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METROLOGIC INSTRUMENTS, INC.

MS5100 Eclipse™ Series
Installation and User's Guide

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INTRODUCTION

The MS5145 Eclipse™ is a single-line, hand-held laser scanner.

Equipped with Metrologic's patented CodeGate® technology, Eclipse can be used in a wide variety of applications. CodeGate technology allows the user to easily target the desired bar code and complete the data transmission with a simple press of a button. This combination makes Eclipse a perfect selection for menu scanning, point-of-sale, document processing and inventory control.

With Metrologic's state-of-the-art scanning technology embedded inside, the MS5145 Eclipse has a longer working range and a wider scan field than a typical CCD. The width of the scan line grows as the scanner moves further away from bar codes. In addition, the laser beam pulses making lining up bar codes easy, and when the scanner senses a bar code (CodeSense® Mode), the laser beam automatically switches to scan mode and activates CodeGate to ensure high-speed scanning and accuracy.

Metrologic has included many standard features such as: user configurable Flash ROM, PowerLink user-replaceable cables, MetroSet®***2*** and MetroSelect® configuration, and data editing (parsing).

ECLIPSE MODEL NUMBER	INTERFACE
MS5145 – 00	Laser Emulation
MS5145 – 9	OCIA
MS5145 – 11	IBM 468X/469X, RS232-TXD, RXD, RTS, CTS
MS5145 – 14	RS232 - TXD, RXD, RTS, CTS, DTR, DSR
MS5145 – 38	RS232 Low Speed USB, Keyboard Emulation or Serial Emulation*
MS5145 – 40	Full Speed USB
MS5145 – 41	RS232/Light Pen Emulation
MS5145 – 47	Keyboard Wedge, Stand Alone Keyboard and RS232 Transmit/Receive

* *Configurable for Keyboard Emulation Mode or Serial Emulation Mode. The default setting is Keyboard Emulation Mode.*

Scanner and Accessories

BASIC KIT	
Part #	**Description**
MS5145	Eclipse Scanner
00-02544x	MetroSelect Single-Line Configuration Guide*
70-79016x	MS5100 Eclipse Series Installation and User's Guide*

** Available on the Metrologic website - www.metrologic.com*

OPTIONAL ACCESSORIES	
Part #	**Description**
AC to DC Power Transformer- Regulated 5.2VDC @ 1A output.	
46-00525	90VAC to 255VAC, United States, Canada and Japan
46-00526	90VAC to 255VAC, Continental European
46-00527	90VAC to 255VAC, United Kingdom
46-00528	90VAC to 255VAC, Australia
46-00529	90VAC to 255VAC, China
46-00530	90VAC to 255VAC, India

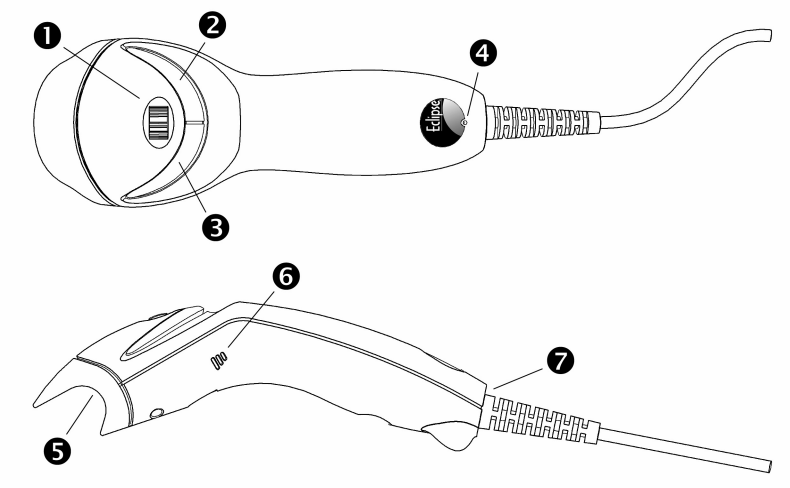
Other items may be ordered for the specific protocol being used. To order additional items, contact the dealer, distributor or call Metrologic's Customer Service Department at 1-800-ID-METRO or 1-800-436-3876.

Scanner and Accessories

OPTIONAL ACCESSORIES	
Part #	**Description**
55-55000*x*-3	RS232 PowerLink Cable with Built in Power Jack 2.1 m (7 ft.) straight cord, long strain relief, black
55-55002*x*-3	Keyboard Wedge PowerLink Cable with Adapter 2.1 m (7 ft.) straight cord, long strain relief, black
55-55020*x*-3	Stand Alone Keyboard PowerLink Cable, 2.1 m (7 ft.) straight cord, long strain relief, black
55-55235*x* -N-3	USB Low Speed Communication Cable, Type A 1.5 m (5 ft.) straight cord, long strain relief, black
55-55200*x* -N-3	USB Full Speed Cable, Locking Pus-Power™ Type A 3 m (10 ft.) straight cord, long strain relief, black This cable is for use with full speed USB (-40) interface only.
MVC**	IBM and OCIA Applications, Metrologic Voltage Converter Cable, ±12VDC to +5.2VDC
** *Contact a Metrologic customer service representative for additional information on the MVC converter cable series and the host connections available.*	
46-46633	Countertop Stand

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.

Scanner Components



ITEM NO.	DESCRIPTION
1	Mode Select Button/CodeGate Button *(see page 12)*
2	Red LED *(see page 14)*
3	Green LED *(see page 14)*
4	Red Output Window (Laser Aperture)
5	Speaker *(see page 13)*
6	10-Pin RJ45, Female Socket *(see page 33)*
7	Pin Hole for Cable Release *(see page 6)*

Figure 1. Scanner Components

Maintenance

Smudges and dirt can interfere with the proper scanning of a bar code.
The output window should be routinely cleaned with glass cleaner sprayed onto a lint free, non-abrasive cleaning cloth.

