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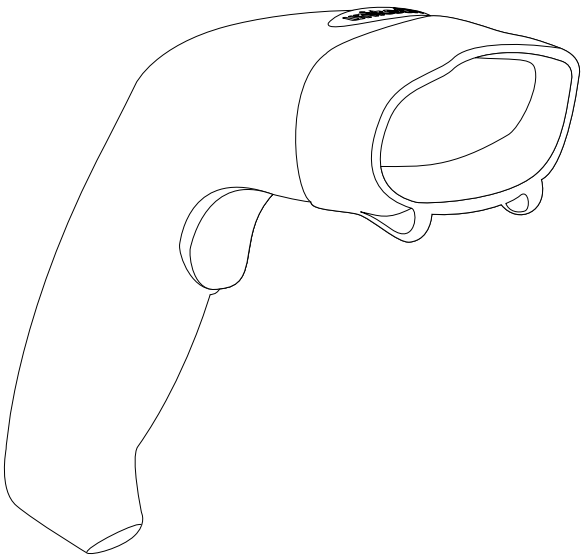
MS810 Laser Scanner



Product Reference Guide

Rev. A

About This Manual

This manual explains how to install, operate and maintain the Unitech MS810 Laser Scanner.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user‘s authority to operate the equipment.

Warranty

No warranty of any kind is made in regard to this material, including, but not limited to, implied warranties of merchantability or fitness for any particular purpose. We are not liable for any errors contained herein or for incidental or consequential damages in connection with furnishing, performance or use of this material. We shall be under no liability in respect of any defect arising from fair wear and tear, willful damage, negligence, abnormal working conditions, failure to follow the instructions and warnings, or misuse or alteration or repair of the products without written approval.

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Support

Unitech’s professional support team is available to quickly answer your questions or technical-related issues. Should an equipment problem occur, please contact the Unitech regional service representatives nearest you. Visit the websites, listed below, for complete contact information:

UTC (China) http://www.ute.com.cn

UTT (Taipei, Taiwan) http://www.unitech.com.tw

APAC (Taipei, Taiwan) http://www.unitech-adc.com

UTJ (Japan) http://www.unitech-japan.co.jp

UTA (USA, Canada) http://www. ute.com

UTA (Latin America) http://www.latin.ute.com

UTI (Europe) http://www.unitech-europe.nl

Table of Contents

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Chapter 1

Introduction

Introducing the MS810

The Unitech MS810 1D laser bar code scanner combines the best scanning performance and value. The device provides an accurate, easy, and fast method of data entry and data storage for computerized information systems. It is easy to install and does not require software or drivers to operate.

All the operating parameters are programmed by the bar code programming menu and stored in non-volatile RAM which can retain the settings after power is turned off.

The MS810 is a powerful and reliable handheld scanner without compromise. It is compatible with USB and K/B interfaces, and numerous configurations.

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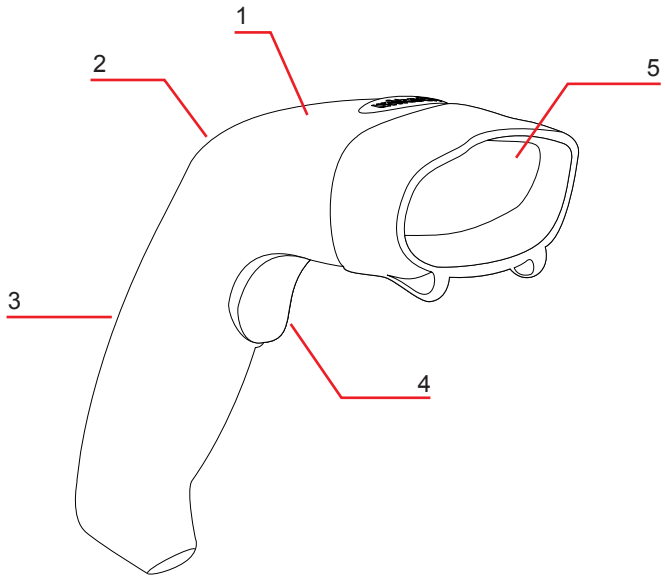
A Tour of the MS810

The following section describes the main components and features of the MR810.



No.	Component	Description
1.	LED (Blue/Red)	LED light indicates a proper decode.
2.	Speaker	Speaker beeps to indicate a proper decode.
3.	Handle	Ergonomic handle allows for an easy grip.
4.	Trigger	Trigger device allows for manual scanning.
5.	Exit Window	A scratch-resistant surface for high-quality scans.

