User's manual

Radio Notice
This equipment generates uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions in this manual, it may cause interference to radio communications. The equipment has been tested and found to comply with the limits for a Class A computing device pursuant to EN55022 and 47 CFR, Part 2 and Part 15 of the FCC rules. These specifications are designed to provide reasonable protection against interference when operated in a commercial environment.

Radio and Television Interference
Operation of this equipment in a residential area can cause interference to radio or television reception. This can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient the receiving antenna.
- Relocate the device with respect to the receiver.
- Move the device away from the receiver.
- Plug the device into a different outlet so that the device and the receiver are on different branch circuits.
If necessary the user may consult the manufacturer, and authorized dealer, or experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402 U.S.A., Stock No. 004000003454.

For CE-countries
This scanner is in conformity with CE standards. Please note that an approved, CE-marked power supply unit should be used in order to maintain CE conformance.

Laser Safety

The laser scanner complies with safety standard IEC 60825 -1for a Class I laser produce. It also complies with CDRH as applicable to a Class IIa laser product. Avoid long term staring into direct laser light.

Radiant Energy: The laser scanner uses one low-power visible laser diodes operating at 650nm in an opto-mechanical scanner resulting in less than 3.9µW radiated power as observed through a 7mm aperture and averaged over 10 seconds.

Do not attempt to remove the protective housing of the scanner, as unprotected laser light with a peak output up to 0.8mW would be accessible inside.

Laser Light Viewing: The scan window is the only aperture through which laser light may be observed from this product. A failure of the scanner motor, while the laser diode continues to emit a laser beam, may cause emission levels to exceed those for safe operation. The scanner has safeguards to prevent this occurrence. If, however, a stationary laser beam is emitted, the failing scanner should be disconnected from its power source immediately.

Adjustments: Do not attempt any adjustments or alteration of this product. Do not remove the protective housing of the scanner. There are no user-serviceable parts inside.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Optical: The use of optical instruments with this product will increase the eye hazard. Optical instruments include binoculars, magnifying glasses, and microscopes but do not include normal eye glasses worn by the user.

Table of Contents

1. General Information

1.1. <u>Introduction</u>

This scanner has two types scan engines, CCD and Laser, to choose from and they are well featured with advanced wireless technology, enabling working efficiency for simultaneous data transfer when scanning as well as working portability as not being constrained by short of cable length. Working places as shipping industry, cargo warehouses, superstores, pharmacies, and many more open-space or large-scale manufacturing sites are delighted to enjoy this move-around freedom.

The cradle, a dongle or any device with wireless technology can be the host of this scanner. All scanned data are instantly transferred to the connected host in a 100-meter connection range in open space or 75-meter range in indoor environments (the actual communication range may vary due to different indoor placement). As if out of connection range, the embedded 32KB flash memory provides sufficient data space to store up to 500 sets of data.

Either scanning in the handheld or hands-free mode, this scanner always offers a high-accuracy and reliable scanning ability. This scanner would be your trusted tool scanning partner.

1.2. <u>Unpacking</u>

This scanner package contains:

      1 ea.   Wireless Single-Line CCD or Laser Scanner

      1 ea.   Charging Cradle or Cradle with Radio Communication

      1 ea.   DC 9V Power Adapter

      2 ea.   Ni-MH AA Recharge Battery

      1 ea.   Interface Cable (only for the cradle host)

      1 ea.   Hand stripe

      1 ea.   User's Manual

If any contents are damaged or missing, please contact your dealer immediately.

Please leave this user's manual within easy access of person using the scanner.

1.3. Scanner Outline

LED Lamp

Logo

Exit Window

Buzzer

Scan Trigger

Battery Cabinet

Cradle Detecting Point

1.4. Cradle Outline

DC Jack

Cable Release Hole

Cable Socket

Scanner Detecting Point

Scanner Holder

LED Lamp

Function Triggers

2. Getting Started

2.1. <u>Installing and Charging Scanner Batteries</u>

<u>Installing Batteries</u>

The rechargeable batteries are packed individually for shipping safety.
Please follow up the steps below to install the batteries.

Always use the rechargeable batteries provided by the manufacturer to avoid any non-compatible danger or void the warranty.

1. Loose the two screws enough to remove the battery cover. (It would not be necessary to remove the screws otherwise may result in losing them.)
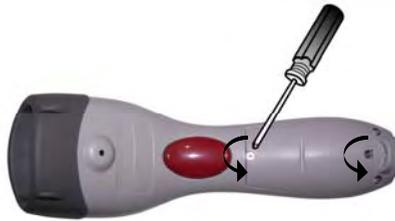
Figure 2-1

2. Insert the batteries into the scanner one by one. (positive pole to positive pole, negative pole to negative pole)
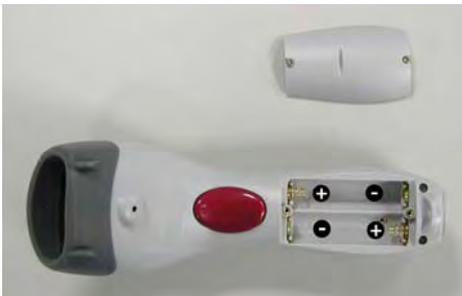
Figure 2-2
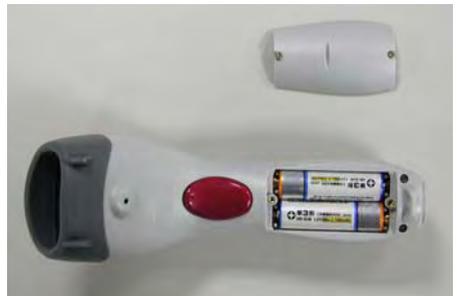
Figure 2-3

3. Put back the battery cover, and tighten both screws.
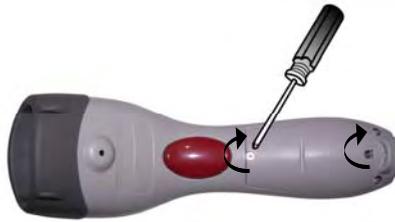
Figure 2-4

Charging Batteries

For users with the charging cradle, you can connect the charging cradle with power adapter and the scanner is now in charging.

For cradle host users, you can connect the cradle with the power adapter (shown as Figure 2-9 as example) first, then place the scanner into the cradle in a 30° angle (shown as Figure 2-5) and press down to make it seat tight into the cradle (shown as Figure 2-6); a clear and short beep is heard when position correctly into the cradle.

Figure 2-5   Figure 2-6

Once the scanner is well situated in the cradle, press down any one of the small buttons at the side of cradle LED lamp to start charging (Shown as Figure).

Figure 2-7   Press any one to start charging

The LED of scanner light in RED as in charge, and light in BLUE when full charged. Refer to Chapter 9 for LED indication.

We call this "Smart Charge", as battery life is well depended on the charging number of times, so only charge the batteries when necessary by following the abovementioned procedures to prolong your battery life.

You may also set up auto-charging as every time the scanner is placed into the cradle.   Follow and scan the appropriate barcode symbols to set up from programming section of this booklet

Note:
  ⬧ *For first charging, always charge the batteries over 5 hours continuously to prolong your battery life.*
  ⬧ *After every full charge, you may use the scanner for 8 hours continuously.*
  ⬧ *Recommend*ed charging environment is temperature in 0°C~35°C (32°F~95°F).

2.2.   Connecting the Cradle

There are two types of cradle to select for this scanner.
  ⬧ Charging Cradle
  ⬧ Cradle Host

Charging Cradle
This cradle designs for battery charging only, it does not support radio communication.   Simply connect the external DC-9V9W power adapter into it and place scanner into cradle to start charging.

When charging is not required, it is recommended to remove the adapter plug to retain the battery life.

Cradle Host

The cradle host features with advanced wireless technology and designs to support radio communication to the scanner.   It the same has charging functionality.   Refer to Section 2.1 for battery charging instructions.

