Metrologic®

MS9500 Voyager® Series
Single-Line Hand-Held Laser Scanner
Installation and User's Guide

Voyager

LOCATIONS

CORPORATE HEADQUARTERS

| **North America** | Metrologic Instruments, Inc.
90 Coles Road
Blackwood, NJ 08012-4683 | Customer Service: 1-800-ID-METRO
Tel: 856-228-8100
Fax: 856-228-6673
Email: info@metrologic.com
Internet: www.metrologic.com |

EUROPEAN HEADQUARTERS

Germany, Middle East and Africa	Metrologic Instruments GmbH Dornierstrasse 2 82178 Puchheim b. Munich, Germany	Tel: +49 89 89019 0 Fax: +49 89 89019 200 Email: info@europe.metrologic.com Germany Email: info@de.metrologic.com
Spain	Metrologic Eria Ibérica SL Julián Camarillo 29, D-1 Edificio Diapasón 28037 Madrid	Tel: +34 913 272 400 Fax: +34 913 273 829 Email: info@es.metrologic.com
Italy	Metrologic Instruments Italia srl Via Emilia 70 40064 Ozzano dell'Emilia (BO)	Tel: +39 0 51 6511978 Fax: +39 0 51 6521337 Email: info@it.metrologic.com
France	Metrologic Eria France SA 69 Rue de la Belle Etoile ZI Paris Nord II, BP 50057 95947 – ROISSY CDG CEDEX	Tel: +33 (0) 1 48.63.78.78 Fax: +33 (0) 1 48.63.24.94 Email: info@fr.metrologic.com
United Kingdom	Metrologic Instruments UK Limited 58 Tempus Business Centre Kingsclere Road, Basingstoke Hampshire RG21 6XG	Tel: +44 (0) 1256 365900 Fax: +44 (0) 1256 365955 Email: info@uk.metrologic.com

ASIA

Singapore	Metrologic Asia (Pte) Ltd No. 8 Kaki Bukit Place 4th Floor Singapore 416186	Tel: 65-6842-7155 Fax: 65-6842-7166 Email: info@sg.metrologic.com
China	Metro (Suzhou) Technologies Co., Ltd. 221 Xing Hai Street Suzhou Industrial Park Suzhou, China 215021	Tel: 86-512-62572511 Fax: 86-512-62571517 Email: info@cn.metrologic.com
Japan	Metrologic Japan Co., Ltd. Matsunoya Building, 6 Floor 3-14-8 Higashiueno Taitou-Ku, Tokyo 110-0015 Japan	Tel: 81-03-3839-8511 Fax: 81-03-3839-8519 Email: info@jp.metrologic.com

SOUTH AMERICA

| **Brazil** | Metrologic do Brasil Ltda.
Rua da Paz 2059
CEP 04713-002
Chácara Santo Antônio
São Paulo, SP, Brasil | Tel: 55-11-5182-8226
Fax: 55-11-5182-8315
Email: info@br.metrologic.com |
| **Outside Brazil** | Metrologic South America
Rua da Paz 2059
CEP 04713-002
Chácara Santo Antônio
São Paulo, SP, Brasil | Tel: 55-11-5182-7273
Fax: 55-11-5182-7198
Email: info@sa.metrologic.com |

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INTRODUCTION

The Voyager® MS9500 Series single-line hand-held scanners include both the MS9520 and MS9540.

The Voyager*CG*™ MS9540 features Metrologic's patented CodeGate® technology. CodeGate is an intuitive scanning system that is ideal for all scanning applications, including menu-scanning, point-of-sale, document processing, and inventory control.

CodeGate works hand-in-hand with Metrologic's patented automatic-triggering scheme. Simply present a bar code to the scanner; the high-visibility 650-nanometer laser is automatically activated allowing the user to easily select the bar code to be scanned. Press the CodeGate button and the data is transmitted to the host system.

Equipped with both 'in-stand' and 'out-of-stand' operation, Voyager can be used as both a hand-held and fixed projection scanner. Voyager automatically senses when it is placed in the stand and de-activates the CodeGate button.

If the advantage of CodeGate technology is unnecessary in your application, then the MS9520 is the Voyager of choice. The MS9520 is packed with all of the same features as the MS9540, with the exception of CodeGate.

Metrologic has included many standard features such as: user programmable Flash ROM, PowerLink user-replaceable cables, MetroSet®*2* and MetroSelect® configuration, EMI rating of Class B, data editing (parsing) capability using Bits 'n' Pieces®, and a 5-year warranty.

Voyager	VoyagerCG™	Interface
MS9520 – 00	MS9540 – 00	Laser Emulation RS-232 Transmit/Receive
MS9520 – 9	MS9540 – 9	OCIA
MS9520 – 11	MS9540 – 11	IBM 468X/469X, RS232-TXD, RXD, RTS, CTS
MS9520 – 14	MS9540 – 14	RS232 - TXD, RXD, RTS, CTS, DTR, DSR
MS9520 – 41	MS9540 – 41	RS-232/Light Pen Emulation
MS9520 – 47	MS9540 – 47	Keyboard Wedge, Stand-Alone Keyboard and RS232 Transmit/Receive

SCANNER AND ACCESSORIES

The following is a list of parts included in the MS9500 kit.

- **Voyager® MS9520** Single-Line Laser Scanner
  or
  Voyager*CG*™ MS9540 – CodeGate® Single-Line Laser Scanner

- **MetroSelect® Programming Guide**** [MLPN 00-02561]
  or
  MetroSelect® Single Line Programming Guide** [MLPN 00-02544]

**Available for download on Metrologic's website – www.metrologic.com

The following items are dependent on the type of MS9500 Kit ordered.
Some items may not be included in your kit.

- **AC to DC Power Transformer** – Regulated 5.2VDC @ 650 mA output.
  One of the following may be included:

  120V United States: [MLPN 45-45593]
  220V – 240V Continental European: [MLPN 45-45591]
  220V – 240V United Kingdom: [MLPN 45-45592]

- **PowerLink Cable** with built in power jack.
  One of the following may be included:

  Standard: [MLPN 53-53xxx*] - 2.7 m (9') coiled cord, long strain relief
  or
 Optional: [MLPN 54-54xxx*] - 2.1 m (7') straight cord, short strain relief

   *xxx specifies connection to host

- **Keyboard Wedge PowerLink and Adapter Cable**

  [MLPN 53-53002] or [MLPN 54-54002]

  PowerLink cable with a 5-pin DIN female connector and a 6-pin mini DIN
  male connector and an adapter cable with a 5-Pin Din male connector and
  a 6-pin mini DIN female connector.

- **Stand Alone Keyboard Power Link Cable [54-54020]**

- **Stand**

  Optional Free-Standing Stand with accessories [MLPN 46-46128]

  Optional Hard Mount Accessory Kit [MLPN 46-46351] used with kit
  [46-46128]

  Optional Wall Mount Hanger Accessory Kit [MLPN 46-46433]

Other items may be ordered for the specific protocol being used.
To order additional items, contact the dealer, distributor or call Metrologic's
Customer Service Department at 1-800-ID-METRO or 1-800-436-3876.

OPERATIONAL TEST

1. Connect the 10-pin RJ45 male connector into the jack on the Voyager® or VoyagerCG™. You will hear a 'click' when the connection is made.

2. Connect the L-shaped plug of the power supply into the power jack on the PowerLink cable.

3. Connect the power supply into an AC outlet. Make sure the AC input requirements of the power supply match the AC outlet.

Optional
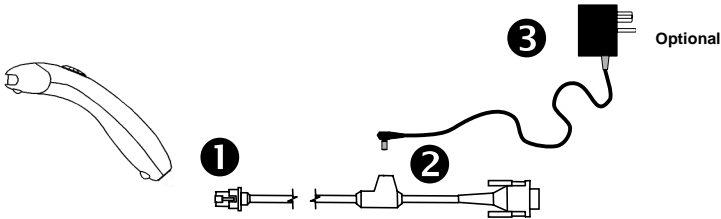
4. When the Voyager is ready to scan, the green LED will turn on, the red LED will flash and the scanner will beep once.

5. Place a bar code in front of the scanning window. The scanner will beep once and flash the red (*default mode only*) LED if the bar code was successfully decoded. For the MS9540, press the CodeGate® button to transmit the data. (See page 8.)

NOTE: Voyager is shipped from the factory programmed with default settings. Refer to the MetroSelect® Programming Guide or MetroSet®2's help files for instructions on how to configure the scanner.

MS9520/9540-00 ONLY
The MS9520-00 and the MS9540-00 leave the factory with the *Laser Emulation Mode* enabled. If you recall defaults while re-configuring your scanner the *Laser Emulation Mode* will no longer be enabled. See [MLPN 00-02557] for enabling *Laser Emulation Mode.*

Caution:

⚠

To maintain compliance with applicable standards, all circuits connected to the scanner must meet the requirements for SELV (Safety Extra Low Voltage) according to EN 60950.

To maintain compliance with standard CSA C22.2 No. 950/UL 1950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

MS9520-00/9/11/14/41 AND MS9540-00/9/11/14/41

1. Turn off the host system.

2. Connect the 10-pin RJ45 male connector into the jack on the Voyager® or Voyager CG™. You will hear a 'click' when the connection is made.

    NOTE: If the Voyager® is receiving power from the host system, skip to step #5. (*See caution statement below*)

3. Connect the L-shaped plug of the power supply into the power jack on the PowerLink cable.

4. Make sure the AC input requirements of the power supply match the AC outlet. Connect the power supply into an AC outlet. The outlet should be near the equipment and easily accessible.

