Wireless Laser Barcode Scanner

- MS836B -

User's Manual

Version 1.9

Change Log

Date	Change Description	Version
2021/10/29	first published version	1.0
2021/11/02	Update Ch.2 ,Ch.3 and Appendix	1.1
2021/11/10	Update Ch.3 and Appendix	1.2
2021/12/02	Remove 3.23 Prefix Sequence	1.3
2021/12/13	Update Ch.2 ,Ch.3 and Appendix	1.4
2022/1/7	Update Ch.2 ,Ch.3 and Appendix	1.5
2022/4/26	Update 1.3 Specification	1.6
2022/5/24	Add Appendix E	1.7
2022/6/06	Update USB Interface	1.8
2022/07/25	Change micro USB to USB Type-C	1.9

Preface

About This Manual

Thank you for purchasing the Unitech product.
This manual explains how to install, operate and maintain our product.

Regulatory Compliance Statements

FCC Warning Statement

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which 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 or relocate the receiving antenna.
–Increase the separation between the equipment and receiver.
–Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

–Consult the dealer or an experienced radio/TV technician for help.

1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure requirements, avoid direct contact to the transmitting antenna during transmitting.
3. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

Operation on the 5.15 - 5.25GHz frequency band is restricted to indoor use only. The FCC requires indoor use for the 5.15-5.25GHz band to reduce the potential for harmful interference to co-channel Mobile Satellite Systems. Therefore, it will only transmit on the 5.25-5.35 GHz, 5.47-5.725 GHz and 5.725 – 5.850 GHz band when associated with an access point (AP).

FCC Label Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

RF Radiation Exposure Statement

For body contact during operation, this device has been tested and meets FCC RF exposure guidelines when used with an accessory that contains no metal and that positions the handset a minimum of 1.5 cm from the body.
Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

Canadian Compliance Statement

This Class B Digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe B respecte les exigences du Reglement

sur le material broilleur du Canada.

European Conformity Statement

Unitech Electronics co., Ltd herewith declares that the Unitech product is in compliance with the essential requirements and all other provisions of the RED 2014/53/EU directive, the EMC 2014/30/EU directive and the Low Voltage 2014/35/EU directive.
The declaration of conformity is available for download at :
https://portal.Unitech.eu/public/Safetyregulatorystatement

CE RF Exposure Compliance

This device meets EU requirements (2014/53/EU) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.
For body-worn operation, this device has been tested and meets the ICNIRP guidelines and the European Standard EN 62209-2, for use with dedicated accessories, SAR is measured with this device at a separation of 0.5 cm to the body, while transmitting at the highest certified output power level in all frequency bands of this device. Use of other accessories which contain metals may not ensure compliance with ICNIRP exposure guidelines.

CE Mark Warning

CE

This equipment complies with the requirements of Directive 2014/53/EU of the European Parliament and Commission from 24 May, 2014 governing Radio and Telecommunications Equipment and mutual recognition of conformity.

RoHS Statement

This device conforms to RoHS (Restriction of Hazardous Substances) European Union regulations that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

Waste electrical and electronic equipment (WEEE)

Unitech has set up a policy and process to meet the EU directive 2002/96/EC and update 2003/108/EC concerning electronic waste disposal.

For more detailed information of the electronic waste disposal of the products you have purchased from Unitech directly or via Unitech's resellers, you shall either contact your local supplier or visit us at : https://portal.Unitech.eu/public/WEEE

Taiwan NCC Warning Statement

NCC 警語

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

注意事項:

1. 使用過度恐傷害視力。
2. 使用30分鐘請休息10分鐘；2歲以下幼兒不看螢幕，2歲以上每天看螢幕不要超過1小時。
3. 減少電磁波影響，請妥適使用。

Laser Information

The Unitech product is certified in the U.S. to conform to the requirements of DHHS/CDRH 21CFR Subchapter J and to the requirements of IEC 825-1. Class II and Class 2 products are not considered to be hazardous. The Unitech product contains internally a Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits as set forth in the above regulations. The scanner is designed so that there is no human access to harmful laser light during normal operation, user maintenance or prescribed service operations.

The laser safety warning label required by the DHHS/IEC for the Unitech product's optional laser scanner module is located on the memory compartment cover, on the back of the unit.

* Laser information only applies to the products with laser components.

CAUTION! Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light. Use of optical instruments with the scanner, including binoculars, microscopes, and magnifying glasses, with will increase eye damage. This does not include eyeglasses worn by the user.

LED Information

The Unitech product contains LED indicator(s) or LED ring whose luminance is not harmful to human eyes during normal operation, user maintenance or prescribed service operations.

*LED information only applies to the products with LED components.

Battery Notice

1. To guarantee optimal performance, it is recommended that rechargeable batteries be replaced every year, or after 500 charging cycles are completed. It is normal for the battery to balloon or expand after one year or 500 cycles. Although it does not cause damage, it cannot be used again and must be disposed of according to the location's safe battery disposal procedures.
2. If a battery performance decreases more than 20%, the battery is at the end of its life cycle. Stop use and ensure the battery is disposed of properly.
3. The length of time that a battery lasts depends on the battery type and how the device is used. Conserve the battery life by doing the following:
   - Avoid fully uncharging the battery because this places additional strain on it. Several partial uncharges with frequent charges are better than a fully uncharged battery. Charging a partially charged battery does not cause harm to the unit.
   - Keep the battery cool. Avoid hot vehicles. For prolonged storage, keep the battery at a 40% charge level.
   - Do not leave the battery uncharged and unused for an extended period of time, the battery will wear out and the longevity of the battery will be at least half of one with frequent charges.
4. Protect battery life by not over or under charging the battery.
5. Please do not leave battery unused for long time without charging it. Despite Unitech's safety precautions, the battery pack may begin to change shape. If so, stop using it immediately. Please check to see if you are using a proper power adapter to charge the battery or contact your service provider for service.
6. If you cannot charge the battery after it has been idle for an extended period of time and it begins to heat up, please do not try to charge it. It may not be functional anymore.
7. Please only use the original battery from Unitech. Using a third party battery can damage our products. Please note that when such damage occurs, it is not covered by your warranty.

CAUTION!

- RISK OF EXPLOSION IF BATTERY IS REPLACED INCORRECTLY.
  DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- 如果更換不正確之電池行事會有爆炸的風險
  請依製造商說明書處理用過之電池
- 如果更换不正确之电池行事会有爆炸的风险
  请依制造商说明书处理用过之电池

Battery charge notice

It is important to consider temperature when the battery pack is charging. Charging is most efficient at normal room temperature or in a slightly cooler environment. It is essential that batteries are charged within the stated range of 0˚C to 40˚C. Charging batteries outside of the specified range could damage the batteries and shorten their life cycle.

CAUTION! Do not charge batteries at a temperature lower than 0˚C. This will and make the batteries unstable and dangerous. Please use a battery temperature detecting device for a charger to ensure a safe charging temperature range.

CAUTION! To ensure the unit working properly, please keep all connectors away from the contaminants staying inside of them such as dust, grease, mud, and water. The negligence may cause the unit with no communication, short circuited, overheated and so on.

CAUTION! If the connector is damaged, please ensure the connector is being fully repaired before use the unit to avoid causing short circuited.

Storage and safety notice

Although charged batteries may be left unused for several months, their capacity may be depleted due to build up of internal resistance. If this happens, they will require recharging prior to use. Batteries may be stored at temperatures between -20°C to 60°C, however they may deplete more rapidly at higher temperatures. It is recommended to store batteries at room temperature.

