user can popup or hide the iOS keyboard by scanning the programming barcode below.

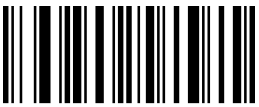

SX31

iOS Popup/Hide Virtual Keyboard

Convert Case

Convert all to upper case: All letters in the barcode data are converted to uppercase letters regardless of whether they are uppercase or lowercase.

Convert all to lower case: All letters in the barcode data are converted to lowercase letters regardless of whether they are uppercase or lowercase.



SX4A

No Case Conversion *

SX49

Convert All to Upper Case

SX48

Convert All to Lower Case

This feature is not affected by CapsLock.

Country Keyboard Types

Keyboard layouts vary from country to country. The default setting is U.S. Keyboard. There are two ways to convert the country keyboard types.

Method 1 When your interface is Bluetooth keyboard, scan the programming barcode below to change this layout.

SX50

USA *

SX51

Belgian


SX52

Finnish_Swedish


SX53

French


SX54

German


SX55

Italian


SX56

Swiss_German


SX57

British


SX58

Danish


SX59

Novwegian


SX5A

Spanish

Method 2 When the scanner is connected to the Cradle or Dongle, scan the programming barcode below to change this layout.


SX060E000.

USA *


SX060E001.

Belgian


SX060E002.

Finnish_Swedish


SX060E003.

French

SX060E004.

German

SX060E005.

Italian

SX060E006.

Swiss_German

SX060E007.

British

SX060E008.

Danish

SX060E009.

Novwegian

SX060E0010.

Spanish

Work for Cradle/Dongle USB HID-KB.

Transmission Rate

When the scanner is connected to the host by searching for product's SN, scan the programming barcode below to set the transmission rate.


SX4D

Slow


SX4C

Medium


SX4B

High

When the scanner is connected to the host with the dongle or cradle via USB cable, scan the programming barcode below to set the transmission rate.


SX060F0C1.

Slow


SX060F0C8.

Medium *


SX060F0C20.

High

Work for Cradle/Dongle USB HID-KB.

Transmission Mode

Bluetooth scanner supports three transmission modes: Synchronous Transmission Mode, Asynchronous Transmission Mode, Batch Storage Mode.

Transmission Mode	when Bluetooth is connected		when Bluetooth is disconnected	
	Transmission	Storage	Transmission	Storage
Synchronous Transmission Mode	√	×	×	×
Asynchronous Transmission Mode	√	×	×	√
Batch Storage Mode	×	√	×	×

Synchronous Transmission Mode

Data transmit when Bluetooth is connected, drop when disconnected.


SX17

Synchronous Transmission Mode *

Asynchronous Transmission Mode

Data is stored when Bluetooth is disconnected and will upload automatically when reconnect.


SX18

Asynchronous Transmission Mode

Batch Storage Mode

Data is stored when Bluetooth is connected and not when disconnected.

SX13

Batch Storage Mode

Count the total number of stored data

You can scan the programming barcode below to query the total number of stored data.

SX1B

Count the total number of stored data

Upload Method

a. Upload all data at once

Step1: Open the text editor on the host.

Step2: Scan the programming barcode below.

SX14

Upload all stored data

Step3: Waiting for all data to be uploaded.

Users can query the total number of uploaded data by scanning the programming barcode below.

SX15

Count the total number of uploaded data

b. Upload data one by one in sequence

Step1: Open the text editor on the host

Step2: Scan the *Upload the next data* programming barcode to upload the first data from the initial transmission location, scan the programming barcode again to upload the next data.

SX20

Upload the next data

SX21

Upload the last data

If the users forget which data was uploaded, scan the programming barcode below to restore the initial transmission location.

SX22

Reset Transmission

Step3: Waiting for all data to be uploaded.

Clear All Stored Data

Scan the programming barcode to clear all stored data.

SX16

Clear All Stored Data

Chapter 3 System Settings

Scan Mode

Trigger Mode

If the Trigger Mode is enabled, you could activate the scanner by pressing an external button. When the external button is pressed, the scanner will continue scanning until the decoding is successful or the external key is manually released.

Manual Trigger Mode *

Presentation Mode

Presentation Mode - Normal

The scanner activates a session every time when it detects a change in ambient illumination. The decode session continues until the barcode is decoded or the decode session timeout expires. Pressing the trigger can also activate a decode session.

Presentation Mode - Normal

Presentation Mode - Continue Scan

The scanner automatically starts one decode session after another. To suspend/resume barcode reading, simply press the trigger. Reread Timeout can avoid undesired rereading of same barcode in a given period of time.

Presentation Mode - Continue Scan

In this scan mode, enable reread delay can avoid undesired rereading of same barcode in a given period of time.

Good Read Delay

Good read delay sets the minimum amount of time before the scanner can read another barcode. To set the good read delay, scan the programming barcode below.

No Delay *

Delay 500 ms

Delay 1000 ms

Reread Delay

Reread delay can avoid undesired rereading of same barcode in a given period of time. This feature is only applicable to the presentation mode (Normal and Continue scan).

Delay 500 ms *

Delay 750 ms

Delay 1000 ms

Illumination

On/Off

Illumination On *

Illumination Off

Illumination Level - Trigger Mode

The higher the illumination level, the brighter the illumination. For different series of products, the lighting level of the manual trigger mode is set differently.

Illumination mode 1

Level-4 *

Level-3

Level-2

Level-1

Illumination Mode 2

Level-4 *

Level-3

Level-2

Level-1

Some products due to hardware limitations, lighting level 1, 2, 3 do not make a difference.

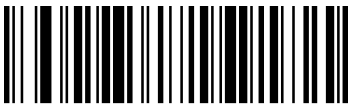
Illumination Level - Presentation Mode

The higher the illumination level, the brighter the illumination. For different series of products, the lighting level of the presentation mode is set differently.

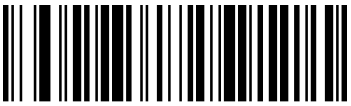
Illumination Mode1

Level-4 *

Level-3


0401022.

Level-2


0401021.

Level-1

Illumination Mode 2


040102150.

Level-4 *


04010250.

Level-3


04010215.

Level-2


0401027.

Level-1

Some products due to hardware limitations, lighting level 1, 2, 3 do not make a difference.

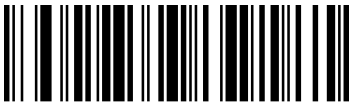
Aiming

When scanning or capturing images in the trigger mode, the scanner projects an aiming pattern which allows positioning the target barcode within its field of view and thus makes decoding easier.