5. Connect the PowerLink cable to the proper port on the host system.

6. Turn on the host system.
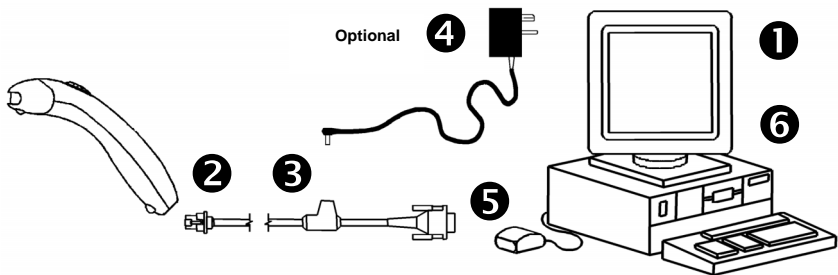
NOTE: Plugging the scanner into a port on the host system does not guarantee that scanned information will be communicated properly to the host system. The scanner is shipped from the factory programmed with default settings. Please refer to the MetroSelect® Programming Guide (MLPN 00-02544) or MetroSet®*2*'s help files for instructions on changing the scanner's configuration. In addition, please check that the scanner and host system are using the same communication protocol.

Caution:

⚠️

To maintain compliance with applicable standards, all circuits connected to the scanner must meet the requirements for SELV (<u>S</u>afety <u>E</u>xtra <u>L</u>ow <u>V</u>oltage) according to EN 60950.

To maintain compliance with standard CSA C22.2 No. 950/UL 1950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.
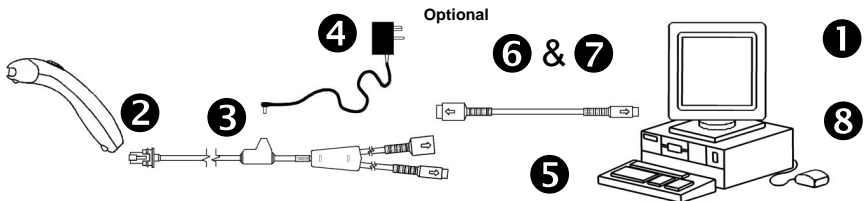
KEYBOARD WEDGE MS9520-47 AND MS9540-47

1. Turn off the PC.

2. Connect the 10-pin RJ45 male connector into the jack on the Voyager® or the VoyagerCG™. You will hear a 'click' when the connection is made.

3. Connect the L-shaped plug of the power supply into the power jack on the PowerLink cable.

    NOTE: If the Voyager® is receiving power from the host system, skip to step #5. (*See caution statement below*)

4. Make sure the AC input requirements of the power supply match the AC outlet. Connect the power supply into an AC outlet. The outlet should be near the equipment and easily accessible.

5. Disconnect the keyboard from the PC.

6. The PowerLink cable is terminated with a 5-pin DIN female connector on one end, and a 6-pin mini DIN male on the other. Metrologic will supply an adapter cable with a 5-pin DIN male connector on one end and a 6-pin mini DIN female connector on the other. According to the termination required, connect the appropriate end of the adapter cable to the PowerLink cable, leaving the necessary termination exposed for connecting to the keyboard and the keyboard port on the PC.

7. Connect to the PowerLink cable to the keyboard and the keyboard port on the PC.

8. Power up the PC.

OPERATION NOTE:
Powering the MS9520-47/MS9540-47 directly from the computer can sometimes cause interference with the operation of the scanner or the computer. Not all computers supply the same current through the keyboard port, explaining why a scanner would work on one computer and not another. Contact a Metrologic Customer Service Representative if you require an external power supply.

Caution:

⚠

To maintain compliance with applicable standards, all circuits connected to the scanner must meet the requirements for SELV (Safety Extra Low Voltage) according to EN 60950.

To maintain compliance with standard CSA C22.2 No. 950/UL 1950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.
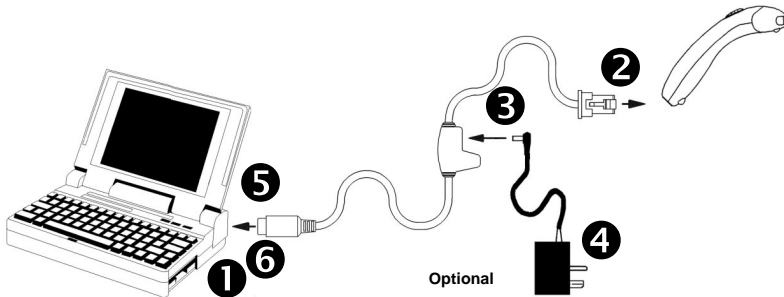
STAND ALONE KEYBOARD

1. Turn off the host system.

2. Connect the 10-pin RJ45 male connector into the jack on the Voyager® or Voyager CG™. You will hear a 'click' when the connection is made.

    NOTE: If the Voyager® is receiving power from the host system, skip to step #5. (*See caution statement below*)

3. Connect the L-shaped plug of the power supply into the power jack on the PowerLink cable.

4. Make sure the AC input requirements of the power supply match the AC outlet. Connect the power supply into an AC outlet. The outlet should be near the equipment and easily accessible.

5. Connect the PowerLink cable to the keyboard port on the host system.

6. Turn on the host system.

Optional

OPERATION NOTE:

Powering the MS9520-47/MS9540-47 directly from the computer can sometimes cause interference with the operation of the scanner or the computer. Not all computers supply the same current through the keyboard port, explaining why a scanner would work on one computer and not another. Contact a Metrologic Customer Service Representative if you require an external power supply.


Caution:

To maintain compliance with applicable standards, all circuits connected to the scanner must meet the requirements for SELV (Safety Extra Low Voltage) according to EN 60950.

To maintain compliance with standard CSA C22.2 No. 950/UL 1950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

DISCONNECTING THE POWERLINK CABLE FROM THE SCANNER

Before removing the cable from the scanner, Metrologic recommends that the power on the host system is off and the power supply has been disconnected from the PowerLink cable.
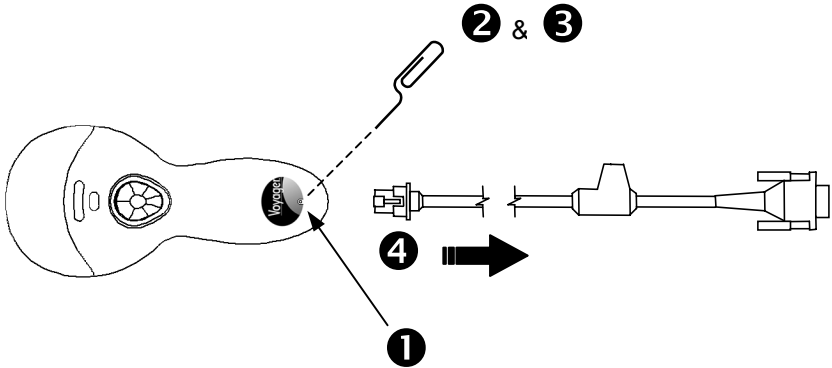
1. Locate the small 'pin-hole' on the top of the unit near the bottom of the Voyager logo.

2. Bend an ordinary paperclip into the shape shown above.

3. Insert the paperclip (or other small metallic pin) into the small 'pin-hole'.

4. You will here a faint 'click'. Pull gently on the strain-relief of the PowerLink cable and it will slide out of the scanner.

HOW TO USE CODEGATE® –MS9540 SERIES ONLY

1 ────────────────

- Auto trigger activates the laser

2 ||||||||||||||||||||||||||||||

- Place the laser line on the bar code

3 ||||||||||||||||||||||||||||||

Click

- Press the CodeGate button to transmit the data

Beep

TWO MODES OF OPERATION

- Auto-trigger while in the stand

- Bar code is automatically decoded and transmitted

- CodeGate activates when removed from the stand

- Bar code data is transmitted when the CodeGate button is pressed

Free Standing Kits #46-46128

Contains:

a. Stand (*MLPN 36-00454*)............................... Qty 1
b. Apron (*MLPN 50-50440*)............................... Qty 1
c. Screw, M3 x 6 mm (*MLPN 18-18670*) .... Qty 2
d. Washer, #5 x .5 OD (*MLPN 18-18671)* .... Qty 2
e. Stand Anchor (*MLPN 50-50449)*................... Qty 1
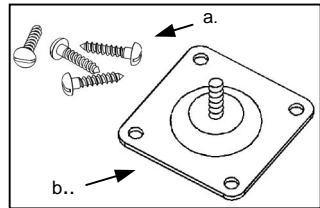f. M3 x 20 mm Set Screw (*MLPN 18-18672*).... Qty 1
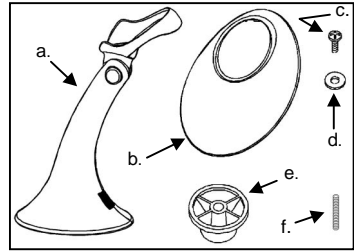
Optional Hard Mount Accessory Kit #46-46351

This kit, used in conjunction with the stand kit (#46-46128), can be used to bolt/hard mount the MS9500 to the countertop.
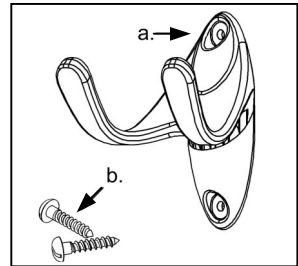
Contains:

a. Screw, #8 Round Head (*MLPN 18-18057*).... Qty 4
b. Base (*MLPN 36-36080*) .... Qty 1

Optional Wall Mount Hanger Accessory Kit #46-46433

Contains:

a. Screw #8 Round Head (*MLPN 18-18057*)..... Qty.2
b. Wall Mount Hanger (*MLPN 18-18057) ....* Qty.1

Optional Wall Mount Hanger Kit #46-46508

Contains:

a. Wall Mount Hanger *(MLPN 36-00611)*....... Qty. 1
b. Wall Mount Base *(MLPN 36-00812)* .... Qty. 1
c. 4.8 x 13 mm, Self Tapping Screw .... Qty. 2
   (MLPN 18-18233)
d**.** Double-Sided Adhesive Tape..................... Qty. 1
   (MLPN 36-00821)
e. #8 Wood Screw *(MLPN 18-18057)*.............. Qty. 2
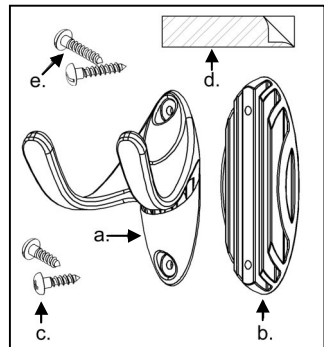
ASSEMBLING THE STANDS

There are 2 options for assembling the stand. The first option allows the stand to be self-supporting and moved freely or placed anywhere on the countertop. The second option is used if the stand will be bolted/hard-mounted to the countertop.