Connection on Cradle Host

The scanner pairs with the cradle, when the scanner scans barcode data and passes to cradle via radio communication, the cradle sends data to host by its interface cable.   Steps to connect the cradle to host as follows:

1.   Take the desirable interface cable and insert the RJ-45 connector to cradle cable box until you hear a clear and short "click" sound, then connect the other end to the host.

2.   When using Keyboard wedge and USB interface for radio communication, it is not necessary to have an external power adapter if host has sufficient power.   But these interfaces need external power adapter when charging batteries.

     Note: When external power adapter (9V) is available, the cradle will disregard the power supply from host (5V).

3.   If using RS-232 interface, it is necessary to plug an external power adapter always.   Plug the power adapter into the DC-Jack of cradle cable box. (Shown as Figure 2-10)

4.   Once cradle powers up, its LED lamp lights RED for one second then turns to flashes BLUE light.   The BLUE LED means the cradle is waiting to be connected.   If the scanner pairs with this cradle, they are connected, and BLUE LED light is always on.

2.3.   Attach the Interface Cable

There are 3 types of interface cable to select from,
- ♦   Keyboard wedge cable
- ♦   RS-232 cable
- ♦   USB cable

Keyboard wedge cable

Figure2-8   Communication Only

Figure2-9   Communication and Charging

<u>RS-232 Cable</u>
Always require adapter for both communication and charging

Figure 2-10

<u>USB Cable</u>

Figure 2-11   Communication Only

Figure 2-12   Communication and Charging

2.4. Detach the Interface Cable

There is a hole on cradle cable box, and use a sharp pin to push down the hole while using another hand gently pull out the interface cable to release it slowly. (Shown in Figure 2-13)

Figure 2-13

3.   Pairing Scanner and Cradle Host

This scanner supports three radio communication types,
  ⬧   Cradle Host,
  ⬧   SPP (Serial Protocol Profile) Slave
  ⬧   SPP (Serial Protocol Profile) Master.

3.1.   <u>Cradle Host</u>

The scanner and communication cradle in the same delivery box are paired in factory, as soon as both are powered on, it should find and connect to each other immediately.

However, in any circumstance that scanner and cradle are not paired with the cradle, follow steps below to redo pairing.

1. Follow procedures in Section 2.2 to connect the cradle and charging the scanner.

2. Power on the cradle and it should light in RED first than LED flashes "BLUE", and it is ready for pairing.

3. Place the scanner into cradle until a short beep heard to confirm position correctly.

4. Hold down simultaneously the two buttons at the side of cradle LED lamp (shown as Figure 3-1) for over 2 seconds.
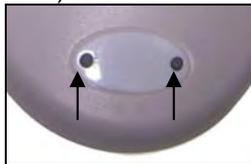
Figure 3-1

   The cradle LED lights in RED and the scanner beeps as a High-Low-High beep tone, and then the scanner and cradle both LED flashes.   If pairing is success, you will hear Low-High beep tone and cradle LED stays in BLUE and scanner LED stays in GREEN.

5. If the cradle is locked for pairing, or if scanner is not set in cradle host mode, it beeps twice and GREEN LED on scanner puts out.

Note:
In cradle host mode, the scanner is always in master mode and cradle is in slave mode. Therefore, you have to scan on "Unlock Pairing Mode" barcode symbol to unlock paired scanner and cradle, than connect or link to other devices.

6. As the scanner links to the communication cradle, the cradle LED stays in BLUE. If in any case the scanner link timeout or enters power down mode, then the cradle LED flashes in BLUE. Press scanner trigger or place the scanner back into the cradle, the communication links automatically again.

Note:
The default radio communication type of scanner sets in cradle host, if by any chance the scanner lost this setting, use the programming barcode symbologies provided in this booklet to set it as "Cradle Host" again.

3.2. <u>SPP - Slave</u>

In the mode of SPP Slave, the scanner is remote by connecting with Serial Protocol Profile (SPP) host.   Therefore, please first make sure your host device is well equipped with advanced wireless technology connectivity and an application software before following the steps below to start pairing.

Note:
All host device and application software has different operating features, here we take a Widcomm BTW utility as an example.

1. Turn on the host computer and activate its Bluetooth® connection.

2. Scan "Start of Configuration" to enter programming mode

3. Scan "SPP Slave" barcode label

4. Scan "End of Configuration" barcode label to exit programming mode. Now, the scanner LED flashes in GREEN, indicating it's waiting to be connected.

5. In the host computer, execute the discovering procedure and find the scanner, it is always shown as "ZBBT" as device name (Shown in Figure 3-2).
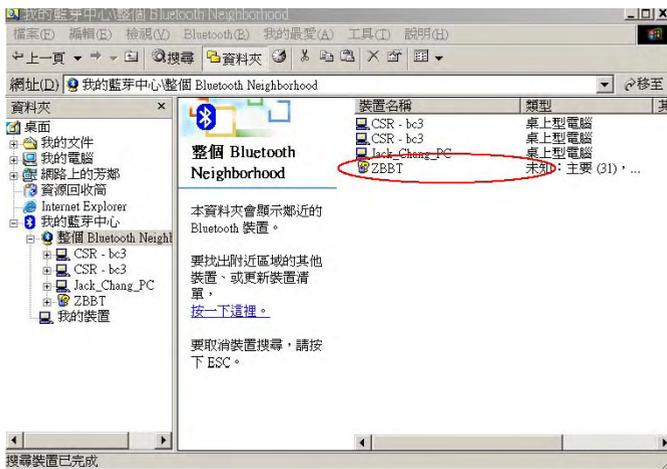
Figure 3-2

6. Select "ZBBT" the scanner, as the scanner default encryption is enabled, and you will be requested to enter the PIN code as "12345678" to start pairing.
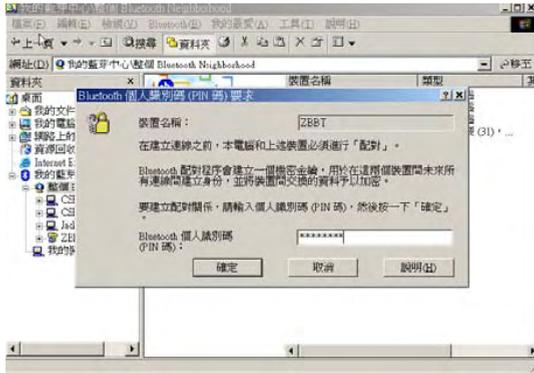
Figure 3-3

7. Double click on "ZBBT" selection and find as follow,

Figure 3-4

8. Right click on the icon and select "Connect Bluetooth Serial Port". Once pairing is completed, the scanner will make low-high beep tone and the LED light in GREEN.

Note:
When scanner is set in slave mode, and the master device supports Piconet, this master device can connect with up to 7 slave mode scanners or equipments at the same time.
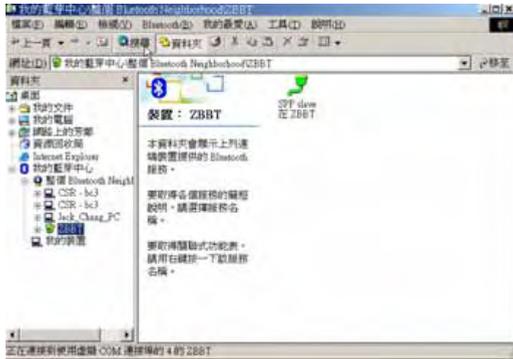
Figure 3-5

9. Right click on icon and select "Contents" and remember your SPP Bluetooth® COM port.
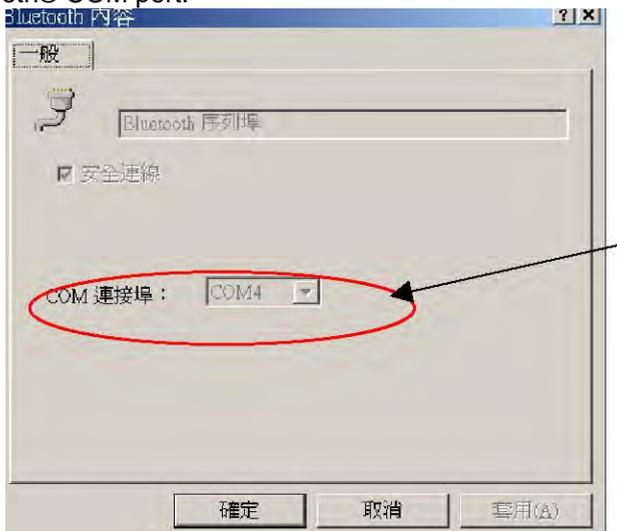
Figure 3-6

The following steps will help you verify the communication status; the actual application depends on your application software used.

