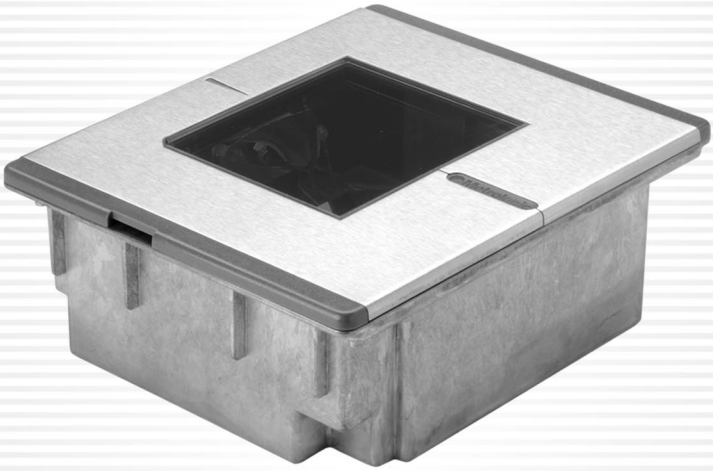
Metrologic®

METROLOGIC INSTRUMENTS, INC.

MS7600 Horizon™ Series Installation and User's Guide



LOCATIONS

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INTRODUCTION

The MS7600 Horizon™ series is Metrologic's next generation in-counter laser bar code scanner. This compact, hands-free scanner is designed with a dense 20-line omnidirectional scan pattern that helps provide fast, efficient throughput with a high first pass read rate.

The MS7600 is equipped with a multitude of standard features including:

- Durable die-cast construction
- Available with either a stainless steel (MS7625) or a high-impact plastic (MS7620) top plate
- Firmware updates via Flash ROM
- Field replaceable window
- EAS deactivation antenna is standard
- Supports commonly used interfaces including USB and Keyboard Wedge
- Custom Edit the bar code data
- PowerLink, user replaceable cables
- RS232 auxiliary port for adding peripherals
- Programmable depth of field
- OPOS and JPOS system compatible

SCANNER		INTERFACE
High Impact Plastic Top	MS7620-**13**	RS232, IBM 46xx, OCIA, Aux
	MS7620-**37**	RS232, Light Pen, Keyboard Wedge, Stand-Alone Keyboard, USB, Aux
Stainless Steel Top	MS7625-**13**	RS232, IBM 4680, OCIA
	MS7625-**37**	RS232, Light Pen, Keyboard Wedge, Stand-Alone Keyboard, USB, Aux

SCANNER AND ACCESSORIES

BASIC KIT	
Part #	**Description**
MS7600	Horizon™ Series Scanner
00-02407A-1 & 00-02407A-2	MetroSelect® Programming Guide Two Book Set
00-02870	MS7600 Horizon™ Series Installation and User's Guide
49-00298	12" EAS cable

Guides also available for download at www.metrologic.com.

OPTIONAL ACCESSORIES	
Part #	**Description**
54-54xxx*	Straight PowerLink Cable with built in power jack. 2.1 m (7') cord with short strain relief
xxx specifies connection to the host.* *Contact a customer service representative for additional information.*	
54-54002	Keyboard Wedge PowerLink Cable with Adapter Cable
MVC**	Metrologic Voltage Converter Cable, +12VDC to +5.2VDC or -12VDC to +5.2VDC
** *Contact a Metrologic Customer Service representative for additional information on Metrologic's MVC cable series and the host connections available.*	
54-54020	Stand Alone Keyboard Wedge PowerLink Cable
54-54667	RS232 AUX PowerLink Cable

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.

OPTIONAL ACCESSORIES	
Part #	**Description**
AC to DC Power Transformer - Regulated 5.2V@650 mA output	
45-45593	120V United States
45-45591	220V – 240V Continental European
45-45592	220V – 240V United Kingdom

REPLACEMENT PARTS	
Part #	**Description**
46-46602	Stainless Steel Top with *Sapphire* Window
46-46603	Stainless Steel Top with *Everscan* Window
46-46604	Stainless Steel Top with *Standard* Window
46-46605	High Impact Plastic Top with *Sapphire* Window
46-46606	High Impact Plastic Top with *Everscan* Window
46-46607	High Impact Plastic Top with *Standard* Window

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.

BEFORE INSTALLING YOUR MS7600

When mounting the MS7600 or replacing the Top Plate:

DO NOT Turn
the unit upside down.

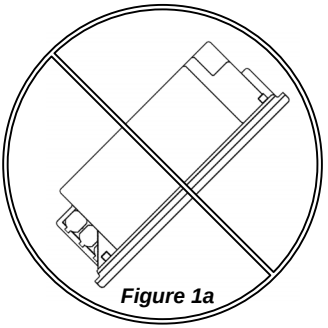


Figure 1a

DO NOT Press
on the window.

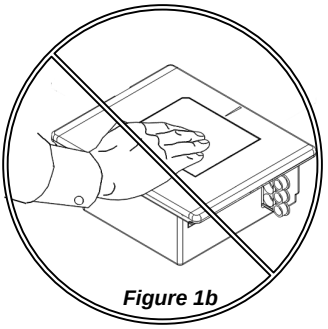


Figure 1b

Lift the Top plate straight up to remove.

(There is no hardware required to remove or replace the Top Plate.)

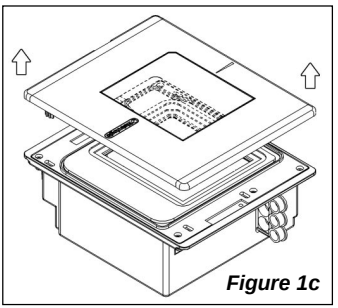


Figure 1c

DO NOT PRESS
on the window in the replacement Top plate.

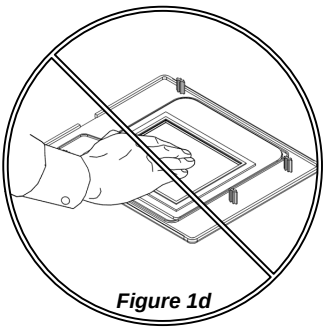


Figure 1d

MOUNTING THE MS7600 SERIES

There are two options for mounting your MS7600. *Option "A" uses* a shelf to support the unit and Option B lets the unit hang free.

Before starting to mount the MS7600, determine the direction of package flow for your application. The unit *must* be mounted in the countertop with the small arrowhead on the top of the unit pointing in same direction as the package flow.