- ✧ OFF: Aiming pattern is off all the time
- ✧ Normal: The scanner projects an aiming pattern only during scanning or capturing images.
- ✧ Continuous: Aiming pattern is on and the illumination is off during scanning or capturing images.
- ✧ Always On: Aiming pattern is constantly on after the scanner is powered on.

OFF

Normal *



Continuous

Always On

Auto-Sense

When the Auto-Sense is enabled and the scanner is placed on the Cradle, the scan mode will be automatically switched to the Presentation Mode-Normal.

0E06041.

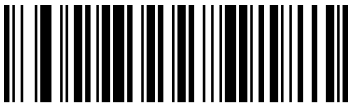
On *

0E06040.

Off

Good Read Vibration

After this feature is turned on, the scanner will have a vibration after the decoding is successful.



0505011.

On *

0505010.

Off

element™

Good Read Beeper

On/Off

0502101.

On *

0502100.

Off

Good Read Beeper Volume

05021D1.

Low

05021D2.

Middle

05021D3.

High *

element™

Good Read Beeper Duration


0502160.

Normal *


0502161.

Short

Good Read Beeper Frequency


05020D800.

Extra Low *


05020D2790.

Low


05020D3280.

Medium


05020D4290.

High

element

Inverse Colour

Off *

Only Inverse ON

Inverse and Normal Both ON

Chapter 4 Prefix & Suffix

General Configuration

Add CR

Add LF

Add CRLF

Add TAB

Add Prefix

Set Custom Prefix

Steps for adding prefix

Step1: Scan the programming barcode: ***Set Custom Prefix***

Step2: Select the symbology to which the prefix is applied (Appendix Code ID), scan the Digit Barcode.

Step3: Set the prefix, scan the Digit Barcode for hex values for characters to be added.

Step4: Scan the programming barcode: ***Save***, If you want to discard the setting, scan the programming barcode: ***Not Save***.

Save

Not Save

Set the custom prefix to “ODE”.

Steps are as follows:

1. Scan the programming barcode: *Set Custom Prefix*
2. Scan the Digit Barcode: “9”, “9”
3. Check the hex values of ODE in the ASCII Table (O:4F, D:44, E:45)
4. Scan the Digit Barcode: “4”, “F”, “4”, “4”, “4”, “5”
5. Scan the programming barcode: *Save*

Add Suffix

Set Custom Suffix

Steps for adding suffix

Step1: Scan the programming barcode: ***Set Custom Suffix***

Step2: Select the symbology to which the suffix is applied (Appendix Code ID), scan the Digit Barcode.

Step3: Set the suffix, scan the Digit Barcode for hex values for characters to be added.

Step4: Scan the programming barcode: ***Save***, If you want to discard the setting, scan the programming barcode: ***Not Save***.

Save

Not Save

Steps are as follows:

1. Scan the programming barcode: *Set Custom Suffix*
2. Scan the Digit Barcode:“9”, “9”
3. Check the hex values of ODE in the ASCII Table (O:4F, D:44, E:45)
4. Scan the Digit Barcode: “4”, “F”, “4”, “4”, “4”, “5”
5. Scan the programming barcode: *Save*

element™

Clear All Prefix and Suffix

Clear All Prefix And Suffix

Chapter 5 Symbologies

General Setting

Enable All Symbologies

If the *Enable All Symbologies* feature is enabled, the scanner will be able to read any barcodes supported by the product.

Enable All Symbologies

Disable All Symbologies

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

Disable All Symbologies

1D Symbologies

Code 128

Enable/Disable Code 128

Enable Code 128 *

Disable Code 128

Message Length

Message length can be set to the maximum value or minimum value. The value between the maximum and the minimum is valid. The maximum value and minimum value can be set using Programming Command.

Code 128 max length command: 020A03. The parameter of this command can be set from min to 90.

Code 128 min length command: 020A02. The parameter of this command can be set from 0 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 020A0325; Min: 020A0210.

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 *

Do Not 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 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.

2-Digit Add-On Code

Enable 2-Digit Add-On Code

Disable 2-Digit Add-On Code *

5-Digit Add-On Code

Enable 5-Digit Add-On Code

Disable 5-Digit Add-On Code *

Add-On Code Required

When this feature is enabled, the scanner can only read the EAN-8 barcodes with add-on code.

EAN-8 Add-On Code required

EAN-8 Add-On Code Not Required *

Addenda Separator

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

Enable EAN-8 Addenda Separator *

Disable EAN-8 Addenda Separator

EAN-13

Enable/Disable EAN-13

Enable EAN-13 *

Disable EAN-13

Transmit Check Digit

EAN-13 is 13 digits in length with the last one as its check digit used to verify the accuracy of the data.

Transmit EAN-13 Check Digit *

Do Not Transmit EAN-13 Check Digit

Add-On Code

2-Digit Add-On Code

Enable 2-Digit Add-On Code

Disable 2-Digit Add-On Code *

5-Digit Add-On Code

Enable 5-Digit Add-On Code

Disable 5-Digit Add-On Code *

Add-On Code Required

When this feature is enabled, the scanner can only read the EAN-13 barcodes with add-on code.

EAN-13 Add-On Code Required

EAN-13 Add-On Code Not Required *

Addenda Separator

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

Enable EAN-13 Addenda Separator *

Disable EAN-13 Addenda Separator

ISBN Translate

When enable this feature, EAN-13 book land symbols will be translated into their equivalent ISBN number format.

Enable ISBN Translate

Disable ISBN Translate *

UPC-E

Enable/Disable UPC-E0

Enable UPC-E0 *

Disable UPC-E0

Enable/Disable UPC-E1

Enable UPC-E1

Disable UPC-E1 *

UPC-E0 Transmit Check Digit

Transmit Check Digit *

Do Not Transmit Check Digit

UPC-E0 Expand

When enable this feature, convert UPC-E decode data to UPC-A format before transmission.

Enable UPC-E0 Expand

Disable UPC-E0 Expand *

UPC-E0 Number System

The number system digit of UPC-E0 symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will be not transmitted.

0212051.

Enable UPC-E0 Number System *

0212050.

Disable UPC-E0 Number System

Add-On Code

2-Digit Add-On Code

0212061.

Enable UPC-E0 2-Digit Add-On Code

0212060.

Disable UPC-E0 2-Digit Add-On Code *

5-Digit Add-On Code

Enable UPC-E0 5-Digit Add-On Code

Disable UPC-E0 5-Digit Add-On Code *

Add-On Code Required

When this feature is enabled, the scanner can only read the UPC-E0 barcodes with add-on code.

UPC-E0 Add-On Code Required

UPC-E0 Add-On Code Not Required *

Addenda Separator

Enable UPC-E0 Addenda Separator *

Disable UPC-E0 Addenda Separator

UPC-A

Enable/Disable UPC-A

Enable UPC-A *

Disable UPC-A

Transmit Check Digit

Enable UPC-A Transmit Check Digit *

Disable UPC-A Transmit Check Digit

Number System

The number system digit of UPC-A symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will be not transmitted.

