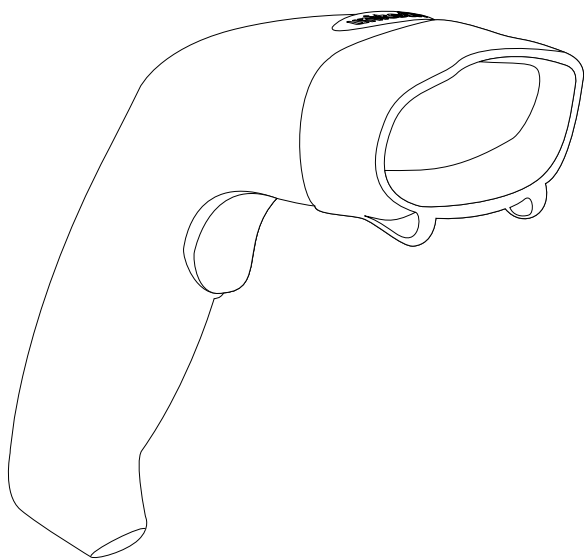


MS810 Laser Scanner



Product Reference Guide

Rev. A

About This Manual

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

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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.

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>

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Introduction

Introducing the MS810

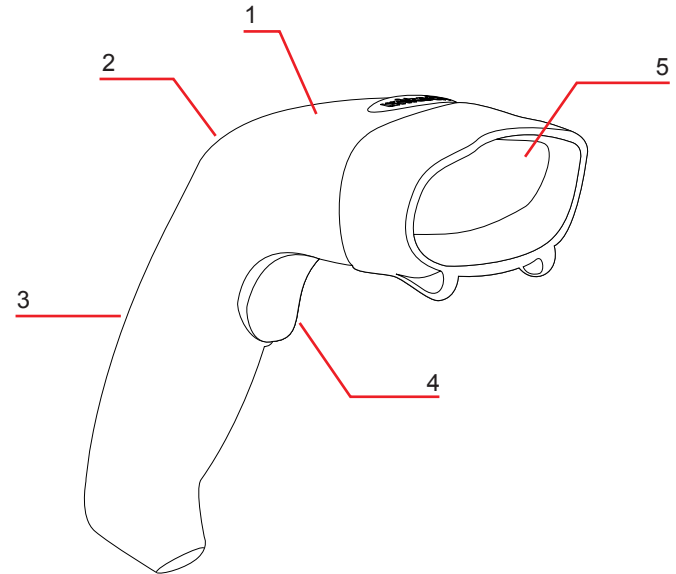
The Unitech MS810 1D laser bar code scanner combines the best scanning performance and value. The device provides an accurate, easy, and fast method of data entry and data storage for computerized information systems. It is easy to install and does not require software or drivers to operate.

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.

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:	38°
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

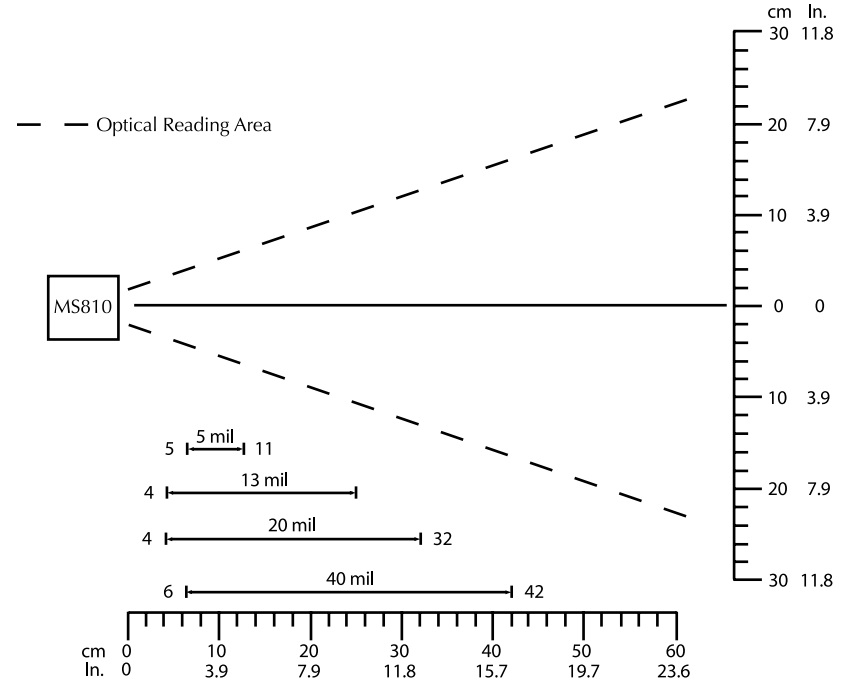
Dimensions (L x W x H):	93mm x 61mm x 182mm
Weight:	130 g +/- 5 g (without cable)
Case Material:	Rubber & ABS Plastic