Caution and Serial Number Labels

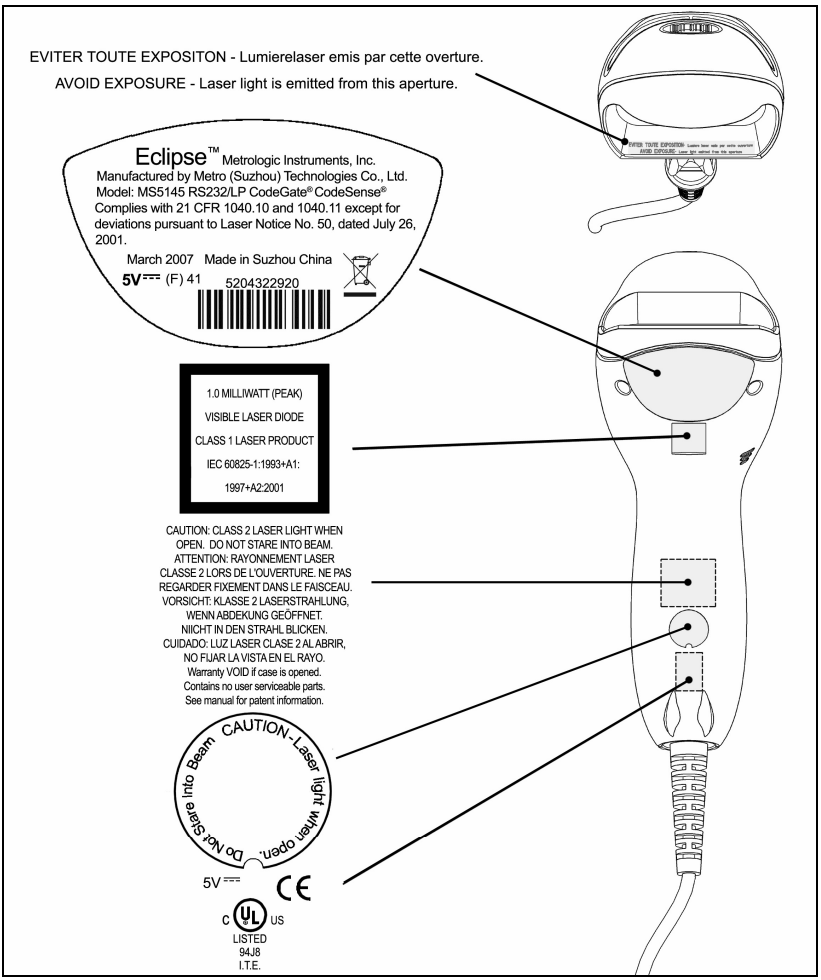


Figure 2. Label Location on the Bottom of the Scanner with Example

Caution

To maintain compliance with applicable standards, all circuits connected to the scanner must meet the requirements for SELV (Safety Extra Low Voltage) according to EN/IEC 60950-1.

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

Cable Removal

Disconnect the power supply from the PowerLink cable and turn off power to the host system before removing the cable from the scanner.

1. Locate the small 'pin-hole' beneath the Eclipse logo on the front side of the scanner near the end of the handle.
2. Bend an ordinary paperclip into the shape shown.
3. Insert the paperclip (or other small metallic pin) into the small 'pin-hole'. There will be a faint 'click' when the connector's lock releases.
4. Pull gently on the cable's strain-relief to remove the cable.

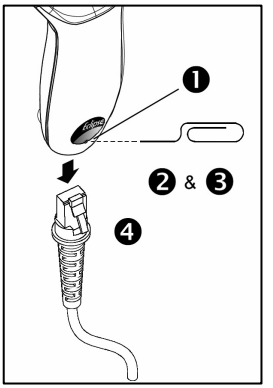


Figure 3.

Cable Connection Warning

Important: If the PowerLink cable is not fully latched the unit can power intermittently.

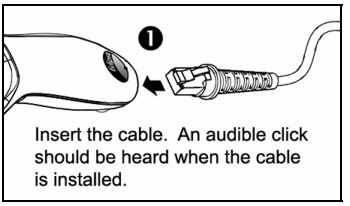


Figure 4.

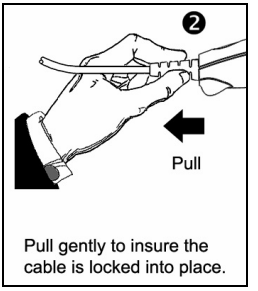


Figure 5.

RS232, Light Pen or Laser Emulation

1. Turn off the host system.
2. Plug the male, 10-pin RJ45 end of the PowerLink cable into the 10-pin socket on the MS5145.
3. Connect the 9-Pin female end of the PowerLink cable to the appropriate communication port on the host device.
4. Plug the external power supply into the power jack on the PowerLink cable.

> STOP Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet must be located near the equipment.

5. Connect AC power to the transformer.
6. Turn on the host system.

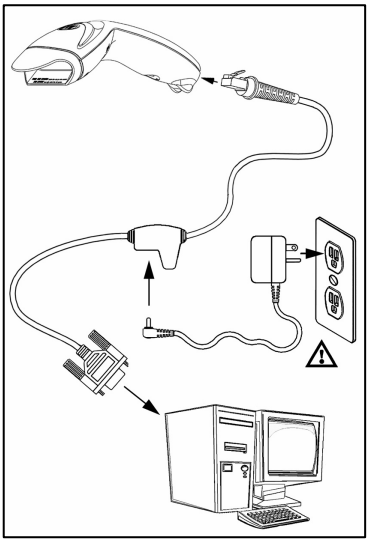


Figure 6. RS232, Light Pen, or Laser Emulation Connections

> 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 settings are also required for proper communications to occur.