10. Open "Program File" > "Communication" > "Hyper Terminal".

11. In the window below, enter any name and click on "OK".

Figure 3-7

12. Select the appropriate COM port as you remembered.
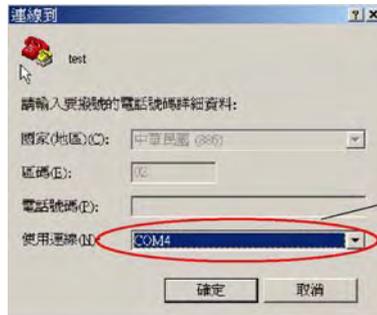
Figure 3-8

13. Select COM port contents as follow then click on "OK"

Figure 3-9

14. Test scan any barcode, and all scanned data should show in your screw.
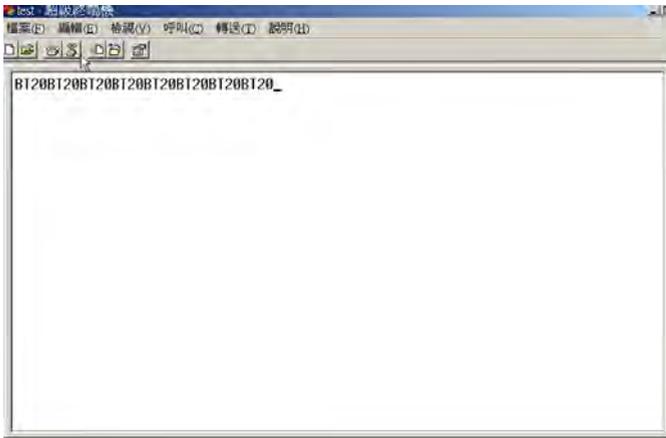
Figure 3-10

15. If the scanner LED flashes in GREEN light indicating it is off-line, or out of range. Trigger the scan button or move in of communication range to be on-line again.

3.3. <u>SPP - Master</u>

In this section, the scanner is configured as SPP-Master, and a pair barcode must be created to the remote Bluetooth® device to which the scanner can connect.

The 12 digits Bluetooth® address of the remote device and its PIN code must be obtained before start pairing. Such address and PIN code can be found in its manual. Follow the steps below to start pairing.

1. Power on the remote device and have its address ready in hand.

2. Scan the "Start of Configuration" barcode label to enter programming mode.

3. Scan "SPP Master" barcode label.

4. Scan "Set Bluetooth® Address" barcode label.

5. Scan from the ASCII table (page 62) to enter these 12 digit address. E.g. the Bluetooth® address is "011B1345600", scan the "0", "0", "1", "1", "B", "1", "3", "4", "5", "6", "0", "0" from ASCII barcode labels.

6. Scan "Confirm the Setting" barcode label confirm the Bluetooth® address.

Hint:
It is often found too much trouble to scan ASCII barcode label, especially there are 12 digits to be entered. You can create a Code 39 barcode label of these 12 digits, and scan this code only for your Bluetooth® address entry and jump to scan "Confirm the Setting".

The Code 39 barcode label formula as follow:
BxxxxxxxxxxxxT; where "x" represents as these 12 digits.

---

7. Scan "Set PIN Code" barcode label if required, otherwise jump to "Begin Pair with Slave".

Note:
The PIN code is an 8 digit PIN code given by remote device, you may also enter "12345678" or ignore this entry and go directly to scan "Begin Pair with Slave" barcode label.

8. Scan "Confirm the Setting" barcode label to confirm the PIN code setting.

9. Scan "Begin Pair with Slave" barcode label and a beep tone is heard to confirm setting than start pairing.

   At the same time, the scanner LED flashes in GREEN light, and if pairing successfully, then scanner will emit Low-High beep tone, GREEN light of scanner LED is on.

   If pairing failed, the scanner emits a series beep tone and you can start set-up procedures all over again.

10. Scan "End of Configuration" to exit set up.

4.   Paging the Scanner

Paging the scanner often happens when you have two or more pairs of scanners and communication cradles, and can not find which scanner pairs with its cradle.

Press any key on cradle, and it sends out a signal to its paired scanner, this scanner beeps 3 beeps and lights BLUE LED 3 times. But if the scanner is out of its receiving range, then it won't react to the cradle.

5. Scanning

There are two ways to scan with this device.
- ⬧ Handheld scanning
- ⬧ Hands-free scanning

5.1 **Handheld Scanning**

In the handheld scanning, hand held the scanner and simply aim at a barcode label and push the scanner trigger to scan (Shown as Figure 5-1). Avoid aim vertically to the barcode label as a total reflection might effect the scanning performance.

Figure 5-1

5.2 **Hands-free Scanning**

Put the scanner into the cradle for hands-free scanning, and move the barcode label approach the scanner scanning zone (Shown as Figure 5-2).

Figure 5-2

6. Data Transmit Method

The data transfer method includes four types, Normal (default), Out-of-Range Mode, Standard Batch Mode and Cradle Contact Batch Mode. Users may modify this setting according to their preferences.

6.1 Normal (default)

The scanner is not storing any data. When the scanner is within the connection range, the scanned data will be transferred to the host computer immediately (a good beep sound is made). If the scanner is out of its connecting range, the scanner scans and emits 4 high-tone series of beep sound, indicating data transmitting error.

6.2 Out-of-Range Mode

In this mode, the scanner is out of its wireless communication range. When scan a barcode label, the scanner LED flashes BLUE light indicating barcode reading success, but emit 4 high-tone series of beeps to indicate the communication breaks.

If the communication is not connected still, the scanner LED now flashes twice per second in GREEN light, and barcode data read is saved into memory.

When scanner is back into its communication range or re-connected, the stored data is sent when scanning next barcode label.

When data send to host, a medium-tone is heard indicating transmitting successfully.

6.3 Standard Batch Mode

Whether within the connection range or not, in Standard Batch Mode, the scanner stores all scanned data which will be transferred to the host computer after scanning "Send Batch Data" label.

6.4 Cradle Contact Batch Mode

Working the same as Standard Batch Mode except all scanned data will only be transferred to the host computer when the scanner is put into the cradle.

When the scanner is put into the cradle, a short-tone beep sound is made to confirm the scanner is fitted into the cradle correctly, then the scanner LED flashes 3 times in BLUE light and stay on, then the scanner starts transferring scanned data. Once the transfer is done, a long medium-tone beep sound will be made.

In this mode, the scanner is NOT required to be paired with the cradle to transfer the scanned data.

Note:
After the scanned data is transferred to the host computer, the scanner automatically clears out its flash memory.

