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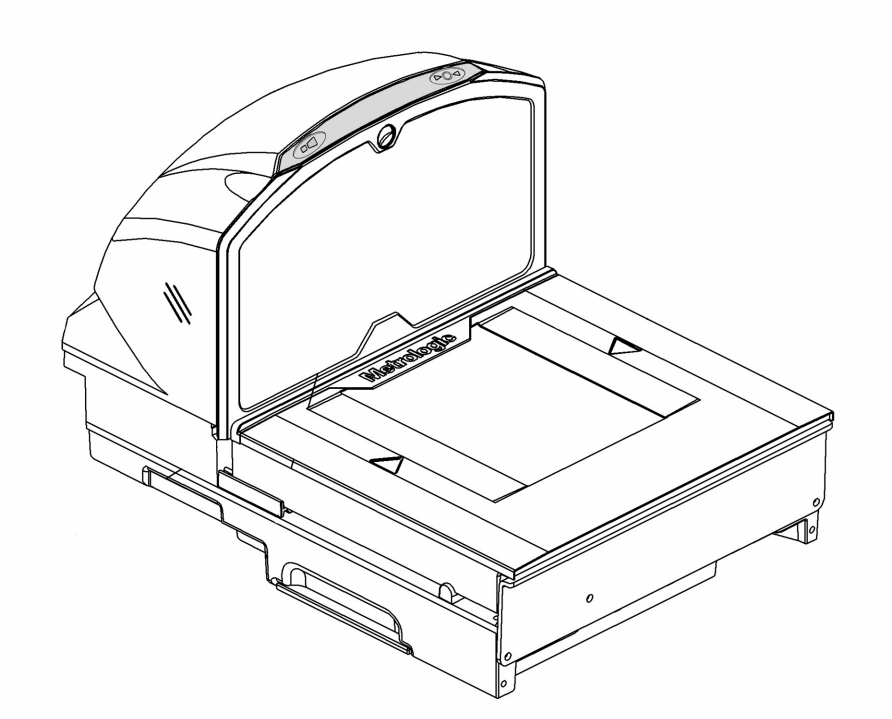
METROLOGIC INSTRUMENTS, INC.

MS2122 Stratos*E*™
Installation and User's Guide



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INTRODUCTION

MANUAL SCOPE

This guide provides an overview of the scanner and scanner operation with detailed information about setup and installation. Adobe® Acrobat® versions of the user's manuals are also available for download from the Metrologic website (www.metrologic.com).

MANUAL SYMBOL KEY

	Caution!
	Important Additional Information.
	Manufactures Note

PRODUCT OVERVIEW

Metrologic's Stratos*E* is designed to meet the demanding needs of high volume supermarket and point-of-sale applications. With advanced features like 6-sided, 360° scanning, 6000 scans per second, a complex scan zone and advanced decoding software, this high performance series of in-counter scanner products guarantees fast customer checkouts with minimal operator fatigue and stress. The MS2122 is equipped with a multitude of standard features including:

- Stratos***SCAN***™ - 6-sided, 360° scanning that minimizes product orientation
- Stratos***SPHERE***™ - Decoding software that reads poor quality and damaged bar codes
- Stratos***SYNC***™ - Horizontal and vertical scanning zones operate independently from one another
- RSS-14 Decoding – Decodes RSS-14, RSS Limited and RSS expanded emerging symbologies
- Flash ROM – Upgrade latest software enhancements on site.
- Powered Aux Port – Connect hand-held scanner for large or bulky items
- Loud Speaker – 3 volume/7 tone settings can be heard in all environments
- Easy Configuration – Windows® based utility or simple bar code setup
- Fully Automatic – "No touch" infrared wake up from power save modes
- EAS Deactivation – Electronic Article Surveillance (EAS) included
- Field Replaceable Vertical Window – Quickly remove vertical window for cleaning or replacement
- Stratos***SCOPE***™ - Visual diagnostic indicator for easy-to read feedback on scanner condition
- Stratos***SWAP***™ - Modular optics engine technology – small, prealigned, field replaceable modules
- Stratos***SCHOOL***™ - operator training software

MODEL NUMBER DESIGNATION

MODEL NUMBER DESIGNATION

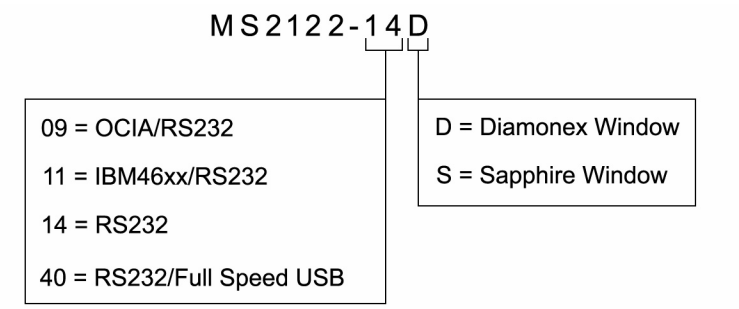


Figure 1. Model Number Designation

BASE KIT COMPONENTS AND OPTIONAL ACCESSORIES

BASE KIT	
Part #	**Description**
MS2122*	Stratos*E* Scanner
* See model number designation above for detailed information on interface type and window type.	
00-02028*x*	MS2122 Stratos*E* Installation and User's Guide
00-02407*x*	MetroSelect® Configuration Guide
00-02034*x*	MS2*xxx* Stratos Series Configuration Addendum

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

OPTIONAL ACCESSORIES	
Part #	**Description**
57-57000*x*-N-3	RS232 Interface Cable, Straight, 3.7 m (12') cord
57-57004*x*-N-3	IBM 46xx Port 9 Cable, Straight 3.7 m (12') cord
57-57015*x*-N-3	OCIA Interface Cable, Straight, 3.7 m (12') cord
57-57200*x* -N-3	USB Full Speed Communication Cable, Straight, 2.7 m (9') Cord, Locking 12V Plus-Power™ Type A
57-57099*x*-3	LSO RS232 PowerLink AUX Cable with built in power jack, Straight, 2.1 m (7') cord
52-52511*x*	.61 m (2') EAS cable

BASE KIT COMPONENTS AND OPTIONAL ACCESSORIES

OPTIONAL ACCESSORIES	
Part #	**Description**
AC to DC Power Transformer - Regulated +5V @ 1.5A +12V @ 1.5A	
46-46812	120V United States and Canada
46-46813	220V – 240V Continental European
46-46814	220V – 240V United Kingdom
46-46817	220V – 240V China
46-46928	220V – 240V Australia

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.

REPLACEMENT PARTS

REPLACEMENT PARTS	
Part #	**Description**
⚠ Caution	Window types (Diamonex and Sapphire) are not interchangeable due to laser safety and/or scanner performance differences. To change window type, the scanner must be returned to the manufacturer for reconfiguration.
46-46889	Vertical Window
46-46807	Diamonex Platter - Compact Size
46-46809	Sapphire Platter - Compact Size

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.

GENERAL PRECAUTIONS

The following are some general precautions to remember when handling your MS2122 scanner.

DO NOT TURN
the unit upside down with the platter in place.

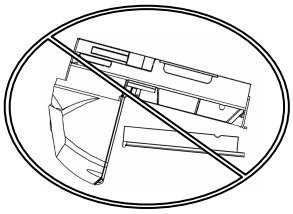


Figure 2.

DO NOT PRESS
on the window in the replacement platter or the vertical window frame.

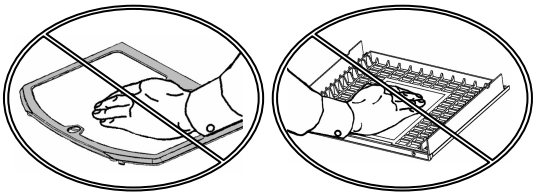


Figure 3.

PRESS on the platter's front lip, grip the opposite end and **LIFT** off the unit base.

No hardware or tools are required to remove or replace the platter. Refer to the Maintenance section of this manual for additional information.

⚠ *See caution statement on page 3.*

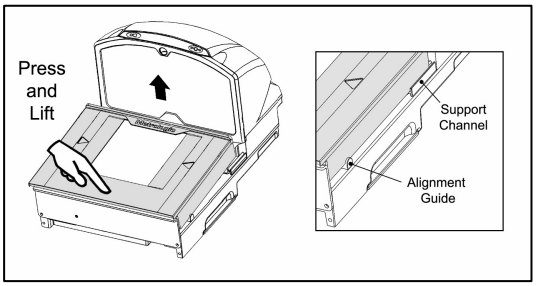


Figure 4.

Two **LIFT HANDLES** are located under the removable platter to assist in installation when placing the unit in the checkstand cutout.

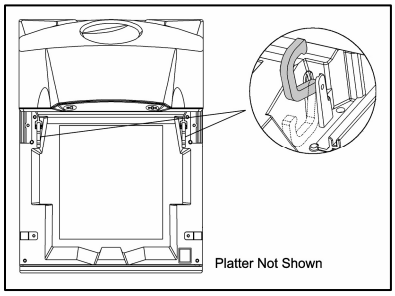


Figure 5.

MS2122 DESIGN SPECIFICATIONS

	Design Specifications
Operational	
Light Source:	VLD 650 nm
Peak Laser Power:	<2.2 mW
Horizontal Depth of Field:	0 mm - 152 mm (0”- 6”) for 0.33 mm (13 mil) bar code
Vertical Depth of Field:	0 mm - 216 mm (0”- 8.5”) for 0.33 mm (13 mil) bar code
Scan Speed:	6000 scans lines per second
No. of Scan Lines:	68 (40 horizontal / 28 vertical)
Motor Speed:	4800 / 6000 RPM
Min Bar Width:	0.152 mm (6.0 mil)
Decode Capability:	All standard 1-D bar codes RSS-14, RSS-Expanded, and RSS-14 Limited
System Interfaces:	RS232, Aux RS232, IBM468x/469x, USB (low speed and full speed), OCIA
Print Contrast:	35% minimum reflectance difference
No. Characters Read:	up to 80 data characters (Maximum number will vary based on symbology and density)
Beeper Operation:	7 tones or no beep; 3 volume settings
Indicators (LED):	Blue = laser on, ready to scan; White = good read, decoding
Mechanical	
Length:	MS2122 - 400 mm (15.75")
Width (below counter):	MS2122 - 292 mm (11.5")
Depth (below counter):	100 mm (3.9")
Height (above counter):	181 mm (7.1")
Weight (with platter):	MS2122 - 6.93 Kg (15.25 lbs.)
Electrical	
Voltage Supply:	1.5A @ +5V / 1.5A @ +12V
Operating Power:	14.25 Watts
Standby Power:	3.25 Watts
Operating Current:	1A @ 5V / .75A @ 12V
Standby Current:	.44A @ 5V / .08A @ 12V
DC Transformers:	Class II; 5VDC @ 1.5A; 12 VDC @ 1.5A
Laser Class 1:	IEC 60825-1:1993+A1:1997+A2:2001 EN 60825-1:1994+A11:1996+A2:2001
EMC:	FCC, ICES-003 & EN 55022 Class A
Environmental	
Operating Temperature:	0°C to 40°C (32°F to 104°F)
IP Rating:	IP 55
Storage Temperature:	-40°C to 60°C (-40°F to 140°F)
Humidity:	5% to 95% relative humidity, non-condensing
Contaminants:	Sealed to resist airborne particulate contaminants
Ventilation:	None required

Specifications subject to change without notice.