Enable UPC-A Number System *

Disable UPC-A Number System

Add-On Code

2-Digit Add-On Code

Enable UPC-A 2-Digit Add-On Code *

Disable UPC-A 2-Digit Add-On Code

5-Digit Add-On Code

Enable UPC-A 5-Digit Add-On Code *

Disable UPC-A 5-Digit Add-On Code

Add-On Code Required

When this feature is enabled, the scanner can only read the UPC-A barcodes with add-on code.

UPC-A Add-On Code Required

UPC-A Add-On Code Not Required *

Addenda Separator

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

Enable UPC-A Addenda Separator *

Disable UPC-A Addenda Separator

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.

Max length command: 020404. The parameter of this command can be set from min to 80.

Min length command: 020403. The parameter of this command can be set from 2 to max.

Set the barcode message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02040425; Min: 02040310.

Check Digit

No Check Char *

Validate Not Transmit

Validate And Transmit

Matrix 2 of 5

Enable/Disable Matrix 2 of 5

Enable Matrix 2 of 5

Disable Matrix 2 of 5 *

Message Length

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

Matrix 2 of 5 max length command: 020803. The parameter of this command can be set from min to 80.

Matrix 2 of 5 min length command: 020802. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02080325; Min: 02080210.

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 value is valid between the maximum and the minimum. The maximum value and minimum value can be set using Programming command.

Industrial 2 of 5 max length command: 020603. The parameter of this command can be set from min to 48.

Industrial 2 of 5 min length command: 020602. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02060325; Min: 02060210.

Code 39

Enable/Disable Code 39

Enable Code 39 *

Disable Code 39

Message Length

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

Code 39 max length command: 020308. The parameter of this command can be set from min to 48.

Code 39 min length command: 020307. The parameter of this command can be set from 0 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02030825; Min: 02030710.

Start/Stop Character

Transmit Start/Stop Character

Do Not Transmit Start/Stop Character *

Check Digit

No Check Char *

Validate Not Transmit

Validate And Transmit

Code 39 Full ASCII

Enable Code 39 Full ASCII

Disable Code 39 Full ASCII *

Code 39 Append

This function allows the scanner to append several Code 39 barcode data together before transmitting to host. When the scanner encounters a Code 39 barcode with append character (ex. Space character), it buffers the data until it reads a Code 39 barcode which does not have append character. Then the data is transmitted in the order that the barcodes were read.

Enable Code 39 Append

Disable Code 39 Append *

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.

Coda bar max length command: 020206. The parameter of this command can be set from min to 60.

Coda bar min length command: 020205. The parameter of this command can be set from 2 to max.

Set the barcode message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02020625; Min: 02020510.

Start/Stop Character


0202021.

Transmit Start/Stop Character


0202020.

Do Not Transmit Start/Stop Character *

Check Digit


0202030.

No Check Char *


0202031.

Validate Not Transmit


0202032.

Validate And Transmit

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.

Code 93 max length command: 020D03. The parameter of this command can be set from min to 80.

Code 93 min length command: 020D02. The parameter of this command can be set from 0 to max.

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

This function allows the scanner to append several Code 93 barcode data together before transmitting to host. When the scanner encounters a Code 93 barcode with append character (ex. Space character), it buffers the data until it reads a Code 93 barcode which does not have append character. Then the data is transmitted in the order that the barcodes were read.

Enable Code 93 Append

Disable Code 93 Append *

GS1-128

Enable/Disable GS1-128

Enable GS1-128 *

Disable GS1-128

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.

GS1-128 max length command: 020B03. The parameter of this command can be set from min to 80.

GS1-128 min length command: 020B02. The parameter of this command can be set from 0 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 020B0325; Min: 020B0210.

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.

MSI max length command: 020E04. The parameter of this command can be set from min to 48.

MSI min length command: 020E03. The parameter of this command can be set from 4 to max.

Set the barcode message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 020E0425; Min: 020E0310.

Check Digit

One Check Character (MOD10), Not Transmit *

One Check Character (MOD10) And Transmit


020E024.

Two Check Characters (MOD10/MOD11), Not Transmit


020E025.

Two Check Characters (MOD10/MOD11) And Transmit


020E022.

Two Check Characters (MOD10/MOD10), Not Transmit


020E023.

Two Check Characters (MOD10/MOD10) and Transmit


020E026.

Disable

Code 11

Enable/Disable Code 11

Enable Code 11 *

Disable Code 11

Check Digit

One Check Digit

Two Check Digits *

element™

Code 32

Enable/Disable Code 32

Enable Code 32

Disable Code 32 *

CodaBlock F Code

Enable/Disable CodaBlock F Code

Enable CodaBlock F Code

Disable CodaBlock F Code *

GS1 DataBar

Enable/Disable GS1 DataBar

Enable GS1 DataBar *

Disable GS1 DataBar

GS1 DataBar Limited

Enable/Disable GS1 DataBar Limited

Enable GS1 DataBar Limited *

Disable GS1 DataBar Limited

GS1 DataBar Expanded

Enable/Disable GS1 DataBar Expanded

Enable GS1 DataBar Expanded *

Disable GS1 DataBar Expanded

2D Symbologies

PDF417

Enable/Disable PDF417

Enable PDF417 *

Disable PDF417

Message Length

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

PDF417 max length command: 021F06. The parameter of this command can be set from min to 2750.

PDF417 min length command: 021F05. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 021F0625; Min: 021F0510.

Enable/Disable Micro PDF417

Enable Micro PDF417

Disable Micro PDF417 *

QR Code

Enable/Disable QR Code

Enable QR Code *

Disable QR Code

Message Length

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

QR max length command: 023703. The parameter of this command can be set from min to 7089.

QR min length command: 023702. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02370325; Min: 02370210.

QR Code Append

This function allows the scanner to append several QR barcode data together before transmitting to host. When the scanner encounters a QR barcode with append character (ex. Space character), it buffers the data until it reads a QR barcode which does not have append character. Then the data is transmitted in the order that the barcodes were read.

Enable QR Code Append

Disable QR Code Append *

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 is valid between the maximum and the minimum. The maximum value and minimum value can be set using Programming command.

Data Matrix max length command: 023603. The parameter of this command can be set from min to 3116.

Data Matrix min length command: 023602. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02360325; Min: 02360210.

Maxi Code

Enable/Disable Maxi Code

Enable Maxi Code

Disable Maxi Code *

Message Length

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

Maxi Code max length command: 023403. The parameter of this command can be set from min to 150.