7. ACK/NAK protocol or Frame packing

When scanner is in SPP Master/Slave mode, and add in the data protocol or packing could confirm the data reliability.   Refer to below for different setting options:

a) No ACK/NAK protocol:

```
┌─────────────┐          ┌─────────────────┐
│             │   data   │                 │
│ BT Scanner  │◄────────►│ Remote BT device│
│             │          │                 │
└─────────────┘          └─────────────────┘
```

b) ACK/NAK only

```
┌────────────┐   ───── data ─────►   ┌──────────┐
│            │   ◄···· NAK ·····     │ Remote BT│
│    BT      │   ···· Resend data ·► │          │
│  scanner   │   ◄──── ACK ─────     │  device  │
│            │   ──► Get a good beep │          │
└────────────┘                       └──────────┘
```

c) Frame packing:

```
┌────────────┐  ── Data format of packet ─►  ┌──────────┐
│            │                               │ Remote BT│
│    BT      │  ◄── Acknowledge packet ──    │          │
│  scanner   │                               │  device  │
│            │  ──► Get a good beep           │          │
└────────────┘                               └──────────┘
```
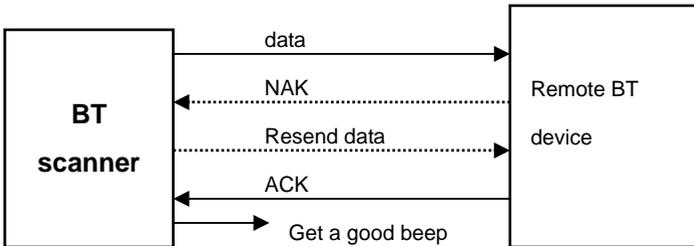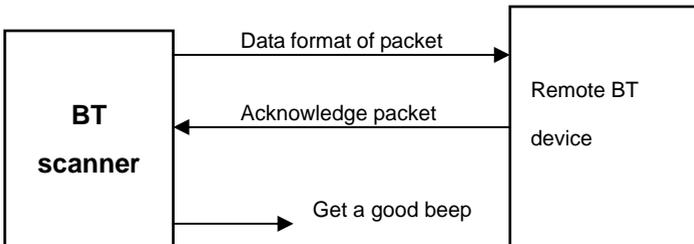
Scanner to remote application

Data Format of Packet
To send a data (barcode) to the remote application, the BT scanner has to encapsulate it:

EAH(Header)	Size of payload	FEH(Format Byte)	Data ID	Data	AEH(End of Byte)	Reserved Byte
1 byte	1 byte	1 byte	1 byte	Varies	1 byte	1 byte

Title	Definition
Header Character (EAH)	The character ID at the head of every data. It has to start with EAH.
Size of Payload	The encapsulated data length excluding header character.
Format Byte (FEH)	Differentiate data format; barcode data is always FEH.
Data ID	The number of each data. If receive the same ID more than once, only the first one is valid, delete the rest.
Data	Decoded barcode data
End of Byte (AEH)	Record data ends.
Reserved Byte	Reserved for future use

Example:

If barcode data is "ABCD", than sender sends out:

EAH + 9H + FEH + ID + "ABCD "+ AEH + Reserved Byte

$9 = 1+1+1+4+1+1$

Acknowledge packet

55H (Header)	Data ID	55H (end of byte)
1 byte	1 byte	1 byte

Example:

If scanner sends out:

EAH , 9H , FEH , 01H , "ABCD ", AEH , EEH

Remote acknowledges:

55H +01H + 55H

8.   Beeper Indication

The scanner is featured with different beep sounds to assist understanding its working status. Please see below for detailed indications of beep sounds.

Beep Sound	Indication
Single beep	Good decode, and data is either transferred to the host computer or saved in the memory.
2 short high-tone beeps	Low battery warning.
3 short low-tone beeps	The flash memory is full.
2 long high-tone beeps	The scanner has completed data transfer in either Standard Batch Mode or Cradle Contact Batch Mode.
4 short high-tone beeps	Error occurred. ex. pairing is broken up, programming error and etc.
Low to high-tone beeps	The Bluetooth® connection is good.
Short high-low-high-tone beeps	Start pairing
Short medium-tone and long low-tone beeps	Powering off

9. LED Indication

The scanner and the radio communication cradle are both featured with LED lights, assisting you to understand their status during the work. Please see below for detailed LED indications.

9.1 The Scanner

LED Illustration	Indication
	GREEN LED Flash (i) Once per second The scanner is trying to pair with the host, or such pairing has broken up. (ii) Twice per second The scanner is in Out-of-Range mode, and the scanner is trying to build up a connection with the host, or such connection has broken up. (iii) Constantly on The scanner is paired.
	BLUE LED Bars Flash (i) Once A data has been decoded, and is either transferred to a host computer or saved in memory by the scanner. (ii) Continuously The scanner is in programming mode.
	Constant Light on with First "BLUE" LED Bar The scanner is either in Standard Batch Mode or in Cradle Contact Batch Mode.
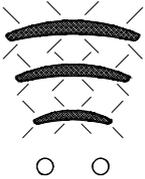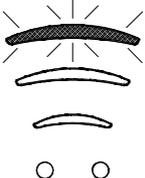
	Constant RED LED Light On When the scanner is in the cradle, it indicates the scanner is under charging.
	Constant Light on with Third "BLUE" LED Bar When the scanner is in the cradle, it indicates the scanner charging is completed.
	All BLUE LED Bars (i) Constantly Light On The scanner is transferring data to the host computer and is in either Standard Batch Mode or Cradle Contact Batch Mode. (ii) Flash Twice Every 3 Seconds The scanner has a low battery

9.2   The Communication Cradle

LED Illustration	Indication
LED Flashes in BLUE Light	The cradle is waiting for pairing.
LED Constantly On in BLUE Light	The cradle is paired with a scanner.
LED Alternately Flashes in BLUE and RED Light	The cradle initiate failed and power reset is required.
RED LED Flashes Once	The cradle has received data from the paired scanner.
LED Constantly On in RED Light	The cradle is processing pairing.

10. Maintenance

This device provides reliable and efficient operation with a minimum of care. Although specific maintenance is not required, as to prolong the operating life of the device, the following precautions needs to be ensured.

10.1 Cleaning the Window and Housing

Any visibly dirty, or scratch on the scanner window will degrade reading performance, therefore do not use abrasive wipes or tissues on the window. When the scanner is not operating, use a soft cloth or lens tissue and gently wipe the scanning window lens.

Do not spread liquid or submerge into liquid in any circumstance.

Never use solvents (e.g., acetone, benzene, ether, or phenol-based agents) on the housing or window, solvents may damage the housing finish or the window.

10.2 Inspecting on Interface Cables

Inspect regularly on the interface cables and its connectors, a badly worn or damaged cable or connecters may interfere the scanning operation. Contact your distributor for information on cable replacement.

10.3 Battery

The lifetime of rechargeable batteries would rely on the number of times the batteries are recharged. Hence, we recommend users to keep default setting and charge in Smart Charge mode (Refer to Section 2.1 for Charging Details). In general, we recommend charge the scanner at the end of each working day or when the scanner requires charging.

11. Programming Guide

Scanning a series of programming bar code labels can configure the scanner. This allows decoding options and interface protocols to be tailored to a specific application. The configuration is stored in non-volatile memory and will not be lost by removing power from the scanner.

The scanner must be properly powered before programming.   If you are about to change the cradle host of parameter, the scanner and cradle must be in pairing status to prevent failure in programming operation.

During the programming mode, the scanner will acknowledge a good and valid reading with a short beep. It will give long beeps for either an invalid or bad reading.

11.1 Default Parameters

The factory default setting table gives the default settings of all the programmable parameters. The default settings will be restored whenever the "Reset" programming label is scanned and the laser scanner is in programming mode.

Factory Default Setting

Parameter	Default
Radio communication	
Bluetooth host	Cradle Host
Pairing mode	Unlocked
Data transmit	Normal
Radio protocol timeout	5 seconds
Power off timeout	20 minutes
Encryption	Enable
Cradle Host	
RS-232 communication	
Baud rate	9600
Parity	none
Data bits	8
Stop bit	1
RTS/CTS	off
Terminator	<CR><LF>
Keyboard Wedge Communication	
Terminator	PC/AT
Keyboard	US keyboard
Terminator	Enter(Alpha numeric)
USB Communication	
Terminator	Enter
Code mode	Scan code

Keyboard	US keyboard
Wand Emulation	
Wand emulation speed	Normal
Data output	Black=high
Pair contact on cradle	Enable
Scanner	
Decoder Selection	**Default**
EAN/UPC	Enable
CODE 39	Enable
Code 32	Disable
CODABAR	Enable
ITF 2 OF 5	Enable
MSI	Disable
Chinese post code	Disable
Code 93	Enable
Code 128	Enable
EAN-128	Disable
Beeper Sound	**Default**
Frequency	High
Duration	Medium
Operating Parameter	**Default**
Scan mode	Trigger mode
Stand mode	Enable
Header and trailer	None
Inter-message delay	None
Inter-character delay	None
Code Identifiers	**Default**
Identifier code as ZEBEX standard	Disable
Identifier code as AIM standard	Disable
Code 39 identifier code	M
ITF 2 of 5 identifier code	I
Chinese post code identifier code	H
UPC-A identifier code	A
UPC-E identifier code	E
EAN-13 identifier code	F
EAN-8 identifier code	FF
Codabar identifier code	N
Code 128 identifier code	K
Code 93 identifier code	L
MSI identifier code	P