NOTE: When a barcode is successfully decoded, the blue LED light on the back of the scanner will turn on and off, and the scanner will beep once. If the barcode is not successfully read, the LED will show red and the beep will not sound.

Laser Scan Engine Specifications

Performance

Light Source:	650 nm (+10/-5 nm) Laser Diode, 1mW (peak)
Depth of Field (40 mils):	Up to 420 mm Min.
Scan Speed:	80 scans/sec
Max Resolution:	0.1mm (4mils) - Code 39
Print Contrast:	45% or more
Scan Angle:	38º
Reading Indicator:	Blue/Red LED, Audible Beep
Interface:	USB, PS/2
Symbologies:	UPC/EAN/JAN, Code 39, Codabar, ITF 2/5, Code 128, Code 11, Code 93, MSI

Electrical Characteristics

Input Voltage:	5 VDC ± 0.5V
Current - Operating:	60mA
Regulation:	FCC Class A & CE & IEC60825 Class II, CDRH: Class II

Physical Characteristics

Dimensions (L x W x H):	93mm x 61mm x 182mm
Weight:	130 g +/- 5 g (without cable)
Case Material:	Rubber & ABS Plastic

Environmental Characteristics

Operating Temperature:	0ºC to 50ºC (32ºF to 122ºF)
Storage Temperature:	-20ºC to 60ºC (-4ºF to 140ºF)
Operating Humidity:	10% to 85% relative humidity, non-condensing
Storage Humidity:	5% to 95% relative humidity, non-condensing
Light Level:	Up to 36000 Lux
Shock:	1.5m drop onto concrete

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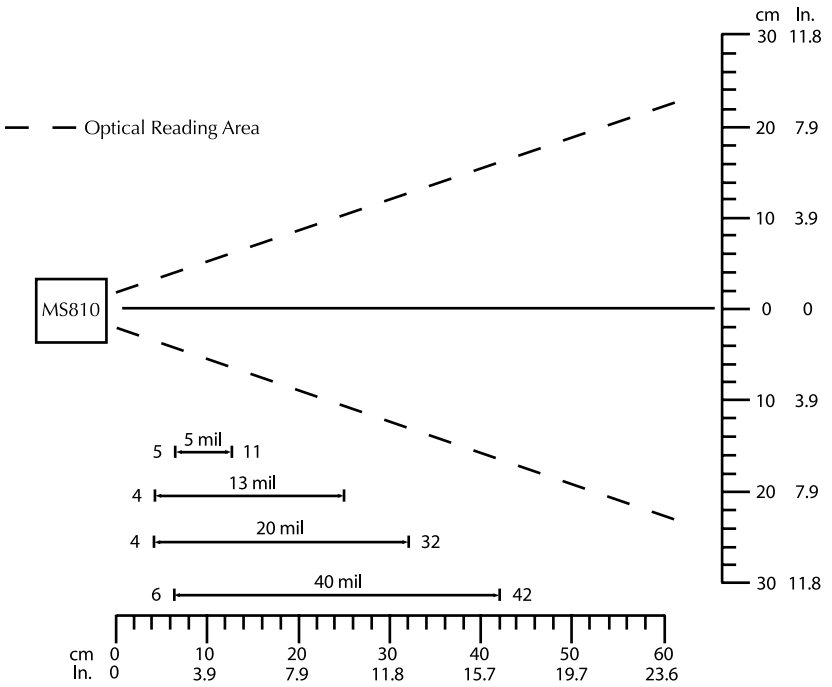
Decode Zone

The Decode Zone is based on Symbol's Standard Code 39 **PCS=0.9** lable in a 600 lux environment.



NOTE: Do not hold the scanner directly over a barcode at 90˚. Scanning light bounces directly back into the scanner from the barcode label is known as specular reflection which will create a "dead zone" where decoding is difficult. Practice a few times to find what range of angles works best.

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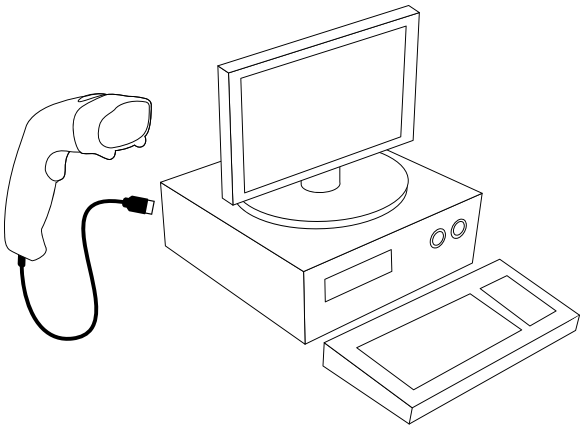
Chapter 2

Installation

USB Cable Connection

Insert the plug on the free end of the USB Communications Cable into any open USB port on the host as described below.