Maxi Code min length command: 023402. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02340325; Min: 02340210.

Aztec

Enable/Disable Aztec

Enable Aztec

Disable Aztec *

Message Length

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

Aztec max length command: 023306. The parameter of this command can be set from min to 3832.

Aztec min length command: 023305. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02330625; Min: 02330510.

Aztec Append

Enable Aztec Append

Disable Aztec Append *

Hanxin

Enable/Disable Hanxin

Enable Hanxin

Disable Hanxin *

Message Length

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

Hanxin max length command: 023803. The parameter of this command can be set from min to 7833.

Hanxin min length command: 023802. The parameter of this command can be set from 1 to max.

Set the Barcode Message length of the minimum value is 10; the maximum value is 25.

Programming command: Max: 02380325; Min: 02380210.

ECI

Enable ECI

Disable ECI *

Postal Code

China Postal Code

Enable/Disable China Postal Code

Enable China Postal Code

Disable China Postal Code *

Telepen

Enable/Disable Telepen

Enable Telepen

Disable Telepen *

Chapter 6 Data Formatter

Introduction

You may use the Data Formatter to modify the scanner's output. For example, you can use the Data Formatter to insert characters at certain points in barcode data.

Normally, When you create a data format, you can save a total of four different data formats (Format 0, Format 1, Format 2 and Format 3) , Format 0 is primary format in the program. The data format includes the application of the data format (such as barcode type, barcode length) and data editing commands.

Add a Data Format

Enter Data Format

Steps to add a data formatting

Step1 Scan the programming barcode: *Enter Data Format*.

Step2 Select Prmary/Alternate Format, scan "0", "1", "2" or "3" from the appendix Digit Barcode, they represent data formats 0~3.

Step3 Select Terminal Type (Appendix Terminal ID), 099 indicates all terminal types.

Step4 Select Code ID. The data format takes effect only for the specified symbologies, 99 indicates all symbologies.

Step5 Set the barcode data length. Specify what length (up to 9999 characters) of data will be acceptable for this symbology. Scan the four digit data length from appendix Digit Barcode. For example, 50 characters is entered as 0050, 9999 indicates all lengths.

Step6 Editor Commands. Refer to the Data Formatting section in this chapter. Scan the Digit Barcode that represent the command you need to edit data. For example, when a command is F120, you should scan "F", "1", "2" and "0".

Step7 Scan the programming barcode: *Save.* To save your data format. If you want to discard this setting, scan the programming barcode: *Not Save*.

Save

Not Save

Program a Format 0 data format using data formatting, Code 128 containing 10 characters applicable, send all characters followed by “A” .

Steps are as below:

1. Scan the “Enter Data Format” barcode.
2. Add data Format 0, scan digit barcode “0”.
3. Select all terminal types, scan digit barcode “0”, “9”, “9” in sequence.
4. Select all symbologies, scan digit barcode “6”, “A” in sequence.
5. Set barcode data length, scan digit barcode “0”, “0”, “1”, “0” in sequence.
6. Send all characters followed by “A”, scan digit barcode “F”, “1”, “4”, “1”.
7. Scan the “Save” barcode.

Change Data Format for Single Scan

You can switch between data formats for a single scan. The next barcode is scanned using the data format selected here, then reverts to the format you have selected above.

For example, you may have set your scanner to use the data format you saved as Format 0. You can switch to Format 1 for a single trigger pull by scanning the "Single Scan Format 1" barcode below. The next barcode that is scanned uses Format 1, then reverts back to Format 0.

091300.

Single Scan Format 0

091301.

Single Scan Format 1

091302.

Single Scan Format 2

091303.

Single Scan Format 3

This setting will be lost by removing power from the scanner, or turning off/rebooting the device.

Clear All Data Formats

If you want remove the data format created from your scanner, scan the programming barcode below.

080304.

Clear All Data Formats

Default data formatting is null.

Data Formatting

Send all characters

Syntax	Description
F1xx	Include in the output message all of the characters from the input message, starting from current cursor position, followed by an insert character.
	xx stands for the insert character's hex value for its ASCII code.

Output the full contents of the barcode below and insert the character "a" at the end.

1234567890ABCDEFGHIJ

Command string: **F161**

F1: the "Send all characters" command

61: the hex value of "a"

The data is output as: **1234567890ABCDEFGHIJa**

Data Formatting:

Send a number of characters

Syntax	Description
F2nnxx	Include in the output message a number of characters followed by an insert character. Start from the current cursor position and continue fo "nn" characters or through the last character in the input message, followed by character "xx".
	nn stands for the numeric value (00-99) for the number of characters. xx stands for the insert character's hex value for its ASCII code.

Send the first 3 characters from the barcode below, followed by a character"A".

1234567890ABCDEFGHIJ

Command string: **F20341**

F2: the “Send a number of characters” command

03: the number of characters to send

41: the hex value of “A”

the data is output as: **123A**

Data Formatting: 

F1&F2 Example

Split the content of the barcode below into two lines for output, the first line outputs the first 10 characters and the second line outputs the remaining content.

Command String: **F2100DF100**

F2: the “Send a number of characters” command

10: the number of characters to send

0D: the hex value of CR

F1: the “Send all characters” command

00: the hex value of <NUL>

The data is output as:

1234567890

ABCDEFGHIJ

Data Formatting: 

element

Send all characters up to a particular character

Syntax	Description
F3ssxx	Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the search character “ss”, followed by an insert character. The cursor is moved forward to the “ss” character.
	ss stands for the search character’s hex value for its ASCII code. xx stands for the insert character’s hex value for its ASCII code.

Output all characters before the character "D" in the barcode below and insert the character "0" at the end.

Command String: **F34430**

F3: the “Send all characters up to a particular character” command

44: the hex value of “D”

30: the hex value of “0”

The data is output as: **1234567890ABC0**

Data Formatting: 

Send all characters up to a string

Syntax	Description
B9nnnns…s	Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the search string “s...s”. the cursor is moved forward to the begining of the “s...s” string.
	nnnn stands for the length of the string. s...s stands for the string to be matched.

Outputs all characters before the string "BC" in the barcode below.

Command String: **B900024243**

B9: the “Send all characters up to a string” command

0002: the length for the added string

4243: The hex value combination of the string "BC"

The data is output as: **1234567890A**

Data Formatting: 

Send all but the last characters

Syntax	Description
E9nn	Include in the output message all but not the last “nn” characters, starting from the current cursor position. The cursor is moved forward to one position past the last input message character included.
	nn stands for the numeric value (00-99) for the number of characters that will not be sent at the end of the message.

The last 9 characters of the barcode are not output.

Command string: **E909**

E9: the “Send all but the last characters” command

09: The length of the string that is not sent.

