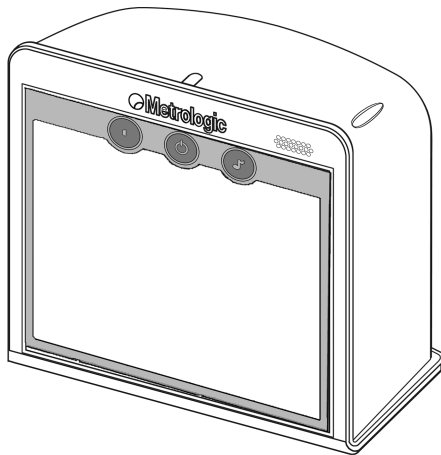




METROLOGIC INSTRUMENTS, INC.
MS7820 Solaris™
Bar Code Scanner
Installation and User's Guide



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TABLE OF CONTENTS

INTRODUCTION

Product Overview	1
Applications and Protocols.....	2
Scanner and Accessories	3
Basic Kit Components	3
Optional Accessories.....	3
Scanner and Accessories	4
MS7820 Scanner Design Specifications.....	7

BASE MODEL CHARACTERISTICS

MS7820 Scanner	9
Components	9
Dimensions	10
Connector Panel.....	10
Caution and Serial Number Label	11

INSTALLATION

Cable Installation (Interface Specific)	12
Keyboard Wedge.....	12
USB.....	13
RS232	14
IBM 46xx	15
Cable Installation (Secondary Metrologic Scanner)	16
EAS Deactivation.....	19
Flex Stand Installation, MLPN 46-00868.....	20
Wall Mount Stand Installation, MLPN 46-00869	23

SCANNER OPERATION

Scan Zone	27
Depth of Field by Minimum Bar Code Element Width.....	28
Indicator Descriptions	32
Audible	32
Visual	33
Failure Modes.....	34
Diagnostic Indicator Display	35

TABLE OF CONTENTS

Power Save Modes.....	36
Touch Button Panel.....	37
MAINTENANCE	
Replaceable Protective Outer Window	38
Daily Maintenance	38
TROUBLESHOOTING GUIDE	
Troubleshooting Symptom / Solution Chart	39
CONFIGURATION MODES.....	44
UPGRADING THE FIRMWARE.....	45
SCANNER AND CABLE TERMINATIONS	
Scanner Pinout Connection	46
Cable Connector Configurations (Host End).....	48
REGULATORY COMPLIANCE	
Safety	50
EMC.....	51
Class A Devices	51
Class B Devices	52
PATENTS.....	53
INDEX	55
CONTACT INFORMATION AND OFFICE LOCATIONS.....	57

INTRODUCTION

PRODUCT OVERVIEW

Metrologic's MS7820 Solaris™ vertical mini-slot scanner increases productivity with an unmatched feature set that aggressively scans high-density codes and fits easily into any existing enclosure found in small item, high-volume retail environments. Every scanner comes standard with an integrated RF EAS antenna, Checkpoint and Sensormatic interlock and the ability to be remotely configured or Flash upgraded. These features, in combination with multiple on-board interfaces and a diagnostic display, make the MS7820 ideal for retailers seeking a lower total cost of ownership on their next scanner investment. Firmware updates are easily loaded into Flash memory.

The MS7820 bar code scanner is equipped with a multitude of standard features including:

- Automatic Scanning Operation
- EAS Deactivation Antenna
- Supports Multiple Interfaces (USB, KBW, RS232, RS485)
- Custom Parsing Bar Code Data
- OPOS and JPOS System Compatible
- RS232 Auxiliary Port for Adding Peripherals (Scanners or Scales)
- User Replaceable Cables
- Coplanar Scanner Surface
- Sunrise 2005 Compliant
- Single-Digit Diagnostic Indicator
- Remote Management Capabilities

INTRODUCTION

APPLICATIONS AND PROTOCOLS

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

SCANNER	COMMUNICATION PROTOCOL(S)
MS7820	RS232, Keyboard Wedge, USB, Auxiliary, 46xx RS485

The MS7820 bar code scanner with Built-in PC Keyboard Wedge Interface is designed to be used for keyboard emulation only. Many RS232 configurable 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)
- IBM PS2 (includes models 30, 70, 8556)

Keyboard Country Type

- *USA
- Belgian
- French
- German
- Hungarian
- Italian
- Japanese
- Russian Cyrillic
- Slovenian
- Spanish
- Swiss
- Swedish/Finnish
- Turkish
- United Kingdom

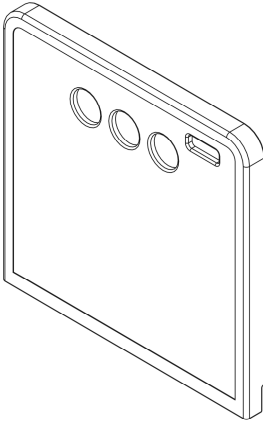
INTRODUCTION

SCANNER AND ACCESSORIES

BASIC KIT COMPONENTS	
Part #	Description
MS7820	Bar Code Scanner
00-02407	MetroSelect® Configuration Guide
00-02283	MS7820 Bar Code Scanner Installation and User's Guide
57-57312-3	MS7820 EAS Cable - Checkpoint (External)
57-57313-3	MS7820 EAS Cable - Sensormatic (External)
<i>Guides also available for download at www.metrologic.com.</i>	
OPTIONAL ACCESSORIES	
Part #	Description
MS7820 Scanner Interface Cables	
5S-5Sxxx-3*	Straight, VLink Cable with short strain relief
5S-5Sxxx-N-3*	Straight, Direct Cable with short strain relief
5S-5S002-3	Keyboard Wedge VLink Cable with Adapter Cable
5S-5S006-N-3	468x (IBM) Direct Cable
5S-5S213-N-3	USB Direct 12V (Type A Plus Power) Cable
5S-5S235-3	USB 12VLink Cable (Type A)
57-57499-3	RS232 Scanner AUX 12VLink Cable
57-57499-N-3	RS232 Scanner AUX Direct Cable
57-57500-N-3	RS232 Scale AUX Cable (Mettler-Toledo Viva)
57-57501-N-3	AUX Cable (MT Viva Scale Handheld Scanner)
<i>xxx*</i>	<i>Specifies connection to the host.</i>
<i>Contact a customer service representative for additional information.</i>	

INTRODUCTION

SCANNER AND ACCESSORIES

OPTIONAL ACCESSORIES	
Part #	Description
AC to DC Power Transformer – Regulated 12V@ 1.25A output	
46-00862	Power Supply, United States / Japan
46-00863	Power Supply, Continental Europe
46-00864	Power Supply, United Kingdom
46-00865	Power Supply, China
46-00866	Power Supply, Australia
Part #	Description
7800 External Window Option	
46-00867	7800 Replaceable Protective Outer Window
	
<p>** For 7800 Replacement Protective Outer Window removal / installation instructions see page 38 of this manual.</p>	
<p><i>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.</i></p>	

INTRODUCTION

SCANNER AND ACCESSORIES

OPTIONAL ACCESSORIES	
Part #	Description
46-00868	MS7820 Flex Stand Kit
Flex Stand, Kit Components	
1. Tall Flex Pole Cover	Qty. 1
2. Tall Flex Pole.....	Qty. 1
3. Stand Base.....	Qty. 1
4. Plastic Stand Base Cover.....	Qty. 1
5. M4 x 0.7 x 10-10N Flat Head Screw.....	Qty. 2
6. #8 x 1.00" Wood Screw	Qty. 4
7. 1/4" Lock Washer	Qty. 2

INTRODUCTION

SCANNER AND ACCESSORIES

OPTIONAL ACCESSORIES																	
Part #	Description																
46-00869	MS7820 Wall Mount Stand Kit																
Wall Mount Stand, Kit Components																	
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">1. Short Flex Pole.....</td> <td style="width: 33%; text-align: right;">Qty. 1</td> </tr> <tr> <td>2. Short Flex Pole Cover</td> <td style="text-align: right;">Qty. 1</td> </tr> <tr> <td>3. Plastic Housing.....</td> <td style="text-align: right;">Qty. 1</td> </tr> <tr> <td>4. Plastic Stand Base Cover.....</td> <td style="text-align: right;">Qty. 1</td> </tr> <tr> <td>5. Wall Mounting Bracket.....</td> <td style="text-align: right;">Qty. 1</td> </tr> <tr> <td>6. 1/4" Lock Washer</td> <td style="text-align: right;">Qty. 2</td> </tr> <tr> <td>7. M4 x 0.7 x 10-10N Flat Head Screw.....</td> <td style="text-align: right;">Qty. 3</td> </tr> <tr> <td>8. #8 x 1.00" Wood Screw</td> <td style="text-align: right;">Qty. 4</td> </tr> </table>		1. Short Flex Pole.....	Qty. 1	2. Short Flex Pole Cover	Qty. 1	3. Plastic Housing.....	Qty. 1	4. Plastic Stand Base Cover.....	Qty. 1	5. Wall Mounting Bracket.....	Qty. 1	6. 1/4" Lock Washer	Qty. 2	7. M4 x 0.7 x 10-10N Flat Head Screw.....	Qty. 3	8. #8 x 1.00" Wood Screw	Qty. 4
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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.

INTRODUCTION

MS7820 SCANNER DESIGN SPECIFICATIONS

MS7820 SERIES DESIGN SPECIFICATIONS	
OPERATIONAL	
Light Source:	V isible L aser D iode (VLD) @ 650 nm
Laser Power:	0.900 mW (peak)
Depth of Field:	0 mm to 255.0 mm (0"- 10.0") for 0.33 mm (13 mil) bar code
Width of Scan Field:	38 mm (1.5") @ 15 mm (0.6"); 135 mm (5.3") @ 191 mm (7.5")
Scan Speed:	1800 scans/second
Scan Pattern:	5 fields of 4 parallel lines (omnidirectional)
Scan Lines:	20
Min Bar Width:	0.127 mm (5.0 mil)
Decode Capability:	Auto-discriminates all standard bar codes; for other sympologies call Metrologic
System Interfaces:	Keyboard Wedge, RS232, USB, IBM 468x/469x
Print Contrast:	35% minimum reflectance difference
No. Characters Read:	up to 80 data characters (Maximum number will vary based on symbology and density)
Roll, Pitch, Yaw:	360°, 60°, 60°
Beeper Operation:	7 tones or no beep
Indicators (LED):	Blue = laser on, ready to scan, and good read.
MECHANICAL	
Dimensions:	152 mm (6.0") H, 92 mm (3.6") D, 152 mm (6.0") W
Footprint of Stand	152 mm (6.0") x 64 mm (2.5")
Weight:	0.706 Kg (1.56 lbs)
Termination:	Two: 10-pin modular RJ45 jacks One: 6-pin modular RJ45 jack
Cable:	Standard 2.1m (7') straight; for other cables call Metrologic