** The message above only applies to the usage of the removable batteries. For the products with non-removable batteries / without batteries, please refer to the specification of each product.*

Product Operation and Storage Notice

The Unitech product has applicable operation and storage temperature conditions. Please follow the limitation of suggested temperature conditions to avoid failure, damage or malfunction.

**For applicable temperature conditions, please refer to the specification of each product.*

Adapter Notice

1. Please do not leave the power adapter in the socket when it is not connected to your Unitech product for charging.
2. Please remove the power adapter when the battery is fully recharged.
3. The bundled power adapter that comes with your Unitech product is not meant to be used outdoors. An adapter exposed to water or rain, or a very humid environment can cause damage to both the adapter and the product.
4. Please only use the bundled power adapter or same specification of adapter to charge your Unitech product. Using the wrong power adapter can damage your Unitech product.

** The message above only applies to the product connected to the adapter. For the products without using the adapters, please refer to the specification of each product.*

Hearing Damage Warning

Zx.3 Warning

The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:

- the symbol of Figure 1 with a minimum height of 5 mm; and
- the following wording, or similar :

To prevent possible hearing damage, do not listen at high volume levels for long periods.

Figure 1 – Warning label (IEC 60417-6044)

Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.

Worldwide Support

Unitech's professional support team is available to quickly answer questions or assist with technical-related issues. Should an equipment problem occur, please contact the nearest Unitech regional service representative.
For complete contact information please visit the Web sites listed below:

Taipei, Taiwan – Headquarters		Europe	
Tel:	+886-2-89121122	**Tel:**	+31-13-4609292
E-mail:	info@hq.ute.com	**E-mail:**	info@eu.ute.com
Address:	5F, No. 136, Lane 235, Baoqiao Road, Xindian District, New Taipei City 231, Taiwan (R.O.C.)	**Address:**	Kapitein Hatterasstraat 19, 5015 BB, Tilburg, the Netherlands
Website:	http://www.ute.com	**Website:**	http://eu.ute.com
China		**Japan**	
Tel:	+86-59-2310-9966	**Tel:**	+81-3-35232766
E-mail:	info@cn.ute.com	**E-mail:**	info@jp.ute.com
Address:	Room401C, 4F, RIHUA International Mansion, Xinfeng 3nd Road, Huoju Hi-tech District, Xiamen, Fujan , China	**Address:**	Kayabacho Nagaoka Building 8F.,1-5-19 Shinkawa, Chuo-Ku, Tokyo, 104-0033, Japan
Website:	http://cn.ute.com	**Website:**	http://jp.ute.com
Asia & Pacific / Middle East		**Latin America**	
Tel:	+886-2-27911556	**Tel:**	+52-55-5171-0528
E-mail:	info@apac.ute.com info@india.ute.com info@mideast.ute.com	**E-mail:**	info@latin.ute.com
Address:	4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan	**Address:**	17171 Park Row, Suite 210 Houston, TX 77084USA (Rep.)
Website:	http://apac.ute.com / http://mideast.ute.com	**Website:**	http://latin.ute.com
North America		**Please scan QR Code to visit us :**	
Tel:	+1-714-8926400		
E-mail:	info@us.ute.com / info@can.ute.com		
Address:	6182 Katella Ave, Cypress, CA 90630, USA		
Website:	http://us.ute.com		

Warranty Policy

The items covered under the Unitech Limited Warranty are free from defects during normal use.
The warranty period is varied from each country. Please consult with your supplier or Unitech local office for actual length of warranty period to your purchased product.

Warranty becomes void if equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

Table of Contents

Chapter 1 - Overview

1.1 Package

Please make sure the following contents are in the MS836B gift box.
If something is missing or damaged, please contact your Unitech representative.

The package contents (without cradle):

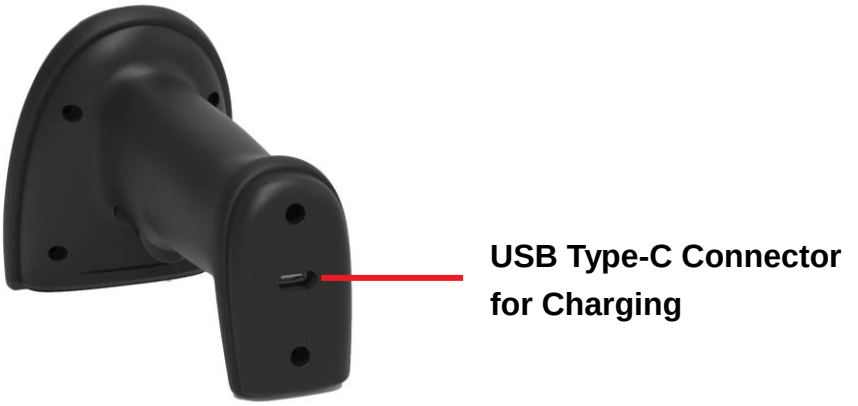
- MS836B Scanner with Battery
- USB Type-C Charging Cable
- 2.4G Receiver
- Quick Start Guide
- Regulatory Compliance Statements

Note: Please charge with USB Type-C Charging cable.

NOTE: ***The barcode with an asterisk (*) which appears in the following chapters indicates that it is the default option for the corresponding setting.***

1.2 Product Detail

- Scanner details



1.3 Specifications

Optical & Performance	
Sensor	1D Laser Engine
Aiming Element	Laser
Ambient Light	0-100,000 Lux
Scan Rate	100 times/ sec
Skew Angle	±60°
Memory	16MB
Optical Resolution	4mil（code 39）
Depth of Field	10mm-265mm(13 mil, EAN13, PCS=90%)
Communication	
Radio	2.4G Wireless
Wireless Coverage	2.4G: 100M (line of sight)
Interface/ Profile	2.4G: USB Bluetooth: HID, BLE ,SPP
Host Interface supported	USB Type-C
Mechanical	
Dimension	174mm × 72mm × 96mm (L x W x H)
Weight	216g
Functionality	
Operation Mode	Trigger Mode, Buffer Mode

Regulatory Approvals	
CE, FCC, BSMI, VCCI	
Symbologies	
1D	Industoal 2 of 5, Standard 25, Matrix 25, China post 25, Code 11, Codabar, MSI/plessey, UK/plessey, Code39 (Standard 39& Full ASCII Code 39) Code 32, Code 93, Code128, UPC-A, UPC-E, EAN 13, EAN 8, UPC/EAN add-on 2/5, ISBN, ISSN, GS1(RSS) RSS-14, LIMITED, EXPENDED, Include GS1 STACK
Data Formatting	Prefix, Suffix, Code ID
Electrical	
Operation Voltage	DC 5V
Current Consumption	Operation mode:＜135 mA Standby mode:＜85mA
Indicator	Buzzer LED light
Battery Type	Lithium-ion
Battery Capacity	2600mAh 18650 battery
Battery Charging time	Fully charged in 5 hours
Operating Time	Over 30 hours (continuous working)
Environmental	
Mechanical Shock	1.5m onto concrete (scanner only)
Operating Temperature	-10°C to 50°C
Storage Temperature	-20°C to 60°C
Relative Humidity	5% to 90% non-condensing
IP Rating	IP42

Package Contents
• MS836B scanner • 2.4G Receiver • USB Type-C Charging Cable

1.4 Getting Started

1.4.1 How to pair the scanner with the receiver

Connect the USB receiver to the host. Plug the USB Receiver to a free USB port of a host computer. The MS836B is now ready to use.

■ LED Description

Green Light	Slow flash	Scanner is not connected to receiver or USB.
	Flash	Scanner is connected to receiver or USB.
	Quick flash	Entering the pairing mode.
	Flash once	Flash once : Scanned data being uploaded successfully.