The data is output as: **1234567890A**

Data Formatting: 

element

Insert a character multiple times

Syntax	Description
F4xxnn	Send “xx” character “nn” times in the output message, leaving the cursor in the current position.
	xx stands for the insert character’s hex value for its ASCII code. nn is the numeric value (00-99) for the number of times it should be sent.

Insert the character A three times.

Command string: **F44103**

F4: the “Insert a character multiple times” command

41: the hex value for “A”

03: the number of times the tab character is sent

The data is output as: **AAA**

Data Formatting: 

E9&F4 Example

Send all characters except for the last 10 from the barcode below, and insert the character “a” twice.

Command string: **E910F46102**

E9: the “Send all but the last characters” command

10: the number of characters at the end to ignore

F4: the “Insert a character multiple times” command

61: the hex value for “a”

02: the number of times the tab character is sent

The data is output as: **1234567890aa**

Data Formatting:

Insert a string

Syntax	Description
BAnnnns…s	Send “ss” string of “nn” length in the output message, leaving the cursor in the current position.
	nnnn stands for the length of the string. s...s stands for the string.

Insert a string “abc”.

1234567890ABCDEFGHIJ

Command string: **BA0003616263**

BA: the “Insert a string” command

0003: the length of the string to be inserted

616263: the hex value for the string “abc”

The data is output as: **abc**

Data Formatting:

E9&BA Example

Send all characters except for the last 9 from the barcode below, insert a string “ABC”.

1234567890ABCDEFGHIJ

E9: the “Send all but the last characters” command

09: the number of characters at the and to ignore

BA: the “Insert a string” command

0003: the length of the string to be added (3 characters)

414243: the hex value for the string “ABC”

The data is output as: **1234567890AABC**

Data Formatting: 

Insert symbology name

Syntax	Description
B3	Insert the name of the barcode’s symbology in the output message, without moving the cursor.

Output the symbology of the barcode below.

Barcode 1: 

Barcode 2: 

Command string: **B3**

B3: the “Insert symbology name” command

The data is output as:

Barcode 1: **PDF417**

Barcode 2: **Code 39**

Data Formatting: 

Insert bar code length

Syntax	Description
B4	Insert the barcode's length in the output message, without moving the cursor.

Output the length of the barcode below.

Barcode 1:

Barcode 2:

Command string: **B4**

B3: the "Insert barcode length" command

The data is output as:

Barcode 1: **8**

Barcode 2: **12**

Data Formatting:

B3&B4 Example

Insert the code name and length before the bar code content, and separate them with a space.

Command string: **B3F42001B4F42001F100**

B3: the "Insert symbology name" command

F4: the "Insert a character multiple time" command

20: the value for a space

01: the number of times the space character is sent

B4: the "Insert bar code length" command

F4: the “Insert a character multiple times” command

20: the hex value for CR

01: the number of times the space character is sent

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **Code 128 20 1234567890ABCDEFGHIJ**

Data Formatting:

Insert Key Strokes

Syntax	Description
B5xxssnn	Insert a key stroke or combination of key strokes (depend on your keyboard), any key can be inserted, including arrows and functions.
	xx is the number of keys pressed (without key modifiers). ss is the key modifier. nn is the key number from the Unicode Key Maps.

To insert a key combination, the command string is **B5xxss$_1$nn$_1$ss$_2$nn$_2$...ss$_x$nn$_x$**.

Under the U.S. style keyboard, insert an “A”.

Command string: **B501021F**

B5: the “Insert Key Strkes” command

01: the number of keys pressed

02: Shift Right (Key Modifiers)

1F: the key number of “a”

The data is output as: **A**

Data Formatting:

Under the U.S. style keyboard, insert an “a”.

12345678

Command string: **B501001F**

B5: the “Insert Key Strkes” command

01: the number of keys pressed

00: No Key Modifier

1F: the key number of “a”

The data is output as: **a**

Data Formatting:

Under the U.S. style keyboard, Insert key combination “Abc”.

12345678

Command string: **B503011F00320030**

B5: the “Insert Key Strkes” command

03: the number of keys pressed

01: Shift Left (Key Modifiers)

1F: the key number of “a”

00: No Key Modifer

32: the key number of “b”

00: No Key Modifier

30: the key number of “c”

The data is output as: **Abc**

Data Formatting:

Insert a Delay

Syntax	Description
EFnnnn	Insert a delay of up to 49995 milliseconds (in multiples of 5), starting from the current cursor position.
	nnnn stands for the delay in 5ms increments, up to 9999.

this command can only be used with USB HID-KB.

Insert a delay (2s) after the 5th and 11th characters of the barcode below.

Command string: **F20500EF0400F20600EF0400F100**

F2: the “Send a number of characters” command

05: the number of characters to send (from the current cursor)

00: the hex value for <NUL>

EF: the “Insert a delay” command

0400: he delay in 5ms increments (5ms*400), that is 2s.

F2: the “Send a number of characters” command

06: the number of character to send (from the current cursor)

00: the hex value for <NUL>

EF: the “Insert a delay” command

0400: he delay in 5ms increments (5ms*400), that is 2s.

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **12345{delay 2s}67890A{delay 2s}BCDEFGHIJ**

Data Formatting: 

Move the cursor forward a number of characters

Syntax	Description
F5nn	Move the cursor ahead (right) “nn” characters from current cursor position.
	nn is the numeric value (00-99) for the number of characters the cursor should be moved ahead.

Delete the first three characters of the bar code and output the remaining content.

1234567890ABCDEFGHIJ

Command string: **F503F100**

F5: the “Move the cursor forward a number of characters” command

03: the number of characters to move the cursor

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **4567890ABCDEFGHIJ**

Data Formatting:

Move the cursor backward a number of characters

Syntax	Description
F6nn	Move the cursor back (left) “nn” characters from current cursor position.
	nn is the numeric value (00-99) for the number of characters the cursor should be moved back.

Delete the first three characters of the bar code and output the remaining content.

1234567890ABCDEFGHIJ

Command string: **EAF603F100**

EA: the “Move the cursor to the end” command

F6: the “Move the cursor backward a number of characters” command

03: the number of characters to move the cursor

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **GHIJ**

Data Formatting:

Move the cursor to the beginning

Syntax	Description
F7	Move the cursor to the first character in the input message.

FE&F7 Example

Manipulate barcodes that begin with a “1”.

Barcode 1:

1234567890ABCDEFGHIJ

Barcode 2:

ABCDEFGHIJ123456789

Command string: FE31F7F20600

FE: the “Compare characters” command

31: the hex value for “1”

F7: the “Move the cursor to the beginning” command

F2: the “Send a number of characters” command

06: the number of characters to send

00: the hex value for <NUL>

The data is output as:

Barcode 1: **123456**

Barcode 2: ABCDEFGHIJ123456789

Data Formatting:

Move the cursor to the end

Syntax	Description
EA	Move the cursor to the last character in the input message.