OPTION A: Shelf Support

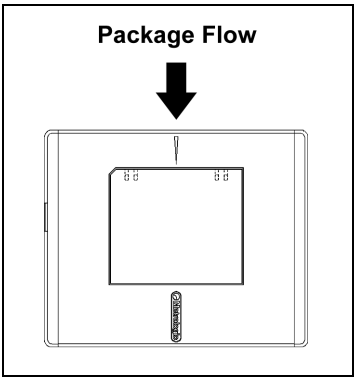
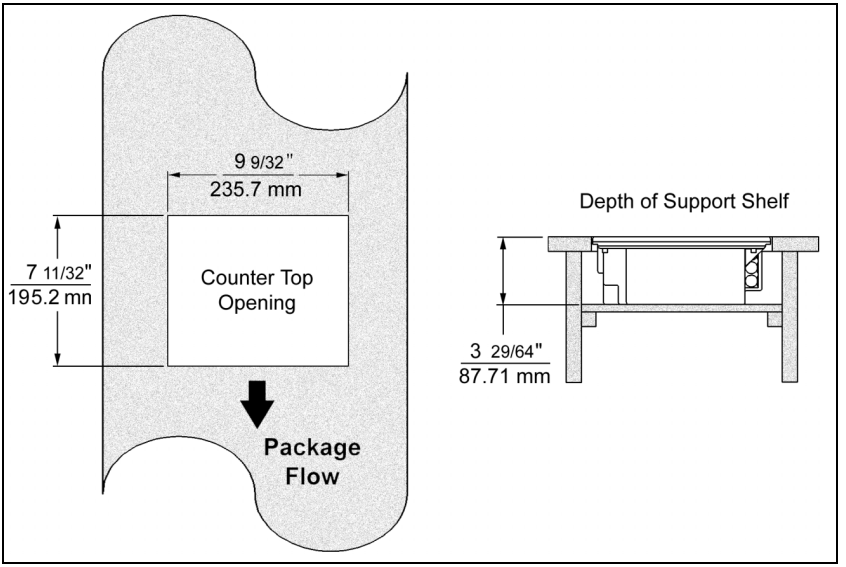
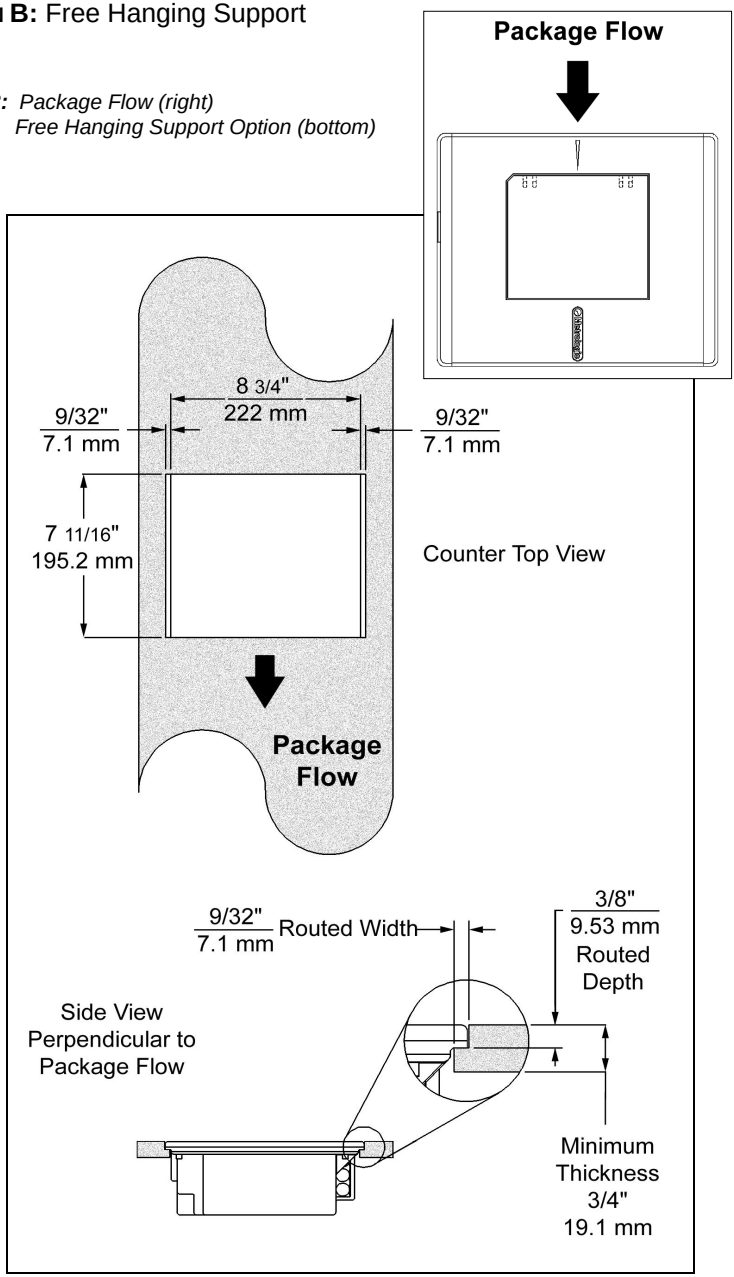


Figure 2: *Package Flow Direction (Top)*
Shelf Support Option (Bottom)



OPTION B: Free Hanging Support

Figure 3: *Package Flow (right)*
Free Hanging Support Option (bottom)



INSTALLATION FOR OCIA INTERFACE

1. Turn off the host system.

2. Connect the MVC cable to the 2nd jack down from the top of the MS7600.

3. Connect the other end of the MVC cable to the host.

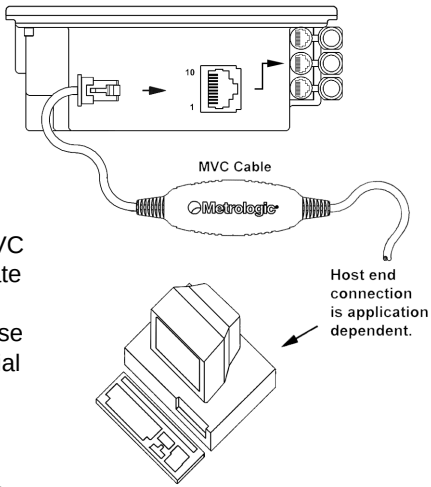


Figure 4: *OCIA, Interface*

STOP Before continuing verify that the MVC 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.

Manufacturers Note:

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.

4. Turn on the host system.

5. Scan the *Load OCIA Defaults* bar code to configure the MS7600 for OCIA communication.

Load OCIA Defaults

3 9 9 9 9 9 3

For additional communication options for OCIA interfaces refer to the MetroSelect Programming Guide (MLPN 00-02407A-1 & -2).

⚠ **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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

INSTALLATION FOR KEYBOARD WEDGE INTERFACE

1. Turn of the host system.
2. Disconnect the keyboard from the host.
3. Connect the PowerLink cable to the 2nd jack from the top of the MS7600.
4. Connect the "Y" end of the PowerLink 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.

STOP Before continuing verify that the PowerLink 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 PowerLink cable.
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 *Load Keyboard Wedge Defaults* bar code to configure the MS7600 for Keyboard Wedge communication.
9. Turn on the host system.

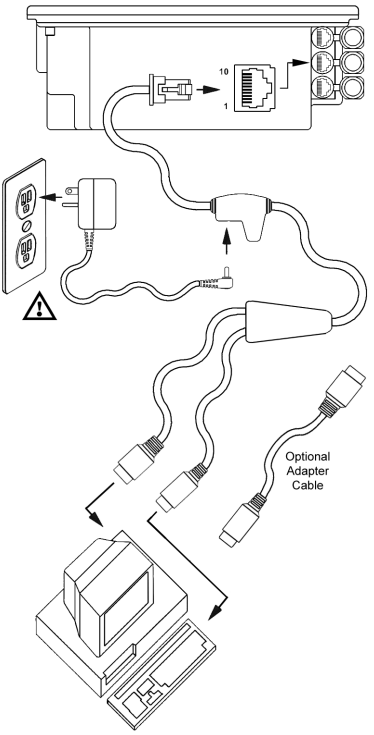


Figure 5: *Keyboard Wedge Interfaces*

Load Keyboard
Wedge Defaults

3 9 9 9 9 9 4

⚠ 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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

INSTALLATION FOR STAND-ALONE KEYBOARD INTERFACE

1. Turn of the host system.
2. Disconnect the keyboard from the host.
3. Connect the PowerLink cable to the 2nd jack from the top of the MS7600.
4. Connect the other end of the PowerLink cable to the keyboard port on the host.

STOP Before continuing verify that the PowerLink 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 PowerLink cable.
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 *Load Keyboard Wedge Defaults* bar code then the *Enable Stand Alone Keyboard* bar code to configure the MS7600 for Stand-Alone Keyboard communication.

   Note: When scanning the bar codes, cover the code <u>not</u> being scanned to ensure the codes are read in the proper sequence.