Environmental Characteristics

Operating Temperature:	0°C to 50°C (32°F to 122°F)
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
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

Decode Zone

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

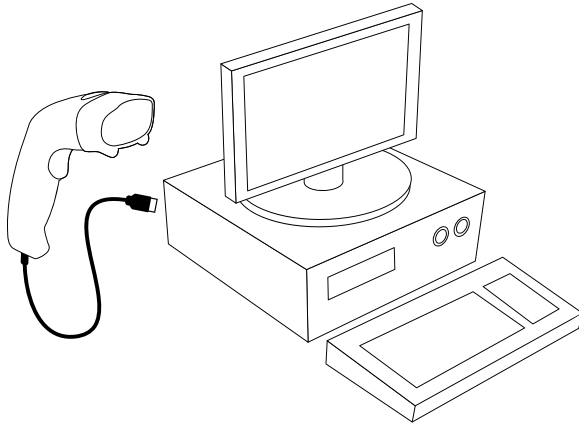


NOTE: Do not hold the scanner directly over a barcode at 90°. Scanning light bounces directly back into the scanner from the barcode label is known as specular reflection which will create a “dead zone” where decoding is difficult. Practice a few times to find what range of angles works best.

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.

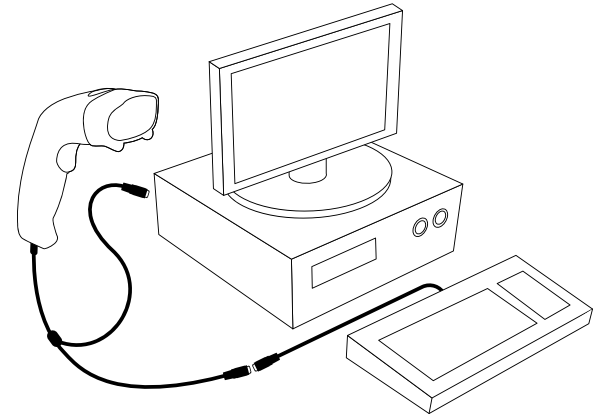


Reset Configuration to Defaults

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.



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.

Bar Code Setup Menu

Multi-Interface Functions - 1

OUTPUT FIRMWARE VERSION



0A

RESET CONFIGURATION TO DEFAULTS



0B

OUTPUT MODE – KEYBOARD / USB



000600

OUTPUT MODE

OUTPUT MODE – KEYBOARD / USB



000600

GOOD READ BEEP TONE – NONE



014200

BUZZER / LED

GOOD READ BEEP TONE - RESET



0B142

DECODE OPTIONS REVERSE IMAGE – ENABLE



01391

IMAGE

DECODE OPTIONS REVERSE IMAGE - DISABLE



01390

Multi-Interface Functions - 1 (cont.)

DECODE OPTIONS SEND BAR CODE
ID - DISABLE



01400

CODE ID

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



Multi-Interface Functions - 2

SCAN MODE - SINGLE SCAN



013300

READING
MODE

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
0134005

LASER/CCD TIMEOUT - 2 SECONDS



0134002
0134002

LASER/CCD PULSE RATE - 7





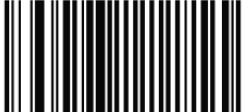


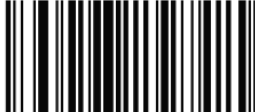


013507
013507

LASER/CCD PULSE RATE - 3



013503
013503

Interface - Keyboard Wedge







<p>WEDGE MODE - AUTODETECT</p>  <p>000200</p>	<p>PC Communication</p>	<p>WEDGE MODE - SCAN SET 2 PASS THRU</p>  <p>000204</p>
<p>TRANSMIT SPEED - 0</p>  <p>0000000</p>	<p>TRANSMIT SPEED</p>	<p>TRANSMIT SPEED - 25</p>  <p>0000025</p>
<p>KEYBOARD COUNTRY - USA</p>  <p>0005000</p>	<p>LANGUAGE</p>	<p>KEYBOARD COUNTRY - GERMAN</p>  <p>0005010</p>
<p>KEYBOARD COUNTRY - FRANCE</p>  <p>0005009</p>		<p>KEYBOARD COUNTRY - UNIVERSAL</p>  <p>0005025</p>

Bar Code Symbolologies

Introduction

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

Symbolologies On/Off - 1

<p>CODE 11 - ENABLE</p>  <p>01261</p>	<p>CODE 11</p>	<p>CODE 11 - DISABLE</p>  <p>01260</p>
<p>CODE 39 ENABLE</p>  <p>00221</p>	<p>CODE 39</p>	<p>CODE 39 DISABLE</p>  <p>00220</p>
<p>FULL ASCII ENABLE</p>  <p>00231</p>		<p>FULL ASCII DISABLE</p>  <p>00230</p>

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 - ENABLE



00851

CODABAR

CODABAR - DISABLE



00850

I2OF5 - ENABLE



00961

**INTERLEAVED
2 OF 5**

I2OF5 - DISABLE



00960

Symbologies On/Off - 2 (cont.)