Scanner Turn on: Long press the trigger key for 2 seconds until you hear a long beep sound.

1.4.2 Test & Finish

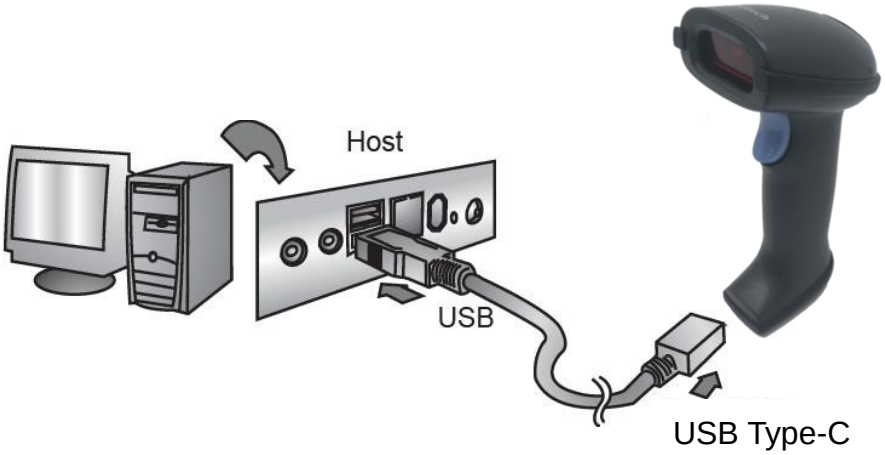
Open a word processing program such as Microsoft Word or Notepad and scan the following barcode:

If the word "Unitech" appears on the screen, you have successfully installed your scanner.

Note: To scan a barcode, make sure the aiming beam crosses every bar and space of the barcode.

1.5 Battery Charging

Before you use the MS836B for the first time, we strongly recommend charging the battery. It takes approximately 5 hours to fully charge the battery. To charge the scanner without a cradle, please follow the instructions below. Please only use the USB Type-C cable which came with the package.



■ Charging through USB Type-C cable

To charge MS836B, please connect scanner with host PC through USB Type-C cable.

1.6 LED / Beeper Indicator

Division	Red LED Light	Green LED Light	Beep / Sound
Battery charging	Red light always on		
Battery Fully charged	Red light out		
Power On			One Long Beep
2.4 G Receiver Pairing		Green light keeps flashing	
Bluetooth Pairing		Green light keeps flashing	
Bluetooth SPP/BLE Pairing		Slow Flash	
USB connection success		Green light always on	One short Beep
2.4 G Receiver connection success		Green light always on	One short Beep
Bluetooth connection success		Green light always on	One short Beep
Barcode Good Read		Green light flash once	One short Beep
Wireless Setting Sound			Two High Beeps
Bluetooth Transmission Failed			Three short Beeps
Mode Setting success			High and Low Beeps
Data saved success			High and Low Beeps
Data upload complete			High and Low Beeps
Auto Power Off			High and Low Beeps
USB disconnection			Three short Beeps
2.4 G Receiver disconnection			Three short Beeps
Bluetooth disconnection			Three short Beeps
Data upload failed			Three short Beeps
Flash memory is full			Three short Beeps
Auto Power Off under Low Battery			Three short Beeps and High and Low Beeps

Chapter 2 – Command Setting

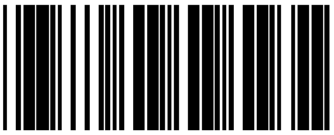
2.1 Barcode Programming

Use of Programming Barcodes

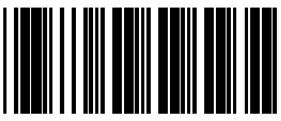
Before starting scanning any setting barcode, please do follow the instruction below. Scanning the Enter Setup barcode can enable the engine to enter the setup mode. Then you can scan a number of programming barcodes to configure your engine. To exit the setup mode, scan the Exit Setup barcode.

Enter Setup

Exit Setup



Exit Setup



2.2 Scanner Type

2.2.1 Wireless Communication Mode

2.4 G Receiver Mode *

Note: For more information, please refer to • 2.6 Wireless 2.4G Setting.

Bluetooth HID Mode

Note: For more information, please refer to • 2.7.1Bluetooth HID Mode

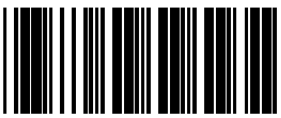
Bluetooth BLE Mode

Bluetooth SPP Mode

Note:

- ***To switch the different scanner type, please do un-pair first and then select the scanner type and redo Bluetooth connection.***

Exit Setup



2.2.2 USB Interface Mode

USB-HID *

USB-COM

2.3 Output Method

USB Priority Output*

Simultaneous Output (USB,2.4G& Bluetooth)

2.4 System Reset

Factory Default

Software Decoder Version

Wireless Version

Exit Setup

2.5 Operation Mode

Wedge Mode

Batch Mode

Auto Mode *

2.5.1 Batch Mode

Upload all data

Note: Scan the "Upload all data" code to complete the data transfer.

Clear all data

Note: Clear all data mode is only effective under Batch mode.

Display stored data

Exit Setup

2.6 Wireless 2.4G Setting

2.4G Receiver Mode *

Scan the "2.4G Receiver Mode" barcode to enter the 2.4G receiver mode automatically and connect to the receiver which is matched last time by default.

One scanner pairing to one receiver is the factory default. If you want to pair with a new receiver, please refer to the following instructions.

Pairing with new receiver

There are two ways to pair with the new receiver:

A. Scan the "2.4G Receiver Pairing" barcode.

B. Long press the button for about 16 seconds.

A. Scan the "2.4G Receiver Pairing" barcode

(1) Remove the original receiver.

(2) Scan the following barcode:

2.4G Receiver Pairing

(3) Insert the receiver you want to connect with into your device. You will hear a short beep when pairing succeeds.

B. Long press the button for about 16 seconds

(1) Remove the original receiver.

(2) Long press the button for about 16 seconds. During the process, there will be 2 sounds respectively; first sound at the 8th second, the second at the 16th second, then release the button.

Exit Setup

Long press 16 seconds to Enter 2.4G pairing Mode

Enable

Disable *

Exit 2.4G Pairing:

(1) When the Receiver is matched, it will prompt once and ending pairing.
(2) Double-click the button to exit and it will prompt once.
(3) If the receiver is not connected within 1 minute, it will exit automatically and with 3 beeps.

Note: When exiting the pairing, if the receiver is not connected, it will connect to the receiver which is matched last time automatically by default.

2.7 Bluetooth

2.7.1 Bluetooth HID Mode

Bluetooth HID Mode

***Note*:** Scan this barcode to enter the "Bluetooth HID Mode" and it will connect to the Bluetooth® which is matched last time automatically by default.

2.7.2 Bluetooth HID Pairing

Bluetooth HID Pairing

1. Enter "Bluetooth HID Pairing" mode:

Scan this barcode to enter the "Bluetooth HID Pairing" mode, or long press 8 seconds until you hear a short beep, then releae the button.

2. Exit "Bluetooth HID Pairing" mode:

(1) Double-click the button, and you will exit the "Bluetooth HID Pairing" mode after one short beep.

(2) If the Bluetooth is not matched within 1 minute, it will exit automatically and with three short beeps.

Enable/Disable "Bluetooth HID Pairing" mode:

Enable

Disable *

Exit Setup

2.7.3 Show & Hide the HID Virtual Keyboard in IOS

Show & Hide the HID Virtual Keyboard in IOS

Note: Quick press three times to enable show or hide IOS virtual keyboard function.