> Powering the MS5145 directly from the host device can sometimes cause interference with the operation of the scanner or the computer. Not all computers supply the same current. For this reason, Metrologic recommends using an external power supply. For additional information contact a Metrologic customer service representative.

> All MS5145-**00** scanners leave the factory with the Laser Emulation Mode enabled. If you recall defaults while re-configuring the scanner the Laser Emulation Mode will no longer be enabled. Refer to the MS5145-00 Laser Emulation Mode section of the MetroSelect Single-Line Configuration Guide for information on enabling the Laser Emulation Mode.

See page 5.

IBM 46xx or OCIA

1. Turn off the host system.
2. Plug the male 10-pin RJ45 end of the MVC cable into the 10-pin socket on the MS5145.
3. For IBM:
   connect the other end of the MVC cable to Port 9 of the host device.

   For OCIA:
   Connect the other end of the MVC cable to the appropriate communication port on the host device.
4. Turn on the host device

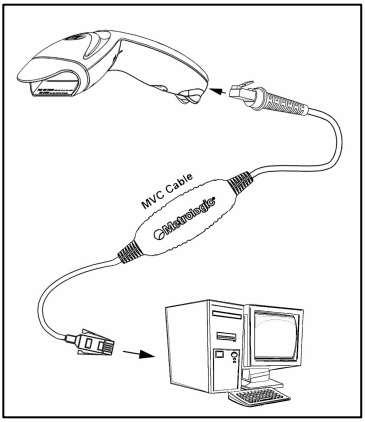
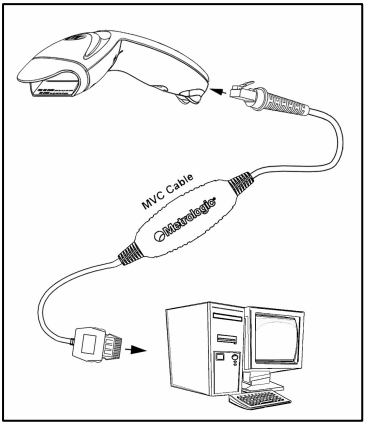


Figure 7. IBM (above) and OCIA (below) Connections



Keyboard Wedge

1. Turn off the host system.
2. Plug the male, 10-pin RJ45 end of the PowerLink cable into the 10-pin socket on the MS5145.
3. Disconnect the keyboard from the host/PC.
4. Connect the Y ends of the PowerLink cable to the keyboard and the host's keyboard port. If necessary, use the supplied adapter cable to make the connections.
5. Plug the external power supply into the power jack on the PowerLink cable.

> STOP Check the AC input requirements of the power supply to make sure the voltage matches the AC outlet. The outlet must be located near the equipment.

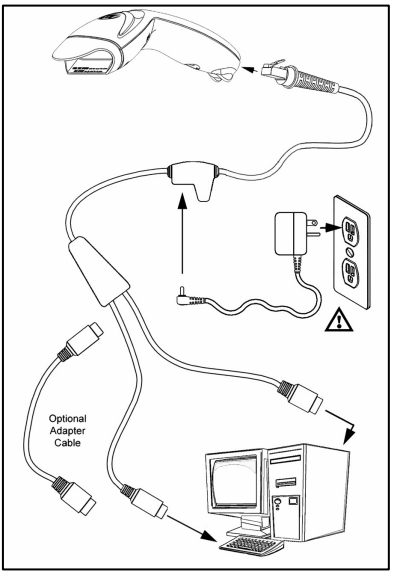


Figure 8. Keyboard Wedge Connections

6. Connect AC power to the transformer.
7. Turn on the host system.

> Powering the MS5145-47 directly from the computer can sometimes cause interference with the operation of the scanner or the computer. Not all computers supply the same current through the keyboard port, explaining why a scanner may work on one computer and not another. Contact a Metrologic Customer Service Representative if you require an external power supply.

⚠ See page 5.

Stand-Alone Keyboard

1. Turn off the host system.
2. Connect the 10-pin RJ45 male connector into the jack on the Eclipse. You will hear a 'click' when the connection is made.

   If the scanner is receiving power from the host system, skip to step #5.

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

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

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

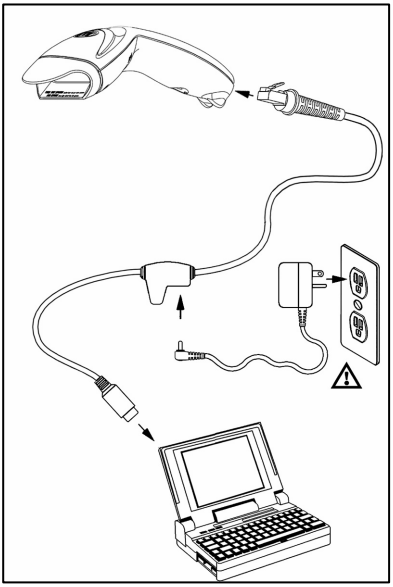


Figure 9. Stand-Alone Keyboard Connection

Powering the MS5145-47 directly from the computer can sometimes cause interference with the operation of the scanner or the computer. Not all computers supply the same current through the keyboard port, explaining why a scanner may work on one computer and not another. Contact a Metrologic Customer Service Representative if you require an external power supply.

See page 5.

USB: Low Speed USB (-38)
Full Speed USB (-40)

1. Turn off the host system.
2. Connect the 10-pin RJ45 male connector of the USB cable into the jack on the Eclipse. You will hear a 'click' when the connection is made.
3. Connect the other end of the USB cable to the host USB port.
4. Turn on the host system.