9. Turn on the host system.

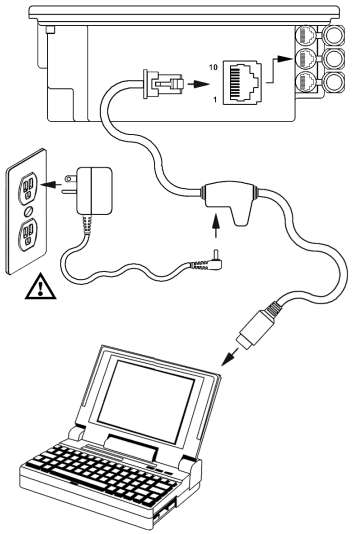


Figure 6: *Stand-Alone Keyboard Interface*

Load Keyboard Wedge Defaults

Scan 1St

Enable Stand-Alone Keyboard

Scan 2nd

⚠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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

INSTALLATION FOR USB INTERFACE

1. Turn off the host system.
2. Connect the PowerLink USB cable to the 2nd jack down from the top of the MS7600.
3. Connect the other end of the USB cable to the host.

STOP Before continuing verify that the USB PowerLink 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.

Manufacturers Note:

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.

4. Scan the *Enable USB Defaults* bar code to configure the MS7600 for USB communication.
5. Turn on the host system.

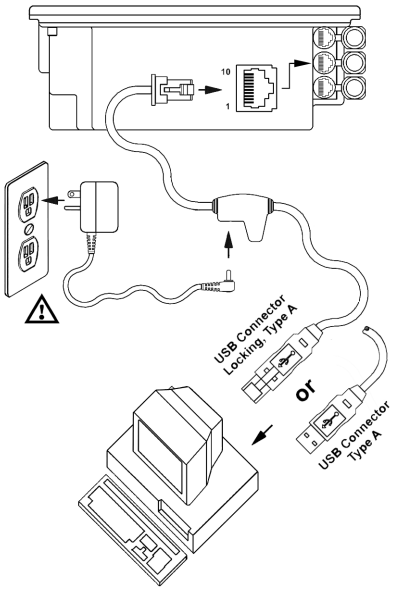


Figure 7: *USB, Interface*

Enable USB Defaults

⚠ **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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

INSTALLATION FOR RS232 OR LIGHT PEN INTERFACES

1. Turn off the host system.
2. Connect the PowerLink cable into the 1st jack down from the top of the MS7600.
3. Connect the other end of the PowerLink cable to the host.

STOP Before continuing verify that the PowerLink 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 Power Link Cable.
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 appropriate bar codes on page 12 to configure the MS7600 for RS-232 or Light Pen communication.
8. Turn on the host system.

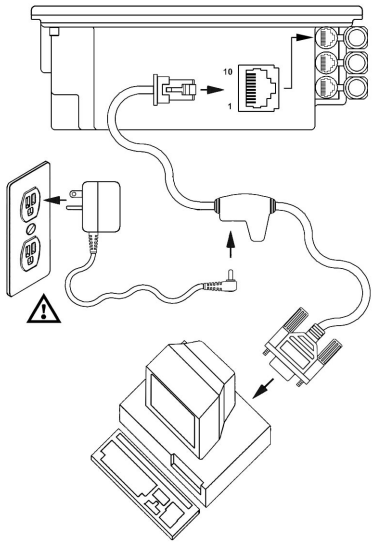


Figure 8: *RS232 or Light Pen Interface*

⚠ **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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

Step 8, page 11 continued.

For RS232 Communication:

Recall Defaults

Scan 1st 

Enable RS-232

Scan 2nd 

For Light Pen Communication:

Recall Defaults

Scan 1st 

Enable Light Pen/Wand

Scan 2nd 

1. Turn off the host system.
2. Connect the MVC cable to the 1st jack down from the top of the MS7600.
3. Connect the other end of the MVC cable to the host.

STOP Before continuing verify that the MVC 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.

Manufacturers Note:

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.

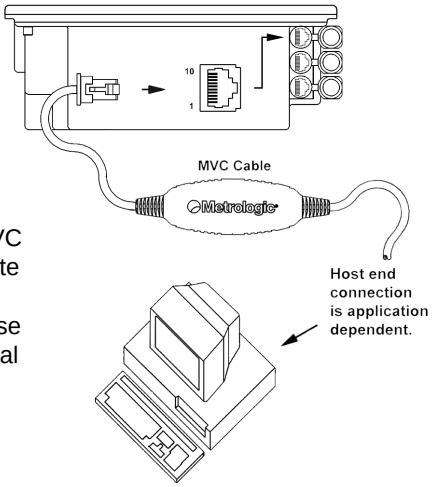


Figure 9: *RS232/IBM, Interface*

4. Turn on the host system.
5. Scan the *Load 46xx IBM Defaults* bar code to configure the MS7600 for IBM 46xx communication.

Load 46xx IBM Defaults

3 9 9 9 9 9 5

For additional communication options for IBM interfaces refer to the MetroSelect Programming Guide (MLPN 00-02407A-1 & -2).

⚠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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

INSTALLATION OF AN AUXILIARY SCANNER

1. Turn off the host system.
2. Connect the PowerLink RS232 AUX cable [MLPN 54-54667A] to the 3rd jack down from the top of the the MS7600 (*see figure 6*).
3. Connect the other end of the PowerLink RS232 AUX cable to the auxiliary scanner.

   The following Metrologic scanners can be used in the "Aux" input of the MS7600: the MS9520, MS9540, MS7220, MS7120, MS6720, MS6220, MS6520, MS5145 or another MS7600.

Important: The MS7600 will only receive full RS232 communication from the auxiliary scanner.

4. Connect the MS7600/Host PowerLink* cable to the appropriate interface jack on the back of the MS7600.
5. Connect the other end of the MS7600/Host PowerLink cable to the Host.
6. Connect the external power supplies for the auxiliary scanner and the MS7600 to the power jacks on the two PowerLink cables.

STOP Before continuing verify that the powerlink 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.

7. Check the AC input requirements of both power supplies to make sure the voltage matches the AC outlets.
8. Connect AC power to the transformers. The outlets should be near the equipment and easily accessible.
9. Configure the MS7600 for the appropriate interface communication*.
10. Configure the auxiliary port and auxiliary scanner. Refer to the MetroSelect®, under *Auxiliary Input Port Controls* [MLPN 00-02407A-1 & -2] for the appropriate configuration settings.
11. Turn on the host system.

* The MS7600/host cable connection is interface dependent. Refer to the installation steps provided for the type of interface required for your application.

⚠ 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. 60950-00/UL 60950 and norm EN 60950, the power source should meet applicable performance requirements for a limited power source.