MS2122 Scanner

Components

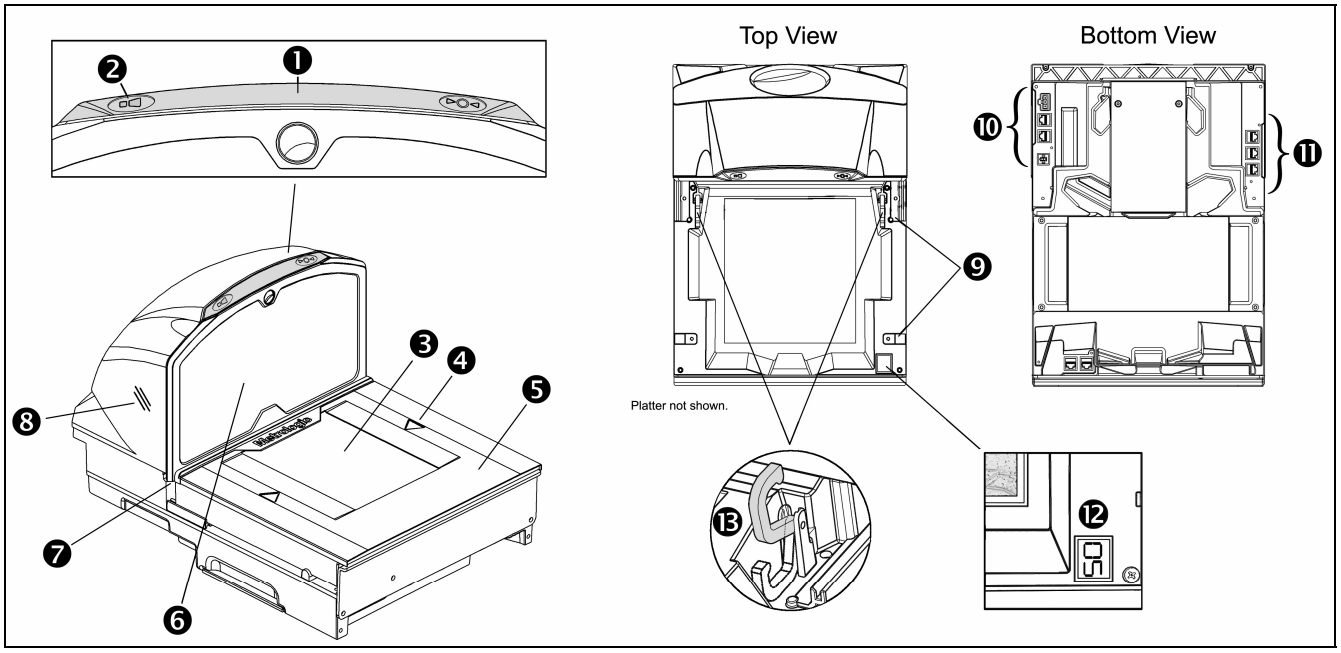


Figure 6. MS2122 Components

ITEM NO.	DESCRIPTION
1	Blue and White LED Bar
2	Volume/Tone Button (Multi-Function)
3	Diamonex or Sapphire Horizontal Window (Laser Aperture)
4	Flow Direction Indicator
5	Stainless Steel Platter (Replaceable)
6	Replaceable Vertical Window with High Impact Frame (Laser Aperture)
7	Debris Guard
8	Speaker
9	Platter Support Channel and Alignment Guides
10	Power, and EAS Connectors
11	Interface and Aux Scanner Connectors
12	Diagnostic Indicator Display (Located Under Platter)
13	Lift Handles (Located Under Platter)

MS2122 Scanner

Dimensions

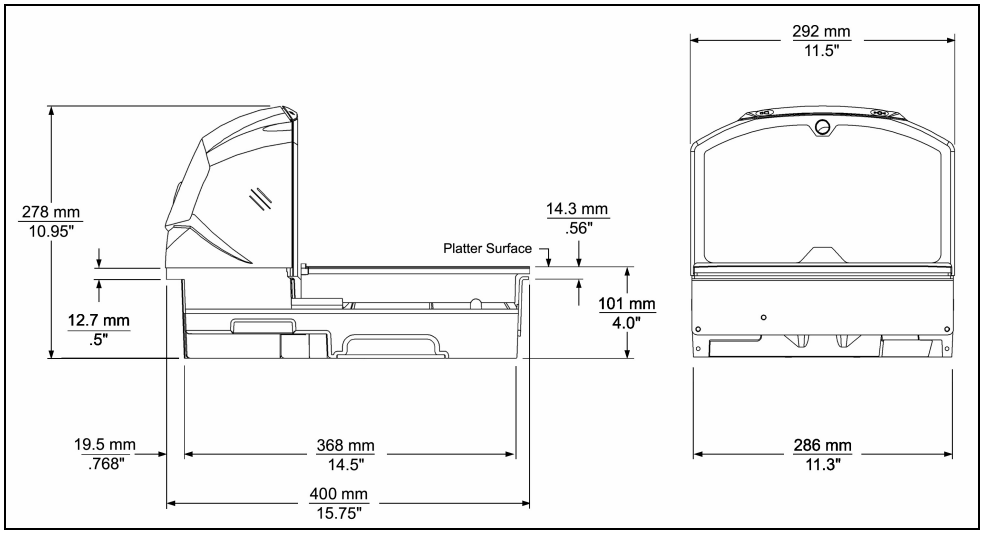


Figure 7. MS2122 Connectors

Connector Panel

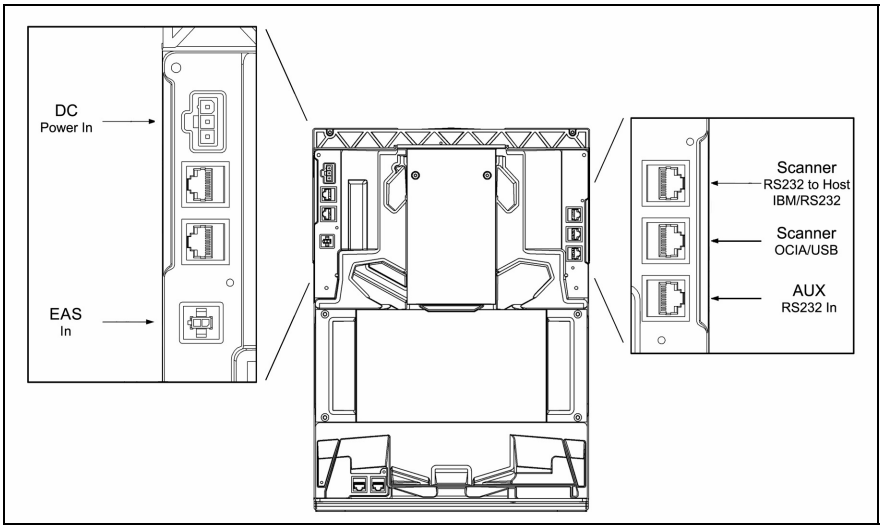


Figure 8. MS2122 Connectors

MS2122 Scanner

Caution and Serial Number Labels

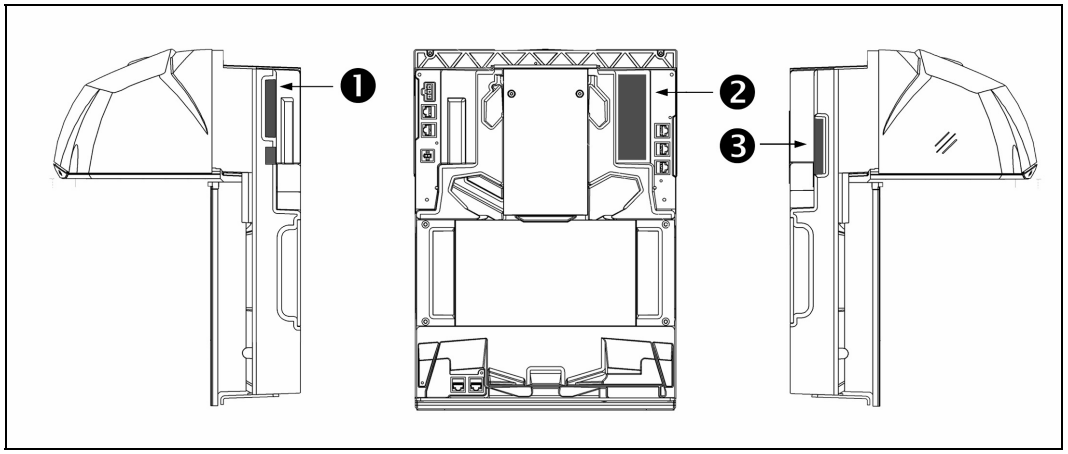


Figure 9. MS2122 Label Locations (Top) and Examples (Bottom)

1

EAS In		N/C	N/C	DC Power In

2

Metrologic Instruments Inc.
Blackwood New Jersey, USA
Contains no user servicable components. Warranty void if case is opened. Complies with FCC and ICES-003 Class A. See manual.
Manufactured Blackwood, NJ. August 2005 (C)
Model: MS2122-11S 46XX 5V, 12V ⎓
Stratos®*E* Barcode Scanner
37 03 09 0011
See User's Guide for patent coverage.

This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50 dated July 26, 2001.

CAUTION:
Laser light when opened.
DO NOT STARE INTO BEAM.

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

3

Scanner RS232 to Host	N/C	Aux RS232 In	On MS2122-14 Model
Scanner RS232 / IBM 46XX to Host	N/C	Aux RS232 In	On MS2122-11 Model
Scanner RS232 to Host	Scanner USB to Host	Aux RS232 In	On MS2122-40 Model
Scanner RS232 to Host	Scanner OCIA to Host	Aux RS232 In	On MS2122-09 Model

QUICK INSTALLATION OUTLINE

The following is a quick preview of the steps required for 1st time installations. Each item is discussed in detail later in this section.

- Determine clearance, ventilation and service access requirements.
- Determine checkstand layout taking into account package flow, cable routing and power requirements.
- Choose the mounting option which provides the best cable/power access and unit stability.
- Unpack the unit.
- Make the appropriate countertop cutouts and install all support brackets.
- Place the unit in the counter.
- Install the platter.
- Follow the steps under the correct interface to connect the cables and power supply.
- Configure the unit for the correct interface.

SITE REQUIREMENTS

Before installing your Stratos*E* scanner, please consider the following items.

Vertical Clearance

A minimum clearance height of 7.50" from the checkstand surface is needed for the vertical 'hood' on all of the scanner models. Additional clearance is recommended for unobstructed LED viewing by the operator.

Ventilation and Spacing

All Stratos*E* models have a die-cast housing to dissipate heat allowing the unit to operate without a ventilation fan. Metrologic recommends that the temperature surrounding the unit does not exceed 40°C (104°F). There should be adequate convection and minimal heat producing equipment in close proximity of the unit. A cooling fan with a filter is recommended if there will be a conveyor motor or other heat producing equipment close to the unit that will create a high temperature environment.

Service Access

When routing and installing the cable (s) and power supply, make sure you leave access that these components may be swapped easily without the need to remove the unit from the checkstand.

When changing the StratosSWAP optics engine modules, Metrologic recommends removing the unit completely from the checkstand.

Power Installation

The Power Supply (AC/DC) should be connected to an AC Outlet that is free of electrical noise (clean). A qualified electrician can determine the amount of electrical noise on the AC line. See additional information on power installation and restrictions under the Installation: Interface section of this manual.

Metrologic recommends using a switched AC outlet. The switch should be located on the operator's side of the checkstand in close proximity to the Stratos*E* to facilitate service of the unit.

Checkstand Layout Considerations

When placing a scanner in a checkstand, the following factors should be considered.

- Items should flow at a distance to the operator that maximizes comfort. The operator should not need to stretch or strain to reach for and scan packages.
- The Stratos*E* can scan a bar code on all 6 sides of a package. The packages should flow into the scan area that provides the maximum reading performance. No lifting or orientation of the items is necessary. A properly placed item diverter can maximize the flow of packages.
- In what direction are the packages flowing? Most checkstands are designed for left-handed takeaway. If the operator is facing the vertical window of the scanner, packages flow from the operator's right to left. The packages are in queue on the conveyor to the right and the bagging is to the left.

UNPACKING THE UNIT

1. Make sure the shipping box is top-side up before opening.

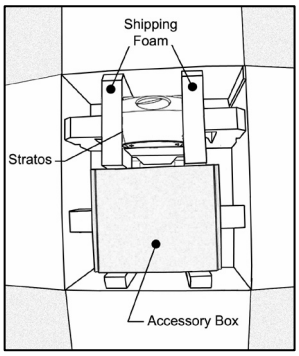


Figure 10.

2. Remove the accessories box and check it's content for the following items.

   - Product Manuals
   - Power Supply
   - Communication Cable(s)

3. Lift the scanner out of the shipping box by gripping the **bottom** of the unit on both sides.

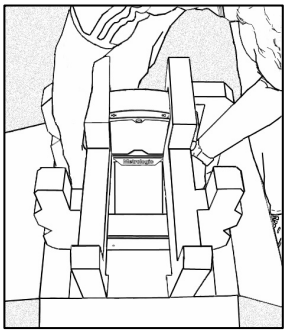


Figure 11.

Important! **Do not** lift the unit out of the box by gripping the sides of the platter.

4. Carefully remove the shipping foam around the unit.

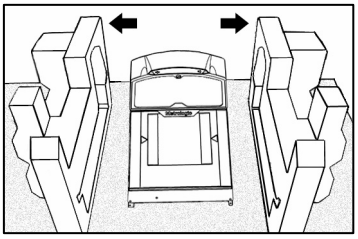


Figure 12.

Important! **Do not** turn the unit upside down or tilt the unit onto its side while removing the shipping foam. The platter is not attached to the unit and can fall off!

5. Lift the platter off the unit and store it in a safe location until the unit has been installed in the checkstand counter.

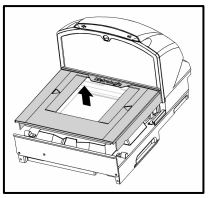


Figure 13.

INSTALLING THE UNIT IN THE COUNTER

Proper Lifting Technique

On every Stratos*E* model there are two lifting handles locatedunder the removable platter. These handles are provided to assist in installation when placing the unit in the checkstand cutout.