EA&F1 Example

Output the symbology name and the last barcode content, separated by Space.

Command string: **EAB3F42001F100**

EA: the “Move the cursor to the end” command

B3: the “Insert symbology name” command

F4: the “Insert a character multiple times” command

20: the hex value for a space

01: the number of times the space is sent

F1: the “Send all characters” comamnd

00: the hex value for <NUL>

The data is output as: **Code 128 J**

Data Formatting: 

Search forward for a character

Syntax	Description
F8xx	Search the input message forward (right) for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character.
	xx stands for the search character’s hex value for its ASCII code.

Output all content after the character D in the barcode below.

1234567890ABCDEFGHIJ

Command string: **F844F100**

F8: the “Search forward for a character” command

44: the hex value for the “D”

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **DEFGHIJ**

Data Formatting:

Search backward for a character

Syntax	Description
F9xx	Search the input message backward (left) for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character.
	xx stands for the search character’s hex value for its ASCII code.

Output all content after the character D in the barcode below.

1234567890ABCDEFGHIJ

Command string: **EAF944F100**

EA: the “Move the cursor to the end”comamnd

F9: the “Search backward for a character” command

44: the hex value for the D

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **DEFGHIJ**

Data Formatting:

Search forward for a string

Syntax	Description
B0nnnns…s	Search forward for “s...s” string from the current cursor position, leaving cursor pointing to “s..s” string.
	nnnn is the string length (up to 9999). s...s consists of the hex value of each character in the match string.

Output all the content after “EFG” in the barcode below.

Command string: **B00003454647F100**

B0: the “Search forward for a string” command

0003: the string length (3 characters)

454647: the hex value combination of the “EFG”

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **EFGHIJ**

Data Formatting: 

Search backward for a string

Syntax	Description
B1nnnns…s	Search backward for “s...s” string from the current cursor position, leaving cursor pointing to “s...s” string.
	nnnn is the string length (up to 9999). s...s consists of the hex value of each character in the match string.

Output all the content after “EFG” in the barcode below.

1234567890ABCDEFGHIJ

Command string: **EAB10003454647F100**

EA: the “Move the cursor to the end” command

B1: the “Search backward for a string” command

0003: the string length (3 characters)

454647： the hex value combination of the “EFG”

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **EFGHIJ**

Data Formatting: 

Search forward for a non-matching character

Syntax	Description
E6xx	Search the input message forward for the first non-”xx” character from the current cursor position, leaving the cursor pointing to the non-”xx” character.
	xx stands for the search character’s hex value for its ASCII code.

Remove zeros at the begiining of barcode below.

00012345678

Command string: **E630F100**

E6: the “Search forward for a non-matching character” command

30: the hex value for the “0”

F1: the “Send all characters” command

0D: the hex value for <NUL>

The data is output as: **12345678**

Data Formatting: 

Search backward for a non-matching character

Syntax	Description
E7xx	Search the input message backward for the first non-"xx" character from the current cursor position, leaving the cursor pointing to the non-"xx" character.
	xx stands for the search character's hex value for its ASCII code.

E7 Example

Command string: **F503E730F100**

F5: the "Move the cursor forward a number of characters" command

03: the number of characters to move the cursor

E7: the "Search backward for a non-matching character" command

30: the hex value for 30

F1: the "Send all characters" command

00: the hex value for <NUL>

The data is output as: **20345678**

Data Formatting: 

Suppress characters

Syntax	Description
FBnnxxyy…zz	Suppress all occurrences of up to fifteen different characters, starting at the current cursor position, as the cursor is advanced by other commands.
	nn is a count of the number of suppressed characters in the list. xxyy...zz is the list of characters to be suppressed.

Remove space, asterisk, underline in barcode data.

123 456*789_A!

Command string: **FB03205F2AF10D**

FB: the “Suppress characters” command

03: the number of character types to be suppressed

20: the hex value for a space

5F: the hex value for “_”

2A: the hex value for “*”

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **123456789A!**

Data Formatting: 

Stop suppressing characters

Syntax	Description
FC	Disables suppress filter and clear all suppressed characters.

Remove space, asterisk, underline in barcode data, but disable this data formatting.

123 456*789_A!

Command string: **FB03205F2AFCF10D**

FB: the “Suppress characters” command

03: the number of character types to be suppressed

20: the hex value for a space

5F: the hex value for “_”

2A: the hex value for “*”

FC: the “Stop suppressing characters” command

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **123 456*789_A!**

Data Formatting: 

Replace characters

Syntax	Description
E4nnxx$_1$xx$_2$yy$_1$yy$_2$...zz$_1$zz$_2$	Replaces up to 15 characters in the output message, without moving the cursor.
	nn is the total count of the number of characters in the list (characters to be replaces plus replacement characters). xx$_1$ defines characters to be replaced. xx$_2$ defines replacement characters, continuing through zz$_1$ and zz$_2$.

Replace the "l" with "L" and the "o" with "O" in the barcode data below.

Command string: **E4046c4c6f4fF100**

E4: the “Replace characters” command

04: the total count of characters to be replaced (“l”, “o”), plus the replacement characters (“L”, “O”)

6c: the hex value for “l”

4c: the hex value for “L”

6f: the hex value for “o”

4f: the hex value for “O”

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **HELLOWORLD**

Data Formatting: 

Stop replacing characters

Syntax	Description
E5	Terminates characters replacement.

Replace the "1" and "0" in the bar code data below with "A", but terminate this replacement.

Command string: **E40331413041E5F100**

E4: the “Replace characters” command

04: the total count of characters to be replaced (“1”、“0”), plus the replacement character (“A”、“A”)

31: the hex value for “1”

41: the hex value for “A”

30: the hex value for “0”

41: the hex value for “A”

E5: the “Stop replacing characters” command

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **1023004115**

Data Formatting:

Compare characters

Syntax	Description
FExx	Compare the character in the current cursor position to thr character “xx”. if characters are equal, move the cursor forward one position.
	xx stands for the comparison character’s hex value for its ASCII code.

Output the number in the bar code below.

Command string: **FE41FE42FE43F100**

FE: the “Compare characters” command

41: the hex value for “A”

FE: the “Compare characters” command

42: the hex value for “B”

FE: the “Compare characters” command

43: the hex value for “C”

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **123456789**

Data Formatting: 

Compare string

Syntax	Description
B2nnnns...s	Compare the string in the input message to the string “S”. if the strings are equal, move the cursor forward past the end of the string.
	nnnn is the string length (up to 9999). s...s consists of the hex value of each character in the match string.