INTRODUCTION

MS7820 SCANNER DESIGN SPECIFICATIONS

	MS7820 SERIES DESIGN SPECIFICATIONS
ELECTRICAL	
Input Voltage:	12VDC \pm 0.25V
Power:	4.8 W
Operating Current:	320 mA
DC Transformers:	Class II; 12VDC @ 1.25A
<i>For Regulatory Compliance information, see pages 50 - 52.</i>	
ENVIRONMENTAL	
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Storage Temperature:	-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 foot candles)
Contaminants:	Sealed to resist airborne particulate contaminants
Ventilation:	None required

BASE MODEL CHARACTERISTICS

MS7820 SCANNER

Components

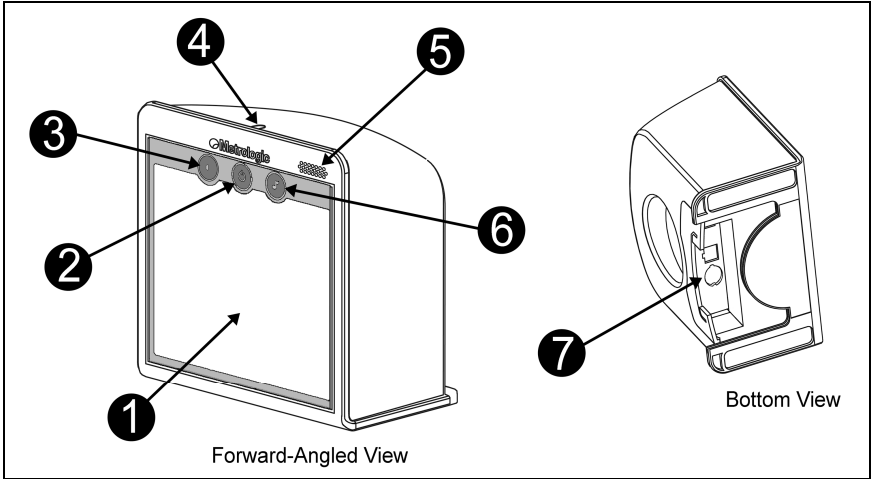


Figure 1. 7820 Bar Code Scanner Parts

- 1** Scratch Resistant Output Window (Laser Aperture)
- 2** Power Save Button
- 3** Volume Button
- 4** Blue Indicator LED
- 5** Speaker
- 6** Tone Button
- 7** Cable Connection Area

BASE MODEL CHARACTERISTICS

MS7820 SCANNER

Dimensions

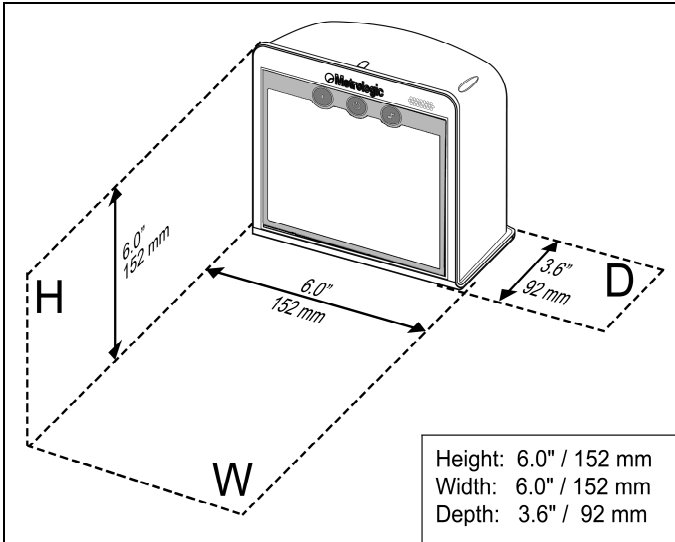


Figure 2. MS7820 Bar Code Scanner Dimensions

Connector Panel

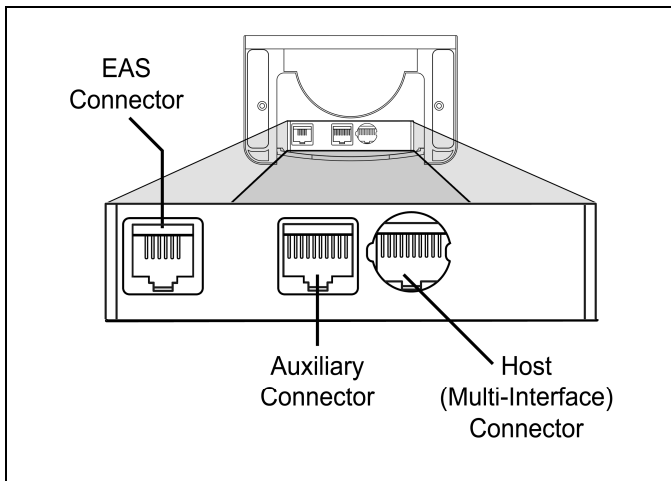


Figure 3. MS7820 Connector Panel Layout

BASE MODEL CHARACTERISTICS

MS7820 SCANNER

Caution and Serial Number Labels

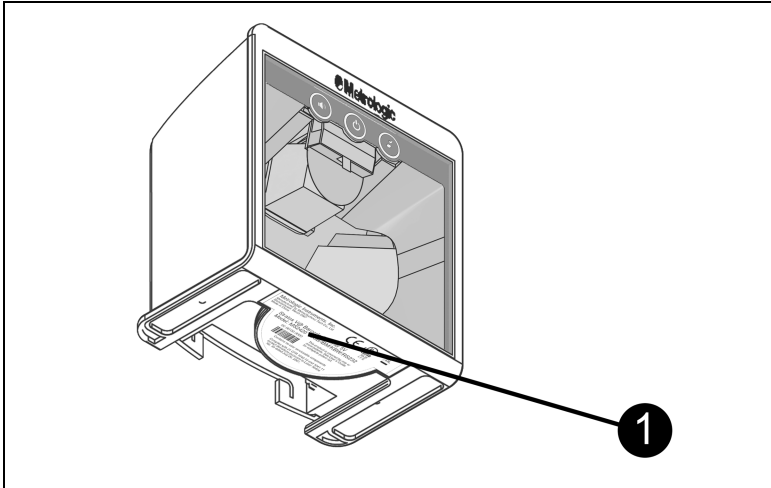
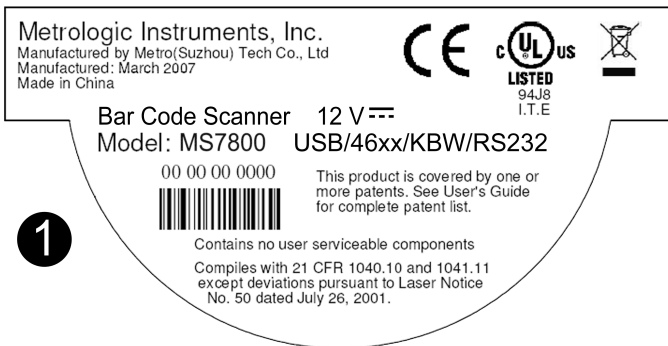


Figure 4. 7820 Label Location (Top) & Sample Label (Below)



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/IEC 60950-1.

To maintain compliance with standard CSA C22.2 No. 60950-1/UL 60950-1 and norm EN/IEC 60950-1, the power source should meet applicable performance requirements for a limited power source.

INSTALLATION

CABLE INSTALLATION (INTERFACE SPECIFIC)

Keyboard Wedge

1. Turn off the host system.
2. Disconnect the keyboard from the host.
3. Connect the keyed VLink cable to the 10-pin Multi-Interface jack. It is the only circular keyed jack located on the bottom of the MS7820 (see figure 5).
4. Connect the “Y” end of the VLink cable to the keyboard and the keyboard port on the host. If necessary, use the male/female adapter cable supplied with the scanner for proper connections.



Before continuing, verify the VLink cable is connected to the appropriate interface jack on the scanner. An incorrect cable connection can cause communication problems or potential damage to the scanner.

5. Connect the external power supply to the power jack on the scanner.
6. Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet.
7. Connect AC power to the transformer. The outlet should be near the equipment and easily accessible.
8. Scan the *Recall Defaults* bar code to configure the MS7820 for Keyboard Wedge communication.
9. Turn on the host system.
10. Snap on the cable cover.

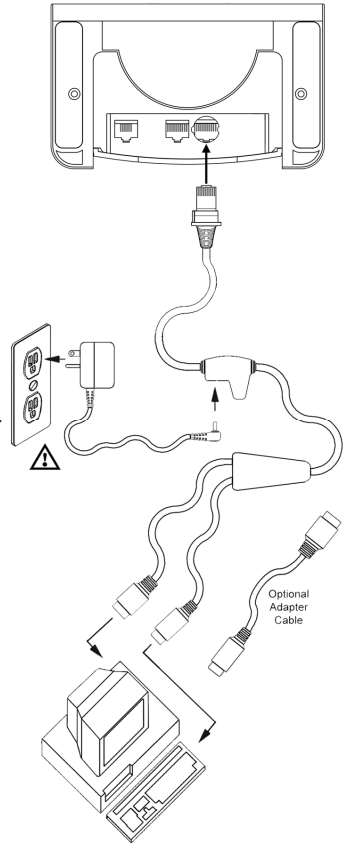


Figure 5.
Keyboard Wedge Interfaces



See SELV Power caution statement located on page 11 of this manual.

INSTALLATION

CABLE INSTALLATION (INTERFACE SPECIFIC)

USB

1. Connect the keyed VLink cable to the 10-pin Multi-Interface jack. It is the only circular keyed jack located on the bottom of the MS7820 (see figure 6).
2. Connect the other end of the USB cable to the host.



Before continuing, verify the USB cable is connected to the appropriate interface jack on the scanner. An incorrect cable connection can cause communication problems or potential damage to the scanner.



Plugging the scanner into the USB port of the PC does not guarantee that scanned information will appear at the PC. A software driver and correct configuration setting may also be required for proper communication depending on settings.

3. Scan the *Recall Defaults* bar code to configure the MS7820 for USB communication.
4. Turn on the host system.
5. Snap on the cable cover.

For additional communication options for USB interfaces refer to the MetroSelect Configuration Guide (MLPN 00-02407).

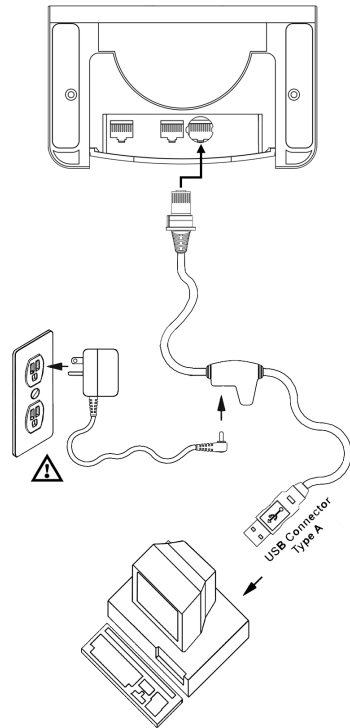


Figure 6. USB, Interface



See SELV Power caution statement located on page 11 of this manual.

INSTALLATION

CABLE INSTALLATION (INTERFACE SPECIFIC)

RS232

1. Turn off the host system.
2. Connect the keyed VLink cable to the 10-pin Multi-Interface jack. It is the only circular keyed jack located on the bottom of the MS7820 (see figure 7).
3. Connect the other end of the VLink cable to the host.