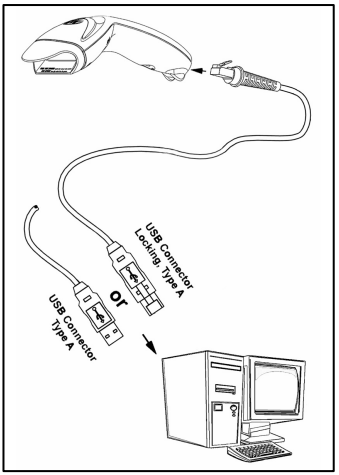


Figure 10. USB

As a default, the MS5145-**38** leaves the factory with *USB Keyboard Emulation Mode* enabled.

For information on configuring the MS5145-38 for *USB Serial Emulation* Mode, please refer to the *USB* section of the MetroSelect Single-Line Configuration Guide (00-02544X).

Plugging the scanner into a port on the host system does not guarantee that scanned information will be communicated properly to the host system. All Eclipse's are shipped already configured with a set of factory defaults. Please refer to the MetroSelect Single-Line Configuration Guide or MetroSet2's help files for instructions on changing the scanner's factory default configuration. The scanner and host system must use the same communication protocols.

How to Use CodeGate and the Manual Activation Mode

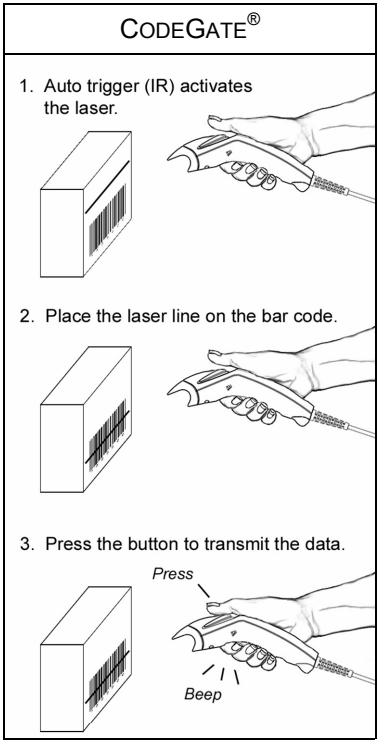


Figure 11. CodeGate Enabled

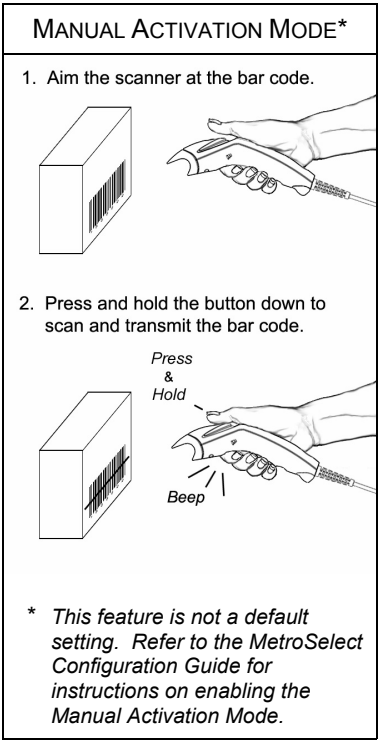


Figure 12. Manual Activation Mode

Two Modes of Operation

CodeGate, Out-of-Stand

- CodeGate activates when removed from the stand
- Bar code data is transmitted when the button is pressed

Manual Activation Mode*, Out-of-Stand

- Button activates laser
- Bar code data is scanned and transmitted while button is held down

Indicators

Audible

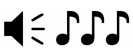
When the MS5145 scanner is operational, the scanner provides audible feedback to indicate the status of the scanner and the last scan. Eight settings are available for the tone of the beep (normal, 6 alternate tones and no tone). for instructions on how to change the lone of the beeper, refer to the Single-Line MetroSelect Configuration Guide.

One Beep – On Power Up
The green LED will turn on, then the red LED will flash and the scanner will beep once. The red LED will remain on for the duration of the beep. The scanner is now ready to scan.

One Beep – During Operation
When the scanner successfully reads a bar code, the red LED will flash and the scanner will beep 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.

Three Beeps – During Operation
When entering the configuration mode, the red LED will flash while the scanner simultaneously beeps three times. The red LED will continue to flash until the unit exits configuration mode. Upon exiting configuration mode, the scanner will beep three times and the red LED will stop flashing.

When configured for communication timeout, 3 beeps during operation will indicate that a communication timeout has occurred.



Three Beeps – On Power Up
This is a failure indicator. Refer to the *Failure Modes* section of this guide on page 14.

Razzberry Tone
This is a failure indicator or an invalid code read during configuration mode. Refer to the *Failure Modes* section of this guide on page 14.

Indicators

Visual

The MS5145 is equipped with a red LED and green LED that indicates the scanner's state and the status of the current scan when the unit is in operation.

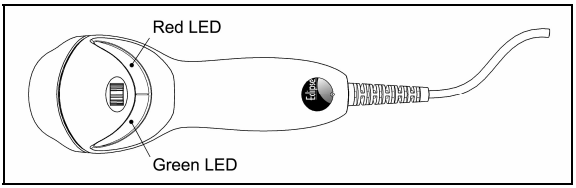


Figure 13. LED Color and Location

Green and Red LEDs Are Off
The LEDs will not be illuminated if the scanner is not receiving power from the host or transformer.

Steady Green
Indicates normal pulse or continuous laser operation. Accompanied by a razzberry tone, it indicates that an invalid bar code has been scanned.

Flashing Green
After a period of inactivity, the *ON* time of the pulsing laser will be shortened. During this time the green LED will flash. This indicates that the scanner is in a *power saver* mode. When a bar code enters the laser field, the scanner will wake up and return to normal pulse mode.

Steady Green and Single Red Flash
When the scanner successfully reads a bar code, the red LED will flash and the scanner will beep. If the red LED does not flash and the scanner does not beep, then the bar code has not been successfully read.