Reset Configuration to Defaults	
If you are unsure of the scanner configuration or have scanned the incorrect codes, please scan the “Reset Configuration to Defaults” barcode. This will reset the scanner to its factory defaults settings in USB interface.	

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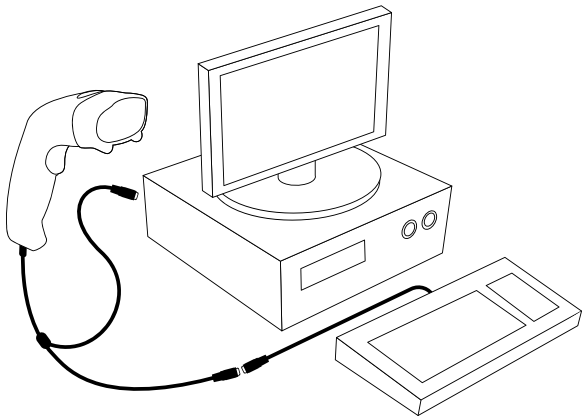
PS/2 (K/B) Cable Connection



Reset Configuration to Defaults	
If you are unsure of the scanner configuration or have scanned the incorrect codes, please scan the “Reset Configuration to Defaults” barcode. This will reset the scanner to its factory defaults settings in PS/2 interface.	

To Operate the MS810

1. Be sure that Host computer is turned OFF.
2. Ensure that all connections are secure.
3. Turn on your host computer and operate the scanner in Notepad, Word or your preferred software.
4. Aim the scanner at a barcode, ensure that the scanner is in trigger mode (default), and press the trigger.
5. On successful decode, the blue LED light will turn on and off. The scanner will beep once.

Maintenance

Cleaning the scan window is the only maintenance required. A dirty window may affect scanning accuracy. Wipe the scanner window gently with a lens tissue or other material suitable for cleaning optical material. Do not spray water or other cleaning liquids directly onto the window.

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Bar Code Setup Menu

Multi-Interface Functions - 1

OUTPUT FIRMWARE VERSION

0A

RESET CONFIGURATION TO DEFAULTS

0B

OUTPUT MODE

OUTPUT MODE – KEYBOARD / USB

000600

OUTPUT MODE – KEYBOARD / USB

000600

BUZZER / LED

GOOD READ BEEP TONE – NONE

014200

GOOD READ BEEP TONE - RESET

0B142

IMAGE

DECODE OPTIONS REVERSE IMAGE – ENABLE

01391

DECODE OPTIONS REVERSE IMAGE - DISABLE

01390

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Multi-Interface Functions - 1 (cont.)

CODE ID

DECODE OPTIONS SEND BAR CODE ID - DISABLE

01400

DECODE OPTIONS SEND BAR CODE ID – AS A PREFIX

01401

DECODE OPTIONS SEND BAR CODE ID - RESET

DECODE OPTIONS SEND BAR CODE ID – AS A SUFFIX

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Multi-Interface Functions - 2

READING MODE

SCAN MODE – SINGLE SCAN

013300

SCAN MODE – SINGLE SCAN NO TRIGGER

013301

SCAN MODE – MULTISCAN

013302

SCAN MODE – MULTISCAN NO TRIGGER

013303

SCAN MODE – CONTINUOUS SCAN

013304

SCAN MODE - PULSE

013305

LASER/CCD TIMEOUT – 5 SECONDS

0134005

LASER/CCD TIMEOUT – 2 SECONDS

0134002

LASER/CCD PULSE RATE - 7

013507

LASER/CCD PULSE RATE - 3

013503

Interface - Keyboard Wedge

WEDGE MODE - AUTODETECT

000200

PC Communication

WEDGE MODE – SCAN SET 2 ` PASS THRU

000204

TRANSMIT SPEED - 0

0000000

TRANSMIT SPEED

TRANSMIT SPEED - 25

0000025

KEYBOARD COUNTRY - USA

0005000

LANGUAGE

KEYBOARD COUNTRY - GERMAN

0005010

KEYBOARD COUNTRY – FRANCE

0005009

KEYBOARD COUNTRY - UNIVERSAL

0005025

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Bar Code Symbologies

Introduction

This section contains a list of supported symbologies with configurable settings for each symbology.