Stand Option 1: Self-supported
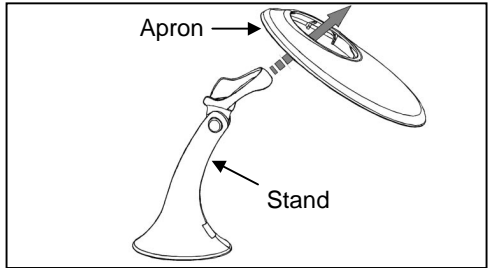### For use with kit #46-46128

Step 1

Slide the apron (*MLPN 50-50440*) over the stand (*MLPN 36-00454*).

Step 2

Position the stand so it sits under the tab on the apron. Then secure the apron to the stand using the M3 x 6 mm screws (*MLPN 18-18670*) and the #5 washers (*MLPN 18-18671*) provided.
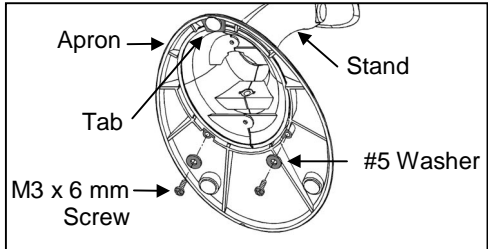
Stand Option 2: Hard-mounted to countertop
For use with kit #46-46351
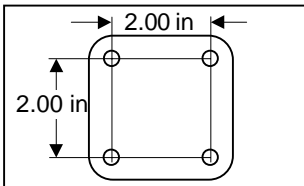
Step 1

Drill four #39 holes in the countertop.
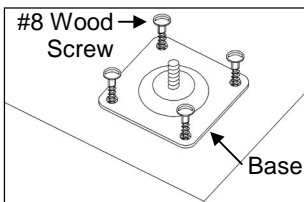
Step 2

Secure the base *(MLPN 36-36080)* to the countertop with the four #8 wood screws *(MLPN 18-18057)* provided.

Continued on next page

10

Stand Option 2: Hard-mounted to countertop (*continued*)
For use with kits #46-46128, #46-46351 and
MS951 Stand Replacements

Anchor from
Kit #46-46128

Base Assembly from
Kit #46-46351 or
MS951 Stand Base
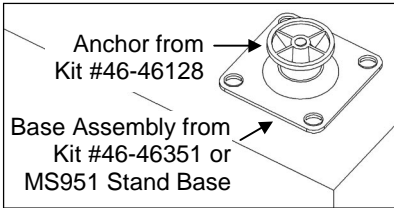
Step 3

Screw the stand anchor (MLPN 50-50449) onto the base assembly until it sits flush.
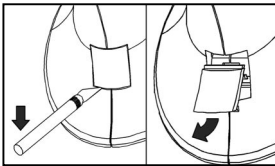
Step 4

Remove the logo plate on the stand by gently using an exacto knife to release the plate hook.
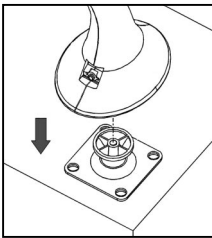
Step 5

Position the stand over the base assembly.
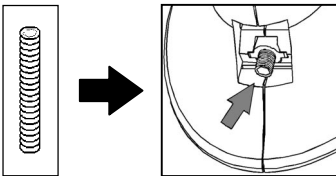
Step 6

Secure the stand to the base assembly by installing and tightening the M3 set screw (MLPN 18-18672) under the logo plate as shown.
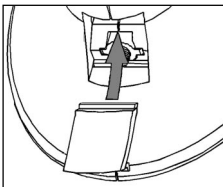
Step 7

Snap the logo plate back into place.

Option One

For Kit #46-46433 and
Kit #46-46508

Step 1:

Drill two #39 pilot holes 3.00" apart.

Step 2:

Attach the *Wall Mount Hanger* to the wall with the two #8 wood screws provided.
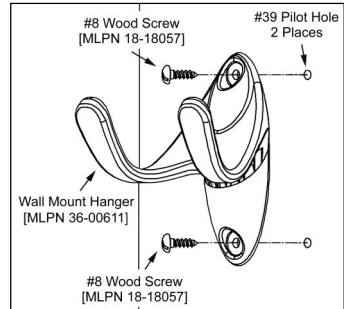
Option Two

Kit #46-46508

Step 1:

Attach the Wall Mount Base to the Wall Mount Hanger with the two 4.8 x 13 mm self-tapping screws.

Step 2:

Remove <u>one</u> side of the protective backing from the double-sided adhesive tape.
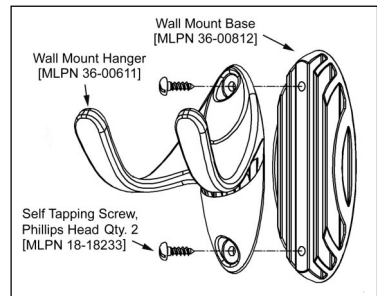
Step 3:

Attach the tape to the back of the Wall Mount Hanger as shown.

Step 4:

Remove the protective backing from the double-sided adhesive tape and apply hook to the wall.

Yellow LED*

CodeGate Button*

Red LED
Green LED

MS9500 Top View

Output Window

Cable Connection

MS9500 Side View
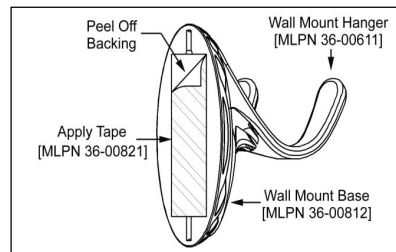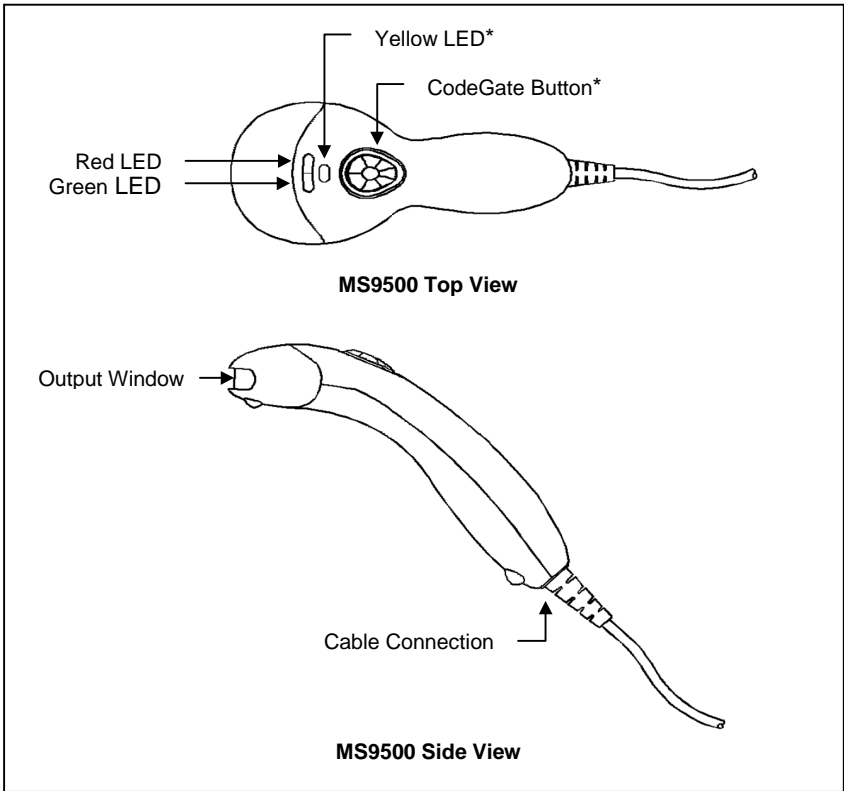
* This feature is not available on the MS9520

AUDIBLE INDICATORS

When the Voyager is in operation, it provides audible feedback. These sounds indicate the status of the scanner**.** Eight settings are available for the tone of the beep (normal, 6 alternate tones and no tone). To change the tone, refer to the MetroSelect® Single-Line Programming Guide (MLPN 00-02544) or MetroSet®2's help files.

One Beep
When the scanner *first* receives power, the green LED will turn on, then the red LED will flash and the scanner will beep once. (The red LED will remain on for the duration of the beep.) The scanner is ready to scan.

When the scanner *successfully* reads a bar code, the red LED will flash and the scanner beeps once (if programmed to do so). If the scanner does not beep once and the green light does not flash, then the bar code has *not* been successfully read.
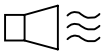
Razzberry Tone
This tone is a failure indicator. Refer to "Failure Modes" page 18.
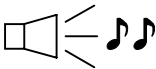
Two Beeps – On Power Up
When there is a Flash ROM upgrade needed, the scanner will beep twice followed by alternating flashing of the green and red LEDs.
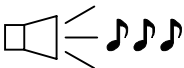
Three Beeps - During Operation
When entering configuration mode, the red LED will flash while the scanner simultaneously beeps three times. The red and green LEDs will continue to flash while in this mode. Upon exiting configuration mode, the scanner will beep three times, and the LEDs will stop flashing.