Output the number in the barcode below.

Command string: **B20003414243F100**

B2: the “Compare string” command

0003: the string length

41: the hex value for “A”

42: the hex value for “B”

43: the hex value for “C”

F1: the “Send all characters” command

00: the hex value for <NUL>

The data is output as: **123456789**

Data Formatting: 

Check for a number

Syntax	Description
EC	Check to make sure there is an ASCII number at the current cursor position. The format is aborted if the character is not numeric.

Add suffix "A" to barcode beginning with a number only.

Barcode 1: 

Barcode 2: 

Command string: **ECF141**

EC: the “Check for a number” command

F1: the “Send all characters” command

41: the hex value for “A”

The data is output as:

Barcode 1: **T12345** (The first character is a T, not a number, F141 after the EC does not work)

Bracode 2: **12345678A**

Data Formatting: 

Check for non-numeric character

Syntax	Description
ED	Check to make sure there is a non-numeric ASCII character at the current cursor position. The format is aborted if the character is numeric.

Add suffix "A" to barcode beginning with a letter only.

Barcode 1: 

Barcode 2: 

Barcode 3: 

Command string: **EDF141**

EC: the “Check for non-numeric character” command

F1: the “Send all characters” command

41: the hex value for “A”

The data is output as:

Barcode 1: **T12345A**

Bracode 2: **12345678** (The first character is a T, not a letter, F141 after the ED does not work)

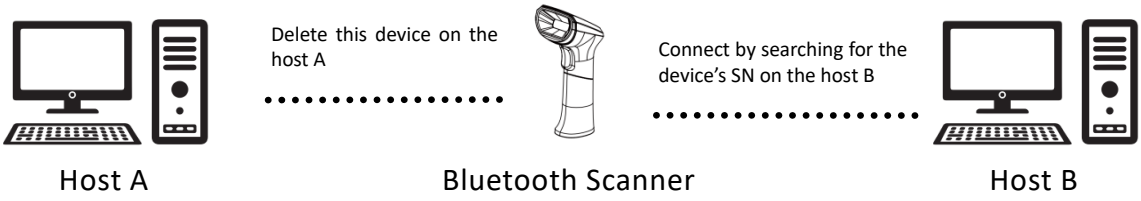
Barcode 3: ***12345678A**

Data Formatting: 

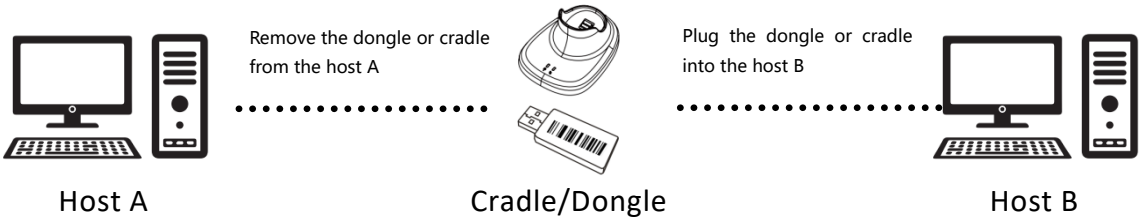
Chapter 7 Frequently Asked Questions

How to switch the host?

1. When Bluetooth scanner connect to the host device by searching for product's serial number, If user want to switch hosts, first ignore or delete this device in the Bluetooth list of the currently connected host, and then connect by searching for the device serial number of the product on the host to be connected.



2. When the Bluetooth scanner is connected to the host through the cradle or dongle, remove the cradle/dongle from the currently connected host and plug it into the USB port of the host to be connected.



How to switch to the wired mode?

Step1: Connect the scanner to the host by using TYPE-C or Micro USB cable (depending on scanner model).

Step2: Scan the programming barcode below.

Switch to the Wired Mode

Step3: Waiting for the scanner to restart automatically.

When the Bluetooth scanner is used as a wired device, the default interface is USB HID-KB, if you want to use the ElementConfig, scan the programming barcode USB COM Port Emulation.

USB HID-KB *

USB COM Port Emulation

How to switch to the Bluetooth mode?

Step1: Connect the scanner to the host by using TYPE-C or Micro USB cable.

Step2: Scan the programming barcode below.

Switch to the Bluetooth mode

Step3: Wait for the scanner to restart automatically.

element

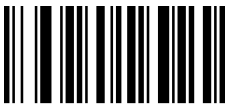
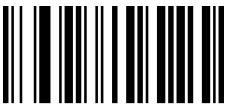
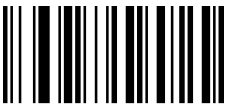
How to print out the Chinese information in the QR code?

When the scanner is connected to a Bluetooth *Cradle* or *Dongle*, scan the programming barcode below.

Application Environment	QR Coding Rule(UTF8/GB2312)
Word	
Excel or Notepad++; The system language on the PC is Chinese.	
QR Sample	 （GB2312） 采菊东篱下，悠然见南山。  （UTF8） 鳳凰臺上鳳凰遊 鳳去臺空江自流

Appendix

Digit Barcode

0	1	2	3
 Y0Y	 Y1Y	 Y2Y	 Y3Y
4	**5**	**6**	**7**
 Y4Y	 Y5Y	 Y6Y	 Y7Y
8	**9**	**A**	**B**
 Y8Y	 Y9Y	 YAY	 YBY
C	**D**	**E**	**F**
 YCY	 YDY	 YEY	 YFY

element

ASCII Table

Hex	Dec	Char
00	0	NUL
01	1	SOH
02	2	STX
03	3	ETX
04	4	EOT
05	5	ENQ
06	6	ACK
07	7	BEL
08	8	BS
09	9	HT
0a	10	LF
0b	11	VT
0c	12	FF
0d	13	CR
0e	14	SO
0f	15	SI
10	16	DLE
11	17	DC1
12	18	DC2
13	19	DC3
14	20	DC4
15	21	NAK
16	22	SYN
17	23	ETB
18	24	CAN
19	25	EM
1a	26	SUB
1b	27	ESC
1c	28	FS
1d	29	GS
1e	30	RS
1f	31	US
20	32	SP
21	33	!
22	34	"
23	35	#
24	36	$
25	37	%
26	38	&
27	39	`
28	40	(
29	41	)
2a	42	*
2b	43	+
2c	44	,

Hex	Dec	Char
2d	45	-
2e	46	.
2f	47	/
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	:
3b	59	;
3c	60	<
3d	61	=
3e	62	>
3f	63	?
40	64	@
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	[

5c	92	\
Hex	**Dec**	**Char**
5d	93	]
5e	94	^
5f	95	_
60	96	'
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	{
7c	124	|
7d	125	}
7e	126	~
7f	127	DEL