Symbologies On/Off - 1

CODE 11 - ENABLE

01261

CODE 11

CODE 11 - DISABLE

01260

CODE 39 ENABLE

00221

CODE 39

CODE 39 DISABLE

00220

FULL ASCII ENABLE

00231

FULL ASCII DISABLE

00230

Symbologies On/Off - 2

CODE 93 - ENABLE

00621

CODE 93

CODE 93 - DISABLE

00620

CODE 128 - ENABLE

00691

CODE 128

CODE 128 - DISABLE

00690

CODE 128 ISBT - ENABLE

00701

CODE 128 ISBT - DISABLE

00700

CODABAR

CODABAR - ENABLE

00851

CODABAR - DISABLE

00850

INTERLEAVED 2 OF 5

I2OF5 - ENABLE

00961

I2OF5 - DISABLE

00960

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Symbologies On/Off - 2 (cont.)

INDUSTRIAL 2 OF 5

ID2OF5 - ENABLE

01061

ID2OF5 - DISABLE

01060

Symbologies On/Off - 3

MSI - ENABLE

01151

MSI

MSI - DISABLE

01150

UPC/EAN

UPC-A ENABLE

00341

UPC-A DISABLE

00340

UPC-E ENABLE

00351

UPC-E DISABLE

00350

EAN-13 ENABLE

00361

EAN-13 DISABLE

00360

EAN-8 ENABLE

00371

EAN-8 DISABLE

00370

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Symbologies Setup - 1

CODE 11 ID CHARACTER – “m”

0131M

CODE 11

CODE 11 ID CHARACTER – “Z”

0131Z

CODE 11 LASER/CCD REDUNDANCY - ENABLE

01321

CODE 11 LASER/CCD REDUNDANCY - DISABLE

01320

CODE 39

CODE 39 SS CHAR - NONE

002700

CODE 39 SS CHAR ‘+’

002704

CODE 39 SEND START/STOP CHARS ENABLE

00281

CODE 39 SEND START/STOP CHARS DISABLE

00280

CODE 39 ID CHARACTER ‘a’

0031A

CODE 39 ID CHARACTER ‘z’

0031Z

Symbologies Setup - 1 (cont.)

CODE 39

CODE 39 LASER/CCD REDUNDANCY ENABLE

00331

CODE 39 LASER/CCD REDUNDANCY DISABLE

00330

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Symbologies Setup - 2

CODE 93

CODE 93 ID CHARACTER – “h”

0066h

CODE 93 ID CHARACTER – “Z”

0066Z

CODE 93 LASER/CCD REDUNDANCY - ENABLE

00681

CODE 93 LASER/CCD REDUNDANCY - DISABLE

00680

CODE 128

CODE 128 ID CHARACTER – ‘g’

0081g

CODE128 ID CHARACTER - ‘Z’

0081Z

CODE 128 LASER/CCD REDUNDANCY - ENABLE

00841

CODE 128 LASER/CCD REDUNDANCY - DISABLE

00840

CODABAR

CODABAR SEND START/STOP CHARS - ENABLE

00861

CODABAR SEND START/STOP CHARS - DISABLE

00860

Symbologies Setup - 2 (cont.)

CODABAR

CODABAR WIDE GAPS ALLOWED - ENABLE

00901

CODABAR WIDE GAPS ALLOWED - DISABLE

00900

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Symbologies Setup - 3

CODABAR

CODABAR ID CHARACTER – 'k'

0094k

CODABAR ID CHARACTER – 'Z'

0094Z

CODABAR LASER/CCD REDUNDANCY - ENABLE

00951

CODABAR LASER/CCD REDUNDANCY - DISABLE

00950

Interleaved 2 of 5

I2OF5 CHECK DIGIT - DISABLE

00970

I2OF5 CHECK DIGIT - ENABLE

00981

I2OF5 ID CHARACTER – 'i'

0104i

I2OF5 ID CHARACTER – 'Z'

0104Z

I2OF5 LASER/CCD REDUNDANCY - ENABLE

01051

I2OF5 LASER/CCD REDUNDANCY - DISABLE

01050

Symbologies Setup - 3 (cont.)