When configured, 3 beeps can also indicate a communications timeout during normal scanning mode.

When using one-code-programming, the scanner will beep three times (the current selected tone), followed by a short pause then by a high tone and a low tone. This tells the user that the single configuration bar code has successfully configured the scanner.
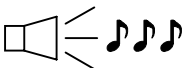
Three Beeps - On Power Up
This is a failure indicator. Refer to "Failure Modes" on page 18.

VISUAL INDICATORS

The MS9540 has three LED indicators (green, red and yellow) located on the head of the scanner. The MS9520 has two LED indicators (green and red) located on the head of the scanner.   When the scanner is on, the flashing or stationary activity of the LEDs indicates the status of the current scan and the scanner.

Green, Red & Yellow (*MS9540's Only*) LEDs are off
The LEDs will not be illuminated if the scanner is not receiving power from the host or transformer.

The scanner is stand-by mode, and CodeGate® is enabled. Present a bar code to the scanner and the green LED will turn on when the laser turns on.

Steady Yellow (*MS9540's Only*)
The CodeGate button is not active. If a bar code is in the scan field, the laser will turn on. The bar code will be decoded and transmitted to the host automatically.

Steady Green
When the laser is active, the green LED is illuminated. The green LED will remain illuminated until the laser is deactivated. (*Default Mode Only)*
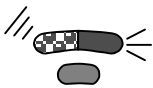
Steady Green and Single Red Flash
When the scanner successfully reads a bar code, the red LED will flash and the scanner will beep once. If the red LED does not flash or the scanner does not beep once, then the bar code has not been successfully read. (*Default Mode Only)*
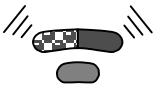
Steady Green and Steady Red
After a successful scan, the scanner transmits the data to the host device. Some communication modes require that the host inform the scanner when data is ready to be received. If the host is not ready to accept the information, the scanner's red LED will remain on until the data can be transmitted.
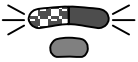
Alternating Flashing of Green and Red
This indicates the scanner is program mode. A razzberry tone indicates that an invalid bar code has been scanned while in this mode**.**

The scanner needs to have a Flash ROM upgrade if the alternating flashing of the red and green LEDs occurs during startup and is accompanied by three beeps.
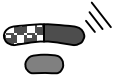
Steady Red, Green off
This indicates the scanner may be waiting for communication from the host.

FAILURE MODES
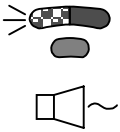
Flashing Green and one Razzberry Tone
This indicates the scanner has experienced a laser sub-system failure. Return the unit for repair to an authorized service center.
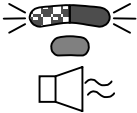
Flashing Red and Green with Two Razzberry Tones
This indicates the scanner has experienced a scanning mechanism failure. Return the unit for repair to an authorized service center.
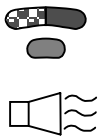
Continuous Razzberry Tone with all LEDs off
If, upon power, the scanner emits a continuous razzberry tone, then the scanner has an experienced an electronic failure. Return the unit for repair to an authorized service center.
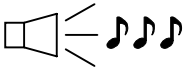
Three Beeps – on power up
If the scanner beeps 3 times on power up then the non-volatile memory (NovRAM) that holds the scanner configuration has failed. If the scanner does not respond after reprogramming, return the scanner for repair to an authorized service center.

PROGRAMMING MODES

The MS9500 Voyager has 3 modes of programming.

➢ **Bar Codes**
   Voyager or Voyager CG can be configured by scanning the bar codes
   located in the MetroSelect® Single-Line Programming Guide (MLPN 00-
   02544). Please refer to this guide for instructions. This manual can be
   downloaded for FREE from Metrologic's website (www.metrologic.com).

➢ **MetroSet®2**
   This user-friendly Windows-based configuration program allows you to
   simply 'point-and-click' at the desired scanner options. This program can be
   downloaded for FREE from Metrologic' website (www.metrologic.com), or
   set-up disks can be ordered by calling 1-800-ID-METRO.

➢ **Serial Programming**
   This mode of programming is ideal for OEM applications. This mode gives
   the end-user the ability to send a series of commands using the serial port of
   the host system. The commands are equivalent to the numerical values of
   the bar codes located in the MetroSelect Single-Line Programming Guide
   (MLPN 00-02544).

How does Serial Programming work?

1. Each command sent to the scanner is the ASCII representation of each
    numeral in the configuration bar code. The entire numeric string is framed
    with an ASCII [stx] and an ASCII [etx].

    EXAMPLE #1:
    Command for Disabling Codabar
    Command = [stx]100104[etx]
    String Sent to Scanner = 02h 31h 30h 30h 31h 30h 34h 03h
    (All values are hexadecimal).

2. If the command sent to the scanner is valid, the scanner will respond with an
    [ack].

3. If the command sent to the scanner in invalid, the scanner will respond with
    a [nak].

    NOTE: If this occurs, the end-user must start over at the very beginning of
             the configuration sequence. Simply re-transmitting the invalid
             command will not work, you must start over.

4. During programming, the motor and laser turn off. YOU CANNOT SCAN A BAR CODE WHILE IN SERIAL PROGRAM MODE.

5. There is a 20 second window between commands. If a 20 second timeout occurs, the scanner will send a [nak] and you must start over.

6. To enter serial program mode, send the following command [stx]999999[etx].

7. To exit serial program mode, send the following command [stx]999999[etx], the scanner will respond with an [ack] followed by 3 beeps.

8. This mode uses the current Baud Rate, Parity, Stop Bits and Data Bits settings that are configured in the scanner. The default settings of the scanner are 9600, Space, 2, 7 respectively. If a command is sent to the scanner to change any of these settings, the change will NOT take effect until after serial program mode is exited.

   <u>EXAMPLE #2</u>**:**

   The following example will set the scanner to the factory default settings, Disable Scanning of Code 128 bar codes, change the beeper tone, and add a "G" as a programmable prefix.

FEATURE	HOST COMMAND	ASCII REPRESENTATION	SCANNER RESPONSE
Enter Program Mode	[stx]999999[etx]	02h 39h 39h 39h 39h 39h 39h 03h	[ack] or 06h
Load Defaults	[stx]999998[etx]	02h 39h 39h 39h 39h 39h 38h 03h	[ack] or 06h
Disable Code 128	[stx]100113[etx]	02h 31h 30h 30h 31h 31h 33h 03h	[ack] or 06h
Alternate Tone 1	[stx]318565[etx]	02h 33h 31h 38h 35h 36h 35h 03h	[ack] or 06h
Prog. Prefix #1	[stx]903500[etx]	02h 39h 30h 33h 35h 30h 30h 03h	[ack] or 06h
Code Byte 0	[stx]0[etx]	02h 30h 03h	[ack] or 06h
Code Byte 7	[stx]7[etx]	02h 37h 03h	[ack] or 06h
Code Byte 1	[stx]1[etx]	02h 31h 03h	[ack] or 06h
Exit Program Mode	[stx]999999[etx]	02h 39h 39h 39h 39h 39h 39h 03h	[ack] or 06h

   The scanner will beep three times!

   The commands sent to the scanner do not include the small superscripted '3' that you see in front of each bar code string in the MetroSelect manual. THE '3' SHOULD NOT BE SENT, IT IS A CODE TYPE DESIGNATION ONLY!

   As you will note for commands requiring additional bar codes to be scanned (such as prefixes, suffixes, timeouts, etc.), simply send the code bytes in the same order that you would normally scan the bar codes.

EXAMPLE #3:

The following example shows the events that occur when an invalid bar code is sent. This sample will load the factory default settings and then set the baud rate to 19200.

FEATURE	HOST COMMAND	ASCII REPRESENTATION	SCANNER RESPONSE
Enter Program Mode	[stx]999999[etx]	02h 39h 39h 39h 39h 39h 39h 03h	[ack] or 06h
Load Defaults	[stx]99999:[etx]	02h 39h 39h 39h 39h 39h 3Ah 03h	[nak] or 15h
Invalid command was sent, you must start over!			
Enter Program Mode	[stx]999999[etx]	02h 39h 39h 39h 39h 39h 39h 03h	[ack] or 06h
Load Defaults	[stx]999998[etx]	02h 39h 39h 39h 39h 39h 03h	[ack] or 06h
19200 Baud Rate	[stx]415870[etx]	02h 34h 31h 35h 38h 37h 30h 03h	[ack] or 06h
Exit Program Mode	[stx]999999[etx]	02h 39h 39h 39h 39h 39h 03h	[ack] or 06h
The scanner will beep three times!			

This example illustrates two important points.

First, if an invalid command is sent from the host, the scanner responds with a [nak] and the end-user must start over from the beginning.

Second, if a command is sent to change the Baud Rate, the new baud rate does not take effect until after the end-user exits program mode.

ABBREVIATED ASCII TABLE

Character	Hex Value	Decimal Value
[STX]	02h	2
[ETX]	03h	3
[ACK]	06h	6
[NAK]	15h	21
0	30h	48
1	31h	49
2	32h	50
3	33h	51
4	34h	52
5	35h	53
6	36h	54
7	37h	55
8	38h	56
9	39h	57

UPGRADING THE FLASH ROM FIRMWARE

The **Meteor** program is a functional component of Metrologic's new line of Flash-based scanners. This program allows the user of a Metrologic scanner to quickly upgrade to a new or custom version of software. It requires the use of a personal computer running under Windows 95 or greater and the use of a communication port. The user merely connects the scanner to a communications port of the PC, launches the **Meteor** program, and blasts off to new software upgrades.