Steady Green and Steady Red
After a successful read, 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.

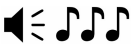
Steady Green and Continuous Flashing Red
When entering the configuration mode, the red LED will flash, the green LED will turn on and the scanner will beep three times. The red LED will continue to flash and the green LED will stay on until the unit exits the configuration mode.

Indicators

Failure

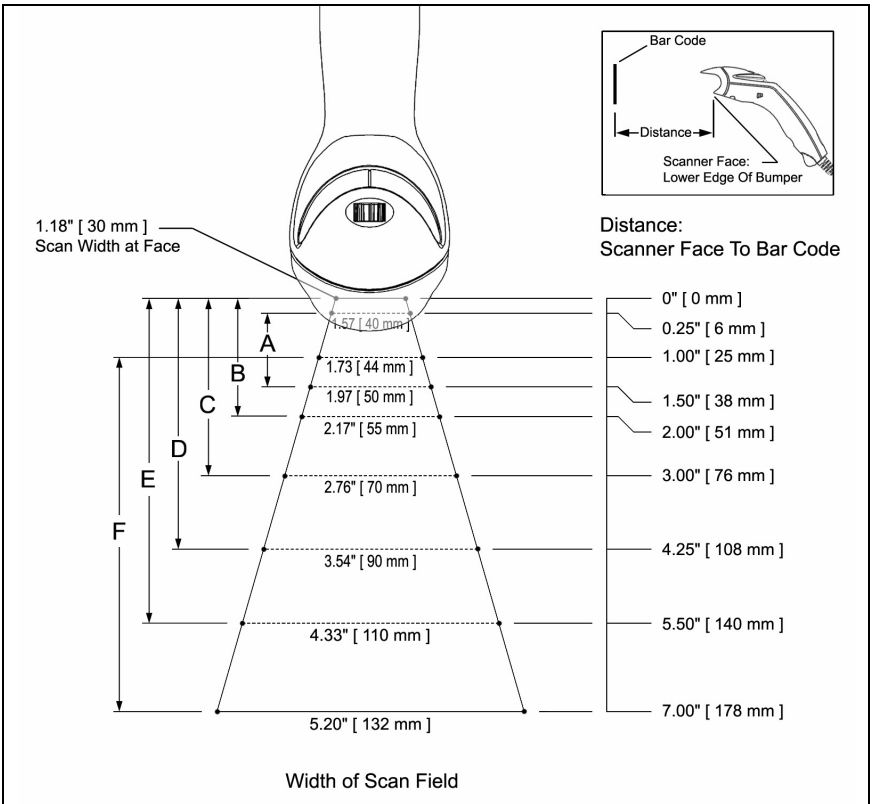
One Razzberry Tone – On Power Up
This indicates the scanner has experienced a laser or flipper subsystem failure. Return the unit for repair to a Metrologic Authorized Service Center.

Continuous Razzberry Tone with no LEDs
If, upon power up, the scanner emits a continuous razzberry tone, then the scanner has an experienced an electronic failure. Return the unit for repair to a Metrologic Authorized Service Center.



Three Beeps – On Power Up
If the scanner beeps 3 times on power up then, the non-volatile memory (NovRAM) that holds the scanner configuration has failed. Return the unit for repair to a Metrologic Authorized Service Center.

Depth of Field vs. Minimum Bar Code Element Width



	Minimum Bar Code Element Width					
	A	**B**	**C**	**D**	**E**	**F**
mm	.10	.12	.17	.26	.33	.66
mils	4.1	4.8	6.8	10.4	13	26

Figure 14. Depth of Field vs. Minimum Bar Code Element Width

Configuration Modes

The MS5145 Eclipse has 3 modes of configuration.

- **Bar Codes**
  The Eclipse can be configured by scanning the bar codes located in the MetroSelect® Single-Line Configuration Guide (MLPN 00-02544). This manual can be downloaded for FREE at www.metrologic.com.

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

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

How does Serial Configuration work?

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

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

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

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

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

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

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

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

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

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

   EXAMPLE #2:

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

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

   The scanner will beep three times!

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

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

EXAMPLE #3:

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

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

This example illustrates two important points.

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

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

ABBREVIATED ASCII TABLE

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

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.

Symptoms	Possible Causes	Solution
All Interfaces		
The unit has no LEDs, beep or laser.	No power is being supplied to the unit.	Check the transformer, the outlet and power strip. Make sure the cable is plugged into the unit.
	No power is being supplied to the unit from host.	Some host systems cannot supply enough current to power Eclipse. A power supply may be needed.
At power up the unit beeps 2 times and alternately flashes the LEDs.	There is a ROM failure.	A flash ROM upgrade is required.
At power up the unit beeps 3 times.	There is a non-volatile RAM failure.	Contact a Metrologic service representative.
At power up there is a continuous razz tone.	There is a RAM or ROM failure.	
At power up there is a razz tone and the green LED flashes.	There is a VLD failure.	
At power up there is a razz tone and both LEDs flash.	There is a scanning mechanism failure.	
The unit scans, communicates and beeps twice.	The same symbol timeout is set too short.	Adjust the same symbol timeout for a longer time.
The unit powers up, but does not beep.	The beeper may be disabled or no tone has been selected.	Enable beeper and 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, 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.