AIM ID

Symbology	AIM ID	Note
EAN-13	]E0	Standard EAN-13
	]E3	EAN-13 + 2-Digit Add-on Code EAN-13 + 5-Digit Add-on Code
EAN-8	]E4	Standard EAN-8
	]E4...]E1..	EAN-8 + 2-Digit Add-on Code
	]E4...]E2..	EAN-8 + 5-Digit Add-on Code
UPC-E	]E0	Standard UPC-E
	]E3	UPC-E + 2-Digit Add-on Code UPC-E + 5-Digit Add-on Code
UPC-A	]E0	Standard UPC-A
	]E3	UPC-A + 2-Digit Add-on Code UPC-A + 5-Digit Add-on Code
Code 128	]C0	Standard Code 128
GS1-128 (UCC/EAN-128)	]C1	FNC1 is the character right after the start character
AIM-128	]C2	FNC1 is the 2nd character after the start character
ISBT-128	]C4	
Interleaved 2 of 5	]I0	No parity check
	]I1	Transmit check digit after parity check
	]I3	Do not transmit check digit after parity check
ITF-6	]I1	Transmit check digit
	]I3	Do not transmit check digit
ITF-14	]I1	Transmit check digit
	]I3	Do not transmit check digit
Industrial 2 of 5	]S0	Not specified
Standard 2 of 5	]R8	One check digit, MOD10; Do not transmit check digit
	]R9	One check digit, MOD 10; Transmit check digit
Code 39	]A0	Full ASCII disabled; No parity check
	]A1	One check digit; MOD43; Transmit check digit
	]A3	One check digit; MOD43; Do not transmit check digit
	]A4	Full ASCII enabled; No parity check
	]A5	Full ASCII enabled; Transmit check digit
	]A7	Full ASCII enabled; Do not transmit check digit
Codabar	]F0	Standard Codabar
	]F2	Transmit check digit after parity check
	]F4	Do not transmit check digit after parity check
Code 93	]G0	Standard Code 93
Code 11	]H0	One check digit, MOD11; Transmit check digit

	]H1	Two check digit, MOD10/MOD11; Transmit check digit
	]H3	Do not transmit check digit after parity check
	]H9	No parity check
GS1-DataBar (RSS)	]e0	Standard GS1-DataBar
Plessey	]P0	Standard Plessey
MSI-Plessey	]M0	One check digit, MOD10; Transmit check digit
	]M1	One check digit, MOD10; Do not transmit check digit
	]M8	Two check digits
	]M9	No parity check
Matrix 2 of 5	]X0	Specified by the manufacturer
	]X1	No parity check
	]X2	One check digit, MOD10; Transmit check digit
	]X3	One check digit, MOD11; Do not transmit check digit
ISBN	]X4	Standard ISBN
ISSN	]X5	Standard ISSN
PDF417	]L0	Comply with 1994 PDF417 specifications
Data Matrix	]d0	ECC000-ECC140
	]d1	ECC200
	]d2	ECC200, FNC1 is the 1st or 5th character after the start character
	]d3	ECC200, FNC1 is the 2nd or 6th character after the start character
	]d4	ECC200, ECI included
	]d5	ECC200, FNC1 is the 1st or 5th character after the start character, ECI included
	]d6	ECC200, FNC1 is the 2nd or 6th character after the start character, ECI included
QR Code	]Q0	QR1
	]Q1	2005 version, ECI excluded
	]Q2	2005 version, ECI included
	]Q3	QR Code 2005, ECI excluded, FNC1 is the 1st character after the start character
	]Q4	QR Code 2005, ECI included, FNC1 is the 1st character after the start character
	]Q5	QR Code 2005, ECI excluded, FNC1 is the 2nd character after the start character
	]Q6	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)

element

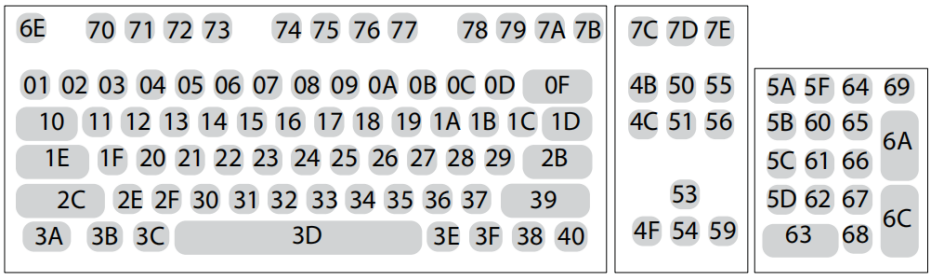
Code ID

Symbology	Code ID
All Symbologies	99
Codabar	61
Code 11	68
Code 128	6A
EAN-13	64
EAN-8	44
GS1 DataBar	79
GS1 DataBar Limited	7B
GS1 DataBar Expandede	7D
GS1 128	49
China Post(Hong Kong 2 of 5)	51
China Post	52
Interleaved 2 of 5	65
Matrix 2 of 5	6D
MSI	67
Telepen	74
UPC-A	63
UPC-E	45
Aztec Code	7A
Hanxin Code	48
Data Matrix	77
Maxi Code	78
PDF417	72
MicroPDF417	52
QR	73
MicroQR	73

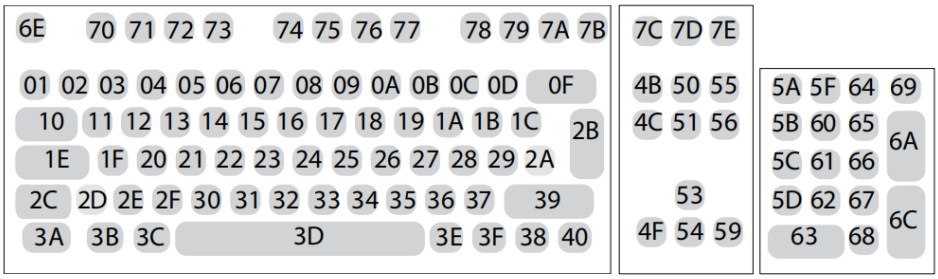
Terminal ID

Terminal-Model	Terminal ID
All Terminal	099
USB-HID KB	124
USB-Serial	130
Serial-RS232 TTL	000

Unicode Key Maps



104 Key U.S. Style Keyboard



105 Key European Style Keyboard

Key Modifiers

Key Modifiers	
No Key Modifier	00
Shift Left	01
Shift Right	02
Alt Left	04
Alt Right	08
Control Left	10
Control Right	20

Key Modifiers can be added to together when needed. Example: Control Left + Shift Left = 11.