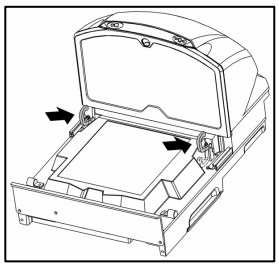


Figure 15. Lifting Handles

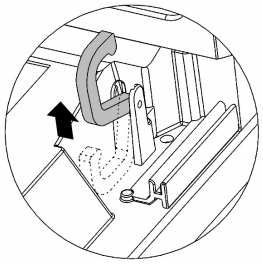


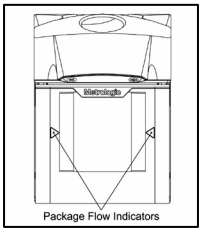
Figure 14. Rotate Handles Up

INSTALLING THE UNIT IN THE COUNTER

There are two options for mounting your MS2122 scanner. *Option A,* is a two-point mounting system that supports the unit at the front and back. *Option B*, is a three-point mounting system that supports the unit at the back and on the sides.

Before starting to mount the MS2122 determine:

- The scanner's orientation in reference to the operator and the direction of package flow.
- The mounting method that provides the most stability for the scanner.
- If any additional materials or tools are required for installation.



Option A: Two-Point Support

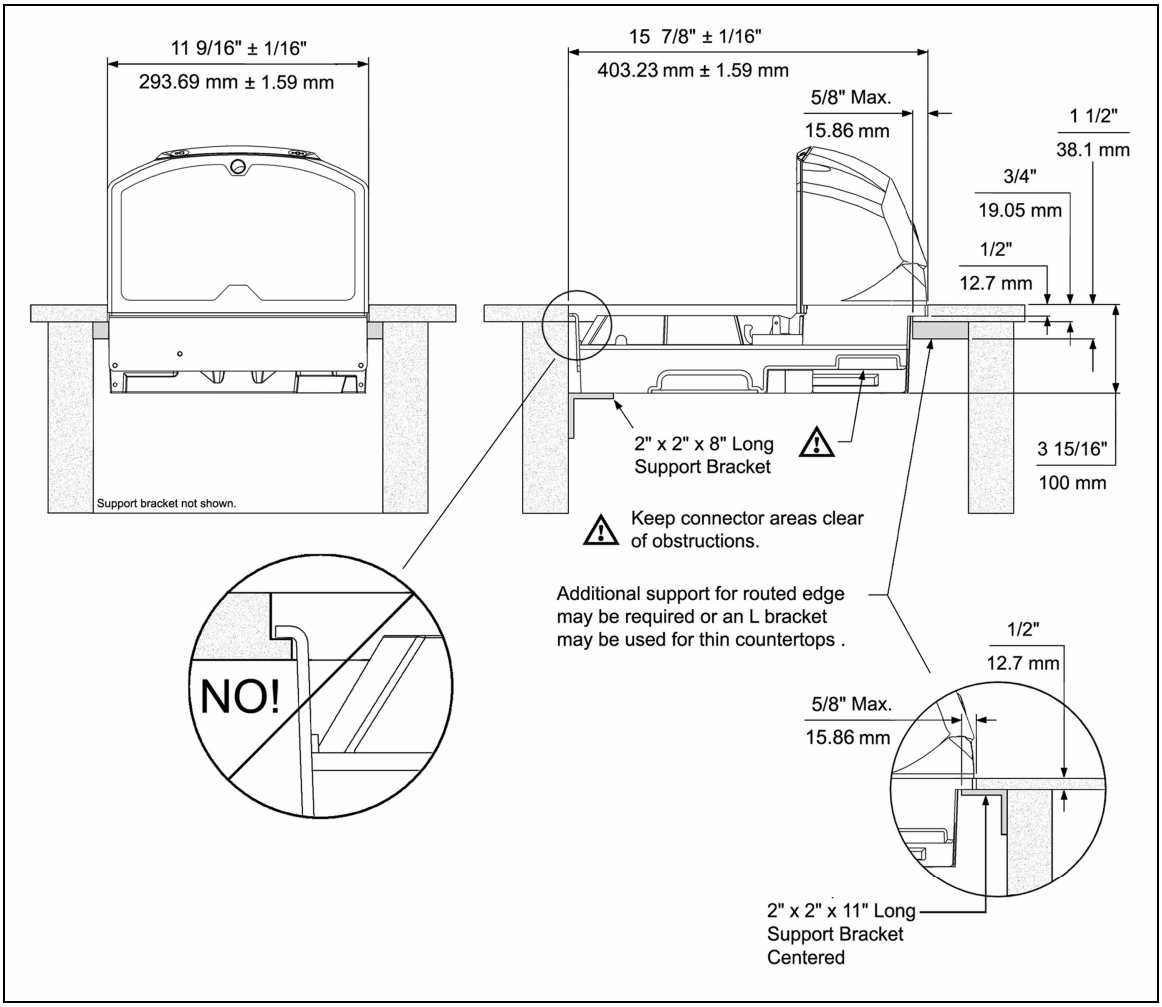


Figure 16. Option A, Two-Point Support

INSTALLING THE UNIT IN THE COUNTER

Option B: Three-Point Support

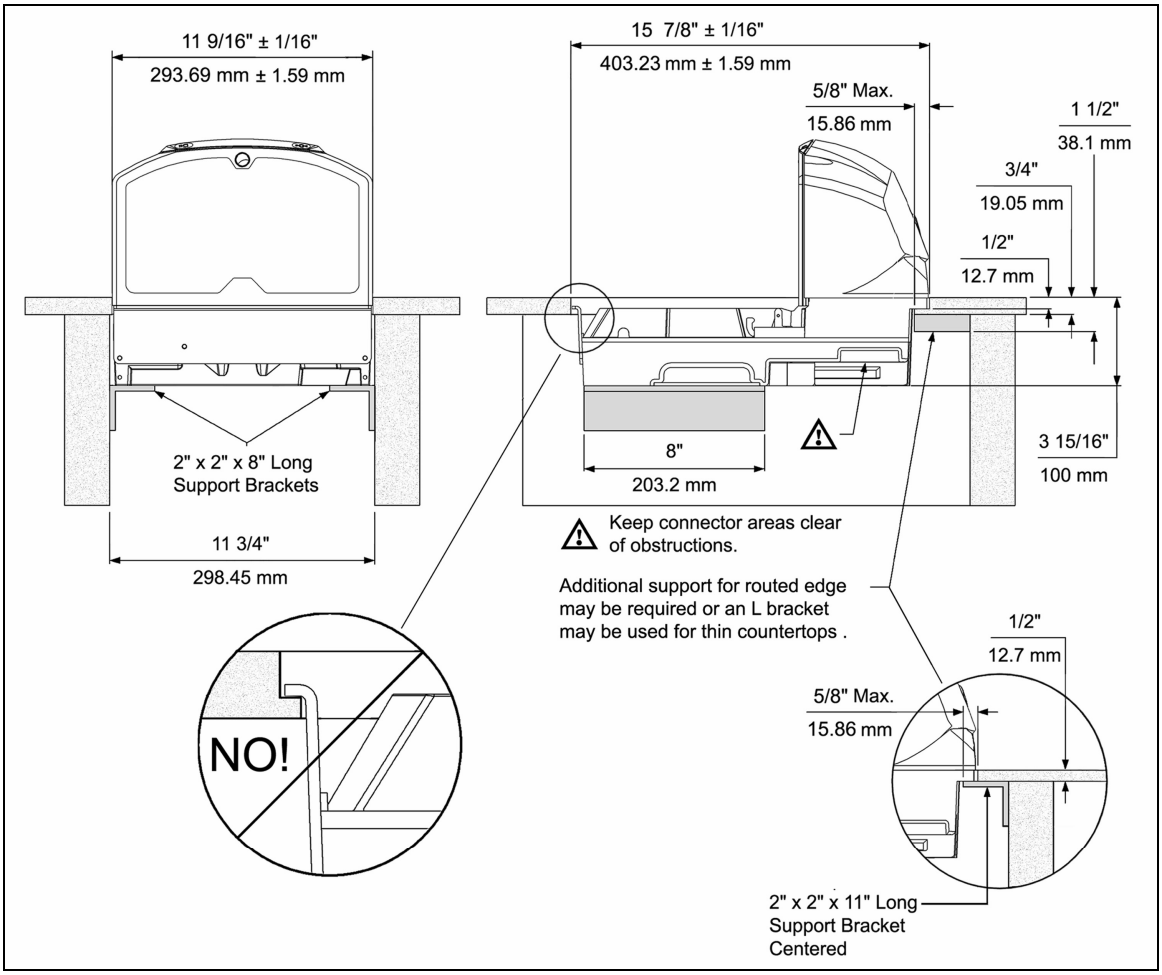


Figure 17. Option B, Three-Point Support

INTERFACE

RS232

The following steps describe how to properly install the cables for an RS232 Stratos*E* application. The scanner must then be configured to match the host's RS232 parameters. Cable installation alone does not guarantee that the Stratos*E* will communicate properly with the host system.

> Configuration bar codes are located in the MetroSelect Configuration Guide (MLPN 00-02407x) and the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x).

1. Turn off the host system.
2. Plug the 10-pin RJ45 end of the RS232 interface cable (MLPN 57-57200x-N-3) into the 10-pin socket labeled ***Scanner RS232 to Host***, on the bottom of the Stratos*E*. Refer to figure shown below.
3. Connect the other end of the RS232 interface cable to the proper communication port on the host device.

> STOP Before continuing, verify that the RS232 interface cable is connected to the appropriate interface socket on the scanner. An incorrect cable connection can cause communication problems or potential damage to the scanner and/or terminal.

4. Plug the external power supply into the 3-pin Molex socket labeled, DC Power In on the bottom of the Stratos*E*.

> Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet should be located near the equipment and be easily accessible.

> Metrologic recommends using a switched AC outlet. The switch should be located on the operator's side of the checkstand in close proximity to the Stratos*E* to facilitate service of the unit.

5. Connect AC power to the transformer. If the AC outlet is equipped with an on/off switch, turn the power on.
6. Turn on the host system.
7. Scan the *Recall Defaults* bar code.
8. Configure the Stratos*E* to match the host system's RS232 parameters.

> Refer to the MetroSelect Configuration Guide (MLPN 00-02407x) under Section G: RS232, ***Enable RS232 Mode***.

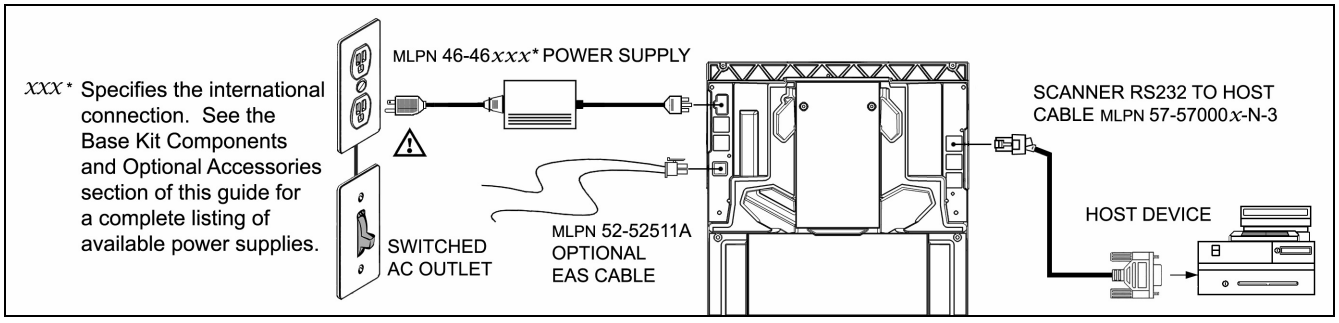


Figure 18. RS232 Interface Cable Installation Schematic

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.

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

INTERFACE

FULL SPEED USB (INTEGRATED)

The following steps describe how to properly install the cables for a Full Speed Stratos*E* application. The scanner must then be configured to match the host's USB parameters. Cable installation alone does not guarantee that the Stratos*E* will communicate properly with the host system.

> Configuration bar codes are located in the MetroSelect Configuration Guide (MLPN 00-02407x) and the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x).

1. Turn off the host system.
2. Plug the 10-pin RJ45 end of the USB interface cable (MLPN 57-57200X-n-3) into the 10-pin socket labeled, ***Scanner USB to Host*** , on the bottom of the Stratos*E*. Refer to the figure below.
3. Connect the other end of the USB interface cable to the appropriate USB port on the host device.

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

> *Manufacturers Note:*
> Plugging the scanner into the USB port of the host device does not guarantee that scanned information will appear at the host device. A software driver and correct configuration setting are also required for proper communication to occur.

4. Plug the external power supply into the 3-pin Molex socket labeled, DC Power In, on the bottom of the Stratos*E*.

> Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet should be located near the equipment and be easily accessible.

> Metrologic recommends using a switched AC outlet. The switch should be located on the operator's side of the checkstand in close proximity to the Stratos*E* to facilitate service of the unit.

5. Connect AC power to the transformer. If the AC outlet is equipped with an on/off switch, turn the power on.
6. Turn on the host system.
7. Configure the Stratos*E* to match the host system's USB parameters.

> Refer to the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x) under Scanner Configuration Bar Codes, Dual Cable Scanner Configuration Bar Codes: ***IBM OEM Full Speed USB Communication Defaults***.