11.2 Default Data Transmit Format

Code	Message format
EAN-13	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13
EAN-8	D1 D2 D3 D4 D5 D6 D7 D8
UPCA	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12
UPCE	D1 D2 D3 D4 D5 D6 D7 D8
CODE128	D1-Dx (default 3~62)
EAN128	C1 D1-Dx (default 3~62)
CODE39	D1-Dx (default 3~62)
CODABAR	D1-Dx (default 6~32)
INTERLEAVED 2/5	D1-Dx (default 6~32)
CHINESE POST CODE	D1-Dx (default 8~32)
CODE93	D1-Dx (default 3~32)
MSI	D1-Dx (default 6~32)

11.3 Program Procedure Using Barcode Manual
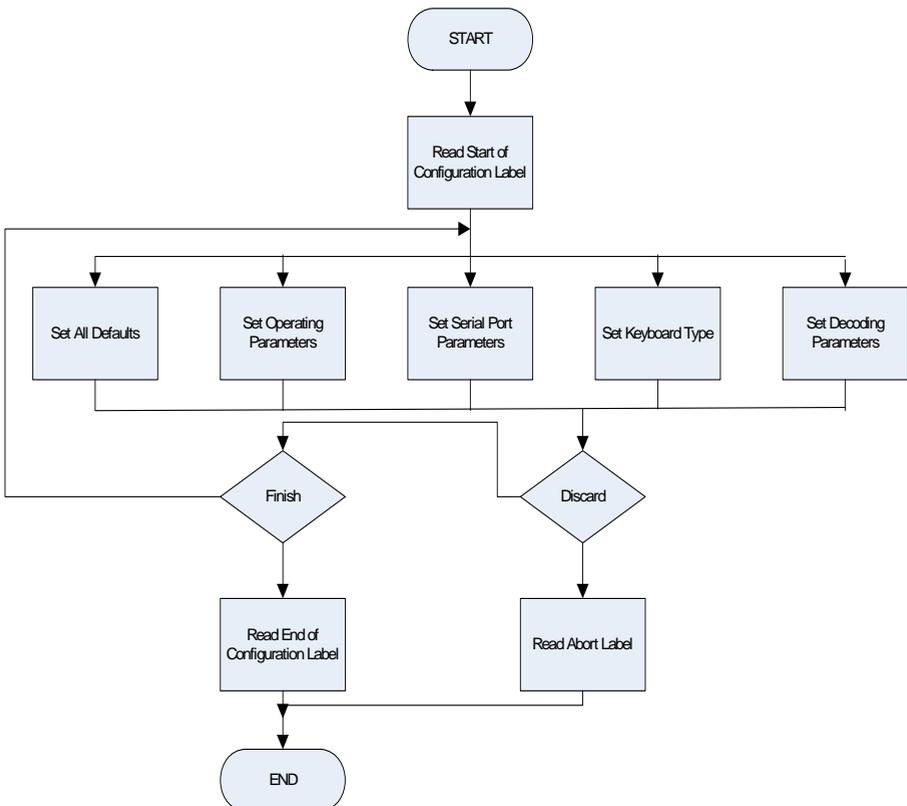
11.4 <u>Parameter Setting</u>

Note: Default values are highlighted in grey background.

|||||||||||||||||||| Start Of Configuration

<u>System Function Setting</u>

Barcode Value	**Description**
||||||||||||||||||||	Return **scanner** to factory defaults
||||||||||||||||||||	Return **cradle host** to factory defaults
||||||||||||||||||||	Display firmware version
||||||||||||||||||||	Return to USB default (Communication cradle link required)
||||||||||||||||||||	Return to wand emulation default (Communication cradle link required)
||||||||||||||||||||	Return to RS232 default (Communication cradle link required)
||||||||||||||||||||	IBM PC/AT/PS/2 Keyboard emulation (Communication cradle link required)
||||||||||||||||||||	Abort (exit programming mode without any updates)

|||||||||||||||||||| End Of Configuration

||||||||||||||||||||| Start Of Configuration

Radio Communication Setting

Cradle Host mode

|||||||||||||||||||||| Cradle Host mode enable

|||||||||||||||||||||| Scanner pairing on cradle enable

|||||||||||||||||||||| Scanner pairing on cradle disable

|||||||||||||||||||||| Unlock cradle paring mode

|||||||||||||||||||||| Lock cradle pairing mode

|||||||||||||||||||||| Undo pairing

|||||||||||||||||||||| Auto charging
(Batteries start charging whenever scanner is on cradle.)

|||||||||||||||||||||| Charging by press trigger on cradle

||||||||||||||||| End Of Configuration

|||||| ||||||| Start Of Configuration

SPP Master/Slave mode

|||||| ||| ||| ||| ||| Scanner SPP Master enable

|||||| ||| ||| ||| ||| Scanner SPP Slave enable

|||||| ||| ||| ||| ||| Set Bluetooth® Address (SPP Master only)

|||||| ||| ||| ||| ||| Set PIN code   (SPP Master only)

|||||| ||| ||||| ||| Save setting to confirm (for address and pin code setting required)

|||||| ||| ||||| ||| Begin pair with slave (SPP Master**)**

|||||| ||| ||| ||| ||| Discover enable

|||||| ||| ||| ||| ||| Discover disable

|||||| ||| ||| ||| ||| Encryption enable

|||||| ||| ||| ||| ||| Encryption disable

|||||| ||| ||| ||| ||| Data communication without protocol

|||||| ||| ||| ||| ||| Data communication with ACK/NAK protocol

|||||| ||| ||| ||| ||| Data communication with Packing protocol

|||||| ||||| End Of Configuration

||||| ||| ||||| Start Of Configuration

Batch Mode

||||| ||| ||| |||| ||| ||| Data transmit normal

||||| ||| ||| || ||| ||| Out of range buffer enable

||||| ||| ||| ||| ||| Standard Batch mode

||||| ||| ||| |||| ||| || Batch mode on cradle

||||| ||| ||| ||| ||| ||| Send Batch data by scanning this label

||||| ||| ||| |||| ||| ||| Clear batch data after send

||||| ||| ||| |||| ||| ||| Clear batch data by scanning "Delete batch data" label