2.7.4 Bluetooth HID Transfer Rate Setting

Fast

Medium *

Low

Ultra-low

***Note*:**

1. Fast speed uploading is recommended in IOS.
2. Set the corresponding speed according to the response speed of the phone under Android system.
3. When the uploaded data is messed up and lost, try to turn down the speed.

Exit Setup

2.7.5 Bluetooth BLE/SPP Mode

Bluetooth BLE Mode

Bluetooth SPP Mode

2.7.6 Bluetooth Name Setting

Bluetooth Name Setting

^&C0C&^MS836B

The front character "^&C0C&^" is fixed and 'MS836B' is the name that needs to be set.
(For example, if you want to set the scanner name as "123", you will need to create a barcode named "^&C0C&^123".)

Note:

1. The Bluetooth® name can only be set within 24 bytes.
2. The name of Bluetooth HID/SPP/BLE all changed after modifying.

Bluetooth Name ASCII Setting

Steps:

1. Scan "Bluetooth Name ASCII Setting" barcode.
2. Please refer to the Appendix C-ASCII code table (for RFID module), and scan the contents that needs to be added in sequence.
3. Scan "Save and Finish Setting" barcode below.

Exit Setup

Save and Finish Setting

Note: The Bluetooth® name can only be set within 24 bytes.

Bluetooth Name Default

Note:

Scan the "Bluetooth Name Default" barcode Or the "Factory Default" barcode to clear the customized Bluetooth® names.

2.7.7 Get Bluetooth Name

Get Bluetooth Name

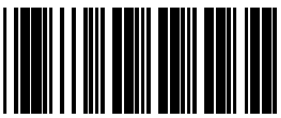
Note: This code only worked under the Bluetooth HID/SPP/BLE mode.

2.7.8 Encoding

Keyboard Function Key *

Send ASCII

Exit Setup



2.8 Data Terminator

CR *

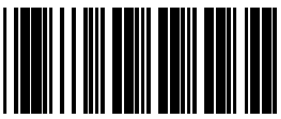
CR/LF

LF

None

TAB

Exit Setup



2.9 Auto Power Off After Idle

Disable

Immediate Sleep

10s

30s

1min *

2min

5min

10min

30min

Exit Setup

2.10 Beeper Control

Off

Note: The Off Code only turns off the short high beep of data send, the setting sound still exists

High *

Medium

Low

2.11 Good Read Indicator

Default Beeps *

One Beep

Exit Setup

2.12 Sound Frequency Setting

2048 Hz

2700 Hz

2.13 Battery Display

Display Battery Capacity

2.14 HID Keyboard Case

Normal Letter Case *

All Upper Case

All Lower Case

Case Inversion

Exit Setup

2.15 HID Keyboard Language

USA *

German

France

Italy

Canadian

Spain

Brazil

Sweden

Portugal

Belgium

Exit Setup

Turkey-F

Turkey-Q

Italian14

Netherlands

Poland

Finland

Latin America

Serbia

Hungary

Denmark

Norway

Exit Setup

Japan

2.16 GS Characters Conversion

None *

GS Converts To <GS>

GS Converts To |

GS converts to]

GS Converts To ^]

Exit Setup

2.17 Reading Length Setting for all Codes

Minimum length for all Codes

Maximum length for all Codes

Note: Reading length setting for all codes is used to limit the barcode length that can be read (is subjected to the data length).

Example:

Set the reading length as 5-10 digit.

Scan "Enter" "Minimum length for all Codes" "0" "0" "5" "Maximum length for all Codes" "0" "1" "0" "Exit". After that, any barcodes shorter than 5 digits or longer than "10" digits cannot be read successfully.

Exit Setup

2.18 Beep Tones

None

Beep Duration Short

Beep Duration Medium *

Beep Duration Long

Set as Customized Duration

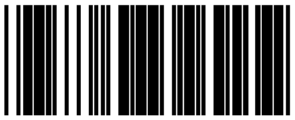
Customized Duration (0.01-2.55s)

Example:

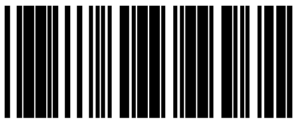
If scanner needs 200ms of customized duration, duration time T = N*10,
200 ms = N*10, N = 20.
So scan: "Enter" "Customize duration" "0" "2" "0" "Set as customized duration" "Exit".

Exit Setup

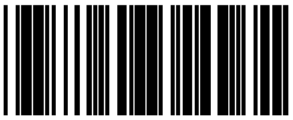
Low



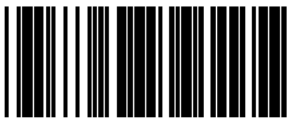
Medium *



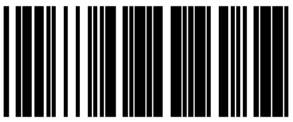
High



Set as Customized Tone



Customized Tone (100-2550Hz)



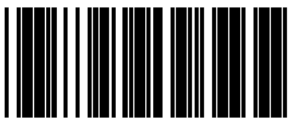
Example:

If scanner needs 200Hz of customized tone, customized tone = N*10,

200Hz = N*10, N = 20.

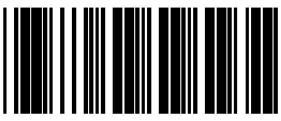
So scan: "Enter" "Customize tone" "0" "2" "0" "Set as customized tone" "Exit".

Starting Sound On *



Starting Sound Off

Exit Setup



Chapter 3 – Symbology

3.1 Return to Factory Default for all Symbologies

Return to Factory Default

Note: In the following chapters, please refer to A.1-ASCII Code Table (for Software Decoder Version) when Setting Length Range and Setting Prefix/Suffix for Symbologies.

***Note**:* For the default values of each symbology's length within range, please refer to Appendix E**.**

3.2 Codabar

Enable *

Disable

3.2.1 Check Digit Verification

Enable

Disable *

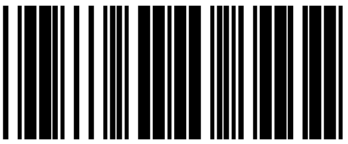
Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