ID2OF5 - ENABLE



01061







**INDUSTRIAL
2 OF 5**

ID2OF5 - DISABLE




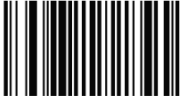

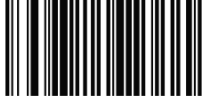


01060

Symbologies On/Off - 3

MSI - ENABLE  01151	MSI	MSI - DISABLE  01150
UPC-A ENABLE  00341	UPC/EAN	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

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 SS CHAR - NONE  002700	CODE 39	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 LASER/CCD REDUNDANCY
ENABLE



00331

CODE 39

CODE 39 LASER/CCD REDUNDANCY
DISABLE



00330

Symbologies Setup - 2

CODE 93 ID CHARACTER – "h"



0066h

CODE 93

CODE 93 ID CHARACTER – "Z"



0066Z

CODE 93 LASER/CCD REDUNDANCY
- ENABLE



00681

CODE 93 LASER/CCD REDUNDANCY
- DISABLE



00680

CODE 128 ID CHARACTER – 'g'



0081g

CODE 128

CODE128 ID CHARACTER - 'Z'



0081Z

CODE 128 LASER/CCD REDUNDANCY
- ENABLE



00841

CODE 128 LASER/CCD REDUNDANCY
- DISABLE



00840

CODABAR SEND START/STOP CHARS
- ENABLE



00861

CODABAR

CODABAR SEND START/STOP CHARS
- DISABLE



00860

Symbologies Setup - 2 (cont.)

CODABAR WIDE GAPS ALLOWED -
ENABLE



00901

CODABAR

CODABAR WIDE GAPS ALLOWED -
DISABLE



00900

Symbologies Setup - 3

CODABAR ID CHARACTER – 'k'



0094k

CODABAR

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.)

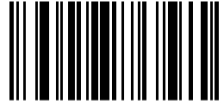
ID2OF5 BAR START/STOP - ENABLE



01071

**Industrial
2 of 5**

ID2OF5 BAR START/STOP - DISABLE



01070

ID2OF5 BAR START/STOP - ENABLE



0113j

ID2OF5 BAR START/STOP - DISABLE



0113Z

Symbologies Setup - 4

ID2OF5 LASER/CCD REDUNDANCY
- ENABLE



01141

ID2OF5 LASER/CCD REDUNDANCY
- DISABLE



01140

MSI CHECK DIGIT - MOD 10



01160

MSI

MSI CHECK DIGIT - RESET



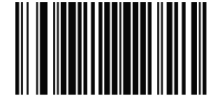
0B116

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.)

EXPAND UPC-A TO EAN-13 ENABLE



00391

UPC/EAN

EXPAND UPC-A TO EAN-13 DISABLE



00390

CONVERT EAN-13 TO ISBN ENABLE



00481

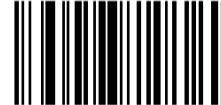
CONVERT EAN-13 TO ISBN DISABLE



00480

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

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

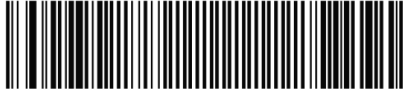
UPC/EAN LASER/CCD REDUNDANCY
DISABLE



00540

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

Edit Setup Bar Codes (cont.)

EDIT - INSERT LEADING ZERO



020000060000000048

EDIT – DISABLE INSERT LEADING ZERO



0B2000006000000048

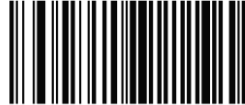
Macro/Special Keys Setup Bar Codes

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'



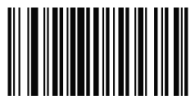
0162048

SPECIAL KEY – DISABLE F3 KEY
MAPPING



0B162

SPECIAL KEY – MAP KEYPAD ENTER TO '2'



0182050

SPECIAL KEY – DISABLE KEYPAD
ENTER MAPPING



0B182

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

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

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 persists, 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.

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 transmission 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.