Each MS9500, regardless of the version number or communication protocol, can be upgraded. In other words, all RS232 (-41), keyboard wedge (-47), light pen (-41), laser emulation (-00), OCIA (-9) and IBM 468X/469X (-11) units can be upgraded. To upgrade all units, a power supply and PowerLink cable (MLPN 54-54012) are required.

The upgrades and custom software versions will be supplied by Metrologic in files called Motorola S-record files. These files contain all the information needed to upgrade the scanner. Simply add this file to the working directory or retrieve from its current location.

The program guides the user with its simplistic one click approach. The user must first select the file; once selected and verified, the file is ready to be used in the upgrade. Press the button to upgrade the scanner, the unit will go into a "flash mode" – both the green and red LEDs will be on. The user can follow the progress of the upgrade by watching the screen for details. When the upgrade is complete, the scanner will respond with its normal one beep on power up. If two beeps occur, the scanner did not upgrade properly. (Contact Metrologic for additional details).

LABELS

Each scanner has a label on the back of the unit. This label has the model number, date of manufacture, serial number, CE and caution information. The following is an example of this label:

EVITER TOUTE EXPOSITION-Lumiere laser emis par cette overture

AVOID EXPOSURE –Laser light is emitted from this apertu

Metrologic Instruments, Inc.
Manufactured in Blackwood New Jersey, USA
VoyagerCG®   CodeGate®
Model: MS9540   February 2001
                        5V === (A) 41
0000000000   RS232/LTPN
SAMPLE   ATTENTION Rayonnement laser lors
                        de l'overture NE PAS REGARDER
                        FIXEMENT DANS LE FAISCEAU
                        oo

CAUTION
LASER LIGHT
DO NOT STARE
INTO BEAM
1.0 MILLIWATT (PEAK)
VISIBLE LASER DIODE
CLASS II LASER PRODUCT
LASER KLASSE 1
PRODUKT

CAUTION-Laser light
When open. Do Not Stare Into Beam

Patent Information-See Manual
FCC and ICES-003 Information-See Manual
Warranty VOID if case opened.
Contains no user serviceable components.
Complies with 21CFR 1040.10 & 1040.11
NACH EN60825-1:1994/A11:1996
5V === C€

c(UL)us
LISTED
94JB
I T E

MAINTENANCE

Smudges and dirt can interfere with the proper scanning of a bar code. Therefore, the output window will need occasional cleaning.

1. Spray glass cleaner onto lint free, non-abrasive cleaning cloth.
2. Gently wipe the scanner window.

2.5" [64 mm]
Scan Width
at Face

Distance from Face

3.4" [86 mm]

A

B

4.4" [112 mm]
4.8" [122 mm]

E

G

H

7.1" [180 mm]

J

8.5" [216 mm]

9.8" [249 mm]

11.7" [297 mm]

Width of Scan Field

0.0" [0 mm]

1.0" [25.4 mm]

2.0" [51 mm]
2.5" [64 mm]

5.0" [127 mm]

6.5" [165 mm]

8.0" [203 mm]

10.0" [254 mm]
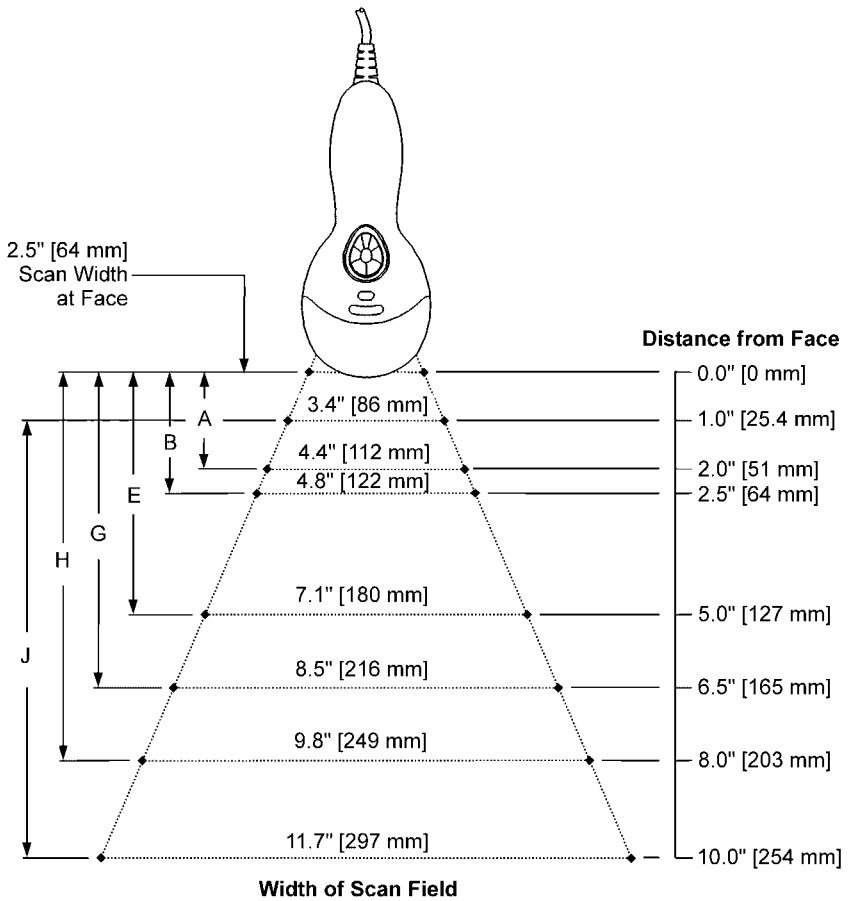
Minimum Bar Code Element Width									
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**
mm	.13	.15	-	-	.19	-	.25	.33	.53	-
mils	5.2	5.7	-	-	7.5	-	10	13	21	-

23

2.5" [64 mm]
Scan Width
at Face

Distance From Face

0.0"
[0 mm]

Short
Range
IR

6.2" [158 mm]

4.0" ±1.0"
[102 mm ±25.4 mm]

Long
Range
IR

12.6" [320 mm]

Width of Scan Field

11.0" ±2.0"
[229 mm ±51 mm]
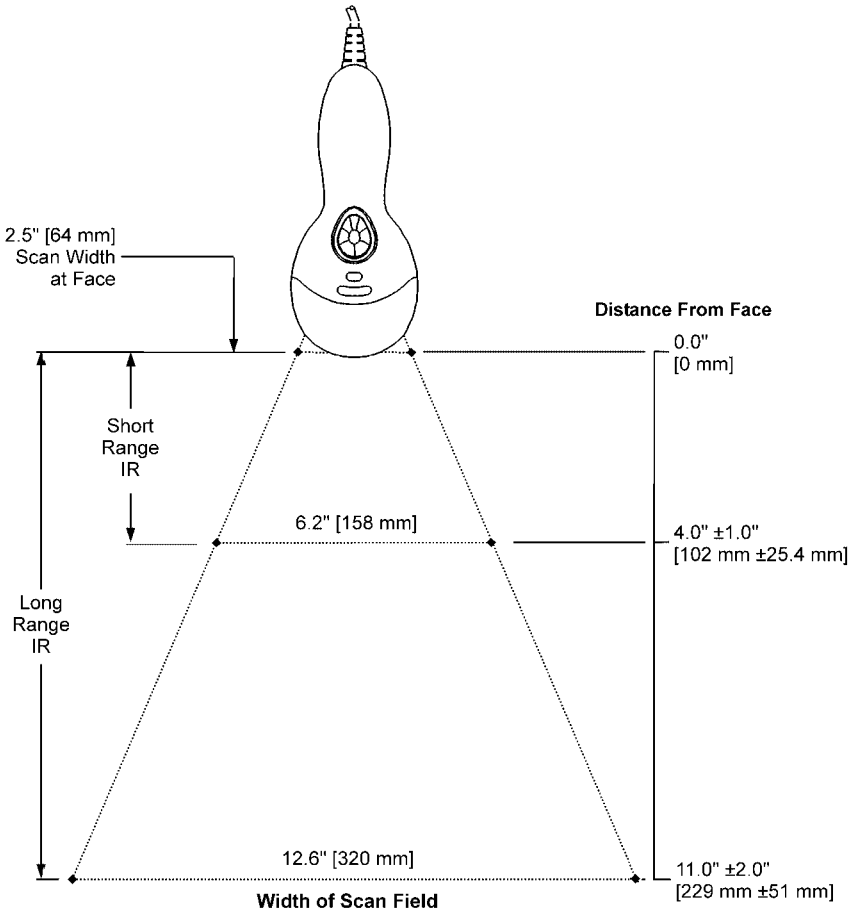
APPLICATIONS AND PROTOCOLS

The model number on each scanner includes the scanner number and factory default communications protocol.

Scanner	Version Identifier	Communication Protocol(s)
MS9520 MS9540	41	RS-232/Light Pen Emulation
MS9520 MS9540	47	Keyboard Wedge, Stand-Alone Keyboard and RS-232 Transmit/Receive
MS9520 MS9540	9	OCIA and RS-232 Transmit/Receive
MS9520 MS9540	11	IBM 468X/469X, RS232-TXD, RXD, RTS, CTS
MS9520 MS9540	00	Laser Emulation and RS-232 Transmit/Receive
MS9520 MS9540	14	RS232-TXD, RXD, RTS, CTS, DTR, DSR

The MS9500 Series Hand-Held Laser Scanner with built-in PC Keyboard Wedge Interface is designed to be used for Keyboard emulation only. Many RS-232 programmable functions available in other Metrologic scanners are also available as keyboard wedge functions.

The following are the most important selectable options specific to the keyboard wedge.