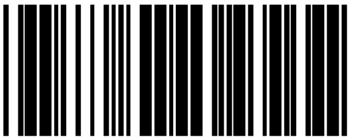
Exit Setup

3.2.2 Transmit Start/Stop Character

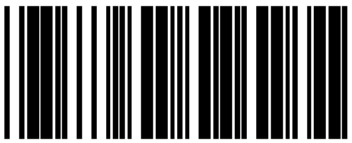
Transmit Start/Stop Character



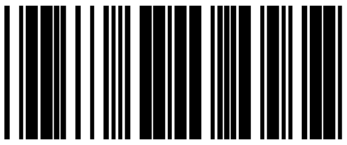
Do Not Transmit Start/Stop Character *



Transmit Start/Stop ABCD/ABCD



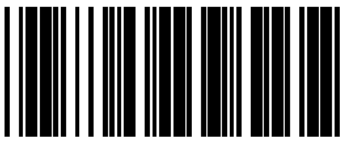
Transmit Start/Stop ABCD/TN*E



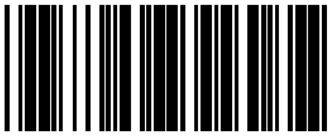
Exit Setup

3.2.3 Set Length Range for Codabar

Minimum Length

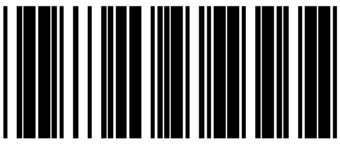


Maximum Length

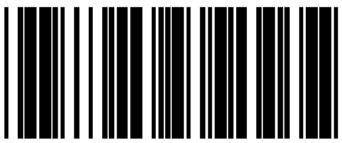


3.2.4 Prefix/Suffix for Codabar

Codabar Prefix



Codabar Suffix



Exit Setup

3.3 Code 39

Enable *

Disable

3.3.1 Code 39 Check Digit Verification

Enable

Disable *

Do Not Transmit Check Digit After Verification *

Transmit Check Digit After Verification

Exit Setup

3.3.2 Transmit Start/Stop Character

Transmit Start/Stop Character

Do Not Transmit Start/Stop Character *

3.3.3 Code 39 Full ASCII

Full ASCII 39 *

3.3.4 Standard 39

Exit Setup

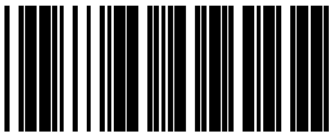
3.3.5 Set Length Range for Code 39

Minimum Length

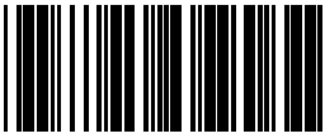
Maximum Length

3.3.6 Prefix/Suffix for Code 39

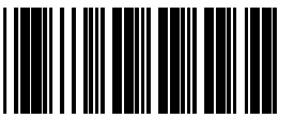
Code 39 Prefix



Code 39 Suffix



Exit Setup



3.4 Code 32

3.4.1 Code 32

Enable

Disable *

3.4.2 Transmit Code 32 Prefix A

Transmit Code 32 Prefix A

Do Not Transmit Code 32 Prefix A *

Exit Setup

3.4.3 Transmit Code 32 Check Digit

Transmit Code 32 Check Digit

Do Not Transmit Code 32 Check Digit *

3.4.4 Prefix/Suffix for Code 32

Code 32 Prefix

Code 32 Suffix

Exit Setup

3.5 Interleaved 2 of 5

Enable *

Disable

3.5.1 Interleaved 2 of 5 Check Digit Verification

Enable

Disable *

Transmit Check Digit

Do Not Transmit Check Digit *

Exit Setup

Transmit the first 0 *

Do Not Transmit the first 0

3.5.2 Set Length Range for Interleaved 2 of 5

Minimum Length

Maximum Length

3.5.3 Prefix/Suffix for Interleaved 2 of 5

Interleaved 2 of 5 Prefix

Interleaved 2 of 5 Suffix

Exit Setup

3.6 Industrial 2 of 5

Enable

Disable*

3.6.1 Check Digit Verification

Enable

Disable *

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

Exit Setup

3.6.2 Set Length Range for Industrial 2 of 5

Minimum Length

Maximum Length

3.6.3 Prefix/Suffix for Industrial 2 of 5

Industrial 2 of 5 Prefix

Industrial 2 of 5 Suffix

Exit Setup

3.7 Matrix 2 of 5

Enable

Disable *

3.7.1 Check Digit Verification

Enable

Disable *

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

Exit Setup

3.7.2 Set Length Range for Matrix 2 of 5

Minimum Length

Maximum Length

3.7.3 Prefix/Suffix for Matrix 2 of 5

Matrix 2 of 5 Prefix

Matrix 2 of 5 Suffix

Exit Setup

3.8 Chinese Postal 2 of 5

Enable

Disable *

3.8.1 Check Digit Verification

Enable

Disable *

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

Exit Setup

3.8.2 Set Length Range for Chinese Postal

2 of 5

Minimum Length

Maximum Length

3.8.3 Prefix/Suffix For Chinese Postal 2 of 5

Chinese Postal 2 of 5 Prefix

Chinese Postal 2 of 5 Suffix

3.9 Standard 2 of 5

Enable

Disable *

3.9.1 Check Digit Verification

Enable

Disable *

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

Exit Setup

3.9.2 Set Length Range for Standard 2 of 5

Minimum Length

Maximum Length

3.9.3 Prefix/Suffix for Standard 2 of 5

Standard 2 of 5 Prefix

Standard 2 of 5 Suffix

Exit Setup

3.10 MSI

Enable

Disable *

3.10.1 Check Digit Verification

Enable

Disable *

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

Exit Setup

Verify Second Check Digit *

Do Not Verify Second Check Digit Verification *

Verify First Check Digit, MOD11

Verify First Check Digit, MOD10 *

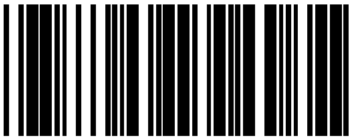
Verify Second Check Digit, MOD11

Verify Second Check Digit, MOD10 *

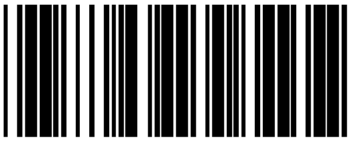
Exit Setup

3.10.2 Set Length Range for MSI

Minimum Length

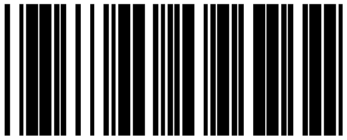


Maximum Length

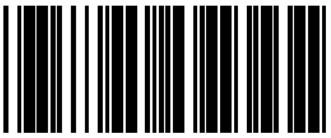


3.10.3 Prefix/Suffix for MSI

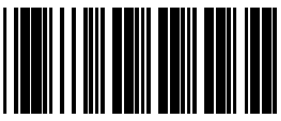
MSI Prefix



MSI Suffix



Exit Setup



3.11 Code 93

Enable *

Disable

3.11.1 Check Digit Verification

Enable

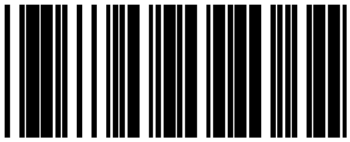
Disable*

Exit Setup

3.11.2 Set Length Range for Code 93

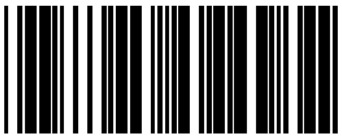
Minimum Length

Maximum Length

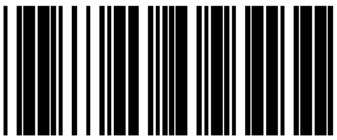


3.11.3 Prefix/Suffix for Code 93

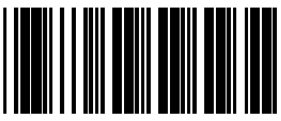
Code 93 Prefix



Code 93 Suffix



Exit Setup



3.12 Code 11

Enable

Disable *

3.12.1 Check Digit Verification

Verify First Check Digit

Do Not Verify First Check Digit*

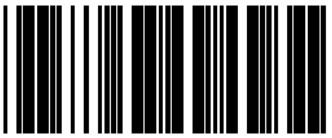
Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification *

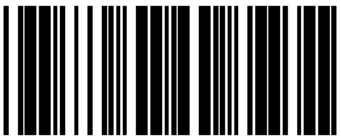
Exit Setup

Verify Second Check Digit *

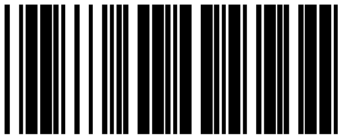
Do Not Verify Second Check Digit



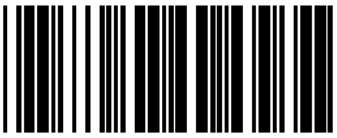
Verify First Check Digit, MOD09



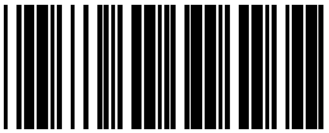
Verify First Check Digit, MOD10 *



Verify Second Check Digit, MOD09



Verify Second Check Digit, MOD10 *



Exit Setup

3.12.2 Set Length Range for Code 11

Minimum Length

Maximum Length

3.12.3 Prefix/Suffix for Code 11

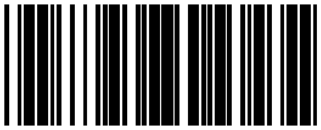
Code 11 Prefix

Code 11 Suffix

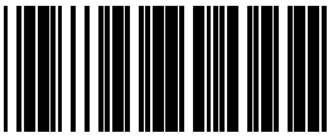
Exit Setup

3.13 Code 128

Enable *

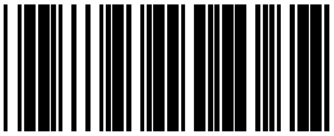


Disable



3.13.1 UCC 128

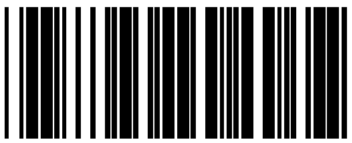
Enable



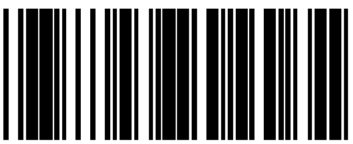
Disable *

3.13.2 Transmit Check Digit

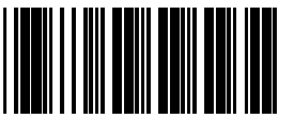
Transmit Check Digit



Do Not Transmit Check Digit *



Exit Setup



3.13.3 Set Length Range for Code 128

Minimum Length

Maximum Length

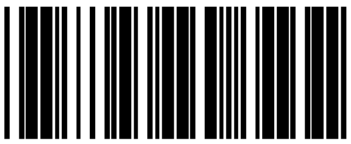
3.13.4 Prefix/Suffix for Code 128

Code 128 Prefix

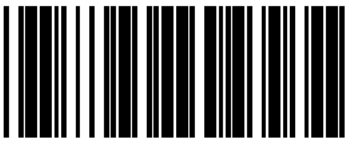
Code 128 Suffix

3.14 GS1 Databar

GS1 Databar Enable All *



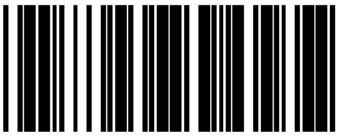
GS1 Databar Disable All



Note: If you scan the GS1 Databar disable all, you have to scan the GS1 Databar Enable all before scanning the following barcodes.

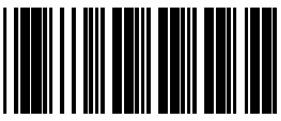
3.14.1 GS1 DataBar-14

Enable *



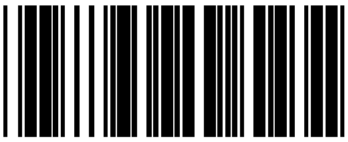
Disable

Exit Setup



3.14.2 Transmit GS1 DataBar-14 Check Digit

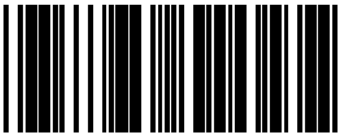
Transmit GS1 Databar Check Digit *



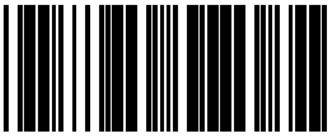
Do Not Transmit GS1 DataBar Check Digit

3.14.3 Prefix/Suffix for GS1 Databar-14

GS1 Databar-14 Prefix



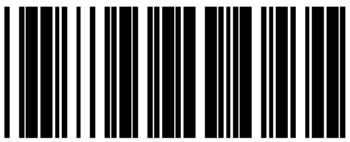
GS1 Databar-14 Suffix



3.14.4 AI_GS1 Databar-14

Enable *

Disable



Exit Setup

3.14.5 GS1 DataBar Limited

Enable *

Disable

3.14.6 Transmit GS1 DataBar Limited Check Digit

Transmit GS1 DataBar Limited Check Digit *

Do Not Transmit GS1 DataBar Limited Check Digit

Exit Setup

3.14.7 AI Limited

Enable *

Disable

3.14.8 Prefix/Suffix for GS1 Databar Limited

GS1 Databar Limited Prefix

GS1 Databar Limited Suffix

3.14.9 GS1 DataBar Expanded

Enable *

Disable

Exit Setup

3.14.10 Set Length Range for GS1 DataBar Expanded

Expanded Minimum Length

Expanded Maximum Length

3.14.11 Prefix/Suffix for GS1 Databar Exapanded

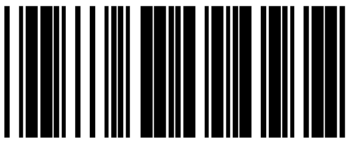
GS1 Databar Exapanded Prefix

GS1 Databar Exapanded Suffix

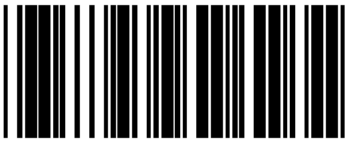
Exit Setup

3.15 UPC-A

Enable *

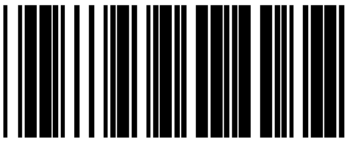


Disable

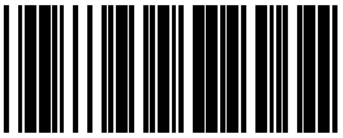


3.15.1 Transmit UPC-A Check Digit

Transmit UPC-A Check Digit *

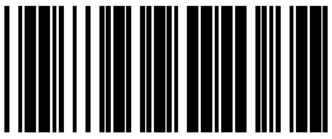


Do Not Transmit UPC-A Check Digit

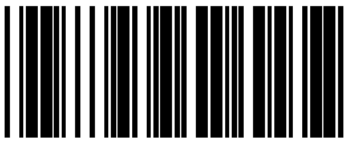


3.15.2 UPC-A Convert to EAN-13

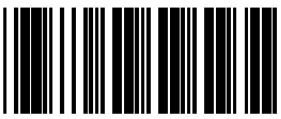
Enable



Disable *



Exit Setup



3.15.3 Transmit UPC-A Leading Digit

Transmit UPC-A Leading Digit *

Do Not Transmit UPC-A Leading Digit

3.15.4 Prefix/Suffix for UPC-A

UPC-A Prefix

UPC-A Suffix

Exit Setup

3.16 UPC-E

Enable *

Disable

3.16.1 Transmit UPC-E Check Digit

Transmit UPC-E Check Digit *

Do Not Transmit UPC-E Check Digit

3.16.2 Convert UPC-E to UPC-A

Enable

Disable *

3.16.3 Convert UPC-E to EAN-13

Enable

Disable *

Note: If "Covert to UPC-A" and "Convert to EAN-13" are enabled both, it will convert to EAN-13.