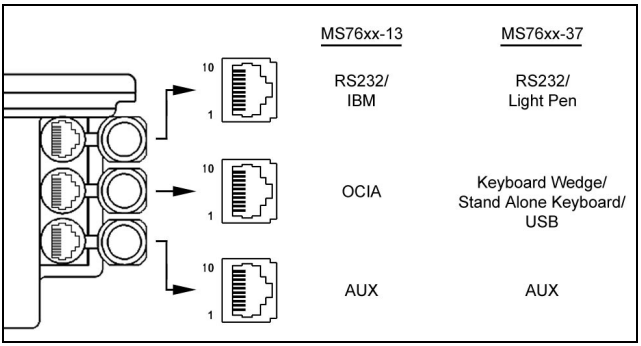
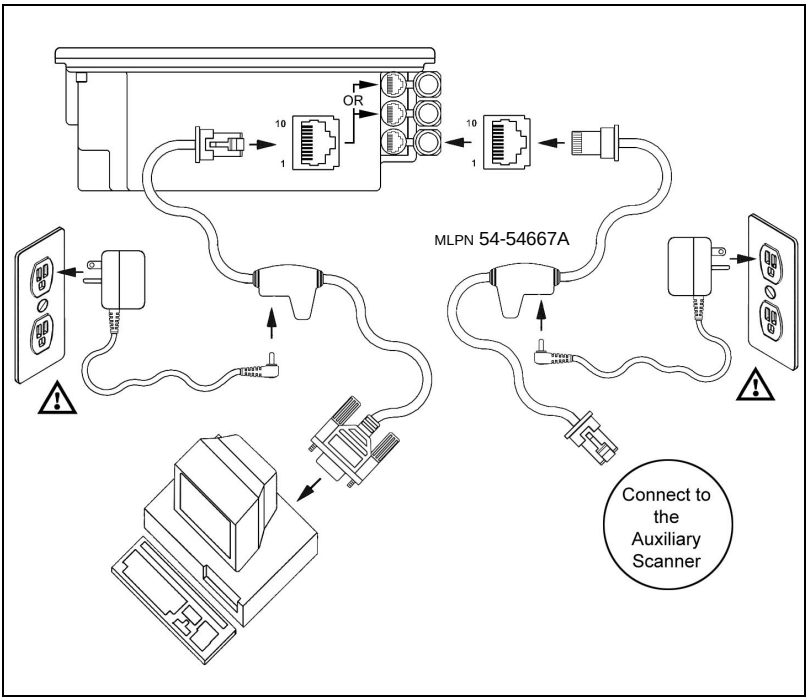


Figure 10: *Connector Orientation (Top)*
Auxiliary Scanner Setup (Bottom)



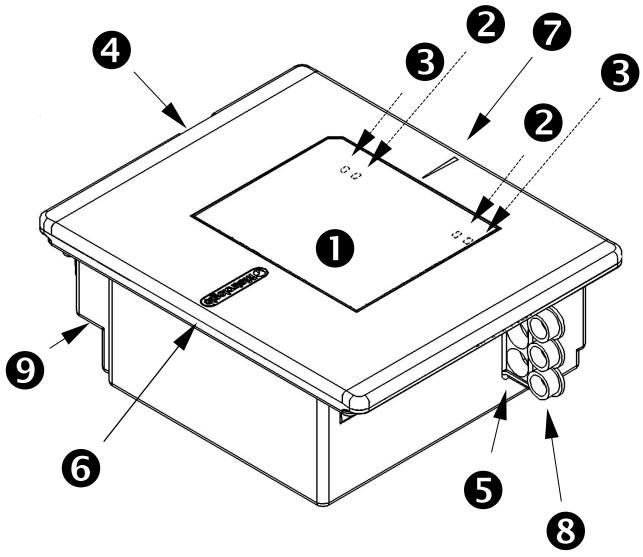


Figure 11: *Scanner Parts*

❶ Output Window (Laser Aperture)

❷ Red LED (Located Under Window)

❸ Amber LED (Located Under Window)

❹ Speaker

❺ Cable Connection Area

❻ Stainless Steel Top (MS7625 units only)

❼ Package Flow Indicator Arrow Head

❽ Rubber Connector Plug

❾ EAS Deactivation Antenna Connector

MAINTENANCE

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

For the MS7600 glass window:

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

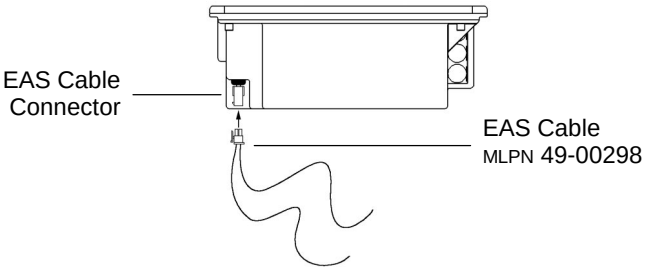
For the MS7600 red window:

1. Use mild soap and water with lint free, non-abrasive cleaning cloth.
2. Gently wipe the scanner window.

EAS DEACTIVATION ANTENNA

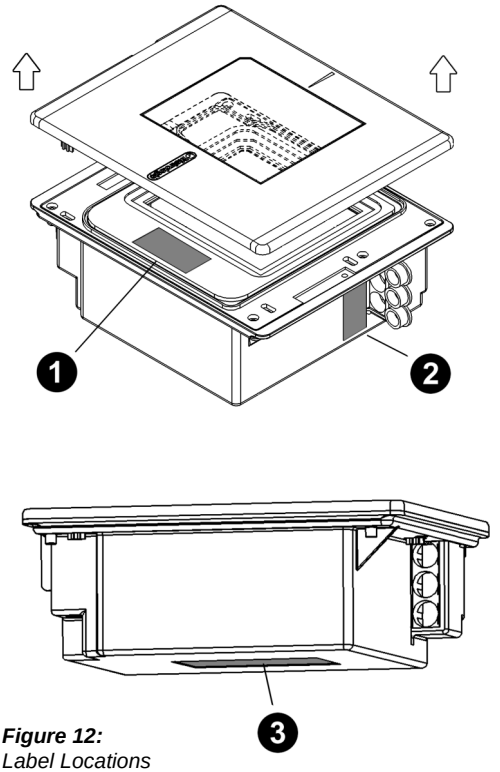
SW1 and SW2 are the switch banks inside the Checkpoint Device that set the deactivation range. Metrologic recommends end users program the MS7600 to the Fixed Low-Density depth of field, so that the unit does not scan out beyond the deactivation range.

Unit #	CheckPoint Recommended Switch Bank Settings	MS7600 Depth of Field Settings
MS7620	1, 2, 3, 4, 5, on SW1 & SW2	Fixed Low Density*
MS7625	1, 2, 3, 4, 5, on SW1 & SW2	Fixed Low Density*
**Note: Minimum element width changes to 6.8 mil when in this mode.*		



Contact Checkpoint Systems directly for additional EAS support.

Each scanner has a label on the back of the unit. The label contains information such as the model number, date of manufacture, serial number, and caution information. An additional caution label is located under the top plate. The following are examples of these labels.



1

CAUTION-CLASS 2 LASER LIGHT WHEN OPEN. DO NOT STARE INTO BEAM. ATTENTION - CLASSE 2 RAYONNEMENT LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU

2

See serial number label for applicable interfaces.	RS232 LIGHT PEN	RS232 IBM
	KB WEDGE USB	OCIA
	AUX	AUX
	762x-37	762x-13

Figure 12:
Label Locations

3

Metrologic Instruments, Inc.
Blackwood, New Jersey, U.S.A.
Manufactured: January 2002 (P) 13
Blackwood, NJ, U.S.A.
Horizon™ Barcode Scanner 5V ⎓
Model: MS7625 IBM/OCIA/RS232
0000000000
SAMPLE
This Product is covered by one or more patents. See User's Guide for complete patent list.

CE c UL us LISTED 94J8 I.T.E.

IEC 60825-1:1993+A2:2001

CAUTION - CLASS 2 LASER LIGHT WHEN OPEN. DO NOT STARE INTO BEAM. ATTENTION - CLASSE 2 RAYONNEMENT LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU. Contains no user serviceable commponents. Complies with 21 CFR 1040.10 and 1040.11 except deviations pursuant to Laser Notice No. 50 dated July 26, 2001.

Patents See Manual.

CLASS 1 LASER PRODUCT
APPAREIL A LASER DE CLASSE 1

LASER KLASSE 1
PRODUKT

AUDIBLE INDICATORS

When the MS7600 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) plus three volume settings. To change the tone or volume, refer to the *Changing the Beeper Tone & Volume* section of this manual.

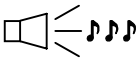
One Beep

When the scanner *first* receives power, the amber LED will turn on, 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 now 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 red light does not flash, then the bar code has *not* been successfully read.

Razzberry Tone

This is a failure indicator. Refer to failure modes page 21.