Before continuing, verify the VLink cable is connected to the appropriate interface jack on the scanner. An incorrect cable connection can cause communication problems or potential damage to the scanner.

4. Connect the external power supply to the power jack on the scanner.
5. Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet.
6. Connect AC power to the transformer. The outlet should be near the equipment and easily accessible.
7. Scan the *Recall Defaults* bar code to configure the MS7820 for RS232 communication.
8. Turn on the host system.
9. Snap on the cable cover.

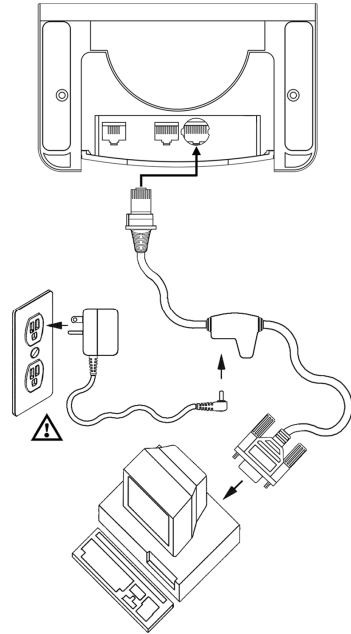


Figure 7. RS232 Interface



See SELV Power caution statement located on page 11 of this manual.

INSTALLATION

CABLE INSTALLATION (INTERFACE SPECIFIC)

IBM 46xx

1. Turn off the host system.
2. Connect the keyed cable to the 10-pin Multi-Interface jack. It is the only circular keyed jack located on the bottom of the MS7820 (see figure 8).
3. Connect the other end of the cable to the host.

STOP Before continuing, verify the cable is connected to the proper communication jack on the scanner. Incorrect cable connection can cause communication problems or potential damage to the scanner.



Plugging the scanner into the serial port of the PC does not guarantee that scanned information will appear at the PC. A software driver and correct configuration setting are also required for proper communication to occur.

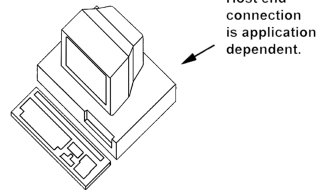
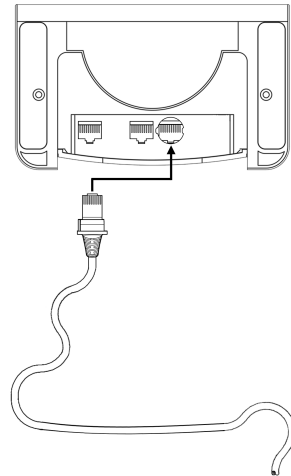


Figure 8. IBM 46xx Interface

4. Turn on the host system.
5. Scan the *Recall Defaults* bar code to configure the MS7820 for RS232/IBM communication.
6. Snap on the cable cover

For additional communication options for IBM interfaces refer to the MetroSelect Configuration Guide (MLPN 00-02407).



See *SELV Power caution statement* located on page 11 of this manual.

INSTALLATION

CABLE INSTALLATION (SECONDARY METROLOGIC SCANNER)

1. Turn off the host system.
2. Connect the round end of the *VLink RS232 AUX* cable [MLPN 57-57499-3] to the RS232 jack of the auxiliary scanner (see *figure 9* on *page 18*).
3. Connect the other end of the *VLink RS232 AUX* cable into the Auxiliary (*AUX*) jack, which is located directly next to the circular keyed Multi-Interface jack. The Auxiliary (*AUX*) jack has a **square** opening.

The following Metrologic scanners can be used in the Auxiliary (*AUX*) input of the MS7820: the MS9520, MS9540, MS7120, MS7220 or another MS7820.



Important: The MS7820 aux port requires the signals: transmit, receive, RTS & CTS from the auxiliary scanner.

4. Connect the MS7820/Host VLink* cable to the circular keyed Multi-Interface jack located on the bottom of the MS7820.
5. Connect the other end of the MS7820/Host VLink cable to the Host.
6. Connect the external power supply to the power jack on the VLink cable.
7. Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet.
8. Snap on the cable cover.
9. Connect AC power to the transformer. The outlet should be near the equipment and easily accessible.
10. Configure the MS7820 for the appropriate interface configuration settings.*

* The MS7820/host cable connection is interface dependent. Refer to the installation steps provided for the type of interface (*RS232, IBM 46xx, etc.*) required for your application.



See SELV Power caution statement located on page 11 of this manual.

INSTALLATION

CABLE INSTALLATION (SECONDARY METROLOGIC SCANNER)

11. Scan the following bar code to configure the auxiliary port on the MS7820 to accept a Metrologic scanner as the secondary scanner.



The following bar codes **do not apply** when using an MS6720 as a secondary scanner. Contact a Metrologic representative for additional information on the MS6720. If the secondary scanner is not a Metrologic scanner refer to Section O of the MetroSelect Configuration Guide.



The auxiliary input port's data format must match the main output format of the secondary scanner.

12. Scan the following bar codes, in order, to configure the secondary scanner to match the auxiliary port's data format.

1st

Enable AUX Output



2nd

Secondary Scanner Data Format



3rd

Enable Comm Timeouts



4th (Optional)

Turn OFF Secondary Scanner's Beeper



13. Turn on the host system.

INSTALLATION

CABLE INSTALLATION (SECONDARY METROLOGIC SCANNER)

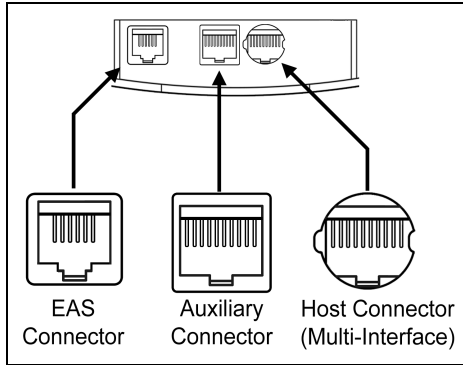
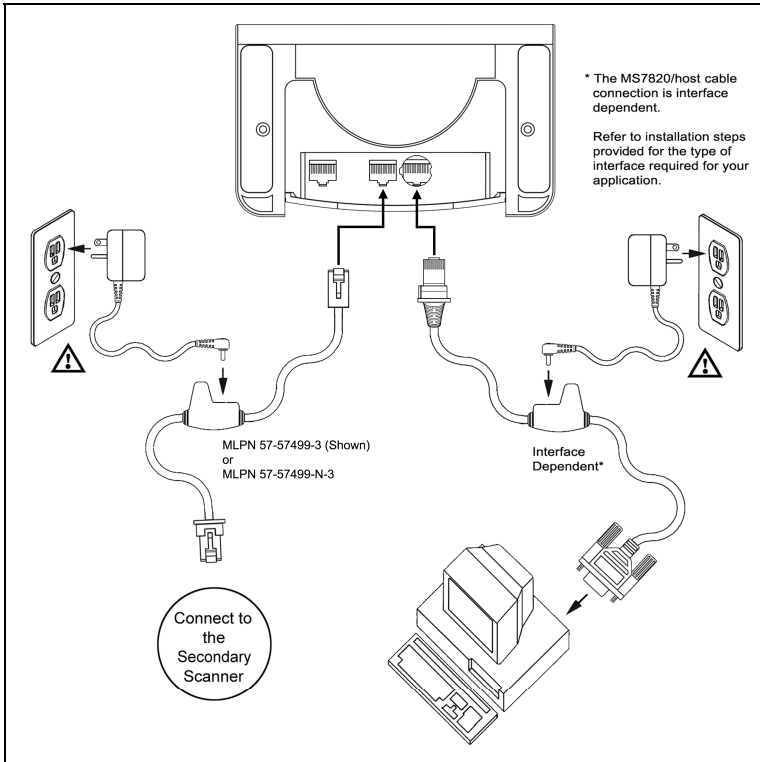


Figure 9. Connector Orientation (Top)
Auxiliary Scanner Setup (Bottom)

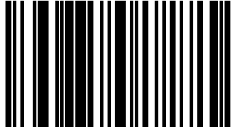


See SELV Power caution statement located on page 11 of this manual.

INSTALLATION

EAS DEACTIVATION

SW1 and SW2 are the switch banks inside the Checkpoint device that set the deactivation range. Metrologic recommends end users program the MS7820 bar code scanner to the *Short Range**, so that the unit does not scan out beyond the deactivation range.

Unit #	Checkpoint Recommended Switch Bank Settings	MS7820 Depth of Field Recommended Settings
MS7820	SW1 - 2, 3, 4, 5, 6 set to ON & SW2 - 2, 3, 4, 5, 6 set to ON	<p data-bbox="713 459 857 483">Short Range*</p>  <p data-bbox="682 618 888 634">3 1 1 8 7 1 1</p>
<p data-bbox="160 672 903 696">* Note: Minimum element width changes to 6.8 mil when in this mode.</p>		

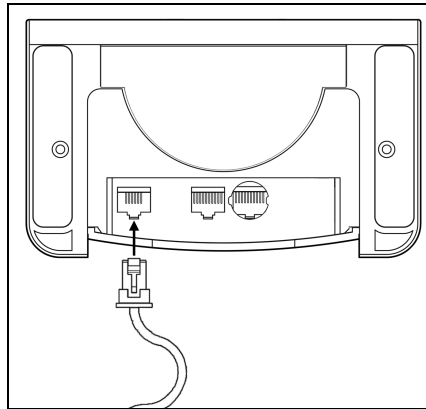


Figure 10. EAS Deactivation Antenna

Contact Checkpoint Systems directly for additional EAS support.

INSTALLATION

FLEX STAND INSTALLATION, MLPN 46-00868

1. Drill four #39 pilot holes in the counter top for the stand base plate.

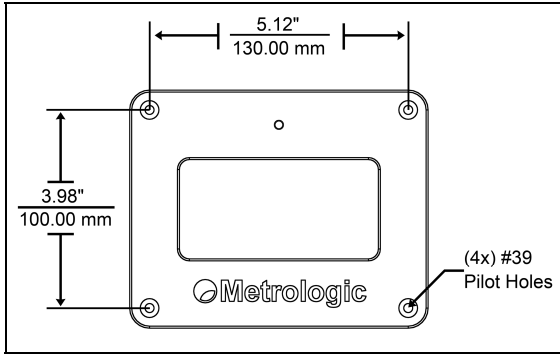


Figure 11. Base Plate Hole Pattern

2. Attach the flex pole assembly and secure the base plate to the counter. Slide the flex cover over the flex pole assembly. Once the flex pole has been assembled, mount the stand base plate to the counter and install the flex cover over the flex pole assembly.