3.16.4 Transmit Lead Zero on UPC-E

Transmit Lead Zero on UPC-E *

Do Not Transmit Lead Zero on UPC-E

3.16.5 Prefix/Suffix for UPC-E

UPC-E Prefix

UPC-E Suffix

Exit Setup

3.17 EAN/JAN-8

Enable *

Disable

3.17.1 Transmit EAN-8 Check Digit

Transmit EAN-8 Check Digit *

Do Not Transmit EAN-8 Check Digit

3.17.2 Convert EAN-8 to UPC-A

Enable

Disable *

Exit Setup

3.17.3 Convert EAN-8 to EAN-13

Enable

Disable *

3.17.4 Transmit Lead Zero on EAN-8

Transmit Lead Zero on EAN-8

Do Not Transmit Lead Zero on EAN-8 *

***Note*:** If Convert to "UPC-A" and "Convert to EAN-13" are enabled both, it actually converts to EAN-13.

3.17.5 Prefix/Suffix for EAN-8

EAN-8 Prefix

EAN-8 Suffix

Exit Setup

3.18 EAN/JAN-13

Enable *

Disable

3.18.1 Transmit EAN-13 Leading Digit

Transmit EAN-13 Leading Digit *

Do Not Transmit EAN-13 Leading Digit

3.18.2 Transmit EAN-13 Second Digit

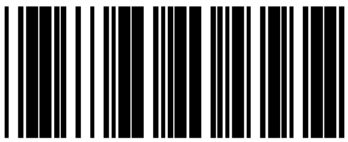
Transmit EAN-13 Second Digit *

Do Not Transmit EAN-13 Second Digit

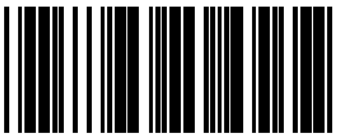
Exit Setup

3.18.3 Prefix/Suffix for EAN-13

EAN-13 Prefix

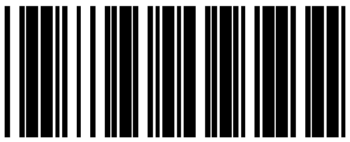


EAN-13 Suffix

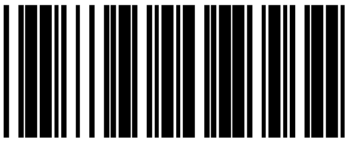


3.18.4 378/379 Supplemental Mode

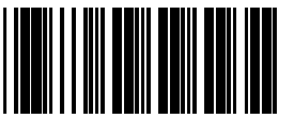
Enable



Disable *



Exit Setup



3.18.5 978/977 Supplemental Mode

Enable

Disable *

Note: Enable _addenda 2 digit or _addenda 5 digit before enable " Supplemental Mode".

3.18.6 434/439 Supplemental Mode

Enable

Disable *

3.18.7 419/414 Supplemental Mode

Enable

Disable *

Exit Setup

3.18.8 491 Supplemental Mode

Enable

Disable *

3.18.9 978/192 Supplemental Mode

Enable

Disable *

Exit Setup

3.19 ISBN

Enable

Disable *

3.20 ISSN

Enable

Disable *

Exit Setup

3.21 Supplements +2/+5

3.21.1 Addenda 2 Digit

Enable

Disable*

3.21.2 Addenda 5 Digit

Enable

Disable*

3.21.3 Space Separator

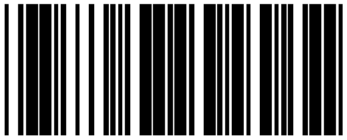
Enable

Disable *

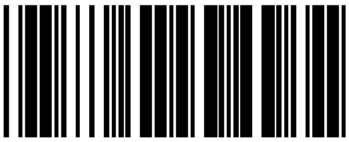
Exit Setup

3.22 UK/Plessey

Code UK Enable *

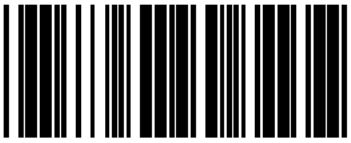


Code UK Disable

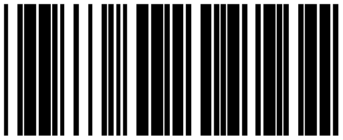


3.22.1 Check Digit Verification

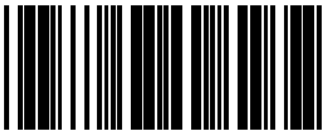
Enable *



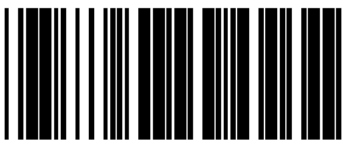
Disable



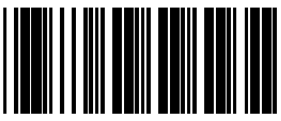
Transmit Check Digit After Verification



Do Not Transmit Check Digit After Verification *

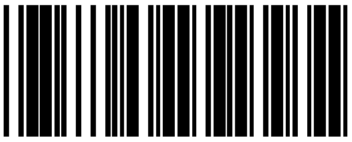


Exit Setup

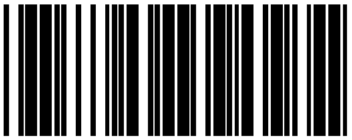


3.22.2 Set Length Range for Code UK

Minimum Length

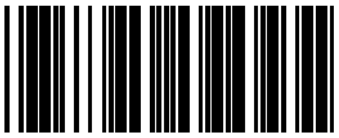


Maximum Length

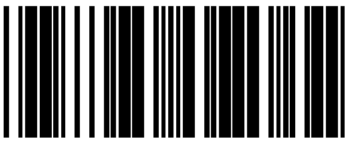


3.22.3 Prefix/Suffix for Code UK

Code UK Prefix



Code UK Suffix



Exit Setup

3.23 Code ID

On

Off *

3.24 Febraban Transfer Function

On

Off *

Exit Setup

Appendix A – Digit Barcodes

A.1 ASCII Code Table (for Software Decoder Version)

SOH (start of headline)

STX (start of text)

ETX

EOT

ENQ

ACK

BEL

BS

HT

LF

VT

FF

CR

SO

SI

DLE

DC1

DC2

Exit Setup

DC3

DC4

NAK

SYN

ETB

CAN

EM

SUB

ESC

FS

GS

RS

US

SP

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Exit Setup

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Exit Setup

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V

W

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Exit Setup

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Exit Setup

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Insert

Del

Function Key F1

Function Key F2

Function Key F3

Function Key F4

Function Key F5

Function Key F6

Function Key F7

Exit Setup

Function Key F8

Function Key F9

Function Key F10

Function Key F11

Function Key F12

TAB

Back TAB

ESC

Enter

Home

PageUp

Return

PageDown

End

RightArrow

LeftArrow

DownArrow

UpArrow

Ctrl On

Ctrl Off

Alt On

Alt Off

Shift On

Shift Off

Exit Setup

Win

Exit Setup

A.2 Default Barcode Parameter Setting Table

Types	Read	Verify Check	Transmit checking digt	Minimum length	Maxnimum length	ID
Industrial 2 of 5	N	N	N	4	64	A
Standard 2 of 5	N	N	N	4	64	B
MatriX 2 of 5	N	N	N	6	64	C
Chinese Postal 2 of 5	N	N	N	6	64	D
Interleave 2 of 5	YES	N	N	6	64	E
Code 11	N	YES	N	4	64	F
Codabar	YES	N	N	4	64	G
Code MSI	N	YES	N	4	64	H
Code UK	YES	YES	N	1	64	I
Code39	YES	N	N	1	64	J
Code32	N	N	N	8	8	K
Code93	YES	YES	N	1	64	L
EAN-13	YES	YES	N	13	13	O
UPC-A	YES	YES	YES	12	12	P
EAN-8	YES	YES	YES	8	8	Q
UPC-E	YES	YES	YES	7	7	R
Code128	YES	YES	N	1	100	L
RSS Truncated	YES	N	N	14	14	S
RSS Limited	YES	N	N	14	14	T
RSS Expanded	YES	N	N	1	74	M
Gray background denotes default						