||||| ||| ||| ||| |||| Delete batch data

||||| ||| ||| ||| ||| ||| Send batch data on cradle contact

||||| ||| ||| ||| ||| ||| Send batch data by press trigger on cradle contact

||||| ||| ||| |||| ||| || Out of range resend data with beeper sound

||||| ||| ||| |||| ||| ||| Out of range resend data without beeper sound

||||| ||| ||| ||| End Of Configuration

|||||| Start Of Configuration

Radio protocol communication parameter

|||||| Radio protocol timeout= 3 second

|||||| Radio protocol timeout= 5 second

|||||| Radio protocol timeout =8 second

|||||| Radio protocol timeout= 10 second

|||||| Radio protocol timeout =13 second

|||||| Radio protocol timeout =16 second

|||||| Radio protocol timeout= 20 second

|||||| Power off timeout=5 minute

|||||| Power off timeout=10 minutes

|||||| End Of Configuration

‖‖‖‖‖‖‖‖‖	Start Of Configuration

‖‖‖‖‖‖‖‖‖‖	Power off timeout=20 minutes

‖‖‖‖‖‖‖‖‖‖	Power off timeout=30 minutes

‖‖‖‖‖‖‖‖‖‖	Power off timeout=1 hours

‖‖‖‖‖‖‖‖‖‖	Power off by scanning this label

‖‖‖‖‖‖‖‖‖‖	Link beeper enable

‖‖‖‖‖‖‖‖‖‖	Link beeper disable

‖‖‖‖‖‖‖‖	End Of Configuration

||||||||||||||||| Start Of Configuration

Same Code Delay

||||||||||||||||||||||| 50msec

||||||||||||||||||||||| 200msec

||||||||||||||||||||||| 400msec

||||||||||||||||||||||| 600msec

||||||||||||||||||||||| 800msec

||||||||||||||||||||||| 100msec

||||||||||||||||||||||| 300msec

||||||||||||||||||||||| 500msec

||||||||||||||||||||||| 700msec

||||||||||||||||||||||| 1000msec

||||||||||||||||||||||| Infinite

|||||||||||||||| End Of Configuration

40

|||||||||||||||||||| Start Of Configuration

Operation Function Setting

Good Read Beeper Tone Selection

|||||||||||||||||||| Medium beeper tone

|||||||||||||||||||| High beeper tone

|||||||||||||||||||| Low beeper tone

|||||||||||||||||||| Speaker disable

Beeper Sound Selection

|||||||||||||||||||| Long

|||||||||||||||||||| Medium

|||||||||||||||||||| Short

|||||||||||||||||||| Ultra Short

|||||||||||||||||||| Ultra Long

|||||||||||||||||||| End Of Configuration

41

|||||| Start Of Configuration

Inter Character Delay
0ms

2ms

5ms

10ms

20ms

50ms

Inter Message Delay
0 ms

100 ms

500 ms

1000 ms

|||||| End Of Configuration

|||||||||||| Start Of Configuration

Interface Settings

1.   RS-232C Interface Setting

Baud Rate
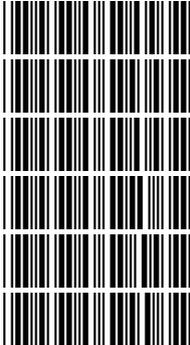
115200

19200

9600

4800

2400

1200

Parity Bit
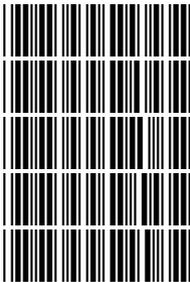
Even parity

Odd parity

Mark parity

Space parity

None parity

Stop Bit

1 stop bit

2 stop bit

Data Bit

7 data bit

8 data bit

|||||||||| End Of Configuration

Handshaking Protocol

||||||||||||| None handshaking

||||||||||||| ACK/NAK

||||||||||||| Xon/Xoff

||||||||||||| RTS/CTS

||||||||||||| Enable BEEPER ON<BEL> CHARACTER

||||||||||||| Ignore Beep on<BEL> character

||||||||||||| Disable ACK/NAK timeout beeper

||||||||||||| Enable ACK/NAK timeout beeper(three sound beeper sound)

||||||||||||| ACK/NAK response time 300ms

||||||||||||| ACK/NAK response time 2s

||||||||||||| ACK/NAK response time 500ms

||||||||||||| ACK/NAK response time 3s

||||||||||||| ACK/NAK response time 1s

||||||||||||| ACK/NAK response time 5s

||||||||||||| ACK/NAK response time infinity

||||||||||||| End Of Configuration

	Start Of Configuration

Message Terminator

RS-232 message terminator—none

RS-232 message terminator—CR/LF

RS-232 message terminator—C

RS-232 message terminator—LF

RS-232 message terminator—H tab

RS-232 message terminator—STX/ETX

RS-232 message terminator—EOT

End Of Configuration

|||||||||||||||| Start Of Configuration

2. Keyboard Wedge Setting

Keyboard Wedge Setting

|||||||||||||||| IBM PC/AT/PS/2 Keyboard emulation

|||||||||||||||| International Keyboard mode.(ALT method).

|||||||||||||||| Keyboard language support---USA

|||||||||||||||| Keyboard language support---UK send scan code

|||||||||||||||| Keyboard language support---GERMANY

|||||||||||||||| Keyboard language support---FRENCH send scan code

|||||||||||||||| Keyboard language support---SPANISH send scan code

|||||||||||||||| Keyboard language support---ITALIAN send scan code

|||||||||||||||| Keyboard language support---Switzerland send scan code

|||||||||||||||| Keyboard language support---Belgium send scan code

|||||||||||||||| Keyboard language support---Japanese

|||||||||||||||| Capital lock on

|||||||||||||||| Capital lock off

|||||||||||||||| Function key emulation enable

|||||||||||||||| Function key emulation disable

|||||||||||||||| Send number as normal data

|||||||||||||||| Send number as keypad data

|||||||||||||||| End Of Configuration

Message Terminator

‖‖‖‖‖‖‖‖‖‖‖ Keyboard terminator---none

‖‖‖‖‖‖‖‖‖‖‖ Keyboard terminator---Enter

‖‖‖‖‖‖‖‖‖‖‖ Keyboard terminator---H-TAB

3. USB Interface Setting

USB interface

|||||||||||||||| International Keyboard mode.(ALT method).

|||||||||||||||| Keyboard language support---USA

|||||||||||||||| Keyboard language support---GERMANY

|||||||||||||||| Keyboard language support---FRENCH send scan code

|||||||||||||||| Keyboard language support---SPANISH send scan code

|||||||||||||||| Keyboard language support---Japanese

Message Terminator

|||||||||||||||| Keyboard terminator---none

|||||||||||||||| Keyboard terminator---Enter

|||||||||||||||| Keyboard terminator---H-TAB

|||||||||||||||| End Of Configuration

|||||||||||||||||| Start Of Configuration

---

4.   Wand Emulation Setting

Wand emulation is not supported as standard, if needed, please contact your distributor.

Wand Emulation

|||||||||||||||||| All barcode will be decoded and transmitted in that symbology

|||||||||||||||||| Enable Wand output data format as CODE39

|||||||||||||||||| Wand emulation data output black=high
•   Scan this bar code to set quiet zones and spaces low and bars =high.

|||||||||||||||||| Wand emulation data output black=low
•   Scan this bar code to set quiet zones and spaces high and bars=low

|||||||||||||||||| Idle = high
•   Idle state refers to the TTL logic level of the Wand Emulation signal when not in use

|||||||||||||||||| Idle = low
•   Idle state refers to the TTL logic level of the Wand Emulation signal when not in use

---

|||||||||||||||||| End Of Configuration

Wand Emulation (Cont'd)

‖‖‖‖‖‖‖‖‖‖ Wand emulation speed-----Low
- This option allows the transmission of wand emulation at 1ms narrow element width

‖‖‖‖‖‖‖‖‖‖ Wand emulation speed-----medium
- This option allows the transmission of wand emulation at 600us narrow element width

‖‖‖‖‖‖‖‖‖‖ Wand emulation speed-----normal

‖‖‖‖‖‖‖‖‖‖ Wand emulation speed-----high
- This option allows the transmission of wand emulation at 300us narrow element width

‖‖‖‖‖‖‖‖‖‖ Wand emulation speed-----higher
- This option allows the transmission of wand emulation at 100 us narrow element width