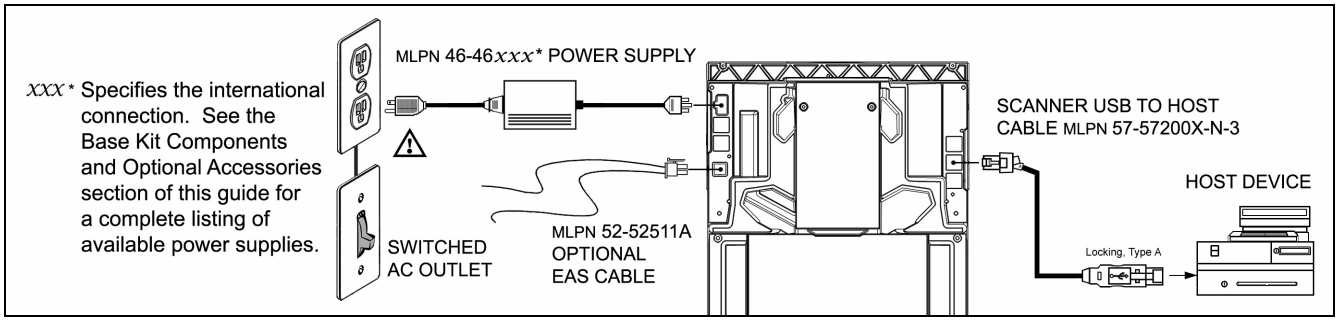


Figure 19. USB Cable Installation Schematic

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.

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

INTERFACE

IBM 46xx

The following steps describe how to properly install the cables for an IBM 46xx Stratos*E* application. The scanner must then be configured to match the host's IBM 46xx parameters. Cable installation alone does not guarantee that the Stratos*E* will communicate properly with the host system.

> Configuration bar codes are located in the MetroSelect Configuration Guide (MLPN 00-02407x) and the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x).

1. Turn off the host system.
2. Plug the 10-Pin RJ45 end of the IBM interface cable (MLPN 57-57004x-N-3) into the 10-pin socket labeled ***Scanner RS232/ IBM to Host***.
3. Connect the other end of the IBM cable to communication port 9 on the host device.

> STOP Before continuing verify that the IBM interface 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 host device does not guarantee that scanned information will appear at the host device. A software driver and correct configuration settings are also required for proper communication to occur.

4. Plug the external power supply into the 3-pin Molex socket labeled, ***DC Power In***, on the bottom of the Stratos*E*.

> Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet should be located near the equipment and be easily accessible.

> Metrologic recommends using a switched AC outlet. The switch should be located on the operator's side of the checkstand in close proximity to the Stratos*E* to facilitate service of the unit.

5. Connect AC power to the transformer. If the AC outlet is equipped with an on/off switch, turn the power on.
6. Turn on the host system.
7. Configure the Stratos*E* to match the host system's IBM 46xx parameters.

> Refer to the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x) under *Scanner Configuration Bar Codes, Dual Cable Scanner Configuration Bar Codes:* ***IBM 3rd Generation 46xx.***

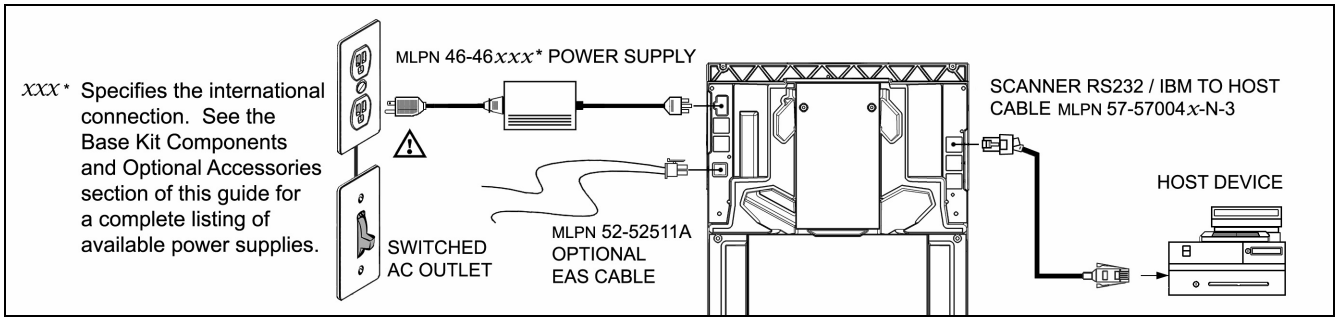


Figure 20. IBM Cable Installation Schematic

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.

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

INTERFACE

OCIA

The following steps describe how to properly install the cables for an OCIA Stratos*E* application. The scanner must then be configured to match the host's OCIA parameters. Cable installation alone does not guarantee that the Stratos*E* will communicate properly with the host system.

> Configuration bar codes are located in the MetroSelect Configuration Guide (MLPN 00-02407x) and the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x).

1. Turn off the host system.
2. Plug the 10-Pin RJ45 end of the OCIA interface cable (MLPN 57-57015x-N-3) into the 10-pin socket labeled ***Scanner OCIA to Host***.
3. Connect the other end of the OCIA interface cable to the appropriate communication on the host device.

> STOP Before continuing verify that the OCIA interface 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 host device does not guarantee that scanned information will appear at the host device. A software driver and correct configuration settings are also required for proper communication to occur.

4. Plug the external power supply into the 3-pin Molex socket labeled, ***DC Power In***, on the bottom of the Stratos*E*.

> Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet should be located near the equipment and be easily accessible.

> Metrologic recommends using a switched AC outlet. The switch should be located on the operator's side of the checkstand in close proximity to the Stratos*E* to facilitate service of the unit.

5. Connect AC power to the transformer. If the AC outlet is equipped with an on/off switch, turn the power on.
6. Turn on the host system.
7. Configure the Stratos*E* to match the host system's OCIA parameters.

> Refer to the MetroSelect Configuration Guide (MLPN 00-02407x) under *Section I: OCIA for Enabling and Setting OCIA Parameters, **Load OCIA Defaults***.

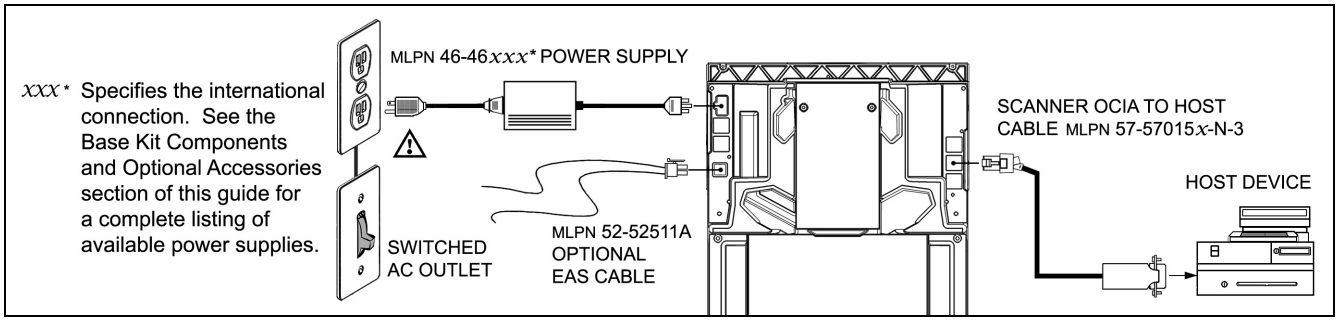


Figure 21. OCIA Cable Installation Schematic

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.

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

SECONDARY METROLOGIC SCANNER, CABLE INSTALLATION

The following steps describe how to properly install the cables between a secondary *Metrologic* scanner and the Stratos*E*. The Stratos*E* and the secondary scanner **must** then be configured to communicate properly. Cable installation alone **does not** guarantee that the Stratos*E* will communicate properly with the host system and secondary scanner.

> Contact a Metrologic customer service representative **before** connecting another manufacturer's scanner to the StratosS as a secondary scanner.

> Configuration bar codes are located in the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x) under *Scanner Configuration Bar Codes:* ***Auxiliary Port, Quick Start for a Secondary Metrologic Scanners***.

1. Refer to pages 13 - 16 for the type of interface *(RS232, IBM 46xx, etc.)* required for your application. Follow the cable installation steps under the appropriate interface before continuing. Once the communication and power cables have been installed follow step 2 below for the secondary scanner installation.

2. Connect the **straight** 10-pin RJ45 end of the RS232 PowerLink AUX cable (MLPN 57-57099x-3) to the RS232 socket of the **secondary** scanner (*see figure below)*.

3. Connect the **angled** 10-pin RJ45 end of the RS232 AUX cable (MLPN 57-57099x-3) to 10-pin socket labeled *Aux RS232 In,* on the bottom of the Stratos*E.*

   Important: The StratosE series' aux port requires the signals; transmit, receive, RTS & CTS from the secondary scanner.

> Stratos*E*' auxiliary port will support 5VDC devices with a 150mA maximum current. If the auxiliary device exceeds this specification an external power supply will be required to power the auxiliary device.
>
> The following Metrologic scanners can receive power from Stratos*E*: the MS9520, MS9540, and the MS5145.

4. **This step is required for secondary devices that require >5VDC and/or 150mA current to operate.** Skip to step 5 if the secondary device requires ≤ 5VDC.

   Plug the power supply into the **secondary** scanner's PowerLink cable (MLPN 57-57099x-3) and connect AC power to the secondary scanner.

   > Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet should be located near the equipment and be easily accessible.

5. Configure the Stratos*E* and the secondary scanner. The auxiliary input port's data format must match the main output format of the secondary scanner.

   > Refer to the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x) under *Scanner Configuration Bar Codes:* ***Auxiliary Port, Quick Start for a Secondary Metrologic Scanners***.

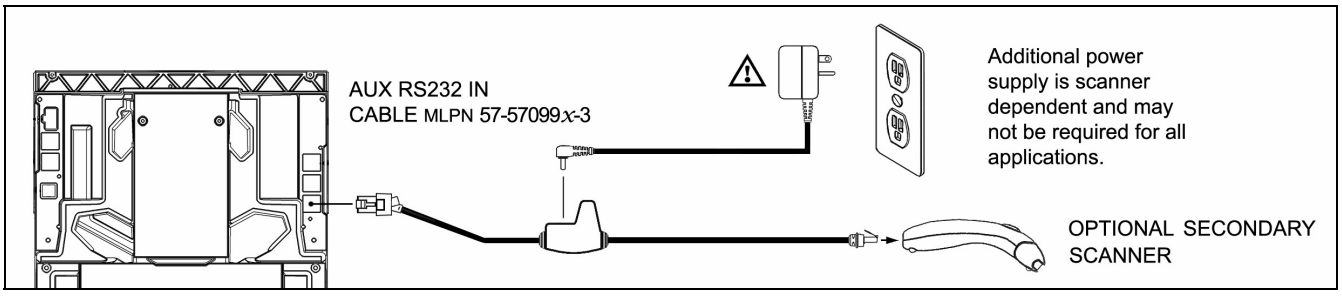


Figure 22. AUX Cable Installation Schematic

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

EAS DEACTIVATION

SW1 and SW2 are the switch banks inside the Checkpoint Device that set the deactivation range. The following is a list of Checkpoint recommended switch bank settings.

Base Model	Checkpoint Recommended Switch Bank Settings
MS2122	SW1 & SW2 switches 1 and 6 set to ON

The Stratos*E* has a connector (*marked EAS In*) on the bottom of the scanner. Metrologic has an optional EAS cable (MLPN 52-52511A) available for purchase for connection between the Checkpoint Device and the Stratos*E*.

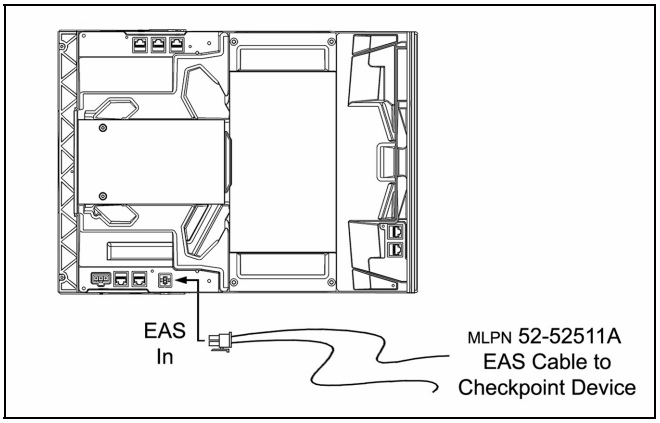


Figure 23. EAS Cable Connection (Bottom of StratosE)

The following figure shows the location of the EAS deactivation area for Stratos*E*. It is important to pass the entire tag through this area to deactivate the security tag.