Industrial 2 of 5

ID2OF5 BAR START/STOP - ENABLE

01071

ID2OF5 BAR START/STOP - DISABLE

01070

ID2OF5 BAR START/STOP - ENABLE

0113j

ID2OF5 BAR START/STOP - DISABLE

0113Z

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Symbologies Setup - 4

ID2OF5 LASER/CCD REDUNDANCY - ENABLE

01141

ID2OF5 LASER/CCD REDUNDANCY - DISABLE

01140

MSI

MSI CHECK DIGIT – MOD 10

01160

MSI CHECK DIGIT –RESET

0B116

MSI ISBN ID CHARACTER –'f'

0053f

MSI ISBN ID CHARACTER –'Z'

0053Z

MSI LASER/CCD REDUNDANCY - ENABLE

01251

MSI LASER/CCD REDUNDANCY - DISABLE

01250

UPC/EAN

EXPAND UPC-E TO UPC-A ENABLE

00381

EXPAND UPC-E TO UPC-A DISABLE

00380

Symbologies Setup - 4 (cont.)

UPC/EAN

EXPAND UPC-A TO EAN-13 ENABLE

00391

EXPAND UPC-A TO EAN-13 DISABLE

00390

CONVERT EAN-13 TO ISBN ENABLE

00481

CONVERT EAN-13 TO ISBN DISABLE

00480

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Symbologies Setup - 5

SEND UPC-A CHECK DIGIT ENABLE

00421

SEND UPC-A CHECK DIGIT DISABLE

00420

SEND UPC-E CHECK DIGIT ENABLE

00431

SEND UPC-E CHECK DIGIT DISABLE

00430

SEND EAN-13 CHECK DIGIT ENABLE

00461

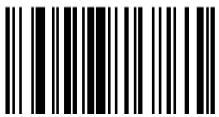
SEND EAN-13 CHECK DIGIT DISABLE

00460

SEND EAN-8 CHECK DIGIT ENABLE

00471

SEND EAN-8 CHECK DIGIT DISABLE



00470

UPC-A ID CHARACTER 'b'

0049b

UPC-A ID CHARACTER 'Z'

0049Z

Symbologies Setup - 5 (cont.)

UPC-E ID CHARACTER ‘c’

0050c

UPC-E ID CHARACTER ‘Z’

0050Z

EAN-13 ID CHARACTER ‘e’

0051e

EAN-13 ID CHARACTER ‘Z’

0051Z

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Symbologies Setup - 6

EAN-8 ID CHARACTER ‘d’

0052d

UPC/EAN

EAN-8 ID CHARACTER ‘Z’

0052Z

ISBN ID CHARACTER ‘f’

0053f

ISBN ID CHARACTER ‘Z’

0053Z

UPC/EAN SUPPLEMENTS - DISABLE

00550

UPC/EAN SUPPLEMENTS – 2 DIGIT ONLY

00551

UPC/EAN SUPPLEMENTS – 5 DIGIT ONLY

00552

UPC/EAN SUPPLEMENTS – 2 & 5 DIGIT

00553

UPC/EAN LASER/CCD REDUNDANCY ENABLE

00541

UPC/EAN LASER/CCD REDUNDANCY DISABLE

00540

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Edit Setup Bar Codes

EDIT #1 – STRIP 1 LEADING CHARACTER ON ALL BAR CODES THAT START WITH '12345'

02000101000000100000000112345

EDIT #1 - OFF

0B20001

EDIT #2 – STRIP 1 TRAILING CHARACTER

020002020000001

EDIT #2 – OFF

0B20002

EDIT #1 – FILTER LEADING SPACES

020001030000032

EDIT #1 - OFF

0B20001

EDIT #1 – FILTER TRAILING SPACES

020001040000032

EDIT #1 - OFF

0B20001

EDIT – FILTER ALL'-' CHARACTERS

020000050000045

EDIT – DISABLE FILTER OF ALL '-' CHARS

0B20000050000045

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Edit Setup Bar Codes (cont.)

EDIT - INSERT LEADING ZERO

020000060000000048

EDIT – DISABLE INSERT LEADING ZERO

0B20000060000000048

Macro/Special Keys Setup Bar Codes

MACRO #1 – FIND '1' AND REPLACE WITH 'ONE'

02010101011ONE

MACRO #1 - DISABLED

0B20101

MACRO #2 – FIND '2' AND REPLACE WITH 'TWO' FOR CODE 39 ONLY

0201023012TWO

MACRO #2 - DISABLED

0B20102

MACRO – FIND '0' AND REPLACE WITH 'A'

02010001010A

MACRO – FIND '0' AND REPLACE WITH 'A' - DISABLE

0B2010001010A

SPECIAL KEY –MAP F3 TO '0'