‖‖‖‖‖‖‖‖‖‖ Wand emulation narrow/wide ratio 1:2

‖‖‖‖‖‖‖‖‖‖ Wand emulation narrow/wide ratio 1:3

‖‖‖‖‖‖‖‖‖‖ End Of Configuration

|||| ||||||||| Start Of Configuration

The Symbologies
CODABAR Parameter Setting

|||||||||||||||| Codabar enable

|||||||||||||||| Codabar start/stop character transmission-----DC1~DC4

|||||||||||||||| CODABAR disable

|||||||||||||||| Codabar start/stop character transmission-----a/t,b/n,c/*,d/e

|||||||||||||||| Codabar start/stop character transmission-----none

|||||||||||||||| Codabar maximum length setting

|||||||||||||||| Codabar start/stop character transmission-----A,B,C,D

|||||||||||||||| Codabar minimum length setting

|||||||||||||||| Save setting to confirm (for length setting)

|||||||||||||||| Codabar concatenation disable

|||||||||||||||| Validate modulo 16 and transmit

|||||||||||||||| Codabar concatenation enable

|||||||||||||||| Codabar data redundant check=off

|||||||||||||||| No check character

|||||||||||||||| Codabar data redundant check=1

|||||||||||||||| Validate modulo 16,but don't transmit

|||||||||||||||| Codabar data redundant check=2

|||||||||||||||| End Of Configuration

|||||||||||||||| Start Of Configuration

Code 39 Parameter Setting

||||||||||||||||||| Code 39 enable

||||||||||||||||||| FULL ASCII code 39

||||||||||||||||||| Code 39 disable

||||||||||||||||||| Code 39 start/stop character transmission

||||||||||||||||||| Code 39 start/stop character without transmission

||||||||||||||||||| Code 32 enable

||||||||||||||||||| Code 32 disable

||||||||||||||||||| Code 39 check digit calculate and transmit

||||||||||||||||||| No check character

||||||||||||||||||| Code 39 check digit calculate but without transmit

||||||||||||||||||| Code 39 data redundant check=off

||||||||||||||||||| Code 39 data redundant check=1

||||||||||||||||||| Code 39 data redundant check=2

|||||||||||||| End Of Configuration

	Start Of Configuration

Code 39 Parameter Setting (Cont'd)

	Code 39 maximum length setting

	Code 39 minimum length setting

	Save setting to confirm (for length setting)

	Code 39 concatenation enable

	Code 39 concatenation disable

	Code 32 (Italian pharmacy) transmit "A" character

	Code 32 (Italian pharmacy) without transmit "A" character

	End Of Configuration

‖‖‖‖‖‖‖‖	Start Of Configuration

Code 93 Parameter Setting

‖‖‖‖‖‖‖‖‖	Code 93 enable
‖‖‖‖‖‖‖‖‖	Code 93 disable
‖‖‖‖‖‖‖‖‖	Code 93 data redundant check=off
‖‖‖‖‖‖‖‖‖	Code 93 data redundant check=1
‖‖‖‖‖‖‖‖‖	Code 93 data redundant check=2
‖‖‖‖‖‖‖‖‖	Code 93 maximum length setting
‖‖‖‖‖‖‖‖‖	Code 93 minimum length setting

‖‖‖‖‖‖‖‖	Save setting to confirm (for length setting)

‖‖‖‖‖‖‖‖‖	Code 93 check digit calculate but without transmit
‖‖‖‖‖‖‖‖‖	Code 93 check digit not calculate and without transmit
‖‖‖‖‖‖‖‖‖	Code 93 check digit calculate and transmit

‖‖‖‖‖‖‖	End Of Configuration

54

|||||||||||||||| Start Of Configuration

Code 128

|||||||||||||||| Code 128 enable

|||||||||||||||| Code 128 disable

|||||||||||||||| EAN 128 enable

|||||||||||||||| EAN 128 disable

|||||||||||||||| Code128 FNC2 concatenation enable

|||||||||||||||| Code128 FNC2 concatenation disable

|||||||||||||||| Code 128 data redundant check=off

|||||||||||||||| Code 128 data redundant check=1

|||||||||||||||| Code 128 data redundant check=2

|||||||||||||||| Code 128 maximum length setting

|||||||||||||||| Code 128 minimum length setting

|||||||||||||||| Save setting to confirm (for length setting)

|||||||||||||||| End Of Configuration

Chinese Post Code

|||||||||||||||||| Chinese post code enable

|||||||||||||||||| Chinese post code disable

|||||||||||||||||| Chinese post codedata redundant check=off

|||||||||||||||||| Chinese post code data redundant check=1

|||||||||||||||||| Chinese post codedata redundant check=2

|||||||||||||||||| Chinese post code maximum length setting

|||||||||||||||||| Chines post code code minimum length setting

|||||||||||||||||| Save setting to confirm (for length setting)

|||||||||||||||||| End Of Configuration

|||||| |||| ||| |||||| Start Of Configuration

MSI/Plessy

MSI enable

MSI disable

MSI data redundant check= off

MSI data redundant check=1

MSI data redundant check=2

MSI/PLESSY maximum length setting

MSI/PLESSY minimum length setting

Save setting to confirm (for length setting)

MSI/Plessy double check digit calculate but not transmit

MSI/Plessy double check digit calculate and both transmit

MSI/Plessy double check digit without calculate and transmit

MSI/Plessy single check digit calculate but without transmit

MSI/Plessy double check digit calculate but only first digit   transmit

MSI/Plessy single check digit calculate and transmit

End Of Configuration

‖‖‖‖‖‖‖‖‖‖	Start Of Configuration

ITF 2 of 5

‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 enable
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 disable
‖‖‖‖‖‖‖‖‖‖‖	IATA code enable
‖‖‖‖‖‖‖‖‖‖‖	IATA disable
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 check digit calculate and transmit
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 check digit calculate but without transmit
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 no check character
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 one Fixed length setting
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 two Fixed length setting
‖‖‖‖‖‖‖‖‖‖‖	ITF 25 data redundant check=off
‖‖‖‖‖‖‖‖‖‖‖	ITF25 data redundant check=1
‖‖‖‖‖‖‖‖‖‖‖	ITF25 data redundant check=2
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 code minimum length setting
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 length variable
‖‖‖‖‖‖‖‖‖‖‖	ITF 2 of 5 code maximum length setting

‖‖‖‖‖‖‖‖‖‖	Save setting to confirm (for length setting)

‖‖‖‖‖‖‖‖	End Of Configuration

||||||||||||| Start Of Configuration

UPC/EAN/JAN

||||||||||||| EAN convert to ISSN/ISBN   enable

||||||||||||| EAN convert to ISSN/ISBN disable

||||||||||||| UPC/EAN/JAN ALL ENABLE

||||||||||||| EAN-8 ENABEL

||||||||||||| UPC-A AND EAN-13 ENABLE

||||||||||||| EAN-8 OR EAN-13 ENABLE

||||||||||||| UPC-A   AND UPC-E ENABLE

||||||||||||| UPC-E ENABLE

||||||||||||| EAN-13 ENABLE

||||||||||||| UPC-A ENABEL

||||||||||||| UPC/EAN Addendum Disable

||||||||||||| Add on 5 only

||||||||||||| Add on 2 only

||||||||||||| Add on 2 or 5

||||||||||||| Force UPC-E to UPC-A format enable

||||||||||||| Force UPC-E to UPC-A format disable

||||||||||||| End Of Configuration

UPC/EAN/JAN (Cont'd)

Force UPC-A to EAN-13 format enable

Force UPC-A to EAN-13 format disable

Transmit UPC-A check digit enable

Transmit UPC-A check digit disable

Transmit UPC-E check digit enable

Transmit UPC-E check digit disable

Transmit UPC-E leading character enable

Transmit UPC-E leading character disable

Transmit UPC-A leading character enable

Transmit UPC-A leading character disable

Transmit EAN-13 check digit disable

Transmit EAN-13 check digit enable

Transmit EAN-8 check digit enable

Transmit EAN-8 check digit disable

End Of Configuration

UPC/EAN/JAN (continued)

force EAN-8 to EAN-13 format enable

force EAN-8 to EAN-13 format disable

EAN-13 country code first "0" can transmitted

EAN-13 country code first:"0" can't transmitted

Add-on format with separator

Add-on format without separator

EAN/UPC +add-on (none mandatory)

EAN/UPC +add-on (mandatory)

|||||||||||||||| Start Of Configuration

Data Editing

Identifier Code

|||||||||||||||| Disable identifier code

|||||||||||||||| Enable identifier code table as ZEBEX standard

|||||||||||||||| Enable identifier code table as AIM standard.

|||||||||||||||| UPC-A identifier code setting

|||||||||||||||| EAN-13 identifier code setting

|||||||||||||||| EAN-8 identifier code setting

|||||||||||||||| CODE 39 identifier code setting

|||||||||||||||| CODABAR identifier code setting

|||||||||||||||| ITF 2 of 5 identifier code setting

|||||||||||||||| CODE 128 identifier code setting

|||||||||||||||| CHINESE POST CODE identifier code setting

|||||||||||||||| CODE 93 identifier code setting

|||||||||||||||| UPC-E identifier code setting

|||||||||||||||| MSI identifier code setting

|||||||||||||||| Save setting to confirm (for length setting)

|||||||||||||||| Add code length as header enable (2 Bytes)

|||||||||||||||| Add code length as header disable (2 Bytes)

|||||||||||||||| End Of Configuration

62

||||||||||||| Start Of Configuration

Header And Trailer

|||||||||||||||| Header (Preamble)

|||||||||||||||| Trailer (Postamble)

|||||||||||||| Save setting to confirm

The **Header and Trailer** allows you to append a header and/or a trailer to every message transmitted via serial port, USB or the keyboard port. There is no restriction in selecting header or trailer characters as far as the sum of the lengths of header and trailer is not larger than 10 digits.