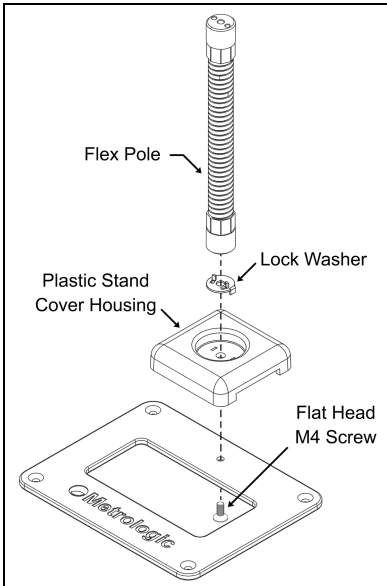


Figure 12. Pole Assembly

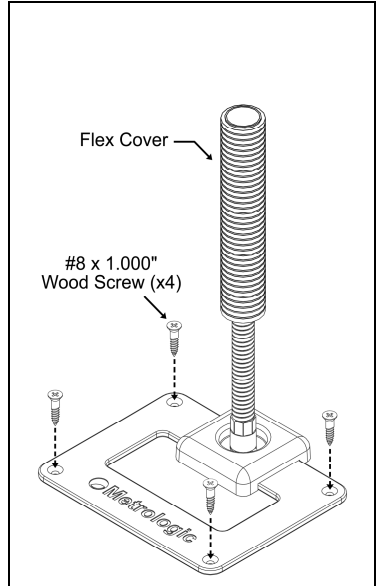


Figure 13. Cover Assembly

INSTALLATION

FLEX STAND INSTALLATION

3. Remove the scanner's back plate from the rear side of the unit. Apply pressure to the points shown in *Figure 14* until the back plate unlatches from the scanner.

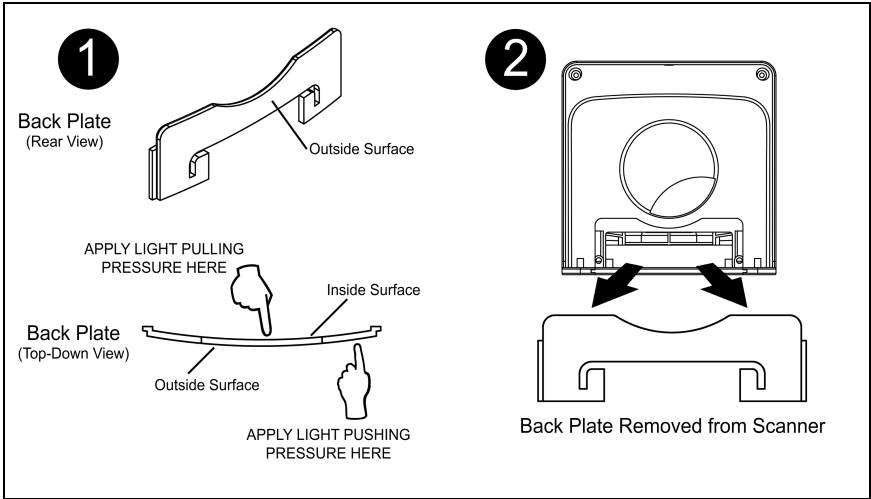


Figure 14. Cable Cover Removal

4. Slide the bottom mounting plate off the scanner.

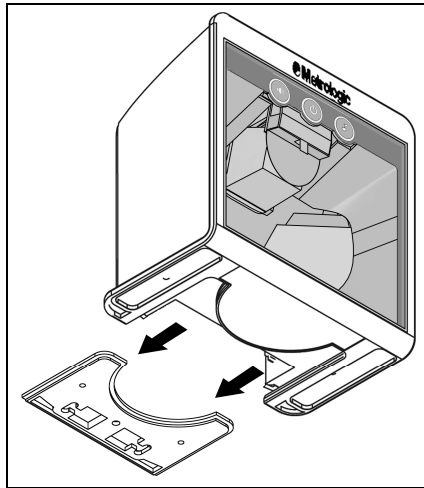


Figure 15. Mounting Plate Removal

INSTALLATION

FLEX STAND INSTALLATION

5. Attach the scanner mounting plate to the flex pole.

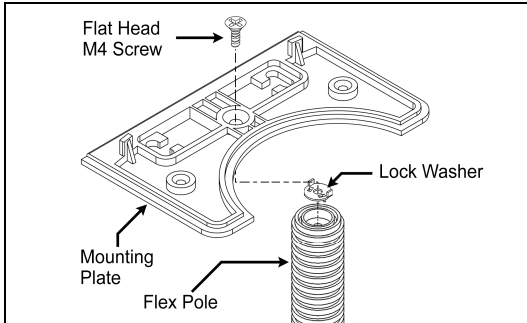


Figure 16. Secure mounting plate to flex pole.

6. Slide the scanner onto the mounting plate until the plate is fully seated into the scanner.

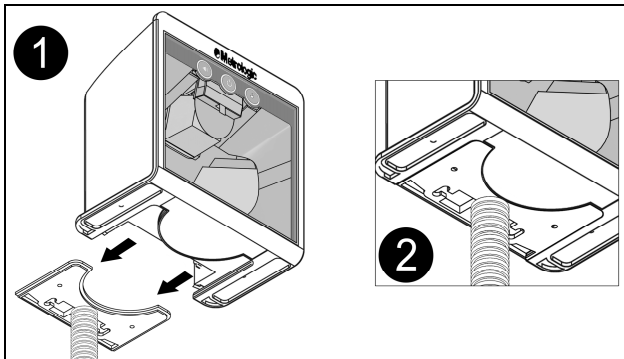


Figure 17. Slide mounting plate into scanner.

7. **Before** installing the scanner's cable cover, refer to pages 12-19 for instructions on the proper cable connections.

8. Re-Install the scanner's back plate to lock-in the bottom mounting plate.

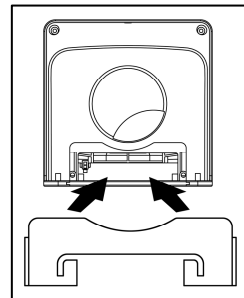


Figure 18. Install back plate

INSTALLATION

WALL MOUNT STAND INSTALLATION, MLPN 46-00869

1. Locate the area on the wall where the scanner will be mounted and drill four #39 pilot holes in the wall for the stand base plate.

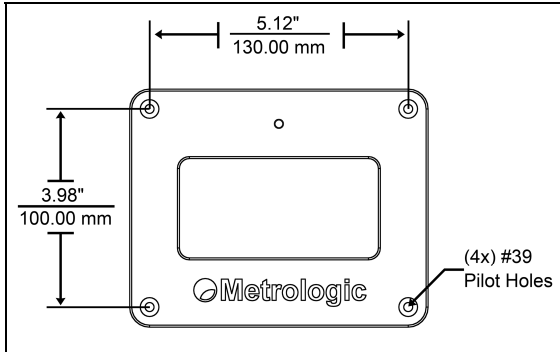


Figure 19. Base Plate Hole Pattern

2. Attach the flex pole assembly to the Wall Mount plate. Slide the flex cover over the flex pole assembly.

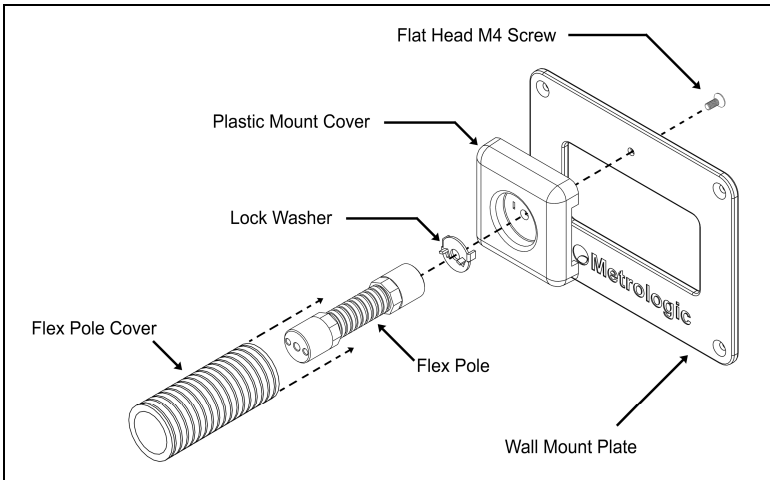


Figure 20. Pole Assembly

INSTALLATION

WALL MOUNT STAND INSTALLATION

3. Remove the scanner's back plate from the rear side of the unit. Apply pressure to the points shown in *Figure 21* until the back plate unlatches from the scanner.

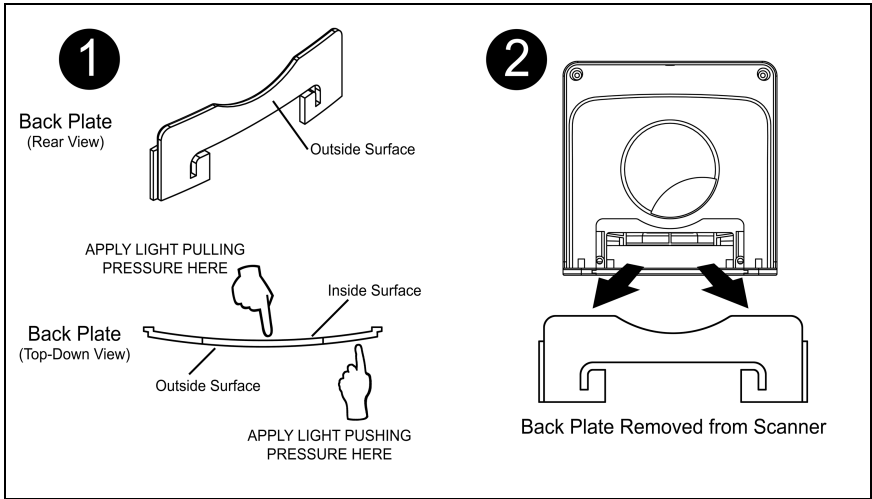


Figure 21. Cable Cover Removal

4. Slide the bottom mounting plate off the scanner.

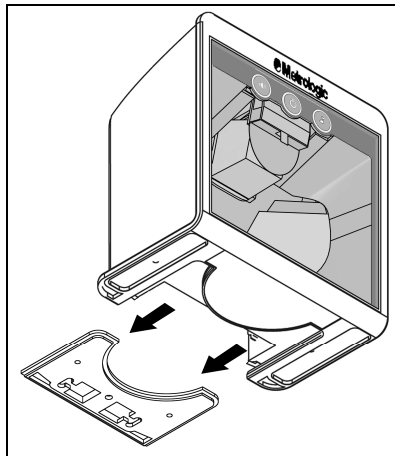


Figure 22. Mounting Plate Removal

INSTALLATION

WALL MOUNT STAND INSTALLATION

- Secure the wall mounting plate to the wall location designated in Step 1 and assemble the remaining parts as shown in *Figure 23*.