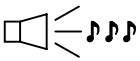


Three Beeps - during operation

When placing the scanner in program mode, the red LED will flash while the scanner simultaneously beeps three times. The red and amber LEDs will continue to flash until the unit exits program mode. Upon exiting program mode, the scanner will beep three times and the red LED 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, 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 page 21.

There is a red LED and amber LED on the front of the MS7600. When the scanner is on, the flashing or constant illumination of the LEDs indicates the status of the current scan and the scanner.

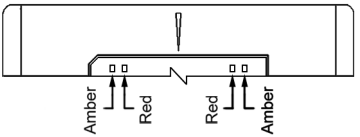


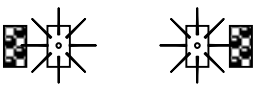
Figure 14: *LEDs*

No Red or Amber LED
The LEDs will not be illuminated if the scanner is not receiving power from the host or transformer.

Steady Amber
When the laser is active, the amber LED is illuminated. The amber LED will remain illuminated until the laser is deactivated.

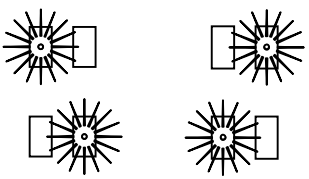
During the power save mode, the laser will turn on and off. During this period, the amber LED remains illuminated.

Steady Amber 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.



Steady Amber 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.

Flashing Amber then Flashing Red
This indicates the scanner is in program mode. A razzberry tone indicates that an invalid bar code has been scanned in this mode.
or
If the unit is in sleep mode, each LED will flash once every 15 seconds.



Steady Red, Amber off
This indicates the scanner may be waiting for communication from the host.

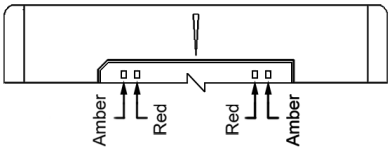
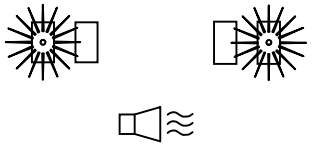


Figure 15: *LEDs*

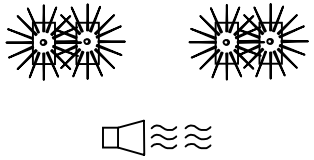
Flashing Amber and One Razzberry Tone

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



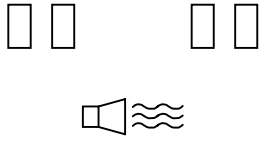
Flashing Red and Amber and Two Razzberry Tones

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



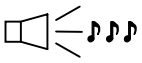
Continuous Razzberry Tone with both LEDs off

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

If the scanner beeps 3 times on power up then, the nonvolatile memory that holds the scanner configuration has failed. Return the unit for repair at an authorized service center.



Changing the Beeper Tone

Beeper tones may be programmed directly or incrementally using the following bar code. The new tone will be heard followed by a short pause. Two more new tones will be heard signifying the new setting has been stored in memory. The silent (no beep) tone is also selectable.

Next Beep Tone

3 9 9 9 9 7 5

Changing the Beeper Volume

Volume levels may be programmed directly or incrementally using the following bar code. The new volume will be heard followed by a short pause. Two more tones will be heard signifying the new setting has been saved in memory. The silent (no volume) tone is also selectable.

Next Volume

3 9 9 9 9 7 4

These volume control and beeper tone bar codes can also be found under the Top plate of the scanner and in the MetroSelect Programming Guide.

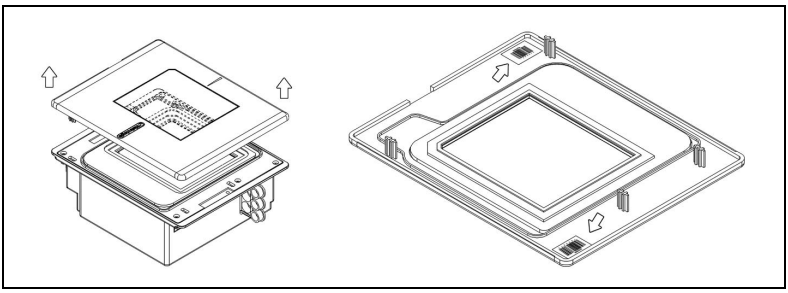


Figure 13: *Additional Beeper Tone and Volume Control Bar Codes.*

POWER SAVE MODES AND IR DETECTION

The MS7600 has five programmable power save modes. Refer to the *MetroSelect Programming Guide* for additional information on Power Save Modes.

1. **Blink Power Save Mode:**
   "Blinks" the laser OFF & ON after a programmed period of non-use.

   When the scanner recognizes a bar code it will exit the Blink mode.

2. **Laser Off Power Save Mode:**
   Turns the laser OFF after a programmed period of non-use. The motor continues to spin allowing for a faster "wake" up time.

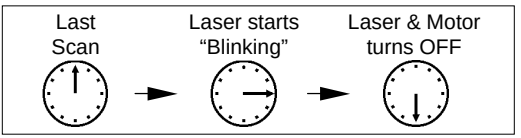
   Any movement detected by the IR will "wake" the scanner from the *Laser Off* power save mode (see figure 16).

3. **Laser & Motor Off Power Save Mode:**
   Turns the laser and motor OFF after a programmed period of non-use.

   Any movement detected by the IR will "wake" the scanner from the power save mode (see figure 16). This mode's "wake" time is slightly longer due to the motor's need to restart.

4. **Dual Action Power Save Mode #1:**
   "Blinks" the laser OFF & ON after a programmed period of non-use turns the laser and motor OFF at thirty-minute intervals.

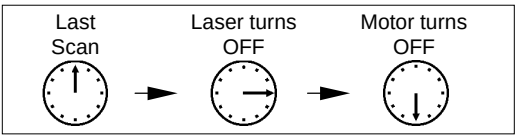
   Example:
   If the power save timeout is set to 15 minutes.



   Any movement detected by the IR will "wake" the scanner from the power save mode (see figure 16).

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

   Example:
   If the power save timeout is set to 15 minutes.



   Any movement detected by the IR will "wake" the scanner from the power save mode (see figure 16).

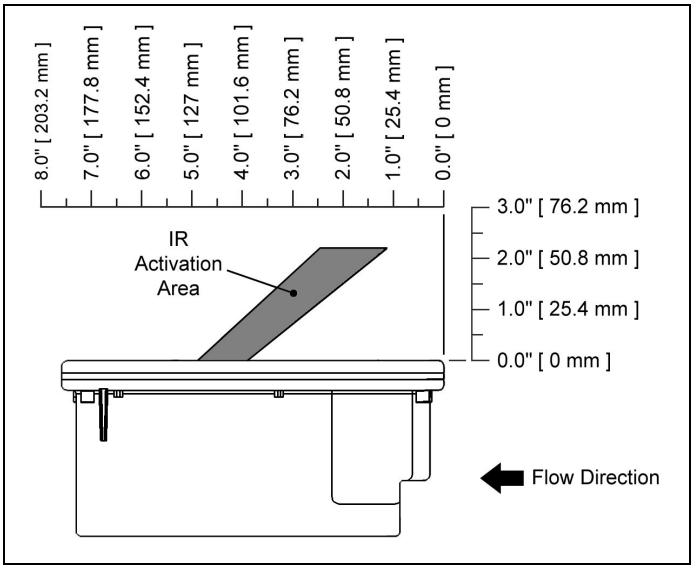


Figure 16: *IR Activation Area Perpendicular to Package Flow*

Specifications subject to change without notice.