Keyboard Type

- **AT (includes IBM® PS2 models 50, 55, 60, 80)
- XT
- IBM PS2 (includes models 30, 70, 8556)

Keyboard Country Type

- **USA
- French
- Italian
- Belgium
- Japanese
- United Kingdom
- German
- Spanish
- Swiss

**Default setting. Refer to Appendix B pages 30-34 for default settings. Refer to the MetroSelect® Single-Line Programming Guide (MLPN 00-02544) or MetroSet®2's help files for information on how to change the default settings.

TROUBLESHOOTING GUIDE

The following guide is for reference purposes only. Contact a Metrologic representative at 1-800-ID-Metro or 1-800-436-3876 to preserve the limited warranty terms.

All Interfaces

MS9500 Series Troubleshooting Guide		
Symptoms	**Possible Causes**	**Solution**
No LEDs, beep or laser	No power is being supplied to the scanner	Check transformer, outlet and power strip. Make sure the cable is plugged into the scanner.
No LEDs, beep, or laser	No power is being supplied to the scanner from host	Some host systems cannot supply enough current to power Voyager. A power supply may be needed.
2 Beeps with alternately flashing LEDs on Power up	Possible ROM failure	Flash ROM Upgrade Required
3 Beeps on power up	Non-volatile RAM failure	Contact a Metrologic Representative, if the unit will not hold the programmed configuration.
Continuous razz tone on power up	RAM or ROM failure	Contact a Metrologic Representative, if the unit will not function.
Razz tone and green LED flash at power up	VLD failure	Contact a Metrologic Representative
Razz tone, red and green LEDs flash at power up	Scanning mechanism failure	Contact a Metrologic Representative
Unit scans, Communicates and beeps twice	Same symbol timeout set too short	Adjust same symbol timeout for a longer time.
The unit powers up, but does not scan/or beep	Beeper disabled. No tone selected	Enable beeper. Select tone.

Symptoms	Possible Causes	Solution
The unit powers up, but does not scan and/or beep	Scanning a particular symbology that is not enabled	UPC/EAN, Code 39, interleaved 2 of 5, Code 93, Code 128 and Codabar are enabled by default. Verify that the type of bar code being read has been selected.
The unit powers up, but does not scan and/or beep	The scanner has been programmed for a character length lock, or a minimum length and bar code being scanned does not satisfy the programmed criteria	Verify that the bar code that is being scanned falls into the criteria (Typical of Non-UPC/EAN codes) *The scanner defaults to a minimum of 3 character bar code.*
The unit scans a bar code, but locks up after the first scan red LED stays on	The scanner is configured to support some form of host handshaking but is not receiving the signal	If the scanner is setup to support ACK/NAK, RTS/CTS, XON/XOFF or D/E, verify that the host cable and host are supporting the handshaking properly.
The unit scans, but the data transmitted to the host is incorrect	The scanner's data format does not match the host system requirements	Verify that the scanner's data format matches that required by the host. Most sure that the scanner is connected to the proper host port.
Scanner beeps at some bar codes and NOT for others of the same bar code symbology	The print quality of the bar code is suspect	Check print mode. The type of printer could be the problem. Change print settings. i.e. change to econo mode or high speed.
Scanner beeps at some bar codes and NOT for others of the same bar code symbology	The aspect ratio of the bar code is out of tolerance	Check print mode. The type of printer could be the problem. Change print settings. i.e. change to econo mode or high speed.

Symptoms	Possible Causes	Solution
Scanner beeps at some bar codes and NOT for others of the same bar code symbology	The bar code may have been printed incorrectly	Check if it is a check digit/character/or border problem.
Scanner beeps at some bar codes and NOT for others of the same bar code symbology	The scanner is not configured correctly for this type of bar code	Check if check digits are set properly.
Scanner beeps at some bar codes and NOT for others of the same bar code symbology	The minimum symbol length setting does not work with the bar code	Check if the correct minimum symbol length is set.
The unit scans the bar code but there is no data	Configuration is not correct	Make sure the scanner is configured for the appropriate mode.
The unit scans but the data is not correct	Configuration is correct	Make sure that the proper PC type AT, PS2 or XT is selected. Verify correct country code and data formatting are selected. Adjust inter-character delay symptom.
The unit is transmitting each character twice	Configuration is not correct	Increase interscan code delay setting. Adjust whether the F0 break is transmitted. It may be necessary to try this in both settings.

Symptoms	Possible Causes	Solution
Alpha characters show as lower case	Computer is in Caps Lock mode	Enable Caps Lock detect setting of the scanner to detect whether the PC is operating in Caps Lock.
Everything works except for a couple of characters	These characters may not be supported by that country's key look up table	Try operating the scanner in Alt mode.
Power-up OK and scans OK but does not communicate properly to the host	Com port at the host is not working or configured properly	Check to make sure that the baud rate and parity of the scanner and the communication port match and the program is looking for "RS-232" data.
Power-up OK and scans OK but does not communicate properly to the host	Cable not connected to the proper com port	Check to make sure that the baud rate and parity of the scanner and the communication port match and the program is looking for "RS-232" data.
Power-up OK and scans OK but does not communicate properly to the host	Cable not connected to the proper com port	Check to make sure that the baud rate and parity of the scanner and the communication port match and the program is looking for "RS-232" data.
The host is receiving data but the data does not look correct	The scanner and host may not be configured for the same interface parameters	Check that the scanner and the host are configured for the same interface parameters
Characters are being dropped	Inter-character delay needs to be added to the transmitted output	Add some inter-character delay to the transmitted output by using the MetroSelect Single-Line Programming Guide MLPN 00-02544.

RS-232 DEMONSTRATION PROGRAM

If an RS-232 scanner is not communicating with your IBM compatible PC, key in the following BASIC program to test that the communication port and scanner are working.

This program is for demonstration purposes only. It is only intended to prove that cabling is correct, the com port is working, and the scanner is working. If the bar code data displays on the screen while using this program, it only demonstrates that the hardware interface and scanner are working. At this point, investigate whether the application software and the scanner configuration match.

If the application does not support RS-232 scanners, a software wedge program that will take RS-232 data and place it into a keyboard buffer may be needed. This program tells the PC to ignore RTS-CTS, Data Set Ready (DSR) and Data Carrier Detect (DCD) signals. If the demonstration program works and yours still does not, jumper RTS to CTS and Data Terminal Reading (DTR) to DCD and DSR on the back of your PC.

```
10       CLS
20       ON ERROR GOTO 100
30       OPEN "COM1:9600,S,7,1,CSO,DSO,CD0,LF" AS#1
35       PRINT "SCAN A FEW BAR CODES"
40       LINE INPUT #1, BARCODE$
50       PRINT BARCODE$
60       K$ = INKEY$: IF K$ = CHR$(27) THEN GOTO 32766
70       GOTO 40
100      PRINT "ERROR NO."; ERR ;"PRESS ANY KEY TO TERMINATE."
110      KK$ = INKEY$: IF K$ = ""THEN GOTO 110
32766    CLOSE: SYSTEM
32767    END
```

APPENDIX A – DESIGN SPECIFICATIONS

OPERATIONAL	
Light Source:	Visible Laser Diode 650 nm ± 10 nm
Laser Power:	Less than 1 mW (peak)
Depth of Scan Field:	0 mm – 203 mm (0" – 8") for 0.330 mm (13 mil) bar code at default setting
Scan Speed:	72 scan lines per second
Scan Pattern:	Single scan line
Minimum Bar Width:	0.127 mm (5.0 mil)
InfraRed Activation:	Long Range: 0 mm – 279 mm ± 51 mm (0" – 11" ± 2") Short Range: 0 mm – 102 mm ± 25 mm (0" – 4" ± 1")
Decode Capability:	Autodiscriminates all standard bar codes for others call a Metrologic service representative
System Interfaces:	RS232, PC Keyboard Wedge, Stand-Alone Keyboard, OCIA, IBM 468X/469X, Light Pen Emulation, Laser Emulation, RS232 with DSR
Print Contrast:	35% minimum reflectance difference
Number Characters Read:	Up to 80 data characters (Maximum number will vary based on symbology & density)
Roll, Pitch, Yaw:	42°, 68°, 52°
Beeper Operation:	7 tones or no beep
Indicators (LED) *Default Settings:*	Green = laser on, ready to scan; Red = good read; Yellow (MS9540 Only) = CodeGate button is inactive (on). CodeGate button is active (off)
MECHANICAL	
Length:	198 mm (7.8")
Width:	Handle - 45 mm (1.8"), Head - 78 mm (3.1")
Depth:	40 mm (1.6")
Weight:	149 g (5.25 oz)
ELECTRICAL	
Input Voltage:	5VDC ± 0.25V
Power:	Operating = 0.825 W, Standby = 0.600 W
Current:	Operating = 165 mA @ 5VDC, Standby = 120 mA @ 5VDC
DC Transformers:	Class 2; 5.2V @ 650 mA
Laser Class:	CDRH: Class II; EN60825-1:1994/A11:1996 Class 1
EMC:	FCC Class B
ENVIRONMENTAL	
Temperature:	Operating = 0°C to 40° (32° to 104°F) Storage = -40°C to 60°C (-40°F to 140°F)
Humidity:	5% to 95% relative humidity, non-condensing
Light Levels:	Up to 4842 Lux (450 footcandles)
Shock:	Designed to withstand 1.5 m (5') drops
Contaminants:	Sealed to resist airborne particulate contaminants
Ventilation:	None required

APPENDIX B – DEFAULT SETTINGS

Many functions of the scanner can be "programmed" – that is, enabled or disabled. The scanner is shipped from the factory programmed to a set of default conditions. The default parameter of the scanner has an asterisk (*) in the charts on the following pages. If an asterisk is not in the default column then the default setting is OFF or DISABLED. Every communication does not support every parameter. If the communication supports a parameter listed in the charts on the following pages, a check mark will appear.