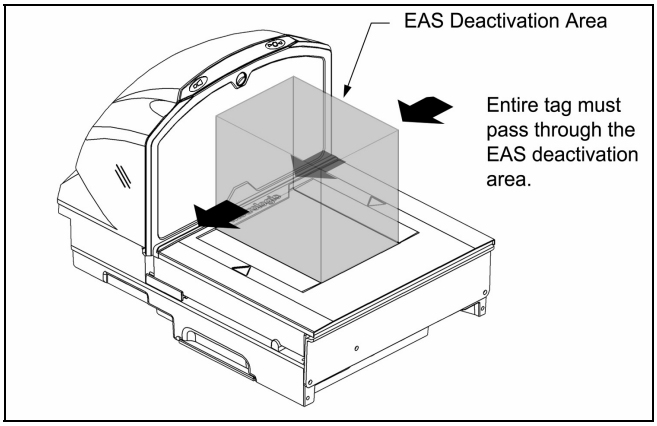


Figure 24. EAS Deactivation Area

SCAN ZONE

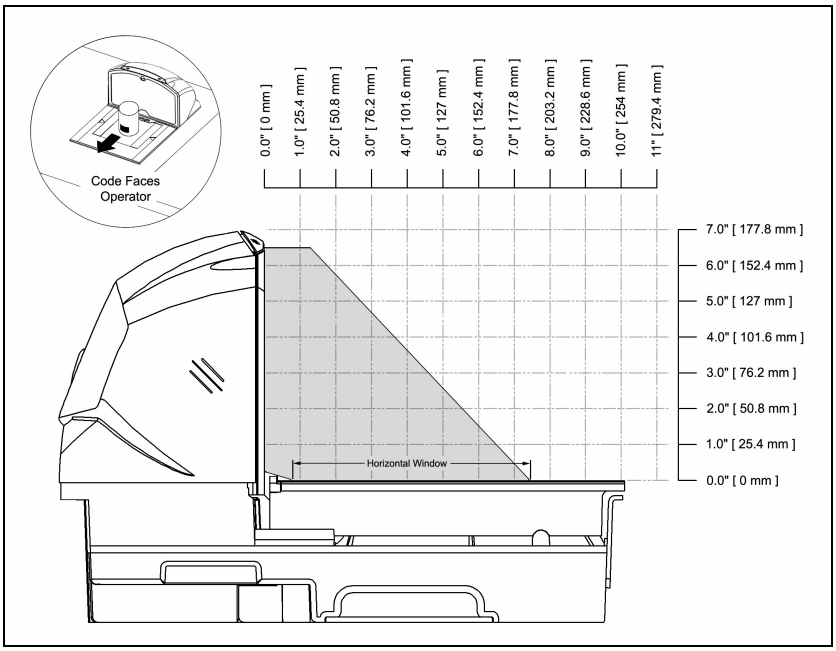


Figure 25. Checker-Side (13 mil)

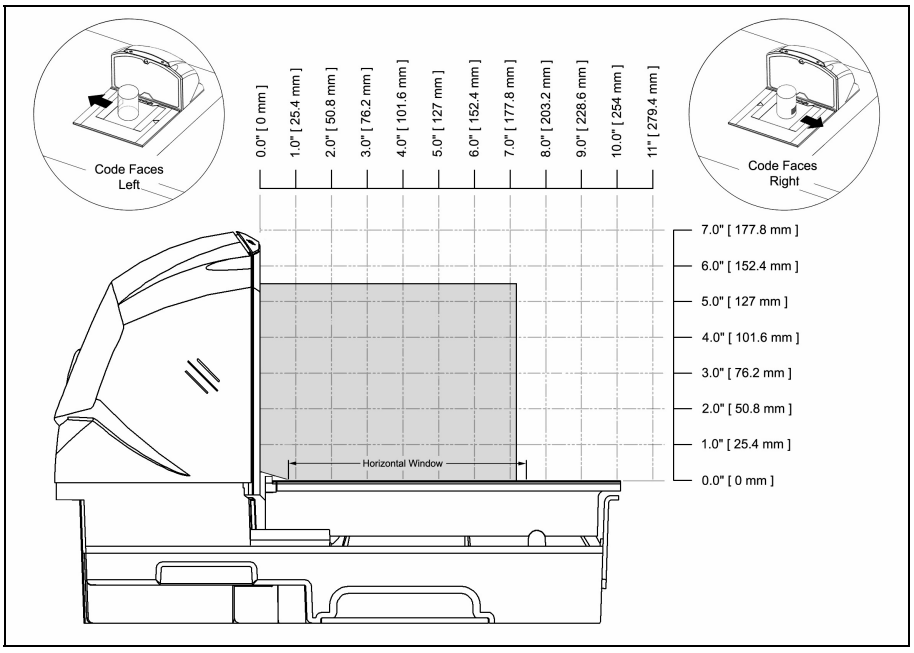


Figure 26. Horizontal Left / Right (13 mil)

Specifications are subject to change without notice.

SCAN ZONE

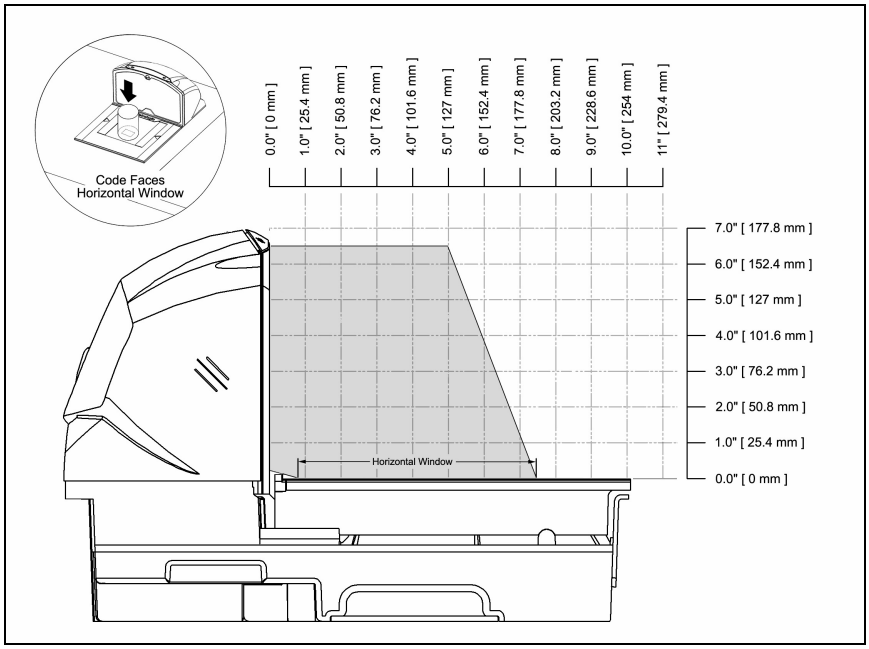


Figure 27. Horizontal Direct (13 mil)

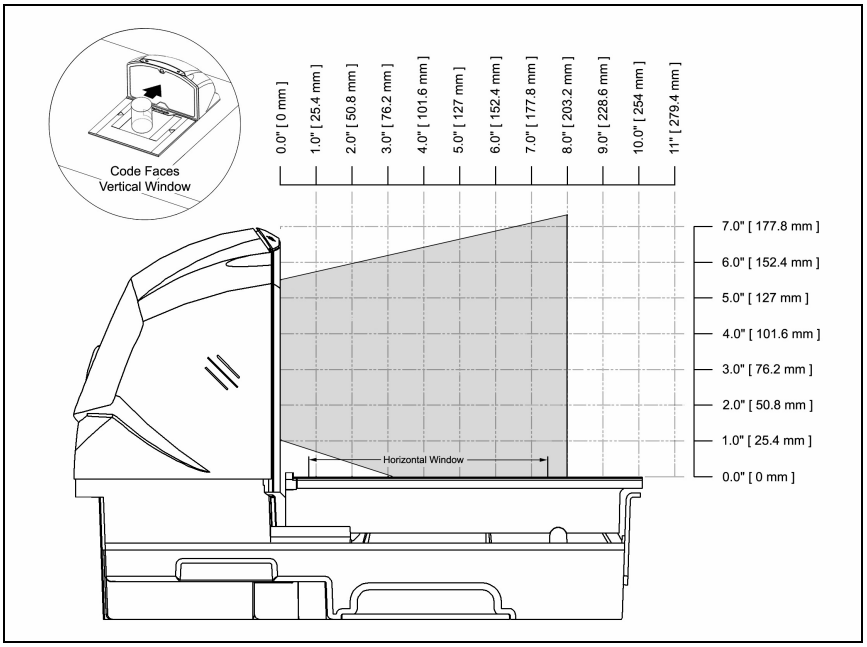


Figure 28. Vertical Direct (13 mil)

Specifications are subject to change without notice.

SCAN ZONE

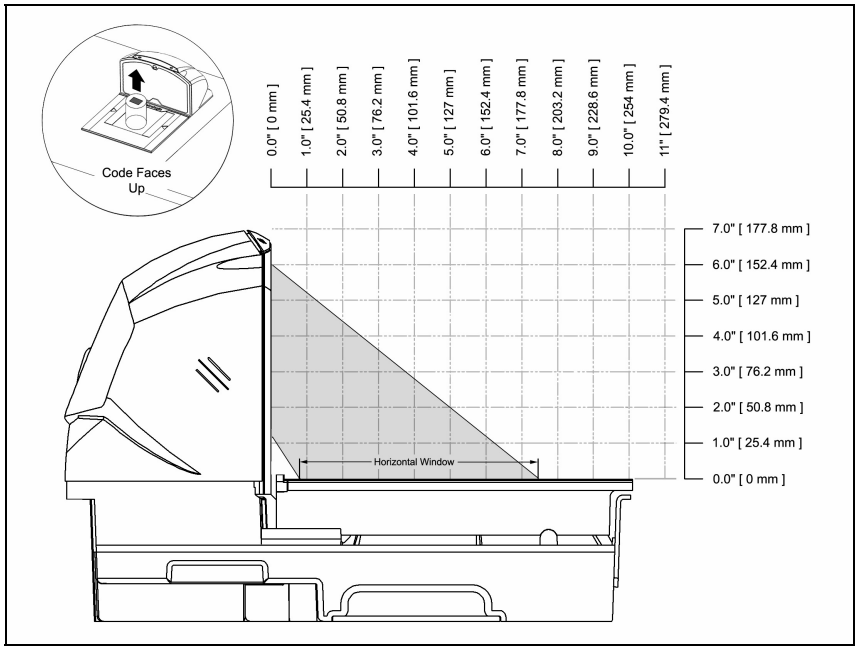


Figure 29. Top-Down (13 mil)

IR ACTIVATION AREA

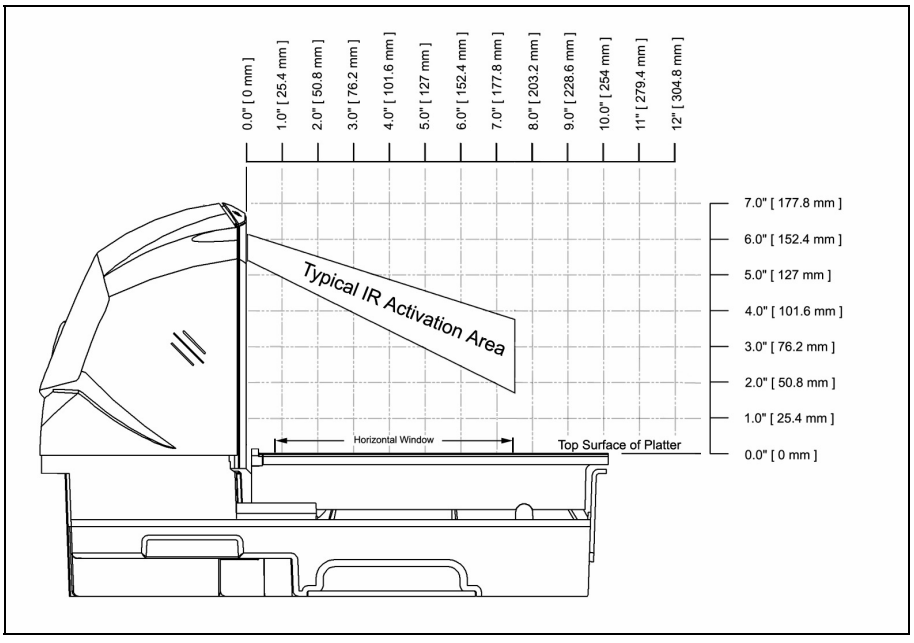


Figure 30. IR Activation Area Perpendicular to Package Flow

Specifications are subject to change without notice.

INDICATOR DESCRIPTIONS

Audible

When in operation the Stratos*E* provides audible feedback that indicates the status of the unit and the current scan. 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 white LED will flash, the blue LED will turn on and the scanner will beep once (*the white 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 white LED will flash and the scanner beeps once (*if configured to do so*). If the scanner does not beep once and the white light does not flash, then the bar code has *not* been successfully read.

Razzberry Tone

This is a failure indicator. Refer to failure modes on page 23.

Three Beeps - during operation

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

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

When using one-code-configuring, 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 on page 23.