0162048

SPECIAL KEY – DISABLE F3 KEY MAPPING

0B162

SPECIAL KEY – MAP KEYPAD ENTER TO '2'

0182050

SPECIAL KEY – DISABLE KEYPAD ENTER MAPPING

0B182

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Termination String Setup Bar Codes

STRING #1 – TERMINATION CHAR - CR

0202011000$0D

STRING #1 – TERMINATION - LF

0202011000$0A

STRING #1 – TERMINATION CR+LF

0202011000$0D$0A

STRING #1 - DISABLE

0B20201

STRING #2– CODE 128 TERMINATION CHAR - CR

0202021080$0D

STRING #2 – CODE 128 TERMINATION CHAR - LF

0202021090$0A

STRING #2– CODE 128 TERMINATION CHAR – CR+LF

0202021080$0D$0A

STRING #2– CODE 128 TERMINATION CHAR - REMOVED

0B20202

STRING – CODE 39 TERMINATION CHAR - TAB

0202001020$09

STRING – CODE 39 TERMINATION CHAR – TAB - REMOVED

0B202001020$09

Termination String Setup Bar Codes (cont.)

STRING ALL CODES PREAMBLE - STX

0202002000$02

STRING ALL CODES POSTAMBLE - ETX

0202003000$03

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Factory Default Settings

Scanner Settings	Default
Keyboard Wedge Communication	**Default**
Terminal Type	PC/AT
Keyboard	US Keyboard
Terminator	Enter (Alpha numeric)
USB Communication	**Default**
Terminator Type	Enter
Code mode	Scan mode
Keyboard	US Keyboard
Decoder Selection	**Default**
EAN/UPC	Enable
Code 39	Enable
Code 32	Disable
CODABAR	Enable
ITF 2 of 5	Enable
MSI	Disable
Code 93	Enable
Code 128	Enable
EAN-128	Disable

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Chapter 6

Troubleshooting

Problem: Nothing happens when I follow the operating instructions.

Possible Cause:	Possible Solution:
Interface cables are loose	Check for loose cable connections. If problem persits, call technical support for assistance.

Problem: My computer gets a keyboard error while booting up.

Possible Cause:	Possible Solution:
The scanner is damaged or is no longer functioning.	Disconnect the scanner from your computer and use your keyboard only. Reboot your computer. If your computer still gets a keyboard error, then the problem may not be the scanner. Call technical support for assistance.

Problem: Light comes on, but the scanner doesn't read the bar code.

Possible Cause:	Possible Solution:
Interface cables are loose	Check for loose cable connections
Scanner is not programmed for the correct bar code type.	Be sure to select the correct interface selection and ensure that the scanner is programmed to read the type of barcode you are scanning.
Barcode symbol is unreadable.	Check the symbol to make sure it is not de-faced. Try scanning test symbols of the same barcode type.
Distance between scanner and barcode is incorrect.	Move the scanner closer or further from the barcode.

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Problem: The scanner beeps, but no data is displayed on my computer.

Possible Cause:	Possible Solution:
Scanner is not programmed for the correct host type.	Please make sure the scanner is configured to the appropriate host type by scanning the corresponding programming barcode on the User's Manual.
The scanner is configured to send the numeric data as KEYPAD NUMERICS, or the Keyboard Country setting is set to UNIVERSAL	Reconfigure the scanner to Send Numerics as MAIN KEYBOARD KEYS and set the Keyboard Country setting to the country setting of your computer.

Problem: My Caps Lock LED on my keyboard flickers when I read a bar code.

Possible Cause:	Possible Solution:
The Keyboard that you are using requires shifting in and out of the shift Lock mode to send the data properly.	You can reduce the flickering and speed up the data transmition by sending numeric data as keypad numerics, or setting the keyboard country mode to UNIVERSAL.

Problem: Scanned data is incorrectly displayed on the host.

Possible Cause:	Possible Solution:
Scanner is not programmed to work with the host.	Be sure proper host type is selected. For keyboard emulation configuration, ensure the system is programmed for the correct keyboard type, and that the CAPS LOCK key is off. Be sure editing options (e.g UPC-E to UPC-A Conversion) are properly programmed.
The scanner's Keyboard Country setting does not match the computer's keyboard setup.	Configure the Keyboard Country to match the same setting as the keyboard on your computer.

Other Product Questions

For any other technical issues, please contact your regional Unitech office for support. Contact information can be found on their websites as listed on Page 3 of this Product Reference Guide.