Symptoms	Possible Causes	Solution
The unit powers up, but does not scan and/or beep.	The bar code being scanned does not satisfy the configured criteria for character length lock or minimum length.	Verify that the bar code being scanned falls into the configured criteria. *The scanner defaults to a minimum of 3 character bar code.*
The unit scans a bar code, but locks up after the first scan and the red LED stays on.	The unit is configured to support some form of host handshaking but is not receiving the signal.	If the unit 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 unit's data format does not match the host system's requirements.	Verify that the unit's data format matches that required by the host. Make sure that the unit is connected to the proper host port.
The unit beeps at some bar codes but NOT for others of the same bar code symbology.	The print quality of the bar code is suspect.	Check the print mode. The type of printer could be the problem. Change the print settings. i.e. Change to econo mode or high speed.
	The aspect ratio of the bar code is out of tolerance.	
	The bar code may have been printed incorrectly.	Check if it is a check digit/character/or border problem.
	The unit is not configured correctly for the type of bar code being scanned.	
	The minimum symbol length setting does not work with the bar code.	Check if the correct minimum symbol length is set.
The unit scans the bar code but there is no data.	The unit's configuration is not correct.	Make sure the scanner is configured for the appropriate mode.

Symptoms	Possible Causes	Solution
The unit scans but the data is not correct.	The unit's configuration is not correct.	Make sure that the proper PC type AT, PS2 or XT is selected. Verify the correct country code and data format is selected. Adjust the inter-character delay symptom.
The unit is transmitting each character twice.	The unit's 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.	The computer is in *Caps Lock* mode.	Enable the *Caps Lock* detect feature 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.
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 not configured properly.	Check to make sure that the baud rate and parity of the scanner and the port match and that the configuration is looking for "RS232" data.
	The cable is not connected to the proper com port.	Check to make sure that the unit is connected to the correct com port on the host device.
The host is receiving data but the data does not look correct.	The scanner and host may not be configured for the same interface parameters.	Check that the scanner and the host are configured for the same interface parameters.
Characters are being dropped.	Inter-character delay needs to be added to the transmitted output.	Add some inter-character delay to the transmitted output by using the MetroSelect Single-Line Configuration Guide.

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

		MS5145 Eclipse	
OPERATIONAL			
Light Source:		**V**isible **L**aser **D**iode (VLD) @ 650 nm	
Laser Power:		Less than 1.0 mW average	
Depth of Scan Field:		0 mm – 140 mm (0" – 5.5")	0.33 mm (13 mil) Bar Code
Scan Speed:		72 ± 2 scan lines per second	
Scan Pattern:		Single scan line	
Minimum Bar Width:		0.089 mm (3.5 mil)	
Decode Capability:		Autodiscriminates all standard bar codes. For other code types, call a Metrologic service representative.	
System Interfaces:		RS232, Keyboard Wedge, USB, Light Pen Emulation, IBM 468X/469X, OCIA, Stand Alone Keyboard	
Print Contrast:		35% minimum reflectance difference	
No. Characters Read:		Up to 80 data characters. The maximum number will vary based on symbology and density.	
Roll, Pitch, Yaw:		38°, 67°, 52°	
Beeper Operation:		7 tones or no beep	
Indicators (LED):		Red = good read	
		Green = laser on, ready to scan	
MECHANICAL			
Length:		170 mm (6.7")	
Width	Head:	63 mm (2.5")	
	Handle:	39 mm (1.5")	
Height	Head:	35 mm (1.4")	
	Handle:	31 mm (1.2")	
Weight:		100.8 g (3.56 oz)	

Specifications subject to change without notice.

DESIGN SPECIFICATIONS

	MS5145 Eclipse	
ELECTRICAL		
Input Voltage:	5VDC ± 0.25V	
Power:	Operating	675 mW
Current:	Operating	125 mA average @ 5VDC
DC Transformers:	Class II; 5.2VDC @ 1A	
For regulatory compliance information, see pages 37 – 39.		
ENVIRONMENTAL		
Temperature:	Operating	0°C to 40°C (32°F to 104°F)
	Storage	-40°C to 60°C (-40°F to 140°F)
Humidity:	5% to 95% relative humidity, non-condensing	
Light Levels:	Up to 4842 Lux (450 footcandles)	
Shock:	Designed to withstand 1.5 m (5 ft.) drops	
Contaminants:	Sealed to resist airborne particulate contaminants	
Ventilation:	None required	

Specifications subject to change without notice.

APPLICATIONS AND PROTOCOLS

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

Scanner	Version Identifier	Communication Protocol(s)
MS5145	00	Laser Emulation
	9	OCIA
	11	IBM 468X/469X, RS232 - TXD, RXD, RTS, CTS
	38	Low Speed USB, Serial Emulation or Keyboard Emulation
	40	Full Speed USB
	41	RS232/Light Pen Emulation
	47	Keyboard Wedge,
	48	Keyboard Wedge, Stand-Alone Keyboard

The MS5145 Keyboard Wedge Series (-47) is designed for keyboard emulation only. Many RS232 configurable functions available in other Metrologic scanners are also available as keyboard wedge functions.

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

Keyboard Type

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

Keyboard Country Type

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

** Indicates a default setting (*see pages 27 - 29 for additional information*). Refer to the MetroSelect Single-Line Configuration Guide (MLPN 00-02544) or MetroSet2's help files for information on how to change the default settings.

DEFAULT SETTINGS

Many functions of the scanner can be *configured* or *enabled/disabled*. The scanner is shipped from the factory configured to a set of default conditions. All default parameters of the scanner have an asterisk (*) marked in the default column. If an asterisk is not in the default column then the default setting is *off* or *disabled*. Every interface does not support every parameter. A check mark (✓) will appear in the interface column if the interface supports the parameter listed.