Descending Tone

The scanner will emit a descending tone when the *microprocessor* is about to Flash upgrade.

Ascending Tone

The scanner will emit a descending tone when the *interface coprocessor* is about to Flash upgrade.

Visual

There is an array of LEDs (white and/or blue) located on the top of the hood of the MS2122. When the scanner is on, the flashing or constant illumination of the LEDs indicates the status of the current scan and the scanner.

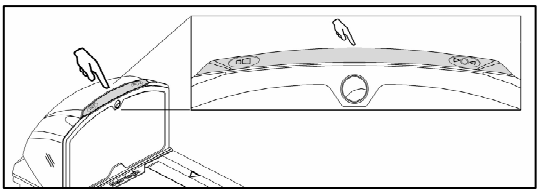


Figure 31. LED Bar

No White or Blue LED

The LEDs will not be illuminated if the scanner is not receiving power from the host or transformer. They are also not illuminated when all lasers are turned off for any reason.

INDICATOR DESCRIPTIONS

Visual

Steady Blue

When all lasers are active, the blue LED is illuminated. The blue LED will remain illuminated until all lasers are deactivated.

Steady Blue and Single White Flash

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

Steady White and Blue

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 white LED will remain on until the data can be transmitted.

Flashing Blue then Flashing White

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 White, Blue Off

This indicates the scanner may be waiting for communication from the host.

Flashing Blue

This indicates there is an error active on the diagnostic indicator display (see Error Codes on page 24). The scanner may continue to operate depending on the type of error.

Failure Modes

Flashing Blue and One Razzberry Tone

This indicates that the scanner has experienced a laser subsystem failure. The scanner will try up to 3 times to correct the failure condition. If the laser subsystem continues to fail, that subsystem (horizontal or vertical) will be shut down and an error indication will be shown on the *Diagnostic Indicator Display*. This error stays on the display until corrected. If the remaining subsystem is still operational, scanning will continue using the operational components.

Flashing Blue and White and Two Razzberry Tones

This indicates that the scanner has experienced a motor subsystem failure. The scanner will try up to 3 times to correct the failure condition. If the motor subsystem continues to fail, that subsystem (horizontal or vertical) will be shut down and an error indication will be shown on the *Diagnostic Indicator Display*. This error stays on the display until corrected. If the remaining subsystem is still operational, scanning will continue using the still operational components.

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.

INDICATOR DESCRIPTIONS

Diagnostic Indicator Display

There is a two-digit error code display located under the platter near the bottom right corner of the output window (see figure below).

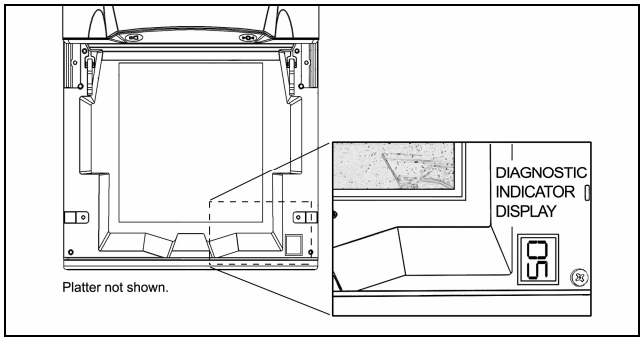


Figure 32. Diagnostic Indicator Display

The following is a list of possible error codes and their meanings. Some errors will require immediate scanner maintenance.

Error Code	Description
01	Reserved
02	RAM ERROR – The scanner's Random Access Memory (RAM) is tested as faulty. Return the unit for repair at an authorized service center.
03	PROGRAM ERROR – The scanner's software program is failing. Return the unit for repair.
04	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. Correct this problem by getting the proper hardware interface OR by configuring the Stratos*E* for the proper interface hardware attached.
05	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. This error is also accompanied by 3 beeps. This error will remain during operation as a reminder that this power cycle is scanning against a default-generated configuration.
06	COMMUNICATION ERROR - The RS232 data line is being held active. This causes the scanner to read a "break" signal constantly and continuous attempts are made to enter MetroSet configuration mode. A short on the RX Data line can cause this condition. It can also be the result of a laptop in power save mode. The scanner will abort attempts to enter configuration mode after a short timeout. The scanner can automatically recover from this condition once the short in the RX Data line is corrected.
09	COPROCESSOR COMMUNICATION ERROR – The main microprocessor is not communicating with the interface coprocessor. The interface coprocessor may be in a fault condition with the host or just not able to respond. This error may appear when the scanner is configured for USB or IBM interface applications or during an attempt to update the interface software through the flash utility. The unit should be repaired at an authorized service center.
11	SWITCH ERROR – The switch used for volume selection or sleep mode is detected in error (always closed). The condition is self-correcting if possible. If the error persists, return the unit for repair at an authorized service center. The scanning operation can continue with this error active.

INDICATOR DESCRIPTIONS

Diagnostic Indicator Display

Error Code	Description
21	LASER #1 (VERTICAL) ERROR – The laser in the vertical scanning subsystem denotes a failure. The scanner will try three times to correct the laser operation. If the laser error persists, the vertical scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the horizontal scanning subsystem is still healthy, it will remain active and scanning can CONTINUE using the remaining good subsystem. The unit, however, should be scheduled for repair at an authorized service center when convenient.
22	LASER #2 (RIGHT HORIZONTAL) ERROR – The right laser in the horizontal scanning subsystem denotes a failure. The scanner will try three times to correct the laser operation. If the laser error persists, and the left horizontal laser (#3) is also in error, the horizontal scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the left (Laser #3) horizontal scanning subsystem is still healthy, the horizontal scanning subsystem remains active and scanning can CONTINUE using the remaining good components. The unit, however, should be scheduled for repair at an authorized service center when convenient.
23	LASER #3 (LEFT HORIZONTAL) ERROR – The left laser in the horizontal scanning subsystem denotes a failure. The scanner will try three times to correct the laser operation. If the laser error persists, and the right horizontal laser (#2) is also in error, the horizontal scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the right (Laser #2) horizontal scanning subsystem is still healthy, the horizontal scanning subsystem remains active and scanning can CONTINUE using the remaining good components. The unit, however, should be scheduled for repair at an authorized service center when convenient.
31	MOTOR #1 (VERTICAL) ERROR – The motor in the vertical scanning subsystem denotes a failure. The scanner will try three times to correct the motor operation. If the motor error persists, the vertical scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the horizontal scanning subsystem is still healthy, it will remain active and scanning can CONTINUE using the remaining good subsystem. The unit, however, should be scheduled for repair at an authorized service center when convenient.
32	MOTOR #2 (HORIZONTAL) ERROR – The motor in the horizontal scanning subsystem denotes a failure. The scanner will try three times to correct the motor operation. If the motor error persists, the horizontal scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the vertical scanning subsystem is still healthy, it will remain active and scanning can CONTINUE using the remaining good subsystem. The unit, however, should be scheduled for repair at an authorized service center when convenient.
31	MOTOR #1 (VERTICAL) ERROR – The motor in the vertical scanning subsystem denotes a failure. The scanner will try three times to correct the motor operation. If the motor error persists, the vertical scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the horizontal scanning subsystem is still healthy, it will remain active and scanning can CONTINUE using the remaining good subsystem! The unit, however, should be scheduled for repair at an authorized service center when convenient.
32	MOTOR #2 (HORIZONTAL) ERROR – The motor in the horizontal scanning subsystem denotes a failure. The scanner will try three times to correct the motor operation. If the motor error persists, the horizontal scanning subsystem will be shut down and this error code will remain on the Diagnostic Indicators. If the vertical scanning subsystem is still healthy, it will remain active and scanning can CONTINUE using the remaining good subsystem! The unit, however, should be scheduled for repair at an authorized service center when convenient.

POWER SAVE MODES

The MS2122 has five configurable power save modes. Refer to the *MetroSelect Configuration Guide* (MLPN 00-02407*x*) for additional information on Power Save Modes.

1. **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.

2. **Laser Off Power Save Mode:**

   Turns the laser OFF after a configured 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 30 on page 21).

3. **Laser & Motor Off Power Save Mode:**

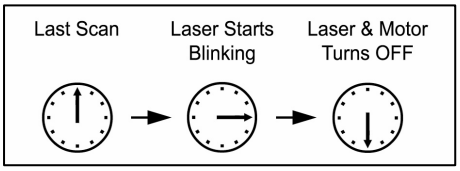
   Turns the laser and motor OFF after a configured period of non-use.

   Any movement detected by the IR will "wake" the scanner from the power save mode (see figure 30 on page 21). 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 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.

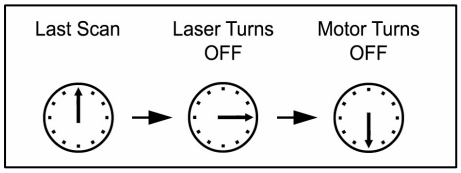


   Any movement detected by the IR will "wake" the scanner from the power save mode (see figure 30 on page 21).

5. **Dual Action Power Save Mode #2 (Default):**

   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.



   Any movement detected by the IR will "wake" the scanner from the power save mode (see figure 30 on page 21).

BEEPER OPTIONS AND BUTTON FUNCTIONS

Changing the Beeper Tone

Beeper tones may be configured 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 configured directly or incrementally using the following bar code. The new volume will be heard. 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

The Multi-Function Button

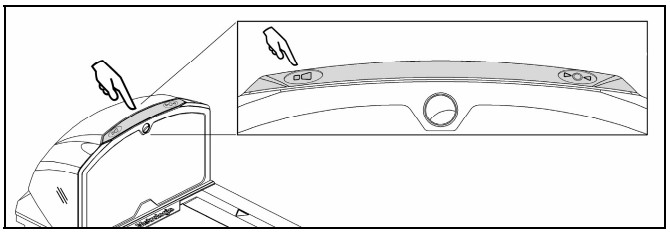


Figure 33. The Multi-Function Button

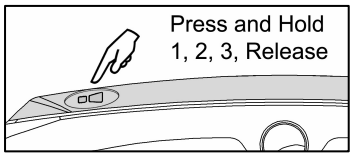


Figure 34. Changing the Beeper Volume

Changing the Beeper Volume

A short (<3 second) depression and the beeper volume will change.
The new volume will be heard, followed by a short pause.
The silent (no beep) volume is also selectable.

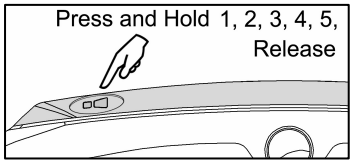


Figure 35. Laser & Motor Off Power Save Move

Placing the Unit in Laser & Motor Off Power Save Mode

A Long (>3 seconds) depression. The *Laser & Motor Off Power Save Mode* is the only power save mode that can be activated with the multi-function button*.

** This feature is configuration dependent. Refer to the Metroselect Configuration Guide (mlpn 00-02407x) under Scanner Operation: Power Save Modes to enable this feature.*

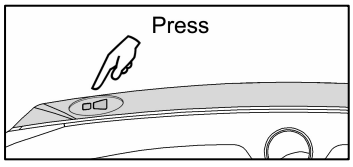


Figure 36. Normal Operation

Waking the Unit from All Power Save Modes

The next button depression will awaken the scanner for normal operation.

STARTUP

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

POWER-UP TEST MODE

When a Stratos*E* scanner is first powered up, it cycles through a number of self-tests before starting normal operation. If there are any initial failures during this sequence of tests the scanner will beep or razz to indicate the error and an error code will appear in the diagnostic indicator display.

The following are examples of the types of tests performed at power-up.

1. Memory tests
2. Hardware setup tests
3. Motor tests
4. Laser tests
5. Configuration tests
6. Interface tests

These tests are also performed on a periodic basis with the operator alerted to any failures.

CONFIGURATION MODE

All MS2122 scanners have been configured at the factory with a set of default communication protocols. Since many host systems have unique formats and protocol requirements, Metrologic provides a wide range of configurable features that may be selected with the use of the MetroSelect® Configuration Guide (MLPN 00-02407x), the MS2xxx Stratos Series configuration Addendum (mlpn 00-02034x) or MetroSet.

For a complete list of the factory default settings, refer to the *Default Settings* section of this guide.

DAILY MAINTENANCE

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

For the glass window:

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

For the red window:

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

Also make sure the debris channels are cleaned regularly.