SCAN VOLUME SPECIFICATIONS

(BASED ON 100% UPC BAR CODES)

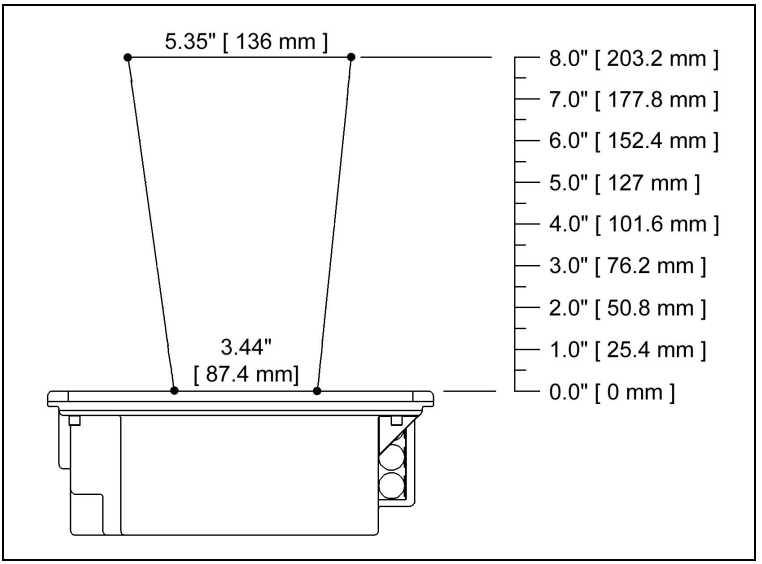


Figure 17: *Scan Volume in Plane Perpendicular to Flow*

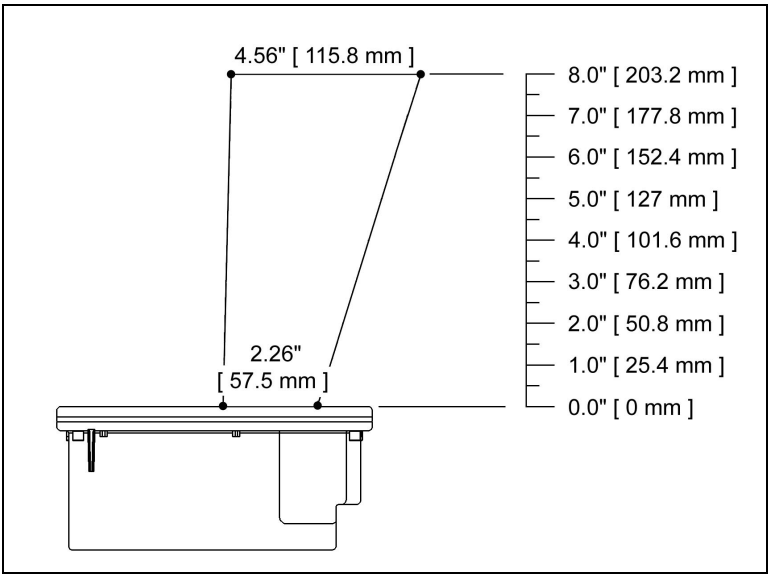


Figure 18: *Scan Volume in Plane Parallel to Flow*

Specifications subject to change without notice.

DEPTH OF FIELD BY MINIMUM BAR CODE ELEMENT WIDTH

(BASED ON 100% UPC BAR CODES)

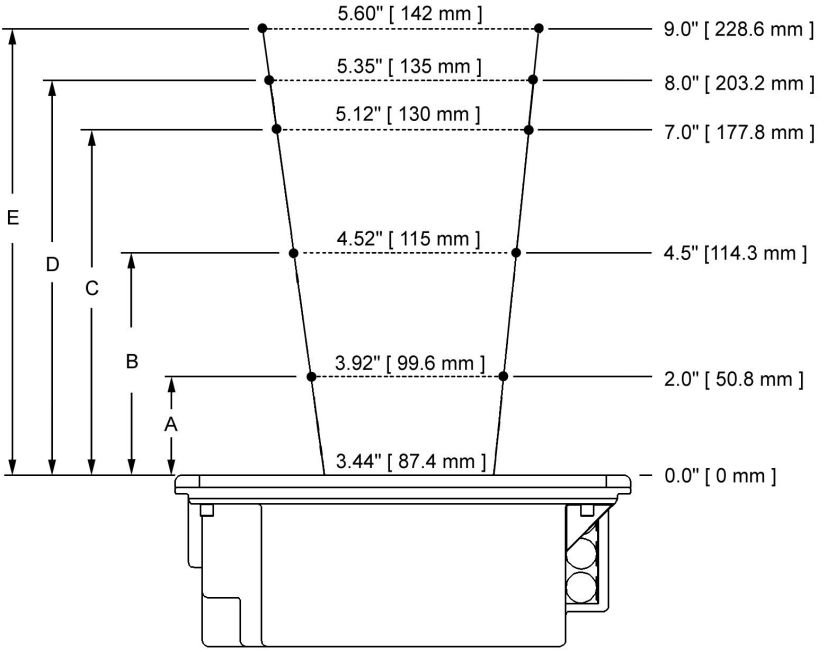


Figure 19: *Depth of Field Perpendicular to Flow*

	Minimum Bar Code Element Width				
	A	**B**	**C**	**D**	**E**
mm	.13	.19	.26	.33	.48
mils	5.2	7.5	10.4	13	19

Specifications subject to change without notice.

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.

MS7600 SERIES TROUBLESHOOTING GUIDE		
SYMPTOMS	**POSSIBLE CAUSE(S)**	**SOLUTION**
All Interfaces		
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 MS7600 series scanner. Use the power supply included with the scanner.
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 amber LED flash at power up	VLD failure	Contact a Metrologic Representative
Razz tone and both LEDs flash at power up	Scanner motor failure	Contact a Metrologic 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 scan and/or beep	Beeper disabled No volume is selected No tone is selected	Enable beeper Select volume Select tone

SYMPTOMS	POSSIBLE CAUSE(S)	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 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 4 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. Make 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. For example change to econo mode or high speed
	Also check character length lock.	
	The aspect ratio of the bar code is out of tolerance	

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
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, PS2 or XT is selected. Verify correct country code and data formatting are selected. Adjust intercharacter delay SYMPTOM
The unit is 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

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
RS-232 Only		
The unit is 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
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
	Cable not connected to the proper com port	
	Com port not operating properly.	

SYMPTOMS	POSSIBLE CAUSE(S)	SOLUTION
The host is receiving data but the data does not look correct.	The scanner and host may not be configured for the same interface font.	Check that the scanner and the host are configured for the same interface font.
Characters are being dropped.	Intercharacter delay needs to be added to the transmitted output.	Add some intercharacter delay to the transmitted output by using the MetroSelect® Programming Guide (MLPN 00-02407A-1 and 00-02407A-2).
Aux port operation with any interface		
Trouble with the Aux port Scanner.		Refer to the user guide provided with the slave scanner.
Aux port Scanner powers up but data is not relayed to the host.	Cable [MLPN 54-54667] may not be connected to the proper port.	Ensure Aux port scanner is connected to the MS7600 com port marked “Aux” port.
	The “Aux” com port may not be operating properly.	* The MS7600 must be programmed to enable the “Aux” port.
		The Aux port scanner must be configured to send “slave” formatted data (reserve code 32).
* Use MetroSet®. For the Auxiliary interface, choose “HoloTrak Decode”. All remaining parameters will be automatically chosen.		
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 programmed for USB operation. Check that the host’s USB port is enabled.