Parameter	Default	OCIA	RS232	Light Pen	IBM 46xx	KBW	USB	Laser Emulation
Normal Scan Mode	*	✓	✓	✓	✓	✓	✓	✓
Continuous Scan Mode		✓	✓	✓	✓	✓	✓	✓
Blinky Scan		✓	✓	✓	✓	✓	✓	✓
Continuous Blinky Scan		✓	✓	✓	✓	✓	✓	✓
Custom (One Shot) Scan		✓	✓	✓	✓	✓	✓	✓
Manual Activation Mode		✓	✓	✓	✓	✓	✓	✓
CodeGate Active	*	✓	✓	✓	✓	✓	✓	✓
CodeGate Inactive		✓	✓	✓	✓	✓	✓	✓
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-Plessy 10/10 Check Digit		✓	✓	✓	✓	✓	✓	✓
MSI-Plessy Mod 10 Check Digit	*	✓	✓	✓	✓	✓	✓	✓
Paraf Support ITF		✓	✓	✓	✓	✓	✓	✓

Parameter	Default	OCIA	RS232	Light Pen	IBM 46xx	KBW	USB	Laser Emulation
ITF Symbol Lengths	Variable	✓	✓	✓	✓	✓	✓	✓
Minimum Symbol Length	3	✓	✓	✓	✓	✓	✓	✓
Symbol Length Lock	None	✓	✓	✓	✓	✓	✓	✓
Bars High as Code 39	*			✓				✓
Spaces High as Code 39				✓				✓
Bars High as Scanned				✓				✓
Spaces High as Scanned				✓				✓
DTS/SIEMENS		✓						
DTS/NIXDORF	*	✓						
NCR F		✓						
NCR S		✓						
Poll Light Pen Source				✓				✓
Beeper Tone	Normal	✓	✓	✓	✓	✓	✓	✓
Beep/Transmit Sequence	Before transmit	✓	✓	✓	✓	✓	✓	✓
Communication Timeout	None	✓	✓	✓	✓	✓	✓	✓
Razzberry Tone on Timeout		✓	✓	✓	✓	✓	✓	✓
Three Beeps on Timeout		✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 250 msecs		✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 375 msecs		✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 500 msecs		✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 625 msecs		✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 750 msecs		✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 875 msecs	*	✓	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 1000 msecs		✓	✓	✓	✓	✓	✓	✓
No Same Symbol Timeout		✓	✓	✓	✓	✓	✓	✓

DEFAULT SETTINGS

Parameter	Default	OCIA	RS232	Light Pen	IBM 46xx	KBW	USB	Laser Emulation
Infinite Same Symbol Timeout		✓	✓	✓	✓	✓	✓	✓
Inter-Character Delay Configurable In 1 msec steps (max 255 msecs)	1 msecs 10 msecs in KBW	✓	✓	✓	✓	✓	✓	✓
Number Of Scan Buffers (*maximum*)	4	✓	✓	✓	✓	✓	✓	✓
Transmit UPC-A Check Digit	*	✓	✓	✓	✓	✓	✓	✓
Transmit UPC-E Check Digit		✓	✓	✓	✓	✓	✓	✓
Expand UPC-E		✓	✓	✓	✓	✓	✓	✓
Convert UPC-A to EAN-13		✓	✓	✓	✓	✓	✓	✓
Transmit Lead Zero On UPC-E		✓	✓	✓	✓	✓	✓	✓
Transmit UPC-A Number System	*	✓	✓	✓	✓	✓	✓	✓
Transmit UPC-A Manufacturer ID#	*	✓	✓	✓	✓	✓	✓	✓
Transmit UPC – A Item ID#	*	✓	✓	✓	✓	✓	✓	✓
Transmit Codabar Start/Stop Characters		✓	✓		✓	✓	✓	
CLSI Editing (Enable)		✓	✓		✓	✓	✓	
Transmit Mod 43 Check digit on Code 39		✓	✓		✓	✓	✓	
Transit Mod 10/ITF		✓	✓		✓	✓	✓	
Transmit MSI-Plessy		✓	✓		✓	✓	✓	
Parity	Space		✓		✓		✓	
Baud Rate	9600		✓					
8 Data Bits			✓					
7 Data Bits	*		✓					
Stop Bits	2		✓					

DEFAULT SETTINGS

Parameter	Default	OCIA	RS232	Light Pen	IBM 46xx	KBW	USB	Laser Emulation
Transmit Sanyo ID Characters			✓			✓		
Nixdorf ID			✓			✓		
LRC Enabled			✓			✓		
UPC Prefix			✓			✓		
UPC Suffix			✓			✓		
Carriage Return	*		✓			✓		
Line Feed-Disabled by Default in KBW	*		✓			✓		
Tab Prefix			✓			✓		
Tab Suffix			✓			✓		
“DE” Disable Command			✓					
“FL” Laser			✓					
Enable Command			✓					
DTR Handshaking support			✓					
RTS/CTS Handshaking			✓					
Character	*		✓					
Message RTS/CTS			✓					
XON/XOFF Handshaking			✓					
ACK/NAK			✓					
Two Digit Supplements		✓	✓	as code 39	✓	✓	✓	as code 39
Five Digit Supplements		✓	✓	as code 39	✓	✓	✓	as code 39
Bookland		✓	✓	as code 39	✓	✓	✓	as code 39
977 (2 digit) Supplemental Requirement		✓	✓	✓	✓	✓	✓	✓
Supplements are not Required	*	✓	✓	✓	✓	✓	✓	✓
Two Digit Redundancy	*	✓	✓	✓	✓	✓	✓	✓
Five digit Redundancy		✓	✓	✓	✓	✓	✓	✓

DEFAULT SETTINGS

Parameter	Default	OCIA	RS232	Light Pen	IBM 46xx	KBW	USB	Laser Emulation
100 msec to Find Supplement Configurable in 100 msec steps (max 800 msec)	*	✓	✓	✓	✓	✓	✓	✓
Coupon Code 128		✓	✓	as code 39	✓	✓	✓	as code 39
† Configurable Code Lengths	7 avail	✓	✓	✓	✓	✓	✓	✓
† Code Selects with Configurable Code Length Locks	3 avail	✓	✓	✓	✓	✓	✓	✓
Configurable Prefix Characters	10 avail		✓			✓		
Suffix Characters	10 avail		✓			✓		
Prefixes for Individual Code Types			✓			✓		
Editing		✓	✓	✓	✓	✓	✓	✓
Inter Scan-Code Delay Configurable (100 µsec steps)	800 µsec					✓		
Function/Control Key Support								
Minimum Element Width Configurable in 5.6 µsec Steps	1 msec			✓				✓

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

UPGRADING THE FLASH ROM FIRMWARE

The MetroSet2 program is a functional component of Metrologic's line of Flash-based scanners. This program allows the user of a Metrologic scanner to quickly upgrade to a new or custom version of software. It requires the use of a personal computer running under Windows 95 or greater and the use of a communication port. The user merely connects the scanner to a communications port of the PC, launches the MetroSet2 program, and blasts off to new software upgrades.