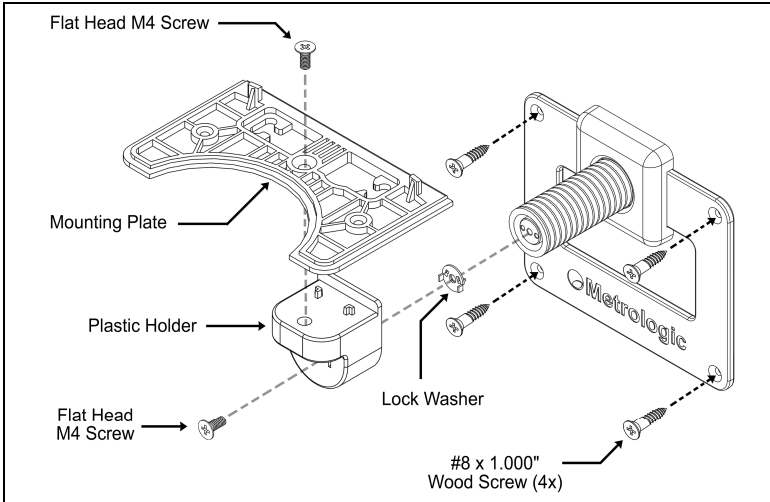


Figure 23. Scanner Mounting Plate Assembly

- Slide the scanner onto the mounting plate until the plate is fully seated into the scanner.

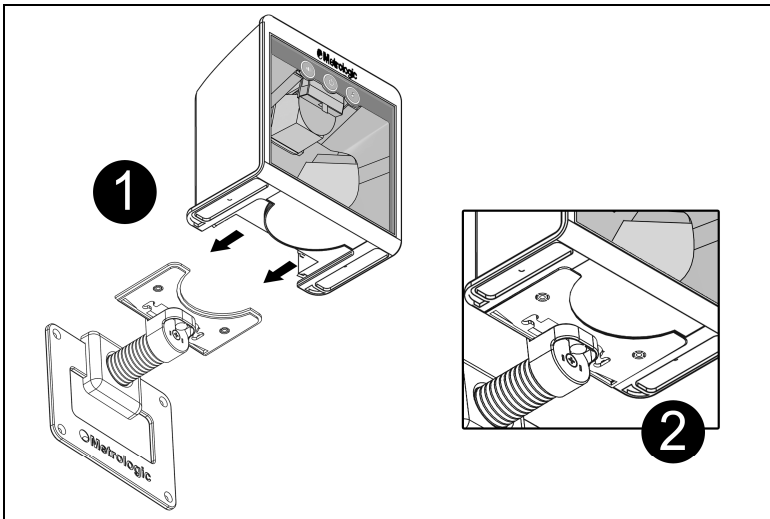


Figure 24. Slide mounting plate into scanner.

INSTALLATION

WALL MOUNT STAND INSTALLATION

7. **Before** installing the scanner's cable cover, refer to pages 12-19 for instructions on the proper cable connections.
8. Re-Install the scanner's back plate to lock-in the bottom mounting plate.

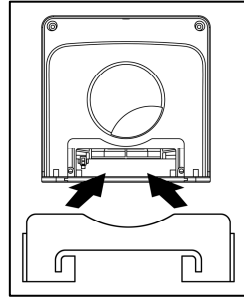


Figure 25. Install back plate

SCANNER OPERATION

SCAN ZONE (BASED ON 100% UPC BAR CODES)

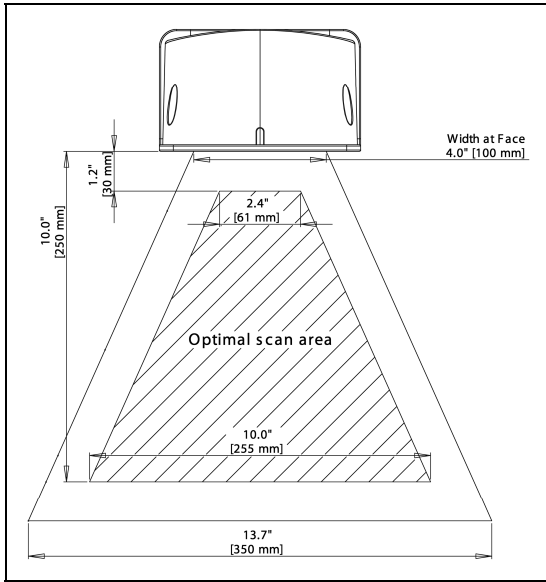
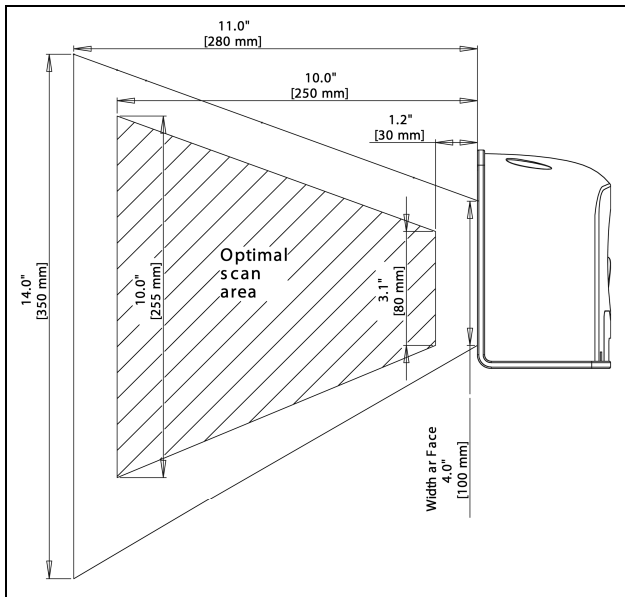


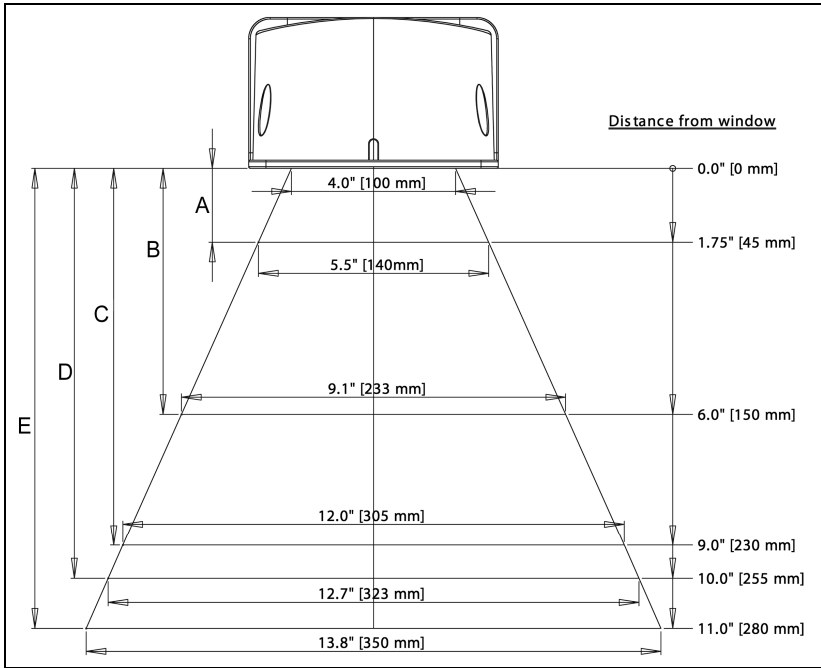
Figure 26. Scan Area Top View (top) Side View (Bottom)



Specifications are subject to change without notice.

SCANNER OPERATION

DEPTH OF FIELD BY MINIMUM BAR CODE ELEMENT WIDTH (BASED ON 100% UPC BAR CODES)



**Figure 27. Depth of Field Top View
Long Range Mode**

Minimum Bar Code Element Width Long Range Mode					
	A	B	C	D	E
mm	.132	.190	.264	.330	.660
mils	5.2	7.5	10.4	13.0	26.0

Specifications are subject to change without notice.

SCANNER OPERATION

DEPTH OF FIELD BY MINIMUM BAR CODE ELEMENT WIDTH (BASED ON 100% UPC BAR CODES)

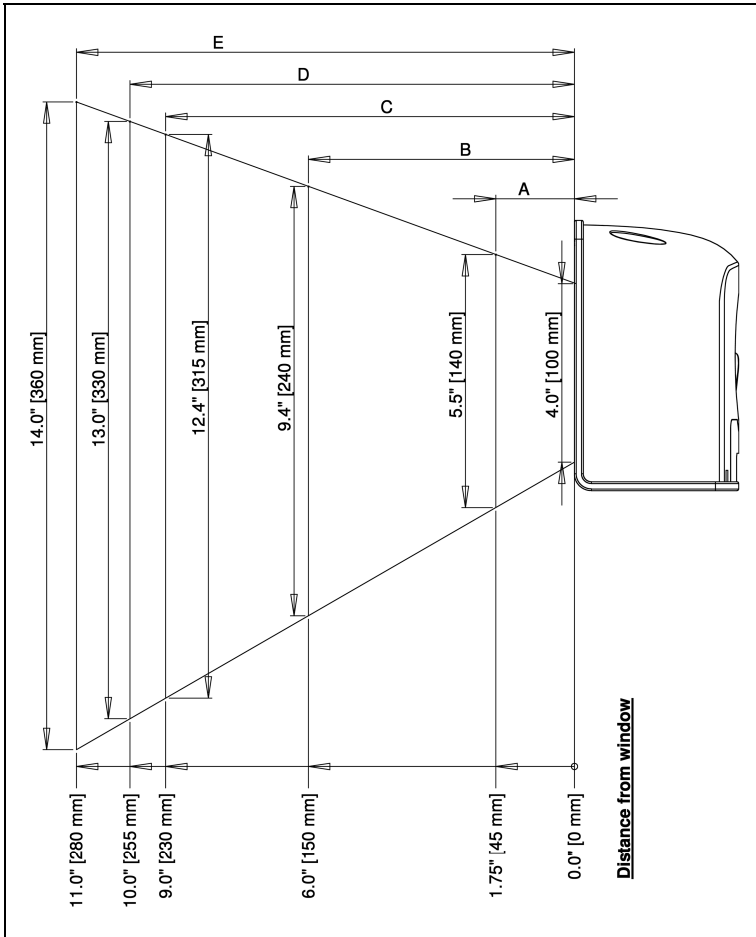


Figure 28. Depth of Field Side View
Long Range Mode

Minimum Bar Code Element Width Long Range Mode					
	A	B	C	D	E
mm	.132	.190	.264	.330	.660
mils	5.2	7.5	10.4	13.0	26.0

Specifications are subject to change without notice.

SCANNER OPERATION

DEPTH OF FIELD BY MINIMUM BAR CODE ELEMENT WIDTH (BASED ON 100% UPC BAR CODES)

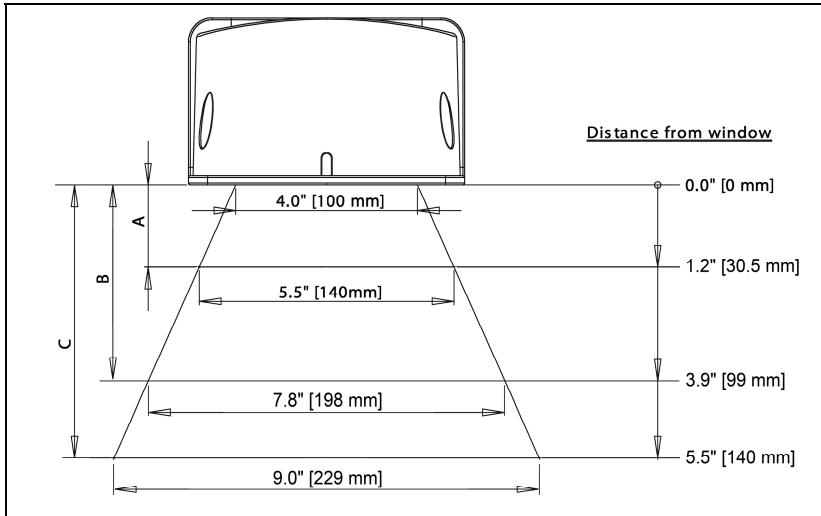


Figure 29. Depth of Field Top View
Short Range Mode

Minimum Bar Code Element Width			
Short Range Mode			
	A	B	C
mm	.190	.264	.330
mils	7.5	10.4	13.0

Specifications are subject to change without notice.