DESIGN SPECIFICATIONS

	MS7600 SERIES DESIGN SPECIFICATIONS
OPERATIONAL	
Light Source:	VLD 650 ± 10 nm
Laser Power:	1.1 mW maximum
Depth of Field:	0 mm to 203.2 mm (0”- 8.0”) for 0.33 mm (13 mil) bar code
Width of Scan Field:	85 mm (3.3”) @ 0 mm (0.0”); 142 mm (5.6”) @ 124 mm (4.9”)
Scan Speed:	2000 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:	Autodiscriminates all standard bar codes; for other symbologies call Metrologic
System Interfaces:	PC Keyboard Wedge, RS-232, OCIA, Light Pen, Stand Alone PC Keyboard, USB, IBM 46xx
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):	amber = laser on, ready to scan red = good read, decoding
MECHANICAL	
Dimensions:	193 mm (7.6") H, 88 mm (3.5") D, 229 mm (9.0") W
Weight:	2.88 Kg (6.35 lbs)
Termination:	Three 10-pin modular RJ45 jacks
Cable:	Standard 2.1m (7’) straight; for other cables call Metrologic

Specifications subject to change without notice

	MS7600 SERIES DESIGN SPECIFICATIONS
ELECTRICAL	
Input Voltage:	5.2VDC ± 0.25V
Power:	2.6 W
Operating Current:	500 mA
Standby Current:	Laser Off Power Save Mode = ≤ 350 mA
	Laser/Motor Off Power Save Mode = ≤165 mA
DC Transformers:	Class II; 5.2 V @ 650 mA
Laser Class:	IEC 60825-1:1993+A2:2001 Class 1
EMC:	FCC, ICES-003 & EN 55022 Class A
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:	4842 LUX (450 foot candles)
Contaminants:	Sealed to resist airborne particulate contaminants
Ventilation:	None required