PARAMETER	DEFAULT	OCIA	RS-232	LIGHT PEN	IBM 46XX	KBW	LASER EMULATION
Normal Scan Mode	*	√	√	√	√	√	√
Continuous Scan Mode		√	√	√	√	√	√
Blinky Scan		√	√	√	√	√	√
Continuous Blinky Scan		√	√	√	√	√	√
Custom (one shot) Scan		√	√	√	√	√	√
Long-Range In-Stand	*	√	√	√	√	√	√
Short-Range In-Stand		√	√	√	√	√	√
Long-Range Out-of-Stand	*	√	√	√	√	√	√
Short-Range Out-of-Stand		√	√	√	√	√	√
CodeGate Active In-Stand		√	√	√	√	√	√
CodeGate Inactive In-Stand	*	√	√	√	√	√	√
CodeGate Active Out-of Stand	*	√	√	√	√	√	√
CodeGate Inactive Out-of Stand		√	√	√	√	√	√
UPC/EAN	*	√	√	√	√	√	√
Code 128	*	√	√	√	√	√	√
Code 93	*	√	√	√	√	√	√
Codabar	*	√	√	√	√	√	√
Interleaved 2 of 5 (ITF)	*	√	√	√	√	√	√
MOD 10 check on ITF		√	√	√	√	√	√
Code 11		√	√	√	√	√	√
Code 39	*	√	√	√	√	√	√
Full ASCII Code 39		√	√	√	√	√	√

PARAMETER	DEFAULT	OCIA	RS-232	LIGHT PEN	IBM 46XX	KBW	LASER EMULATION
Mod 43 Check on Code 39		√	√	√	√	√	√
MSI-Plessy 10/10 Check Digit		√	√	√	√	√	√
MSI-Plessy Mod 10 Check Digit	*	√	√	√	√	√	√
Paraf Support ITF		√	√	√	√	√	√
ITF Symbol Lengths	Variable	√	√	√	√	√	√
Minimum Symbol Length	3	√	√	√	√	√	√
Symbol Length Lock	None	√	√	√	√	√	√
Bars High as Code 39	*			√			√
Spaces High as Code 39				√			√
Bars High as Scanned				√			√
Spaces High as Scanned				√			√
DTS/SIEMENS		√					
DTS/NIXDORF	*	√					
NCR F		√					
NCR S		√					
Poll light pen source				√			√
Beeper tone	Normal	√	√	√	√	√	√
Beep/transmit sequence	Before transmit	√	√	√	√	√	√
Communication timeout	None	√	√	√	√	√	√
Razzberry tone on timeout		√	√	√	√	√	√
Three beeps on timeout		√	√	√	√	√	√
Same symbol rescan timeout 250 msecs		√	√	√	√	√	√
Same symbol rescan timeout 375 msecs		√	√	√	√	√	√
Same symbol rescan timeout: 500 msecs)		√	√	√	√	√	√
Same symbol rescan timeout 625 msecs		√	√	√	√	√	√

PARAMETER	DEFAULT	OCIA	RS-232	LIGHT PEN	IBM 46XX	KBW	LASER EMULATION
Same symbol rescan timeout 750 msecs		√	√	√	√	√	√
Same symbol rescan timeout 875 msecs	*	√	√	√	√	√	√
Same symbol rescan timeout: 1000 msecs		√	√	√	√	√	√
No Same symbol timeout		√	√	√	√	√	√
Infinite Same symbol timeout		√	√	√	√	√	√
Inter-character delay Program able in 1 msec steps (max 255 msecs)	1 msecs 10 msecs in KBW	√	√	√	√	√	√
Number of scan buffers (*maximum*)	4	√	√	√	√	√	√
Transmit UPC-A check digit	*	√	√	√	√	√	√
Transmit UPC-E check digit		√	√	√	√	√	√
Expand UPC-E		√	√	√	√	√	√
Convert UPC-A to EAN-13		√	√	√	√	√	√
Transmit lead zero on UPC-E		√	√	√	√	√	√
Transmit UPC-A number system	*	√	√	√	√	√	√
Transmit UPC-A Manufacturer ID#	*	√	√	√	√	√	√
Transmit UPC –A Item ID#	*	√	√	√	√	√	√
Transmit Codabar Start/Stop Characters		√	√		√	√	
CLSI Editing (Enable)		√	√		√	√	
Transmit Mod 43 Check digit on Code 39		√	√		√	√	
Transit Mod 10/ITF		√	√		√	√	
Transmit MSI-Plessy		√	√		√	√	
Parity	Space		√		√		
Baud Rate	9600		√				
8 Data Bits			√				
7 Data Bits	*		√				
Stop Bits	2		√				

PARAMETER	DEFAULT	OCIA	RS-232	LIGHT PEN	IBM 46XX	KBW	LASER EMULATION
Transmit Sanyo ID Characters			√			√	
Nixdorf ID			√			√	
LRC Enabled			√			√	
UPC Prefix			√			√	
UPC Suffix			√			√	
Carriage Return	*		√			√	
Line Feed-Disabled by default in KBW	*		√			√	
Tab Prefix			√			√	
Tab Suffix			√			√	
"DE" Disable Command			√				
"FL" Laser			√				
Enable Command			√				
DTR Handshaking support			√				
RTS/CTS Handshaking			√				
Character	*		√				
Message RTS/CTS			√				
XON/XOFF Handshaking			√				
ACK/NAK			√				
Two Digit Supplements		√	√	as code 39	√	√	as code 39
Five Digit Supplements		√	√	as code 39	√	√	as code 39
Bookland		√	√	as code 39	√	√	as code 39
977 (2 digit) Supplemental Requirement		√	√	√	√	√	√
Supplements are not Required	*	√	√	√	√	√	√
Two Digit Redundancy	*	√	√	√	√	√	√
Five digit Redundancy		√	√	√	√	√	√

PARAMETER	DEFAULT	OCIA	RS-232	LIGHT PEN	IBM 46XX	KBW	LASER EMULATION
100 msec to Find Supplement Programmable in 100 msec steps (max 800 msec)	*	√	√	√	√	√	√
Coupon Code 128		√	√	as code 39	√	√	as code 39
† Programmable Code Lengths	7 avail	√	√	√	√	√	√
† Code Selects with programmable Code Length Locks	3 avail	√	√	√	√	√	√
Programmable Prefix characters	10 avail		√			√	
Suffix characters	10 avail		√			√	
Prefixes for Individual Code types			√			√	
Editing		√	√	√	√	√	√
Inter Scan-Code delay programmable (100 µsec steps)	800 µsec					√	
Function/control Key Support							
Minimum Element width Programmable in 5.6 µsec steps	1 msec			√			√

† These options are mutually exclusive. One can not be used in conjunction with the other.

APPENDIX C

Scanner Pinout Connections

The MS9520 and MS9540 scanner interfaces terminate to a 10-pin modular jack. The serial # label indicates the interface enabled when the scanner is shipped from the factory.

MS9520-41 & MS9540-41 RS-232C and Light Pen Emulation	
Pin	**Function**
1	Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	RTS Output
5	CTS Input
6	DTR Input/LTPN Source
7	Reserved
8	LTPN Data
9	+5VDC
10	Shield Ground

MS9520-47 & MS9540-47 Keyboard Wedge and Stand-Alone Keyboard	
Pin	**Function**
1	Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	PC Data
5	PC Clock
6	KB Clock
7	PC +5V
8	KB Data
9	+5VDC
10	Shield Ground
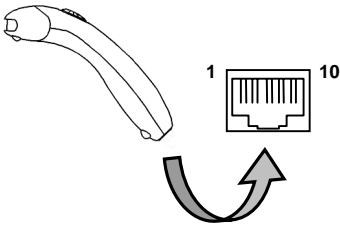
MS9520-11 & MS9540-11 IBM 468X/469X	
Pin	**Function**
1	Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	RTS Output
5	CTS Input
6	DTR Input
7	IBM B-Transmit
8	IBM A+ Receive
9	+5VDC
10	Shield Ground

Continued next page
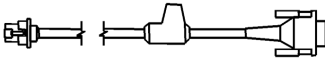
MS9520-9 & MS9540-9 OCIA	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RDATA
5	RDATA Return
6	Clock In
7	Clock Out
8	Clock in Return/Clock out Rtrn
9	+5VDC
10	Shield Ground
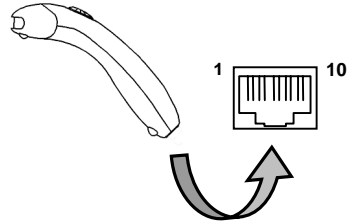
MS9520-00 & MS9540-00	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	Flip Sense/Start of Scan Output
5	Proximity Detect/Trigger Emulation Output
6	Scan/Laser Enable Input
7	Reserved
8	Data Out
9	+5VDC
10	Shield Ground

MS9520-14 & MS9540-14	
Pin	**Function**
1	Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	RTS Output
5	CTS Input
6	DTR Input
7	Reserved
8	DSR Out
9	+5VDC
10	Shield Ground

Cable Connector Configurations

"Standard" PowerLink cable

9-pin D-type female connector to the PC

Pin	Function
1	Shield Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	DTR Input/Light Pen Source
5	Power/Signal Ground
6	Light Pen Data *(DSR Out for -14 interfaces)*
7	CTS Input
8	RTS Output
9	+5VDC
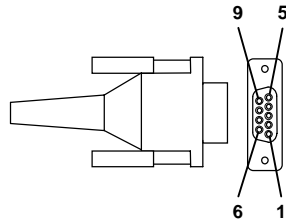
9-Pin D-Type Connector

Stand Alone Keyboard Power Link Cable

Pin	Function
1	PC Data
2	NC
3	Power Ground
4	+5VDC PC Power to KB
5	PC Clock
6	NC
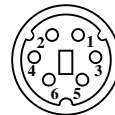
6-Pin Male Mini-DIN Connector

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Cable Connector Configuration

The Keyboard Wedge PowerLink cable [MLPN 53-53002 or 54-54002] is terminated with a 5-pin DIN female connector on one end, and a 6-pin mini DIN male on the other.