Exit Setup

A.3 Default Setting Table

List	Project Name	Description	Default
1	Scan mode		Manual scan
2	Interface setting		*Automatic
3	KB/USB	Keyboard language	US
4		Function keyboard	ON
5		Enable digital keypad	Disable
6		Caplock Ignore	Not ignore
7		KB clock	10K(slow)
8	Data editing	Terminator	Enter(0x0d)
9		Caps lock	Origianl data
10		Data inversion	Disable
11		CODE ID	OFF
12		Overall Prefix and Suffix	None
13		Overall decoding length limitation	None
14		Character delay	None
15		String delay	None
16	Beeper settings	Successful decoding sound tips	Middle tone, Long duration
17		Starting sound tips	ON
18	Other functions	Repeated	None
19		Inverse barcode decoding	OFF
20		Automatic induction	ON

Exit Setup

Appendix B – Hidden Character

B-1 Hide The Previous Character Shortcut Settings

The format is as follows: ^&601&^ to ^&6FF&^,01~FF are hidden digits.

Do not hide the previous characters *

Hide the first 1 bit

Hide the first 2 bits

Hide the first 3 bits

Hide the first 4 bits

Hide the first 5 bits

Hide the first 6 bits

Hide the first 7 bits

Hide the first 8 bits

Exit Setup

Hide the first 9 bits

Hide the first 10 bits

Hide the first 11 bits

Hide the first 12 bits

Hide the first 13 bits

Hide the first 14 bits

Hide the first 15 bits

Hide front Character

Hide Back Character

Saved and Finished Set

Exit Setup

B-2 Shortcut Settings to Hidden back character

The format is as follows: ^&701&^ to ^&7FF&^,01~FF are hidden digits.

Hide the last 1 bit

Hide the last 2 bits

Hide the last 3 bits

Hide the last 4 bits

Hide the last 5 bits

Hide the last 6 bits

Hide the last 7 bits

Hide the last 8 bits

Hide the last 9 bits

Hide the last 10 bits

Hide the last 11 bits

Hide the last 12 bits

Exit Setup

Hide the last 13 bits

Hide the last 14 bits

Hide the last 15 bits

Exit Setup

Appendix C – ASCII Code Table (for RFID Module)

Null

SOH(start of headline)

STX (start of text)

ETX

EOT

ENQ

ACK

BEL

BS

HT

LF

VT

FF

CR

SO

SI

DLE

DC1

DC2

DC3

DC4

NAK

SYN

ETB

CAN

Exit Setup

EM

SUB

ESC

FS

GS

RS

US

SP

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Exit Setup

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V

W

X

Y

Z

Exit Setup

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d e f

g h i

j k l

m n o

p q r

s t u

v w x

y z [

Exit Setup

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DEL

Caps Lock

Function Key F1

Function Key F2

Function Key F3

Function Key F4

Function Key F5

Function Key F6

Function Key F7

Function Key F8

Function Key F9

Function Key F10

Function Key F11

Function Key F12

PrintScreen

Scroll Lock

Pause

Insert

Home

PageUp

Delete

PageDown

End

RightArrow

LeftArrow

DownArrow

UpArrow

Num Lock(keypad)

/(keypad)

*(keypad)

Exit Setup

-(keypad)

+(keypad)

Enter(keypad)

1(keypad)

2(keypad)

3(keypad)

4(keypad)

5(keypad)

6(keypad)

7(keypad)

8(keypad)

9(keypad)

0(keypad)

.(keypad)

Exit Setup

Dec	Hex	Char
0	00	NUL (Null char.)
1	01	SOH (Start of Header)
2	02	STX (Start of Text)
3	03	ETX (End of Text)
4	04	EOT (End of Transmission)
5	05	ENQ (Enquiry)
6	06	ACK (Acknowledgment)
7	07	BEL (Bell)
8	08	BS (Backspace)
9	09	HT (Horizontal Tab)
10	0A	LF (Line Feed)
11	0B	VT (Vertical Tab)
12	0C	FF (Form Feed)
13	0D	CR (Carriage Return)
14	0E	SO (Shift Out)
15	0F	SI (Shift In)
16	10	DLE (Data Link Escape)
17	11	DC1 (XON) (Device Control 1)
18	12	DC2 (Device Control 2)
19	13	DC3 (XOFF) (Device Control 3)
20	14	DC4 (Device Control 4)
21	15	NAK (Negative Acknowledgment)
22	16	SYN (Synchronous Idle)
23	17	ETB (End of Trans. Block)
24	18	CAN (Cancel)
25	19	EM (End of Medium)
26	1A	SUB (Substitute)
27	1B	ESC (Escape)
28	1C	FS (File Separator)
29	1D	GS (Group Separator)
30	1E	RS (Request to Send)
31	1F	US (Unit Separator)

Exit Setup

Dec	Hex	Char
32	20	<SPACE>
33	21	!
34	22	"
35	23	#
36	24	$
37	25	%
38	26	&
39	27	'
40	28	(
41	29	)
42	2A	*
43	2B	+
44	2C	,
45	2D	-
46	2E	.
47	2F	/
48	30	0
49	31	1
50	32	2
51	33	3
52	34	4
53	35	5
54	36	6
55	37	7
56	38	8
57	39	9
58	3A	:
59	3B	;
60	3C	<
61	3D	=

Dec	Hex	Char
62	3E	>
63	3F	?
64	40	@
65	41	A
66	42	B
67	43	C
68	44	D
69	45	E
70	46	F
71	47	G
72	48	H
73	49	I
74	4A	J
75	4B	K
76	4C	L
77	4D	M
78	4E	N
79	4F	O
80	50	P
81	51	Q
82	52	R
83	53	S
84	54	T
85	55	U
86	56	V
87	57	W
88	58	X
89	59	Y
90	5A	Z
91	5B	[
92	5C	\
93	5D	]
94	5E	^

Dec	Hex	Char
95	5F	_
96	60	`
97	61	a
98	62	b
99	63	c
100	64	d
101	65	e
102	66	f
103	67	g
104	68	h
105	69	i
106	6A	j
107	6B	k
108	6C	l
109	6D	m
110	6E	n
111	6F	o
112	70	p
113	71	q
114	72	r
115	73	s
116	74	s
117	75	u
118	76	v
119	77	w
120	78	x
121	79	y
122	7A	z
123	7B	{
124	7C	|
125	7D	}
126	7E	~
127	7F	DEL

Appendix D – Function Code for Serial Port and USB Virtual Serial Port

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

Hex	Dec	Char
1A	26	SUB (Substitute)
1B	27	ESC (Escape)
1C	28	FS (File Separator)
1D	29	GS (Group Separator)
1E	30	RS (Request to Send)
1F	31	US (Unit Separator)

Appendix E – The Default Value Of Each Symbology's Length Within Range

Symbology	Default Minimum Length	Default Maximum Length
Industrial 2 of 5	4	64
Standard 2 of 5	4	64
Matrix 2 of 5	4	64
Chinese Postal 2 of 5	4	64
Interleaved 2 of 5	4	64
Code 11	4	64
Codabar	4	64
Code MSI	4	64
Code UK	1	64
Code 39	1	64
Code 32	8	8
Code 93	1	64
EAN-13	13	13
UPC-A	12	12
EAN-8	8	8
UPC-E	7	7
Code 128	1	100
GS1 Databar Truncated	14	14
GS1 Databar Limited	14	14
GS1 Databar Expanded	1	74