SCANNER OPERATION

DEPTH OF FIELD BY MINIMUM BAR CODE ELEMENT WIDTH (BASED ON 100% UPC BAR CODES)

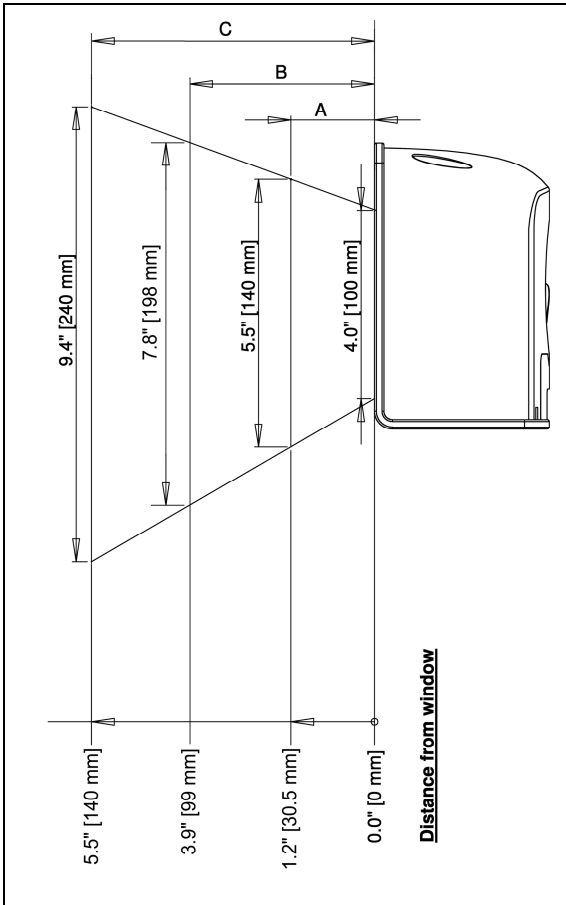


Figure 30. Depth of Field Side View
Short Range Mode

Minimum Bar Code Element Width Short Range Mode			
	A	B	C
mm	.190	.264	.330
mils	7.5	10.4	13.0

Specifications are subject to change without notice.

INDICATOR DESCRIPTIONS

Audible

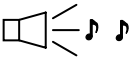
When the MS7820 scanner is in operation, it provides audible feedback. These sounds indicate the status of the scanner. Eight settings are available for the tone of the beep (normal, 6 alternate tones and no tone). To change the tone, use the *Tone Button* or refer to the MetroSelect Configuration Guide.



One Beep

When the scanner *first* receives power, the blue LED will turn on and the scanner will beep once. The blue LED will remain on for the duration of the beep. The scanner is now ready to scan.

When the scanner *successfully* reads a bar code, the blue LED will flash and the scanner will beep once (if configured to do so). If the scanner does not beep once and the blue LED does not flash, then the bar code has *not* been successfully read.



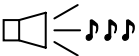
Two Beeps

The scanners programmed interface setting does not match the actual connected interface cable. This audible indicator will be heard during power up, or when a bar code is scanned.



Razzberry Tone

This is a failure indicator. Refer to failure modes on page 34.



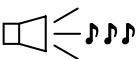
Three Beeps - during operation

When placing the scanner in program mode, the blue LED will flash while the scanner simultaneously beeps three times. The blue LED will continue to flash until the unit exits program mode. Upon exiting program mode, the scanner will beep three times and the LED will stop flashing.

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

The scanner will beep three times in an ascending tone, with each beep higher in pitch than the previous. This tells the user that the single configuration bar code has *successfully* configured the scanner.

Three beeps will also occur during a manual adjustment of the beeper tone. The scanner will emit three evenly pitched/spaced tones with the blue indicator LED blinking in unison.



Three Beeps - on power up

This is a failure indicator. Refer to failure modes on page 34.

SCANNER OPERATION

INDICATOR DESCRIPTIONS

Visual

There is a blue LED on the top of the MS7820 as well as three illuminated buttons on the front. When the scanner is on, the flashing or constant illumination of the LED indicates the status of the current scan and the scanner.

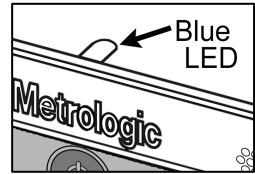


Figure 31. LEDs



No Blue LED

The LEDs will not be illuminated if the scanner is not receiving power from the host or transformer.

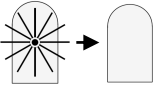
or

The unit is in Power Save Mode. During Power Save Mode, the laser will be off and the blue LED will not illuminate.



Steady Blue LED

When the laser is active, the blue LED is illuminated. The blue LED will remain illuminated until the laser is deactivated.



Steady Blue LED to OFF

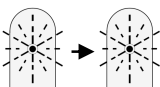
After a successful scan, the scanner transmits the data to the host device. Some communication modes require that the host inform the scanner when data is ready to be received. If the host is not ready to accept the information, the scanner's blue LED will remain off until the data can be transmitted.



Single Blue LED Flash

When the scanner successfully reads a bar code, the blue LED will flash and the scanner will beep once. If the blue LED does not flash or the scanner does not beep once, then the bar code has not been successfully read.

The blue LED will also flash once while the EAS is in deactivation mode.



Flashing Blue LED

This indicates the scanner is in program mode. A flashing blue LED with razzberry tone indicates that an invalid bar code has been scanned during this mode.

INDICATOR DESCRIPTIONS

Failure Modes

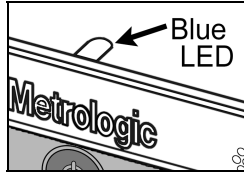
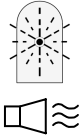
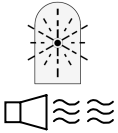


Figure 32. LED



Flashing BLUE LED and One Razzberry Tone

This indicates the scanner has experienced a laser subsystem failure. Return the unit for repair at an authorized service center.



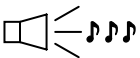
Flashing Blue LED and Two Razzberry Tones

This indicates the scanner has experienced a motor failure. Return the unit for repair at an authorized service center.



Continuous Razzberry Tone with LED off

If, upon power up, the scanner emits a continuous razzberry tone, then the scanner has an electronic failure. Return the unit for repair at an authorized service center.



Three Beeps - on power up

The scanner beeps three times on power up indicates the nonvolatile memory, that holds the scanner configuration, has failed. Return the unit for repair at an authorized service center.

SCANNER OPERATION

INDICATOR DESCRIPTIONS

Diagnostic Indicator Display

There is a green colored (when illuminated) single digit error code display located to the left of the scanner's mirrored polygon (see figure to the right).

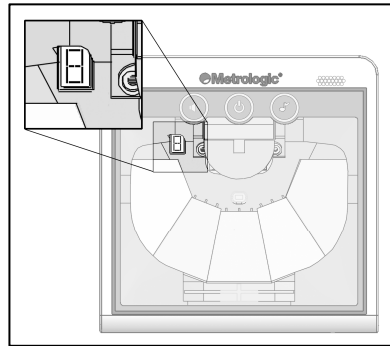


Figure 33. Failure LED

ERROR CODE	DESCRIPTION
0	RAM ERROR – The scanner's Random Access Memory (RAM) is tested as faulty. Return the unit for repair at an authorized service center.
1	PROGRAM ERROR – The scanner's software program is failing. Return the unit for repair.
2	INTERFACE ERROR – After power up and any application exit (e.g. MetroSet, etc.), the scanner checks the interface hardware with that chosen in configuration. If they do not agree, an interface error exists.
3	CONFIGURATION ERROR – The non-volatile configuration memory did not agree with the data last saved. Default configuration data is then used and the scanner continues operating.
4	COMMUNICATION ERROR – The RS232 data line is being held active. The scanner will abort attempts to enter configuration mode after a short timeout.
5	COPROCESSOR COMMUNICATION ERROR – The main microprocessor is not communicating with the interface coprocessor. Return the unit for repair at an authorized service center.
6	LASER ERROR – The laser in the scanning system denotes a failure. Return the unit for repair at an authorized service center.
7	MOTOR ERROR – The motor in the scanning system denotes a failure. Return the unit for repair at an authorized service center.
8	SCALE ERROR – The scanner is not communicating with the scale.
9	EAS ERROR – The scanner is not communicating with the EAS device.

SCANNER OPERATION

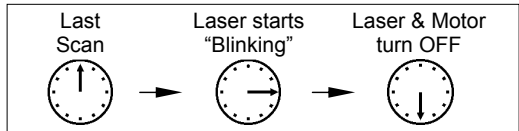
POWER SAVE MODES

The MS7820 bar code scanner has five configurable power save modes. Refer to the *MetroSelect Configuration Guide* for additional information on Power Save Modes.

- Blink Power Save Mode:**
“Blinks” the laser OFF & ON after a configured period of non-use.
When the scanner recognizes a bar code, it will exit the Blink mode.
- Laser Off Power Save Mode (Default):**
Turns the laser OFF after a configured period of non-use.
The motor continues to spin allowing for a faster “wake” up time. Pressing any of the three buttons will “wake” the scanner from the *Laser Off* power save mode (see figure 17).
- Laser & Motor Off Power Save Mode:**
Turns the laser and motor OFF after a configured period of non-use.
Pressing any of the three buttons will “wake” the scanner from the power save mode (see figure 37). This mode’s “wake up” time is slightly longer due to the motor’s need to restart.
- Dual Action Power Save Mode #1:**
“Blinks” the laser OFF & ON after a configured period of non-use turns the laser and motor OFF at thirty-minute intervals.

Example:

If the power save timeout is set to 15 minutes.

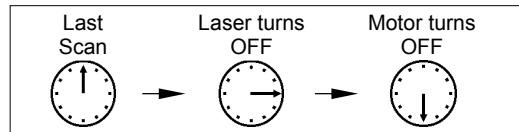


Pressing the Power Save button will “wake” the scanner from the power save mode (see figure 37).

- Dual Action Power Save Mode #2:**
Turns the laser OFF after a configured period of non-use then turns the motor OFF after thirty-minute intervals.

Example:

If the power save timeout is set to 15 minutes.



Pressing the Power Save button will “wake” the scanner from the power save mode (see figure 37).