Keyboard Wedge PowerLink Cable

5-Pin DIN, Female

6-Pin DIN, Male

Metrologic will supply an adapter cable with a 5-pin DIN male connector on one end and a 6-pin mini DIN female connector on the other.
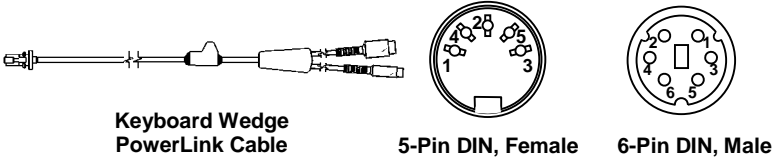
5-Pin DIN, Male

Adapter Cable

6-pin Mini DIN, Female
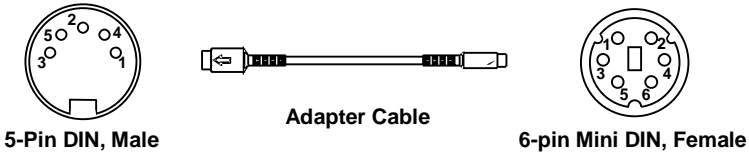
According to the termination required, connect the appropriate end of the adapter cable to the PowerLink cable, leaving the necessary termination exposed for connecting to the keyboard and the keyboard port on the PC. The pin assignments are as follows:

PowerLink Cable

5-pin Female DIN	
Pin	**Function**
1	Keyboard Clock
2	Keyboard Data
3	No Connect
4	Power Ground
5	+5 Volts DC

6-pin Male Mini-DIN	
Pin	**Function**
1	PC Data
2	No Connect
3	Power Ground
4	+5 Volts DC
5	PC Clock
6	No Connect

Adapter Cable

5-pin Male DIN	
Pin	**Function**
1	PC Clock
2	PC Data
3	No Connect
4	Power Ground
5	+5 Volts DC

6-pin Female Mini-DIN	
Pin	**Function**
1	Keyboard Data
2	No Connect
3	Power Ground
4	+5 Volts DC
5	Keyboard Clock
6	No Connect

APPENDIX D – WARRANTY AND DISCLAIMER

Limited Warranty

The MS9500 series scanners are manufactured by Metrologic at its Blackwood, New Jersey, USA facility. The MS9500 series scanners have a five (5) year limited warranty from the date of manufacture. Metrologic warrants and represents that all MS9500 series scanners are free of all defects in material, workmanship and design, and have been produced and labeled in compliance with all applicable US Federal, state and local laws, regulations and ordinances pertaining to their production and labeling.

This warranty is limited to repair, replacement of Product or refund of Product price at the sole discretion of Metrologic. Faulty equipment must be returned to the Metrologic facility in Blackwood, New Jersey, USA or Puchheim, Germany. To do this, contact Metrologic's Customer Service/Repair Department to obtain a Returned Material Authorization (RMA) number.

In the event that it is determined that the equipment failure is covered under the warranty, Metrologic shall, as its sole option, repair the Product or replace the Product with a functionally equivalent unit and return such repaired or replaced Product without charge for service or return freight, whether distributor, dealer/reseller, or retail consumer, or refund an amount equal to the original purchase price.

This limited warranty does not extend to any Product which, in the sole judgement of Metrologic, has been subjected to abuse, misuse, neglect improper installation, or accident, nor any damage due to use or misuse produced from integration of the Product into any mechanical, electrical or computer system. The warranty is void if the case of Product is opened by anyone other than Metrologic's repair department or authorized repair centers.

THIS LIMITED WARRANTY, EXCEPT AS TO TITLE, IS IN LIEU OF ALL OTHER WARRANTIES OR GUARANTEES, EITHER EXPRESS OR IMPLIED, AND SPECIFICALLY EXCLUDES, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE UNDER THE UNIFORM COMMERCIAL CODE, OR ARISING OUT OF CUSTOM OR CONDUCT. THE RIGHTS AND REMEDIES PROVIDED HEREIN ARE EXCLUSIVE AND IN LIEU OF ANY OTHER RIGHTS OR REMEDIES. IN NO EVENT SHALL METROLOGIC BE LIABLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGE, DAMAGES TO PERSON OR PROPERTY, OR EFFECT ON BUSINESS OR PROPERTY, OR OTHER DAMAGES OR EXPENSES DUE DIRECTLY OR INDIRECTLY TO THE PRODUCT, EXCEPT AS STATED IN THIS WARRANTY. IN NO EVENT SHALL ANY LIABILITY OF METROLOGIC EXCEED THE ACTUAL AMOUNT PAID TO METROLOGIC FOR THE PRODUCT. METROLOGIC RESERVES THE RIGHT TO MAKE ANY CHANGES TO THE PRODUCT DESCRIBED HEREIN.

North America Headquarters

Metrologic Instruments, Inc.	Customer Service: 1-800-ID-METRO
90 Coles Road	Tel: 856-228-8100
Blackwood, NJ 08012-4683	Fax: 856-228-6673
	Email: info@metrologic.com
	Website: www.metrologic.com

Germany

Metrologic Instruments GmbH	Tel: 49-89-89019-0
Dornierstrasse 2	Fax: 49-89-89019-200
82178 Puchheim b.	Email: info@europe.metrologic.com
Munich, Germany	

APPENDIX E - NOTICES

Notice

This equipment 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 and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to 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

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

Notice

This Class B digital apparatus complies with Canadian ICES-003.

Remarque

Cet appareil numerique de la class B est conforme à la norme NMB-003 du Canada.

⚠ **Caution**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure. Under no circumstances should the customer attempt to service the laser scanner. Never attempt to look at the laser beam, even if the scanner appears to be nonfunctional. Never open the scanner in an attempt to look into the device. Doing so could result in hazardous laser light exposure. The use of optical instruments with the laser equipment will increase eye hazard.

⚠ **Atención**

La modificación de los procedimientos, o la utilización de controles o ajustes distintos de los especificados aquí, pueden provocar una luz de láser peligrosa. Bajo ninguna circunstancia el usuario deberá realizar el mantenimiento del láser del escáner. Ni intentar mirar al haz del láser incluso cuando este no esté operativo. Tampoco deberá abrir el escáner para examinar el aparato. El hacerlo puede conllevar una exposición peligrosa a la luz de láser. El uso de instrumentos ópticos con el equipo láser puede incrementar el riesgo para la vista.

⚠ **Attention**

L'emploi de commandes, réglages ou procédés autres que ceux décrits ici peut entraîner de graves irradiations. Le client ne doit en aucun cas essayer d'entretenir lui-même le scanner ou le laser. Ne regardez jamais directement le rayon laser, même si vous croyez que le scanner est inactif. N'ouvrez jamais le scanner pour regarder dans l'appareil. Ce faisant, vous vous exposez à une rayonnement laser qú êst hazardous. L'emploi d'appareils optiques avec cet équipement laser augmente le risque d'endommagement de la vision.

⚠ **Achtung**

Die Verwendung anderer als der hier beschriebenen Steuerungen, Einstellungen oder Verfahren kann eine gefährliche Laserstrahlung hervorrufen. Der Kunde sollte unter keinen Umständen versuchen, den Laser-Scanner selbst zu warten. Sehen Sie niemals in den Laserstrahl, selbst wenn Sie glauben, daß der Scanner nicht aktiv ist. Öffnen Sie niemals den Scanner, um in das Gerät hineinzusehen. Wenn Sie dies tun, können Sie sich einer gefährlichen Laserstrahlung aussetzen. Der Einsatz optischer Geräte mit dieser Laserausrüstung erhöht das Risiko einer Sehschädigung.

⚠ **Attenzione**

L'utilizzo di sistemi di controllo, di regolazioni o di procedimenti diversi da quelli descritti nel presente Manuale può provocare delle esposizioni a raggi laser rischiose. Il cliente non deve assolutamente tentare di riparare egli stesso lo scanner laser. Non guardate mai il raggio laser, anche se credete che lo scanner non sia attivo. Non aprite mai lo scanner per guardare dentro l'apparecchio. Facendolo potete esporVi ad una esposizione laser rischiosa.   L'uso di apparecchi ottici, equipaggiati con raggi laser, aumenta il rischio di danni alla vista.

APPENDIX F

Patents

"Patent Information

This METROLOGIC product may be covered by one or more of the following US Patents:

US Patent No. 4,958,984; 5,081,342; 5,260,553; 5,340,971; 5,340,973; 5,424,525; 5,468,951; 5,484,992; 5,525,789; 5,528,024; 5,591,953; 5,616,908; 5,627,359; 5,661,292; 5,777,315; 5,789,730; 5,789,731; 5,811,780; 5,825,012; 5,828,048; 5,883,375; 5,886,337; 5,895,907; 5,925,870; 5,925,871; 5,939,698; 6,029,894; D408,532;

4,360,798; 4,369,361; 4,387,297; 4,460,120; 4,593,186; 4,607,156; 4,673,805; 4,736,095; 4,758,717; 4,816,660; 4,845,350; 4,896,026; 4,923,281; 4,933,538; 4,992,717; 5,015,833; 5,017,765; 5,059,779; 5,117,098; 5,124,539; 5,130,520; 5,132,525; 5,140,144; 5,149,950; 5,180,904; 5,200,599; 5,229,591; 5,247,162; 5,250,790; 5,250,791; 5,250,791; 5,250,792; 5,262,628; 5,280,162; 5,280,164; 5,304,788; 5,321,246; 5,324,924; 5,396,053; 5,396,055; 5,408,081; 5,410,139; 5,436,440; 5,449,891; 5,468,949; 5,479,000; 5,532,469; 5,545,889

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Other worldwide patents pending.

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