Specifications subject to change without notice

RS232 DEMONSTRATION PROGRAM

If an RS232 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,CS0,DS0,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$(27) THEN GOTO 32766
70      GOTO 40
100     PRINT “ERROR NO.”; ERR; “ PRESS ANY KEY TO TERMINATE.”
110     K$ = INKEY$: IF K$ = “” THEN GOTO 110
32766   CLOSE: SYSTEM
32767   END
```

APPLICATIONS AND PROTOCOLS

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

SCANNER	VERSION IDENTIFIER	COMMUNICATION PROTOCOL(S)
7620 7625	13	RS232, IBM 46xx, OCIA, Aux
7620 7625	37	RS232, Light Pen, Keyboard Wedge, Stand-Alone Keyboard, USB, Aux

The MS7600 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
- Belgium
- French
- German
- Italian
- Japan
- Spanish
- Swiss
- United Kingdom

** Refer to pages 36-41 for complete information on the factory default settings. Refer to the MetroSelect® Programming Guide (MLPN 00-02407A-1 & 00-02407A-2) or MetroSet® 2's help files for information on how to change the default settings.

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	USB
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		✔	✔	✔	✔	✔	✔
MOD 43 Check on Code 39		✔	✔	✔	✔	✔	✔
MSI-Plessey		✔	✔	✔	✔	✔	✔
MSI-Plessey 10/10 Check Digit		✔	✔	✔	✔	✔	✔
MSI-Plessey MOD 10 Check Digit	*	✔	✔	✔	✔	✔	✔
Paraf Support		✔	✔	✔	✔	✔	✔
ITF Symbol Lengths	Variable	✔	✔	✔	✔	✔	✔
Minimum Symbol Length	4	✔	✔	✔	✔	✔	✔
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		✔					

DEFAULT SETTINGS (CONTINUED)

Parameter	Default	OCIA	RS-232	Light Pen	IBM 46XX	KBW	USB
NCR S		✔					
Poll Light Pen Source				✔			
Beeper Tone	Normal	✔	✔	✔	✔	✔	✔
Beep/Transmit Sequence	Before Transmit	✔	✔	✔	✔	✔	✔
Beeper Volume	Loudest	✔	✔	✔	✔	✔	✔
Communication Timeout	None	✔	✔	✔	✔	✔	✔
Razzberry Tone on Timeout		✔	✔	✔	✔	✔	✔
Three Beeps on Timeout		✔	✔	✔	✔	✔	✔
No Beeps on Timeout	*	✔	✔	✔	✔	✔	✔
Enter Power Save Mode	10 mins.	✔	✔	✔	✔	✔	✔
Blink Power Save Mode		✔	✔	✔	✔	✔	✔
Laser OFF Power Save Mode		✔	✔	✔	✔	✔	✔
Laser & Motor OFF Power Save Mode		✔	✔	✔	✔	✔	✔
Dual Action Power Save Mode #1		✔	✔	✔	✔	✔	✔
Dual Action Power Save Mode #2	*	✔	✔	✔	✔	✔	✔
Same Symbol Rescan Timeout: 200 msecs		✔	✔	✔	✔	✔	✔
Same Symbol Rescan Timeout: 500 msecs Programmable in 50 msec steps (MAX 6.35 seconds)	*	✔	✔	✔	✔	✔	✔
Same Symbol Rescan Timeout: 1250 msecs		✔	✔	✔	✔	✔	✔
Same Symbol Rescan Timeout: 2000 msecs		✔	✔	✔	✔	✔	✔
Intercharacter Delay Programmable in 1 msec steps (MAX 255 msecs)	1 msecs 10 msecs in KBW	✔	✔		✔	✔	
Number of Scan Buffers	1	✔	✔	✔	✔	✔	✔
Transmit UPC-A Check Digit	*	✔	✔	✔	✔	✔	✔
Transmit UPC-E Check Digit			✔	✔	✔	✔	✔
Expand UPC-E		✔	✔	✔	✔	✔	✔

Parameter	Default	OCIA	RS-232	Light Pen	IBM 46XX	KBW	USB
Convert UPC-A to EAN-13		✔	✔		✔	✔	✔
Transmit Lead Zero on UPC-E		✔	✔	✔	✔	✔	✔
Convert EAN-8 to EAN-13		✔	✔		✔	✔	✔
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		✔	✔		✔	✔	✔
Transmit Code 39 Stop/Start Characters		✔	✔		✔	✔	✔
Transmit Mod 10/ITF		✔	✔		✔	✔	✔
Transmit MSI-Plessey Check Characters		✔	✔		✔	✔	✔
Parity	Space		✔				
Baud Rate	9600		✔				
8 Data Bits			✔				
7 Data Bits	*		✔				
Transmit Sanyo ID Characters			✔			✔	✔
Nixdorf ID			✔			✔	✔
LRC Enabled			✔			✔	✔
UPC Prefix			✔			✔	✔
UPC Suffix			✔			✔	✔
Transmit AIM ID Characters			✔			✔	✔
STX Prefix			✔			✔	✔
ETX Suffix			✔			✔	✔

Parameter	Default	OCIA	RS-232	Light Pen	IBM 46XX	KBW	USB
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 RTS/CTS	*		✔				
Message RTS/CTS			✔				
XON/XOFF Handshaking			✔				
ACK/NAK			✔				
Two Digit Supplements		✔	✔	as code 39	✔	✔	✔
Five Digit Supplements		✔	✔	as code 39	✔	✔	✔
Bookland 978		✔	✔	as code 39	✔	✔	✔
Bookland 977 (2 digit) Supplemental Requirement		✔	✔	✔	✔	✔	✔
Supplements are not Required	*	✔	✔	✔	✔	✔	✔
Two Digit Redundancy	*	✔	✔	✔	✔	✔	✔
Five Digit Redundancy		✔	✔	✔	✔	✔	✔
100 msec to Find Supplement Programmable in 100 msec steps (MAX 800 msec)	*	✔	✔	✔	✔	✔	✔

Parameter	Default	OCIA	RS-232	Light Pen	IBM 46XX	KBW	USB
Coupon Code 128		✔	✔	as code 39	✔	✔	✔
Programmable Code Lengths	7 avail.	✔	✔	✔	✔	✔	✔
Programmable Prefix Characters	10 avail.		✔			✔	✔
Suffix Characters			✔			✔	✔
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			✔			
Depth of Field							
Variable Depth of Field	*	✔	✔	✔	✔	✔	✔
Normal Depth of Field	*	✔	✔	✔	✔	✔	✔
Extended Depth of Field		✔	✔	✔	✔	✔	✔
Long Depth of Field	*	✔	✔	✔	✔	✔	✔
Ultra Close Depth of Field		✔	✔	✔	✔	✔	✔

Default settings for "*Aux*" interface

The slave scanner and the MS7600 always communicate via RS232. Data is relayed to the host via various primary interfaces.

Parameter	Default	OCIA	RS-232	Light Pen	IBM 46XX	KBW	USB
Aux Baud Rate	38400	✔	✔	✔	✔	✔	✔
Aux parity	space	✔	✔	✔	✔	✔	✔
Aux data bits	7	✔	✔	✔	✔	✔	✔
Aux stop bits	2	✔	✔	✔	✔	✔	✔
Aux character RTS	*	✔	✔	✔	✔	✔	✔
Aux message RTS		✔	✔	✔	✔	✔	✔
Aux Ack/Nak	*	✔	✔	✔	✔	✔	✔
Aux Xon/Xoff	*	✔	✔	✔	✔	✔	✔
Aux D/E commands		✔	✔	✔	✔	✔	✔
Aux M/O commands		✔	✔	✔	✔	✔	✔
Aux F/L commands		✔	✔	✔	✔	✔	✔
Aux Intercharacter Delay	1 msec	✔	✔	✔	✔	✔	✔
Aux Port Data Format	None (Disabled)	✔	✔	✔	✔	✔	✔

Scanner Pinout Connections

The MS7600 scanner interfaces terminate to 10-pin modular jacks located on the back of the unit. The serial # label indicates the model number of the scanner.

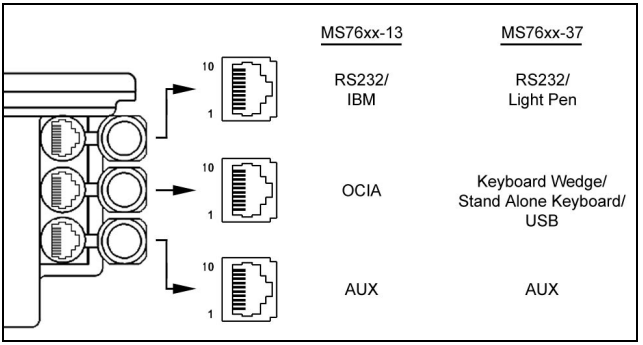


Figure 20: *Scanner Interface Ports*

MS762x-13 OCIA	
Pin	**Function**
1	Ground
2	NC
3	NC
4	RDATA
5	RDATA Return
6	Clock in
7	Clock out
8	Clock in Return/ Clock out Rtrn
9	+5VDC
10	Shield Ground

MS762x-13 IBM 46xx	
Pin	**Function**
1	Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	RTS Output
5	CTS Input
6	DTR
7	IBM B- (D-)
8	IBM A+ (D+)
9	+5V IN
10	NC

MS762x-13/-37 Auxilary Port RS232 IN Only	
Pin	**Function**
1	Ground
2	RS-232 Receive Input
3	RS-232 Transmit Output
4	RTS In
5	CTS Out
6-10	NC

Continued next page

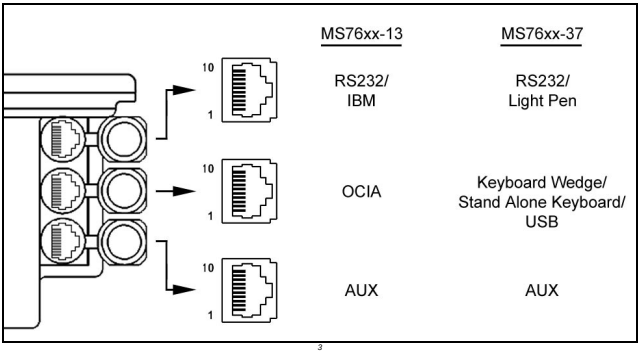


Figure 21: *Scanner Interface Ports*

MS762x-37
Keyboard Wedge,
Stand-Keyboard or USB

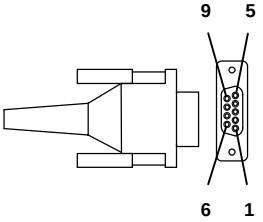
Pin	Function
1	Ground
2	USB D-
3	USB D+
4	PC Data
5	PC Clock
6	KB Clock
7	PC +5V, V-USB
8	KB Data
9	+5VDC
10	Shield Ground

MS762x-37
RS-232 or Light Pen

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	N/C
8	LTPN Data
9	+5VDC
10	Shield Ground

Cable Connector Configurations (Host End)

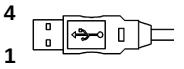
PowerLink Cable MLPN 54-54xxx*	
Pin	**Function**
1	Shield Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	DTR Input
5	Power/Signal Ground
6	Reserved
7	CTS Input
8	RTS Output
9	+5VDC



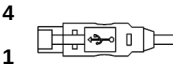
9-Pin D-Type Conn.

xxx* specifies connection to the host

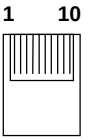
USB PowerLink Cable (MLPN 54-54165, Type A)	
Pin	**Function**
1	N/C
2	D-
3	D+
4	Ground



USB Type A (Top)
Locking Type A (Bottom)

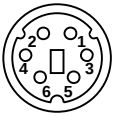


PowerLink, RS232 LSO/AUX Cable MLPN 54-54667	
Pin	**Function**
1	Ground
2	RS-232 Transmit Output
3	RS-232 Receive Input
4	RTS Output
5	CTS Input
6-10	N/C



10-pin Modular Plug

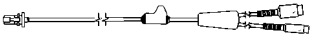
Stand Alone Keyboard Cable MLPN 54-54020	
Pin	**Function**
1	PC Data
2	NC
3	Power Ground
4	+5VDC PC Power to KB
5	PC Clock
6	NC



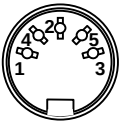
6-Pin Male Mini-DIN Conn.

Cable Connector Configuration

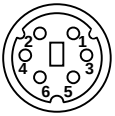
The PowerLink cable is terminated with a 5-pin DIN female connector on one end, and a 6-pin mini DIN male on the other.



PowerLink Cable

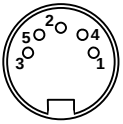


5-Pin DIN, Female



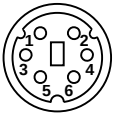
6-Pin DIN, Male

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	Keyboard 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

LIMITED WARRANTY

The MS7600 Series scanners are manufactured by Metrologic at its Blackwood, New Jersey, U.S.A. facility. The MS7600 Series scanners have a two (2) year limited warranty from the date of manufacture. Metrologic warrants and represents that all MS7600 Series 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 the Metrologic facility in Blackwood, New Jersey, U.S.A. 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 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 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 DAMAGES, 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.

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NOTICES

Notice
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 his own expense. Any unauthorized changes or modifications to this equipment could void the users 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 la classe A 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.

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 EN 55022:1998

Warnung!

Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem fall kann vom Betrieber verlangt werden, angemessene Maßnahmen durchführen.

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 predre les mesures adéquates.

PATENTS

“Patent Information

This METROLOGIC product may be covered by 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; 6,209,789;

4,360,798; 4,369,361; 4,387,297; 4,460,120; 4,496,831; 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; 5,081,342; 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; 5,250,792; 5,260,553; 5,262,628; 5,280,162; 5,280,164; 5,304,788; 5,321,246; 5,324,924; 5,340,973; 5,396,053; 5,396,055; 5,408,081; 5,410,139; 5,424,525; 5,436,440; 5,449,891; 5,468,949; 5,468,951; 5,479,000; 5,484,992; 5,525,789; 5,528,024; 5,532,469; 5,545,889; 5,591,953; 5,616,908; 5,627,359

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Other worldwide patents pending.

February 2002

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