SCANNER OPERATION

TOUCH BUTTON PANEL

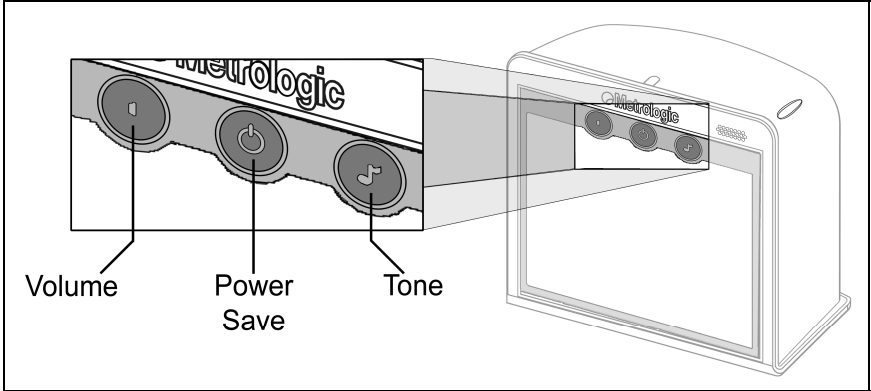


Figure 34. The Touch Button Panel Operation



Figure 35. Changing the Beeper Tone

CHANGING THE BEEPER TONE

Touch the Tone button once and the beeper tone will change. The new tone will be heard. Then two more of the new tones will be heard signifying the new setting has been set.



Figure 36. Changing the Beeper Volume

CHANGING THE BEEPER VOLUME

Touch the Volume Button to adjust the scanner's speaker volume or mute (silence) the scanner.

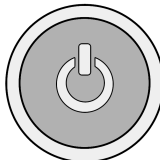


Figure 37. Power Save Button

PLACING THE UNIT IN POWER SAVE MODE

Long (>3 seconds) touch of the Power Save button will place the MS7820 scanner into Power Save Mode.

TO WAKE THE UNIT FROM POWER SAVE MODE

Touch any of the three touch panel buttons to awaken the scanner for normal operation.

MAINTENANCE

REPLACEABLE PROTECTIVE OUTER WINDOW

The MS7820 bar code scanner includes a replaceable protective outer window, which protects the flat-screen window from scratches when used in harsh scanning environments.

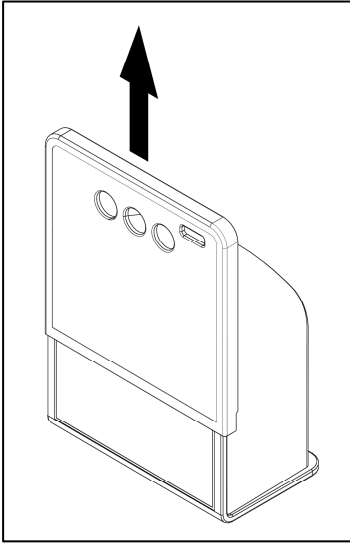


Figure 39.
Replaceable Protective Outer Window Easy Removal.

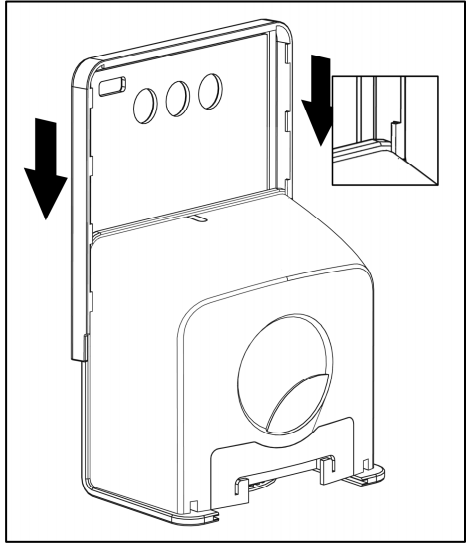


Figure 38.
Replaceable Protective Outer Window Easy Installation.

DAILY MAINTENANCE

Smudges and dirt on the unit's window can interfere with the unit's performance. If the window requires cleaning, use only a mild glass cleaner containing no ammonia. When cleaning the window, spray the cleaner onto a lint free, non-abrasive cleaning cloth then gently wipe the window clean.

If the unit's case requires cleaning, use a mild cleaning agent that does not contain strong oxidizing chemicals. Strong cleaning agents may discolor or damage the unit's exterior.

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.

MS7820 SERIES TROUBLESHOOTING GUIDE		
SYMPTOMS	POSSIBLE CAUSE(S)	SOLUTION
<i>All Interfaces</i>		
No LEDs, beep or motor spin.	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.	No power is being supplied to the scanner from host.	Some host systems cannot supply enough current to power MS7820 series scanner. Use the power supply included with the scanner.
3 beeps on power up.	Non-volatile RAM failure.	Contact a Metrologic customer service representative, if the unit will not hold the configuration.
Continuous razz tone on power up.	Diagnostic failure.	Contact a Metrologic customer service representative, if the unit will not function.
Razz tone and blue LED flash at power up.	VLD failure.	Contact a Metrologic customer service representative.
	Scanner motor failure.	Contact a Metrologic customer service representative.
Multiple scans upon presentation of code.	Same symbol timeout set too short.	Adjust same symbol timeout for a longer time.
The unit powers up but does not beep.	Beeper disabled No volume is selected No tone is selected.	Enable beeper. Select volume (configurable). Select tone.

TROUBLESHOOTING GUIDE

SYMPTOMS	POSSIBLE CAUSE(S)	SOLUTION
<p>The unit powers up, but does not scan and/or beep.</p>	<p>Scanning a particular symbology that is not enabled.</p>	<p>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.</p>
	<p>The scanner has been configured for a character length lock, or a minimum length and bar code being scanned does not satisfy the configured criteria.</p>	<p>Verify that the bar code that is being scanned falls into the criteria. (Typical of Non-UPC/EAN codes. <i>The scanner defaults to a minimum of 4 character bar code.</i>)</p>
<p>The unit scans a bar code, but locks up after the first scan (blue LED stays off).</p>	<p>The scanner is configured to support some form of host handshaking but is not receiving the signal.</p>	<p>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.</p>
<p>The unit scans, but the data transmitted to the host is incorrect.</p>	<p>The scanner's data format does not match the host system requirements.</p>	<p>Verify that the scanner's data format matches the format required by the host. Make sure that the scanner is connected to the proper host port.</p>

TROUBLESHOOTING GUIDE

SYMPTOMS	POSSIBLE CAUSE(S)	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.
	The scanner is not configured correctly for this type of bar code.	Check if check digits are set properly.
	The minimum symbol length setting does not work with the bar code.	Check if the correct minimum symbol length is set.
Multi-Function Button is not working.	A faulty push button switch.	Contact a Metrologic customer service representative.
Keyboard Wedge Only		
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 not correct.	Make sure that the proper PC type AT or PS2 is selected. Verify correct country code and data formatting are selected. Adjust the intercharacter delay.
The unit is not transmitting each character.	Configuration is not correct.	Increase the interscan code delay setting. Adjust whether the F0 break is transmitted. It may be necessary to try this in both settings.
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.

TROUBLESHOOTING GUIDE

SYMPTOMS	POSSIBLE CAUSE(S)	SOLUTION
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.
RS232 Only		
The unit is not transmitting each character.	Configuration is not correct.	Increase the intercharacter delay setting. Adjust whether the F0 break is transmitted (KBW Interface ONLY). It may be necessary to try this in both settings.
Alpha characters show as lower case.	Computer is in Caps Lock mode.	Enable the caps lock detect setting of the scanner to detect if the PC is operating in Caps Lock.
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 "RS232" data.
	Com port not operating properly.	
	Cable not connected to the proper com port.	
The host is receiving data but the data does not look correct.	The scanner and host may not be configured for the same interface.	Check that the scanner and the host are configured for the same interface.

TROUBLESHOOTING GUIDE

SYMPTOMS	POSSIBLE CAUSE(S)	SOLUTION
Aux Port Operation with any Interface		
Trouble with the secondary scanner.		Refer to the user guide provided with the secondary scanner.
Secondary scanner powers up but data is not relayed to the host.	Cable [MLPN 57-57499x-3] may not be connected to the proper port.	Ensure the secondary scanner is connected to the MS7820 com port marked "Aux" port.
	The "Aux" com port may not be operating properly.	* The MS7820 must be configured to enable the "Aux" port. The secondary scanner must be configured to send 'secondary' formatted data (reserve code 32).
* Use the "Auxiliary mode setup" wizard in MetroSet®.		
USB Only		
The scanner powers up ok, scans ok but does not communicate.	The USB Port is not operating correctly.	Check that the scanner is configured for USB operation. Check that the host's USB port is enabled.

CONFIGURATION MODES

The MS7820 has three modes of configuration.

- **Bar Codes**

The MS7580 can be configured by scanning the bar codes included in the Metrologic Configuration Guide shipped with the area imager.

This manual can also be downloaded FREE from Metrologic's website (www.metrologic.com).

- **MetroSet2**

This user-friendly Windows-based configuration program allows you to simply 'point-and-click' at the desired scanner options. This program can be downloaded 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 configuration 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 Configuration Guide (MLPN 00-02407).

UPGRADING THE FIRMWARE

The MS7820 is part of Metrologic's line of scanners with flash upgradeable firmware. The upgrade process requires, a new firmware file supplied to the customer by a customer service representative♦ and Metrologic's MetroSet2 software♦♦. A personal computer running Windows 95 or greater with an available RS232 serial or USB port is required to complete the upgrade.



PowerLink Cable #54-54014 is required when using RS232 for the upgrade process. This cable can be ordered from Metrologic at 1-800-ID-METRO. **Do not** use the standard cable supplied with keyboard wedge or RS485 scanner interface kits. If using USB for the upgrade process, the standard USB cable provided with the scanner can be used.

To upgrade the firmware in the MS7580:

1. Plug the scanner into a serial communication port on the host system.
 2. Start the MetroSet2 software.
 3. Click on the plus sign (+) next to *POS Scanners* to expand the supported scanner list.
 4. Choose the MS7820 Solaris from the list.
 5. Click on the Configure *Solaris/7820 Scanner* button.
 6. Choose *Flash Utility* from the options list located on the left side of the screen.
 7. Click on the *Open File* button in the Flash Utility window.
 8. Locate and open the flash upgrade file supplied by Metrologic.
 9. Select the COM port that the scanner is connected to on the host system.
 10. Verify the settings listed in the Flash Utility window.
 11. Click on the *Flash Scanner* button to begin the flash upgrade.
 12. A message will appear on the screen when the upgrade is complete.
-
- ♦ Metrologic's customer service department can be reached at 1-800-ID-METRO or 1-800-436-3876.
 - ♦♦ MetroSet2 is available for download, at no additional cost, from <http://www.metrologic.com/corporate/download>.

SCANNER AND CABLE TERMINATIONS

SCANNER PINOUT CONNECTIONS

The MS7820 scanner interfaces terminate to 10-pin modular jacks located on the back of the unit.