1.) Select either header or trailer you are going to program by scanning the corresponding label.
2.) Scan your ideal character(s) from the enclosed ASCII table to set as header or trailer (be sure to enable full ASCII code 39 option before starting).
3.) Read the "Save setting to confirm" label to confirm the programming.

Truncate Character

|||||||||||||||| Truncate header character

|||||||||||||||| Truncate trailer character

|||||||||||||| Save setting to confirm

The **Truncate character** setting allows you to truncate a number of symbology header or trailer.   When you do so, the specific character you select is deleted from the symbology.

1.) Scan the "Truncate header character" or "Truncate trailer character" label.
2.) Scan two barcode value from the full ASCII code table (0~9).   For example, if you want to omit the number 2, then scan "0" and "2.
3.) Scan the "Save setting to confirm" label.

|||||||||||| End Of Configuration

Full ASCII Code 39 Table

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
‖‖‖‖‖‖‖	Full ASCII ---NUL	00	‖‖‖‖‖‖‖	Full ASCII ---SI Function key-----"Shift"	0F
‖‖‖‖‖‖‖	Full ASCII ---SOH Function key-----"Ins"	01	‖‖‖‖‖‖‖	Full ASCII ---DLE Function key-----"5(num)"	10
‖‖‖‖‖‖‖	Full ASCII ---STX Function key-----"Del"	02	‖‖‖‖‖‖‖	Full ASCII ---DC1 Function key-----"F1"	11
‖‖‖‖‖‖‖	Full ASCII ---ETX Function key-----"Home"	03	‖‖‖‖‖‖‖	Full ASCII ---DC2 Function key-----"F2"	12
‖‖‖‖‖‖‖	Full ASCII ---EOT Function key-----"End"	04	‖‖‖‖‖‖‖	Full ASCII ---DC3 Function key-----"F3"	13
‖‖‖‖‖‖‖	Full ASCII ---ENQ Function key-----"Up arrow"	05	‖‖‖‖‖‖‖	Full ASCII ---DC4 Function key-----"F4"	14
‖‖‖‖‖‖‖	Full ASCII ---ACK Function key-----"Down arrow"	06	‖‖‖‖‖‖‖	Full ASCII ---NAK Function key-----"F5"	15
‖‖‖‖‖‖‖	Full ASCII ---BEL Function key-----"Left arrow"	07	‖‖‖‖‖‖‖	Full ASCII ---SYN Function key-----"F6"	16
‖‖‖‖‖‖‖	Full ASCII ---BS Function key-----"Backspace"	08	‖‖‖‖‖‖‖	Full ASCII ---ETB Function key-----"F7"	17
‖‖‖‖‖‖‖	Full ASCII ---HT Function key-----"TAB"	09	‖‖‖‖‖‖‖	Full ASCII ---CAN Function key-----"F8"	18
‖‖‖‖‖‖‖	Full ASCII ---LF Function key-----"Enter (alpha numeric"	0A	‖‖‖‖‖‖‖	Full ASCII ---EN Function key-----"F9"	19
‖‖‖‖‖‖‖	Full ASCII ---VT Function key-----"right arrow"	0B	‖‖‖‖‖‖‖	Full ASCII ---SUB Function key-----"F10"	1A
‖‖‖‖‖‖‖	Full ASCII ---FF Function key-----"PgUp"	0C	‖‖‖‖‖‖‖	Full ASCII ---ESC Function key-----"F11"	1B
‖‖‖‖‖‖‖	Full ASCII ---CR Function key-----"Enetr(num.)"	0D	‖‖‖‖‖‖‖	Full ASCII ---FS Function key-----"F12"	1C
‖‖‖‖‖‖‖	Full ASCII ---SO Function key-----"PgDn"	0E	‖‖‖‖‖‖‖	Full ASCII ---GS Function key-----"ESC"	1D

‖‖‖‖‖‖‖   End Of Configuration

Full ASCII Code 39 Table (continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---RS Function key-----"CTL(L)"	1E		Full ASCII ----	2D
	Full ASCII ---US Function key-----"ALT(L)"	1F		Full ASCII ---.	2E
	Full ASCII ---SP	20		Full ASCII ---/	2F
	Full ASCII ---!	21		Full ASCII ---0	30
	Full ASCII ---"	22		Full ASCII ---1	31
	Full ASCII ---#	23		Full ASCII ---2	32
	Full ASCII ---$	24		Full ASCII ---3	33
	Full ASCII ---%	25		Full ASCII ---4	34
	Full ASCII ---&	26		Full ASCII ---5	35
	Full ASCII ---'	27		Full ASCII ---6	36
	Full ASCII --- (	28		Full ASCII ---7	37
	Full ASCII ---)	29		Full ASCII ---8	38
	Full ASCII ---*	2A		Full ASCII ---9	39
	Full ASCII ---+	2B		Full ASCII ---:	3A
	Full ASCII ---,	2C		Full ASCII ---;	3B

End Of Configuration

Full ASCII Code 39 Table (continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---<	3C		Full ASCII ---K	4B
	Full ASCII ---=	3D		Full ASCII ---L	4C
	Full ASCII --->	3E		Full ASCII ---M	4D
	Full ASCII ---?	3F		Full ASCII ---N	4E
	Full ASCII ---@	40		Full ASCII ---O	4F
	Full ASCII ---A	41		Full ASCII ---P	50
	Full ASCII ---B	42		Full ASCII ---Q	51
	Full ASCII ---C	43		Full ASCII ---R	52
	Full ASCII ---D	44		Full ASCII ---S	53
	Full ASCII ---E	45		Full ASCII ---T	54
	Full ASCII ---F	46		Full ASCII ---U	55
	Full ASCII ---G	47		Full ASCII ---V	56
	Full ASCII ---H	48		Full ASCII ---W	57
	Full ASCII ---I	49		Full ASCII ---X	58
	Full ASCII ---J	4A		Full ASCII ---Y	59

End Of Configuration

Full ASCII Code 39 Table (continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---Z	5A		Full ASCII ---i	69
	Full ASCII ---[	5B		Full ASCII ---j	6A
	Full ASCII ---\	5C		Full ASCII ---k	6B
	Full ASCII ---]	5D		Full ASCII ---l	6C
	Full ASCII ---^	5E		Full ASCII ---m	6D
	Full ASCII ---_	5F		Full ASCII ---n	6E
	Full ASCII ---`	60		Full ASCII ---o	6F
	Full ASCII ---a	61		Full ASCII ---p	70
	Full ASCII ---b	62		Full ASCII ---q	71
	Full ASCII ---c	63		Full ASCII ---r	72
	Full ASCII ---d	64		Full ASCII ---s	73
	Full ASCII ---e	65		Full ASCII ---t	74
	Full ASCII ---f	66		Full ASCII ---u	75
	Full ASCII ---g	67		Full ASCII ---v	76
	Full ASCII ---h	68		Full ASCII ---w	77

End Of Configuration

Full ASCII Code 39 Table (continued)

Code 39	ASCII	Hexa-code	Code 39	ASCII	Hexa-code
	Full ASCII ---x	78		Full ASCII ---|	7C
	Full ASCII ---y	79		Full ASCII ---}	7D
	Full ASCII ---z	7A		Full ASCII ---~	7E
	Full ASCII ---{	7B		Full ASCII ---DEL	7F

End Of Configuration