HORIZONTAL SCAN WINDOW REPLACEMENT

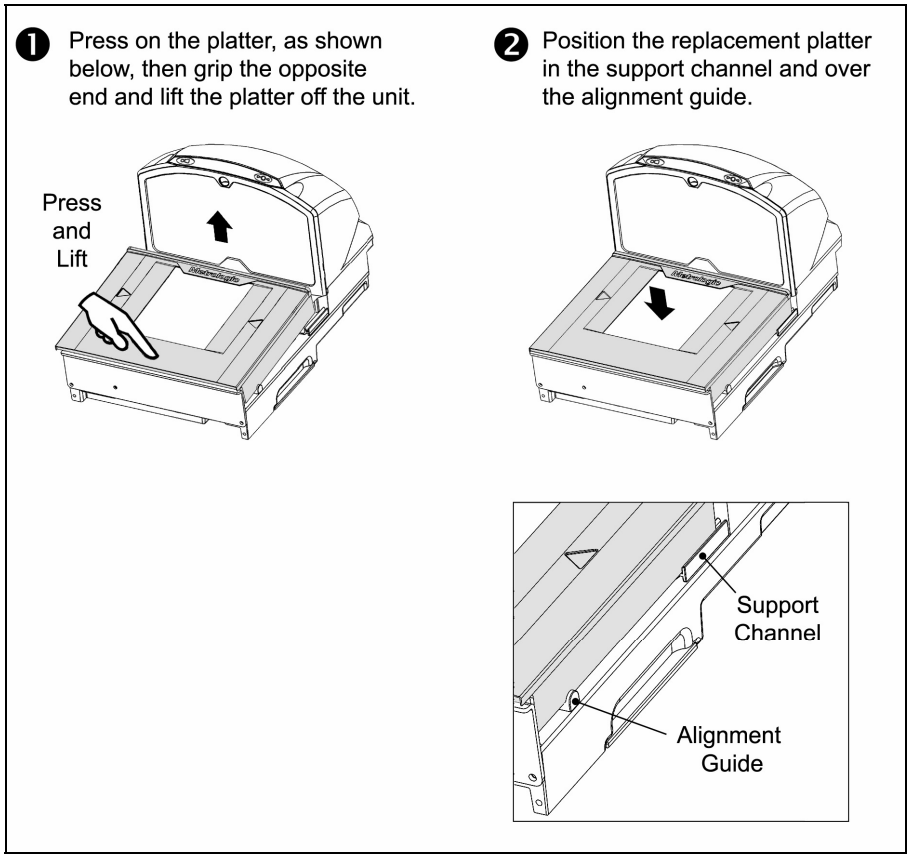


Figure 37. Horizontal Scan Window Replacement

VERTICAL SCAN WINDOW REPLACEMENT

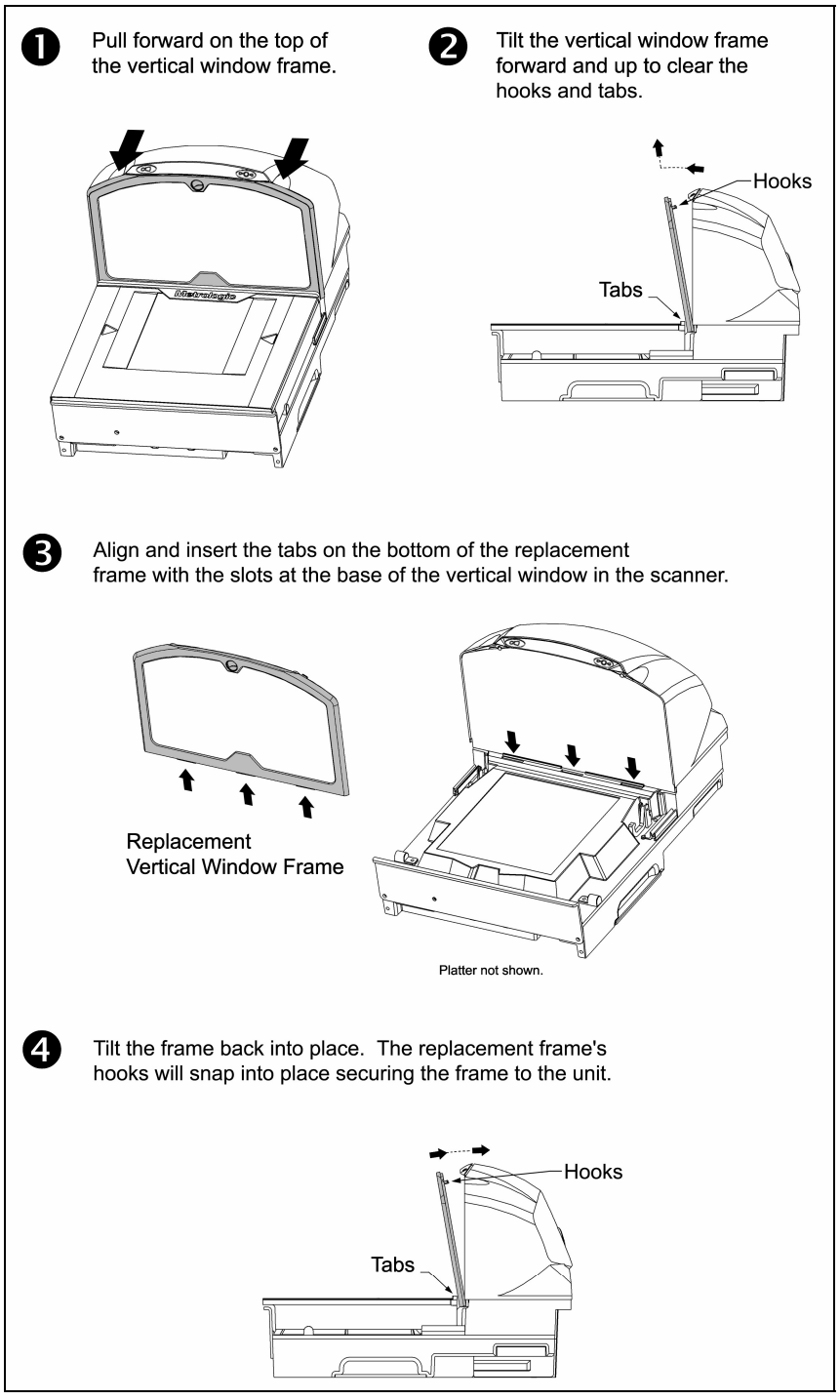


Figure 38. Vertical Scan Window Replacement

TROUBLESHOOTING

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.

Symptom	Possible Cause(s)	Solution
All Interfaces		
No LEDs, beep or motor spin.	No power is being supplied to the scanner.	Check the transformer, outlet and the power strip. Make sure the power cable is plugged into the scanner.
During power up the unit beeps 3 times.	A Non-volatile RAM failure.	Contact a Metrologic service representative, if the unit will not hold the configuration.
During power up the unit razzes continuously.	A RAM or ROM failure.	Contact a Metrologic service representative, if the unit will not function.
During power up the unit razzes once and the blue LED flashes.	A VLD failure.	Contact a Metrologic service representative.
During power up the unit razzes twice and both LEDs flash.	Scanner motor failure.	Contact a Metrologic service representative.
There are multiple scans upon presentation of code.	The *same symbol timeout* is set to short.	Adjust same symbol timeout for a longer time.
The unit powers up but does not beep.	The beeper is disabled.	Enable the beeper.
	No volume is selected.	Select a volume.
	No tone is selected.	Select a tone.
The unit powers up but does not scan and/or beep.	The unit is trying to scan a particular symbology that is not enabled.	UPC/EAN and Code 128 are enabled by default. Verify that the type of bar code being read has been selected.
	The unit has been configured for a character length lock or a minimum length and the bar code being scanned does not satisfy the configured 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, but locks up after the first scan (*the white 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 form others of the same bar code symbology.	The print quality of the bar code is suspect.	The type of printer and/or the printer settings could be the problem. Check the print mode or change the printer settings. For example change to econo mode or high speed.
	Check the character length lock.	
	The aspect ratio of the bar code is out of tolerance.	

Symptom	Possible Cause(s)	Solution
All Interfaces		
The unit beeps at some bar codes but 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.
RS232 Only		
The unit powers up OK and scans OK but does not communicate properly to the host.	The com port at the host is not working or is not 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.
	The cable is not connected to the proper com port.	
	The com port is not operating properly.	
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.
Characters are being dropped.	The intercharacter delay needs to be added to the transmitted output.	Add some intercharacter delay to the transmitted output by using the MetroSelect Configuration Guide (MLPN 00-02407x).
Aux Port Operation With Any Interface		
The secondary scanner is not functioning.		Refer to the user's guide provided with the secondary scanner.
The secondary scanner powers up but data is not relayed to the host.	The secondary scanner cable may not be connected to the proper port on the StratosH.	Ensure that the secondary scanner is connected to the MS2122 com port marked "Aux" port.
	The auxiliary com port may not be operating properly.	* The MS2122 must be programmed to enable the auxiliary port.
		The auxiliary input port's data format must match the main output format of the secondary scanner.
* Refer to the MS2xxx Stratos Series Configuration Addendum (MLPN 00-02034x) under Scanner Configuration Bar Codes: Auxiliary Port, Quick Start for a Secondary Metrologic Scanner.		