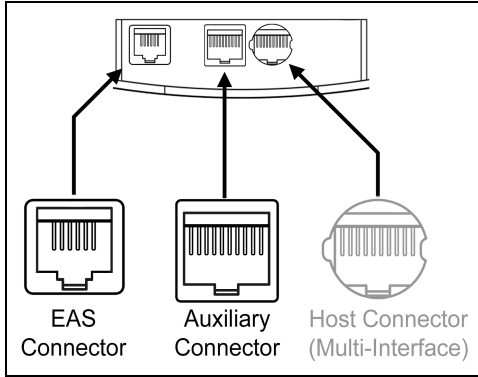


Figure 40. Scanner Interface Ports

MS7820 EAS Connector			MS7820 Auxiliary Connector	
Pin	Function		Pin	Function
1	GROUND		1	GROUND
2	ANTENNA +		2	AUX_RxD
3	ANTENNA -		3	AUX_TxD
4	EAS GPIO OUT		4	AUX_RTS
5	EAS GPIO IN		5	AUX_CTS
6	SHIELD		6	SCAN DATA
			7	TRIGGER
			8	SCAN ENABLE
			9	SW +5VDC (OUT)
			10	GROUND

SCANNER AND CABLE TERMINATIONS

SCANNER PINOUT CONNECTIONS

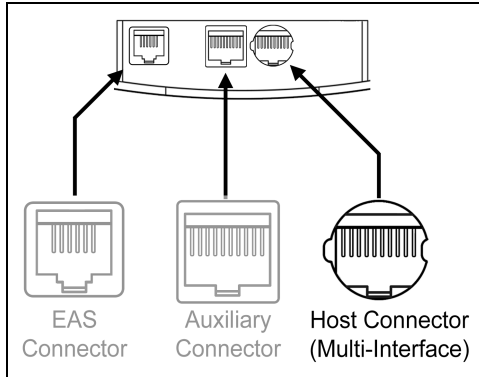


Figure 41. Scanner Interface Ports

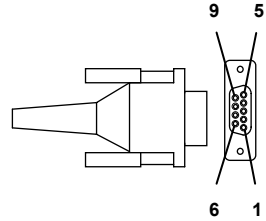
HOST CONNECTOR (Multi-Interface)			
Pin	Function	Pin	Function
RS-232		Keyboard Wedge	
1	Ground	1	Ground
2	CTS / DTR	2	Tied to Pin 3 in Cable
3	Data Rx	3	Tied to Pin 2 in Cable
4	N/C	4	PC Data
5	N/C	5	PC Clock
6	RTS*	6	KB Clock
7	N/C	7	+5VDC PC Keyboard
8	Data Rx*	8	KB Data
9	Adapter Power	9	Adapter Power
10	Shield Ground	10	Shield Ground
IBM/RS-485		USB	
1	Ground	1	Ground
2	Tied to Pin 6 in Cable	2	Tied to Pin 4 in Cable
3	N/C	3	N/C
4	IBM A+	4	Tied to Pin 2 in Cable
5	IBM B-	5	N/C
6	Tied to Pin 2 in Cable	6	USB D+
7	N/C	7	+5VDC USB
8	N/C	8	USB D-
9	Adapter Power	9	Adapter Power
10	Shield Ground	10	Shield Ground

* These signals are TTL level outputs.

SCANNER AND CABLE TERMINATIONS

CABLE CONNECTOR CONFIGURATIONS (HOST END)

VLink Cable MLPN 5S-5Sxxx-3*	
Pin	Function
1	Shield Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	N/C
5	Power/Signal Ground
6	Reserved
7	CTS Input †
8	RTS Output
9	+5VDC



9-Pin D-Type Conn.

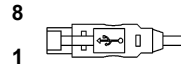
xxx* specifies connection to the host

USB Type A, VLink Cable MLPN 5S-5S235-3	
Pin	Function
1	+5VDC
2	D-
3	D+
4	Ground



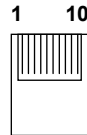
USB Type A

USB Direct 12V (Type A) Locking MLPN 5S-5S213-N-3	
Pin	Function
1	+5VDC
2	D-
3	D+
4	Ground
5	Ground
6	+12VDC
7-8	N/C



USB Type A. Locking

VLink, RS232 AUX Cable MLPN 57-57499-N-3	
Pin	Function
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output
5	CTS Input
6-10	N/C



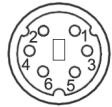


10-pin Modular Plug

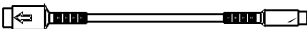


† CTS Input can also serve as DTR input.

SCANNER AND CABLE TERMINATIONS

CABLE CONNECTOR CONFIGURATIONS (HOST END)

VLink, Keyboard Wedge MLPN 54-54002		
Pin	Function	 <p>5-Pin DIN, Female</p>
1	Keyboard Clock	
2	Keyboard Data	
3	No Connect	
4	Power Ground	
5	+5 Volts DC	
Pin	Function	 <p>6-Pin DIN, Male</p>
1	Keyboard Data	
2	No Connect	
3	Power Ground	
4	+5 Volts DC	
5	PC Clock	
6	No Connect	

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 VLink cable, leaving the necessary termination exposed for connecting to the keyboard and the keyboard port on the PC.

Keyboard Wedge Adapter Cable		
Pin	Function	 <p>5-Pin DIN, Male</p>
1	PC Clock	
2	PC Data	
3	No Connect	
4	Power Ground	
5	+5 Volts DC	
Pin	Function	 <p>6-pin Mini DIN, Female</p>
1	Keyboard Data	
2	No Connect	
3	Power Ground	
4	+5 Volts DC	
5	Keyboard Clock	
6	No Connect	

SAFETY

ITE Equipment

IEC 60950-1, EN 60950-1

Laser

Laser Class 1: IEC 60825-1:1993+A1+A2,
EN 60825-1:1994+A1+A2



⚠ 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 qui est dangereux. 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.

EMC

Emissions

FCC Part 15, ICES-003, CISPR 22, EN 55022

Immunity

CISPR 24, EN 55024

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

Class A Devices

The following is applicable when the scanner cable is greater in length than 3 meters (9.8 feet) when fully extended:

Les instructions ci-dessous s'appliquent aux cables de scanner dépassant 3 mètres (9.8 pieds) de long en extension maximale:

Folgendes trifft zu, wenn das Scannerkabel länger als 3 Meter ist:

This equipment has been tested and found to comply with 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 instruction 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 their own expense. Any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice

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

Remarque

Cet appareil numérique de classe A est conforme à la norme canadienne NMB-003.

European Standard

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Funkstöreigenschaften nach EN55022:1998

Warnung!

Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen. In diesem Fall kann vom Betreiber verlangt werden, angemessene Massnahmen durchzuführen.

Standard Europeo

Attenzione

Questo e' un prodotto di classe A. Se usato in vicinanza di residenze private potrebbe causare interferenze radio che potrebbero richiedere all'utilizzatore opportune misure.

Attention

Ce produit est de classe "A". Dans un environnement domestique, ce produit peut être la cause d'interférences radio. Dans ce cas l'utiliseteur peut être amené à prendre les mesures adéquates.

EMC

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

Class B Devices

The following is applicable when the scanner cable is less than 3 meters (9.8 feet) in length when fully extended:

Les instructions ci-dessous s'appliquent aux câbles de scanner ne dépassant pas 3 mètres (9.8 pieds) de long en extension maximale:

Folgendes trifft zu, wenn das Scannerkabel kürzer als 3 Meter ist:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 energy and, if not installed and used in accordance with the instructions, 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

Notice

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

Remarque

Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

PATENTS

This METROLOGIC product may be covered by, but not limited to, one or more of the following U.S. Patents:

U.S. Patent No.;

4,960,985; 5,081,342; 5,216,232; 5,557,093; 5,627,359; 5,637,852;
5,661,292; 5,777,315; 5,789,731; 6,029,894; 6,098,885; 6,209,789;
6,347,743; 6,412,696; 6,460,767; 6,975,456

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Other worldwide patents pending.

LIMITED WARRANTY

The MS7820 Solaris™ bar code scanners are manufactured by Metrologic at its Blackwood, New Jersey, U.S.A. facility. The MS7820 Solaris bar code scanners have a two (2) year limited warranty from the date of manufacture. The duration of the warranty is dependent upon the country where the product was purchased. Please contact your Metrologic representative for warranty information. Metrologic warrants and represents that all MS7820 Solaris bar code scanners are free of all defects in material, workmanship and design, and have been produced and labeled in compliance with all applicable U.S. 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 one of the following Metrologic repair facilities: Blackwood, New Jersey, USA; Madrid, Spain; or Suzhou, China. To do this, contact the appropriate Metrologic Customer Service/Repair Department to obtain a Returned Material Authorization (RMA) number.

In the event that it is determined the equipment failure is covered under this warranty, Metrologic shall, at 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 judgment 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.

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INDEX

A

AC	8
accessories	3, 4
adapter	49
audible	<i>See indicator</i>
auxiliary	3, 43, 47, 48
scanner	16, 17, 18
auxiliary port	10

B

bar code	28, 29, 30, 31
Bar Code	44
beep	<i>See indicator</i>
blue led	<i>See indicator</i>
button	
power save button	9, 36
tone button	9
volume button	9
Button	45

C

cable	7, 9
adapter	49
auxiliary	3
communication	3, 4, 46–49
connection area	9
cover	9
EAS	3
keyboard wedge	46–49
pin assignments	46–49
powerlink	3, 4, 46–49
stand-alone keyboard	3
USB	3, 46–49
caution	11, 50
class	52
cleaning	38
communication	2
compliance	50, 51
configuration	45
Configuration	44
connector panel	10
customer service	54

D

DC power	10
depth of field	7, 28, 29, 30, 31
diagnostic	35

dimensions	7, 10
------------------	-------

E

EAS	3, 10, 19
EMC	51
EMI	51
emissions	51
error code	35

F

features	1
firmware	45
flash	45
flex stand	
installation	20–22, 20–22
optional kits	5

H

HID	13
Host	16

I

IBM 46xx	10
immunity	51
indicator	7
audible	9, 32, 34, 39–43, 45
diagnostic	35
failure	32, 34, 39–43
visual	9, 33, 39–43, 45
installation	
cable	12–18
EAS	19
flex stand	20–22, 20–22
outer window	38
interface	7
IBM 46xx	15, 46
light pen	14, 46
rs232	14
stand-alone keyboard	47
USB	13

K

kb wedge	<i>See keyboard wedge</i>
keyboard type	2
keyboard wedge	2–3, 10, 41, 47, 49
kits	5, 6

INDEX

L

- labels 11
- laser 11, 36, 50
- laser power 7
- led *See indicator*
- limited warranty 54

M

- maintenance 38
- manual 3
- MetroSelect 44
- MetroSet2 45

N

- notices 52

O

- operation 52

P

- patents 53
- pin assignments *See cables*
- POS (Point Of Sale) 13
- power 8, 45
- power save 36
- protocols 2

R

- razzberry tone 32, 33, 34

- repair 54
- rs232 10, 14, 42, 46–49

S

- safety 50, 52
- scan zone 27
- secondary scanner 16, 17, 18, 43
- serial label 11
- specifications 7

T

- tone 32, 33, 34
- troubleshooting 39–43

U

- upgrade 45
- USB 3, 10, 13, 43, 47, 48

V

- ventilation 8
- visual *see indicator*
- voltage 8, 12, 14, 16

W

- warranty 54
- weight 7
- window 9, 38
- window, outer 38

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