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 RS232 scanners, a software wedge program that will take RS232 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
```

COMMUNICATION PARAMETERS

Many functions of the scanner can be "configured" - that is, enabled or disabled. The scanner is shipped from the factory pre-configured 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 interface does not support every parameter. If the interface supports a parameter listed in the charts on the following pages, a check mark will appear.

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	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 CD on Code 39		✓	✓	✓	✓
Transmit Mode 43 CD		✓	✓	✓	✓
Paraff		✓	✓	✓	✓
Paraff Lead “A”		✓	✓	✓	✓
Allow Paraff Failures		✓	✓	✓	✓
French PC Terminal			✓		
MSI-Plessey		✓	✓	✓	✓
Airline (15 digit) 2 of 5		✓	✓	✓	✓
Airline (13 digit) 2 of 5		✓	✓	✓	✓
Matrix 2 of 5		✓	✓	✓	✓
Telepen		✓	✓	✓	✓
UK Plessey		✓	✓	✓	✓
STD 2 of 5		✓	✓	✓	✓
MSI-Plessey 10/10 Check Digit		✓	✓	✓	✓
MSI-Plessey MOD 10 Check Digit		✓	✓	✓	✓
ITF Symbol Lengths	Variable	✓	✓	✓	✓
ITF Minimum Symbol Length	6	✓	✓	✓	✓
Symbol Length Lock	None	✓	✓	✓	✓
Minimum Symbol Length	4	✓	✓	✓	✓
Trioptic		✓	✓	✓	✓
RSS14 Enable		✓	✓	✓	✓
RSS14 ID “]e0”	*	✓	✓	✓	✓
RSS14 App ID “01”	*	✓	✓	✓	✓
RSS14 Check Digit	*	✓	✓	✓	✓
RSS Expanded Enable		✓	✓	✓	✓

COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	USB
Expanded ID "]e0"	*	✓	✓	✓	✓
RSS Limited Enable		✓	✓	✓	✓
RSS Limited ID "]e0"	*	✓	✓	✓	✓
RSS Limited App ID "01"	*	✓	✓	✓	✓
RSS Limited Check Digit	*	✓	✓	✓	✓
DTS/SIEMENS		✓			
DTS/NIXDORF	*	✓			
NCR F		✓			
NCR S		✓			
Beeper Tone	Normal	✓	✓	✓	✓
Beep Transmit Sequence	Before Transmit	✓	✓	✓	✓
Beeper Volume	Loudest	✓	✓	✓	✓
Power-Up Disable Good Scan Beep		✓	✓	✓	✓
Communication Timeout	None	✓	✓	✓	✓
Razzberry Tone on Timeout		✓	✓	✓	✓
Three Beeps on Timeout		✓	✓	✓	✓
Fast Beep		✓	✓	✓	✓
Beep Twice on Supplements		✓	✓	✓	✓
No Beeps on Timeout	*	✓	✓	✓	✓
5 Retries Before Timeout		✓	✓	✓	✓
Timeout In …	2 secs.	✓	✓	✓	✓
Laser Off Between Records		✓	✓	✓	✓
Variable Laser Off Delay	5 - 635 msec	✓	✓	✓	✓
Disable Button Control of Power Save Mode	*	✓	✓	✓	✓
Disable Button Control of Beep Volume		✓	✓	✓	✓
Flash LED on Good Scan	*	✓	✓	✓	✓
Reverse LED Convention		✓	✓	✓	✓
Flash LED on Good Scan	*	✓	✓	✓	✓
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: 500 msecs Configurable in 50 msec steps (MAX 6.35 seconds)	500 msec	✓	✓	✓	✓
Intercharacter Delay Configurable in 1 msec steps (MAX 255 msecs)	1 msecs 10 msecs in KBW	✓	✓	✓	

COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	USB
Number of Scan Buffers	1	✓	✓	✓	✓
UPC GTIN-14 Format		✓	✓	✓	✓
EAN-8 Enable	*	✓	✓	✓	✓
Transmit EAN-8 Check Digit	*	✓	✓	✓	✓
Convert EAN-8 to EAN-13		✓	✓	✓	✓
EAN-8 with Small Borders		✓	✓	✓	✓
EAN-13 Enable	*	✓	✓	✓	✓
Transmit EAN-13 Check Digit	*	✓	✓	✓	✓
UPC-A Enable	*	✓	✓	✓	✓
Convert UPC-A to EAN-13		✓	✓	✓	✓
Transmit UPC-A Check Digit	*	✓	✓	✓	✓
Transmit UPC-A Number System	*	✓	✓	✓	✓
Transmit UPC-A Manufacturers ID.	*	✓	✓	✓	✓
Transmit UPC-A Item ID	*	✓	✓	✓	✓
UPC-E Enable	*	✓	✓	✓	✓
Expand UPC-E		✓	✓	✓	✓
Transmit UPC-E Lead ‘0’	*	✓	✓	✓	✓
Transmit UPC-E Check Digit		✓	✓	✓	✓
Disable UPC-E Auto Redundancy	*	✓	✓	✓	✓
Transmit Codabar Start/Stop Characters		✓	✓	✓	✓
Codabar CLSI		✓	✓	✓	✓
Dual Field Codabar		✓	✓	✓	✓
Tab Between Dual field Codabar		✓	✓	✓	✓
Codabar CLSI Check Digit		✓	✓	✓	✓
Codabar 7-Check Check Digit		✓	✓	✓	✓
Codabar Mod-16 Check Digit		✓	✓	✓	✓
Transmit MSI Plessey Check Digits		✓	✓	✓	✓
Number of MSI Plessey Check Digits	0	✓	✓	✓	✓
UK Plessey A to X Convert		✓	✓	✓	✓
UK Plessey Special 12 Character Format		✓	✓	✓	✓
Transmit UK Plessey Check Digit		✓	✓	✓	✓
EAN 128 Enable		✓	✓	✓	✓
Enable French Pharma		✓	✓	✓	✓
Enable Matrix 2 of 5 Check Digit		✓	✓	✓	✓
Enable Hong Kong 2 of 5		✓	✓	✓	✓
Enable Alpha Telepen		✓	✓	✓	✓
Telepen Convert Lead ‘^L’ to ‘E’		✓	✓	✓	✓

DEFAULT SETTINGS

COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	USB
Enable Code 11 Check Digit		✓	✓	✓	✓
Parity	Space		✓		
Baud Rate	9600		✓		
8 Data Bits			✓		
7 Data Bits	*		✓		
Stop Bits	2		✓		
RTS / CTS Enabled			✓		
Message RTS			✓		
Character RTS	*		✓		
ACK / NAK			✓		
O / N Handshaking			✓		
Host Bell / Cancel			✓		
Xon / Xoff			✓		
No Transmit Without DTR Present			✓		
French PC Terminal Emulation			✓		
“D/E” Disable Command			✓		
“Z/R” Disable Command			✓		
“F/L” Laser Command			✓		
“M/O” Motor Enable Commands			✓		
Beep on Bell			✓		
Razz on ‘z’			✓		
CTS Scan Transmit Enable			✓		
Limit 1 Scan per CTS			✓		
Activate on DTR			✓		
Activate on DC2 Character			✓		
Xmit No Read Message on DC2 Timeout			✓		
No Transmit LED During No Read Message			✓		
Configurable “No Read” Message			✓		
Recv “I” = Transmit “METROLOGIC”			✓		
Recv “i” = Transmit Scanner ID Byte			✓		
STX Prefix			✓		✓
TAB Prefix			✓		✓
Metrologic Prefix			✓		✓
UPC Prefix			✓		✓
ETX Suffix			✓		✓
TAB Suffix			✓		✓

COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	USB
Carriage Return Suffix	*		✓		✓
Line Feed Suffix	*		✓		✓
UPC Suffix			✓		✓
Transmit LRC			✓		✓
Start LRC on 1st Byte			✓		✓
Start LRC on 2nd Byte			✓		✓
'c' Prefix for UPC			✓		✓
'$' Prefix for UPC			✓		✓
Configurable Prefix Characters	10 avail		✓		✓
Configurable Suffix Characters	10 avail		✓		✓
Predefined Code ID Sets	Multiple Selections		✓		✓
Configurable Prefix for Code Types			✓		✓
Configurable Suffix for Code Types			✓		✓
Configurable Code Length Locks	7 avail		✓	✓	✓
Code Selects	7 avail		✓	✓	✓
Transmit High Priority Code at Timeout			✓	✓	✓
Random Code Deselects	1 Set		✓	✓	✓
Do not transmit Similar Codes			✓	✓	✓
Target Code Deselects	1 Set		✓	✓	✓
Transmit Lower Priority Codes			✓	✓	✓
Code Select / Deselect Timeout 0.1 to 25.5 seconds	5 sec		✓	✓	✓
Razz on Code Select Timeout	*		✓	✓	✓
Replace 1 Character in Transmission			✓		✓
Japan Dual Field Code Selects			✓	✓	✓
EAN-13 Only in Japan Dual Field			✓	✓	✓
Two Digit Supplements		✓	✓	✓	✓
Five Digit Supplements		✓	✓	✓	✓
Require Supplements		✓	✓	✓	✓
Remote Supplement Support		✓	✓	✓	✓
Two Digit Redundancy		✓	✓	✓	✓
Five Digit Redundancy		✓	✓	✓	✓
Enable Coupon Code 128		✓	✓	✓	✓
Transmit Coupon ']C1'	*	✓	✓	✓	✓
Group Separator	*	✓	✓	✓	✓
Coupon Code Can Begin with '4'		✓	✓	✓	✓
Enable EAN-99 Coupon Code		✓	✓	✓	✓
Bookland Supplements		✓	✓	✓	✓
French 378/379 Supplements		✓	✓	✓	✓

COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	USB
German 434/439 Supplements		✓	✓	✓	✓
Convert Bookland to ISBN		✓	✓	✓	✓
Bookland 979 Supplements		✓	✓	✓	✓
Convert 979 to ISBN		✓	✓	✓	✓
Convert 290 to ISBN		✓	✓	✓	✓
Reformat ISBN		✓	✓	✓	✓
Add EAN Article ID		✓	✓	✓	✓
Transmit ISBN / EAN Check Digit		✓	✓	✓	✓
977 Supplements (2-digit)		✓	✓	✓	✓
Convert 977 to ISSN		✓	✓	✓	✓
Reformat ISSN		✓	✓	✓	✓
Transmit ISSN Check Digit		✓	✓	✓	✓
414 / 419 requires Supplements		✓	✓	✓	✓
Number System 2 Enables Supplements		✓	✓	✓	✓
Number System 2 Requires 5-Digit Supplements		✓	✓	✓	✓
Number System 5 Enables Supplements		✓	✓	✓	✓
Allow Code ID's with Supplements		✓	✓	✓	✓
High Density Codes	*	✓	✓	✓	✓
Medium Density Codes		✓	✓	✓	✓
Low Density Codes		✓	✓	✓	✓

Default settings for *Aux* interface

The secondary scanner and the Stratos*E* series always communicates via RS232. Data is relayed to the host via various primary interfaces.

PARAMETER	DEFAULT	OCIA	RS232	IBM 46XX	USB
Aux Baud Rate	38400	✓	✓	✓	✓
Aux Parity	none	✓	✓	✓	✓
Aux Data Bits	8	✓	✓	✓	✓
Aux Stop Bits	1	✓	✓	✓	✓
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)	✓	✓	✓	✓
Aux Port to Stratos-School†	None (Disabled)	✓	✓	✓	✓

† When the *Aux Port* connects to a host port, the *Aux Port Data Format* should be disabled (requires cable MLPN 57-57008x-N-3).

SCANNER PINOUT CONNECTIONS

The MS2122 scanner interfaces terminate to 10-pin modular jacks located on the bottom of the units. The serial number label indicates the model number of the scanner.

DC Power	
Pin	**Function**
1	12VDC
2	Ground
3	5VDC

EAS	
Pin	**Function**
1	EAS In
2	EAS Out

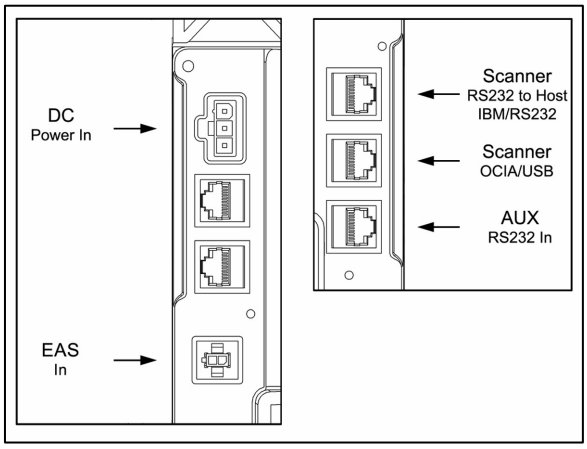


Figure 39. Connector Layout

Scanner IBM to Host	
Pin	**Function**
1	Ground
2	RS232 TX
3	RS232 RX
4	RS232 RTS
5	RS232 CTS
6	RS232 DTR
7	IBM B-
8	IBM A+
9	NC
10	NC

Scanner RS232 to Host	
Pin	**Function**
1	Ground
2	RS232 TX
3	RS232 RX
4	RS232 RTS
5	RS232 CTS
6	RS232 DTR
7	NC
8	NC
9	NC
10	NC

USB or OCIA	
Pin	**Function**
1	Ground
2	OCIA Sdata
3	OCIA Sdata
4	OCIA RDATA
5	OCIA RDATA Return
6	OCIA Clock In / FS USB D+
7	OCIA Clock Out / +USBV
8	OCIA Clock In Return /USB D- FS
9	NC
10	Shield

Auxiliary Port RS232 IN Only	
Pin	**Function**
1	Ground
2	RS232 Receive Input
3	RS232 Transmit Output
4	RS232 RTS In
5	RS232 CTS Out
6	NC
7	NC
8	NC
9	+5V Out
10	NC

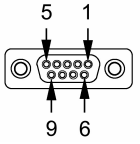
FS = Full Speed USB

CABLE CONNECTOR CONFIGURATIONS

Cable Connector Configurations

RS232 Interface Cable, MLPN 57-57000*x*-N-3	

Pin	Function
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	DTR Input
5	Power/Signal Ground
6	Reserved
7	CTS Input
8	RTS Output
9	+5VDC From Host



9-Pin D-Type Connector

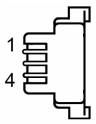
Full Speed USB Cable, MLPN 57-57200*x*-N-3	

Pin	Function**
1	PC +5V USB
2	D-
3	D+
4	Signal Ground

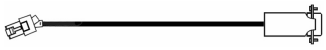
Locking,
Type A

IBM 46xx Cable, MLPN 57-57004*x*-N-3	

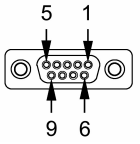
Pin	Function**
1	Signal Ground
2	IBM B-
3	IBM A+
4	*No Connect*



4-Pin SDL

OCIA Cable, MLPN 57-57015*x*-N-3	

Pin	Function**
1	Shield Ground
2	R Data
3	R Data Return
4	Clock Out
5	Signal Ground
6	OCIA Clock In Return / Clock Out Return
7	
8	Clock In
9	*No Connect*



9-Pin D-Type Connector

*** All signals referenced from the StratosE scanner.*

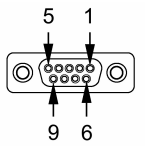
Specifications are subject to change without notice.

CABLE CONNECTOR CONFIGURATIONS

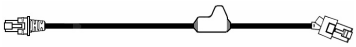
Cable Connector Configurations

Aux Port Configuration Cable*, MLPN 57-57008*x*-N-3	

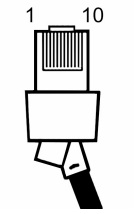
Pin	Function**
1	*No Connect*
2	Output from the Scanner
3	Input to the Scanner
4	*No Connect*
5	Ground
6 - 9	*No Connect*



9-Pin D-Type Connector

RS232 LSO/AUX Cable, MLPN 57-57099*x*-3	

Pin	Function†
1	Signal Ground
2	RS232 from Aux / Secondary Scanner
3	RS232 to Aux / Secondary Scanner
4	RTS from Aux / Secondary Scanner
5	CTS to Aux / Secondary Scanner
6 - 8	*No Connect*
9	+5VDC – Transformer / Direct
10	Shield Ground



10-Position Modular Plug

* *This configuration cable was designed to be used with the StratosE auxiliary connector only.*

** *All signals are referenced from the StratosE scanner.*

† *All signals are referenced from the auxiliary / secondary scanner.*

Specifications subject to change without notice.

NOTICES

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, conformé a la norme NMB-003 du Canada.

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.

CAUTIONS

⚠ 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.

LIMITED WARRANTY

The MS2122 Stratos*E*™ Series scanners are manufactured by Metrologic at its Blackwood, New Jersey, U.S.A. facility. The MS2122 Stratos*E* Series scanners have a two (2) year limited warranty from the date of manufacture. Metrologic warrants and represents that all MS2122 Stratos*E* 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 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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PATENTS

Patent Information

This METROLOGIC product may be covered by one or more of the following U.S. Patents:

U.S. Patent No.;

5,343,027; 5,627,359; 5,686,717; 5,789,731; 5,828,049; 6,029,894; 6,209,789; 6,299,065; 6,345,505; 6,422,467; 6,481,625; 6,494,377; 6,814,292; 6,830,190; 6,874,690; 6,918,540; 6,951,304;

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Other worldwide patents pending.

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