Each MS5145, regardless of the version number or communication protocol, can be upgraded. In other words, all RS232 (-41), keyboard wedge (-47), light pen (-41), laser emulation (-00), OCIA (-9), IBM 468X/469X (-11), low speed USB (-38), and integrated full speed USB (-40) units can be upgraded. To upgrade all units, a power supply cable (MLPN 54-54014) is required. For RS232 units the 54-54000-3 PowerLink cable may be used in place of the 54-54014 PowerLink cable.

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

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

Scanner Pinout Connections

The MS5145 scanner interfaces terminate to a 10-pin modular jack.
The serial # label indicates the interface enabled when the scanner is shipped from the factory.

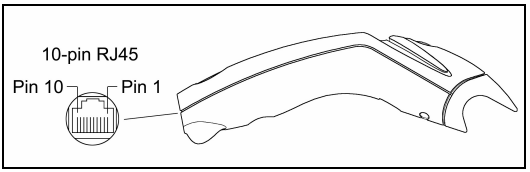


Figure 15.

MS5145-41 RS232C and Light Pen Emulation	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output
5	CTS Input
6	DTR Input/LTPN Source
7	Reserved
8	LTPN Data
9	+5VDC
10	Shield Ground

MS5145-47 Keyboard Wedge and Stand-Alone Keyboard	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	PC Data
5	PC Clock
6	KB Clock
7	PC +5V
8	KB Data
9	+5VDC
10	Shield Ground

MS5145-11 IBM 468X/469X	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output
5	CTS Input
6	DTR Input
7	IBM B-Transmit
8	IBM A+ Receive
9	+5VDC
10	Shield Ground

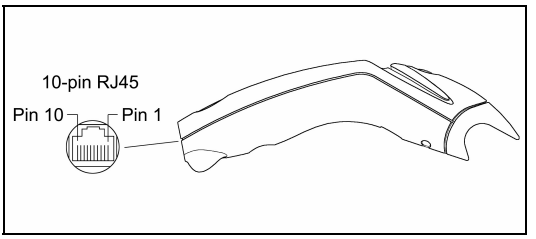


Figure 16.

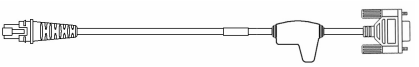
MS5145-00 Laser Emulation	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	Flip Sense/Start of Scan Output
5	Proximity Detect/ Trigger Emulation Output
6	Scan/Laser Enable Input
7	Reserved
8	Data Out
9	+5VDC
10	Shield Ground

MS5145-9 OCIA	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RDATA
5	RDATA Return
6	Clock In
7	Clock Out
8	Clock in Return/ Clock out Rtrn
9	+5VDC
10	Shield Ground

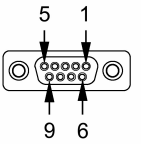
MS5145 Full Speed (-40) and Low Speed (-38) USB	
Pin	**Function**
1	Ground
2	N/C
3	N/C
4	N/C
5	N/C
6	D+
7	PC +5V/V_USB
8	D-
9	N/C
10	Drain Wire

Cable Connector Configurations

RS232 PowerLink Cable, *55-55000x-3*



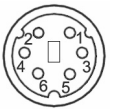
Pin	Function
1	Shield Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	DTR Input/Light Pen Source
5	Power/Signal Ground
6	Light Pen Data *(DSR Out for -14 interfaces)*
7	CTS Input
8	RTS Output
9	+5VDC



9-Pin D-Type Connector

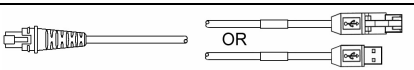
Stand Alone Keyboard PowerLink Cable, *55-55020A-3*

Pin	Function
1	PC Data
2	NC
3	Power Ground
4	+5VDC PC Power to KB
5	PC Clock
6	NC



6-Pin Male Mini-DIN Connector

USB Communication *55-55235x-N-3 or 55-55200x-N-3*

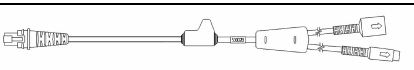
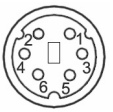


Pin	Function
1	PC +5V/V_USB
2	D-
3	D+
4	Ground
Shield	Shield

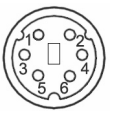
Non-Locking, Type A
MLPN *54-54214x-N-3*

Locking, Type A
MLPN *54-54213x-N-3 or*
MLPN *54-54214x-N-3*

Cable Connector Configuration

Keyboard Wedge PowerLink Cable 55-55002A-3		
Pin	**Function**	
1	Keyboard Clock	
2	Keyboard Data	
3	No Connect	
4	Power Ground	
5	+5 Volts DC	5-Pin DIN, Female
Pin	**Function**	
1	PC Data	
2	No Connect	
3	Power Ground	
4	+5 Volts DC	
5	PC Clock	6-Pin DIN, Male
6	No Connect	

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

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

Safety

ITE Equipment

IEC 60950-1, EN 60950-1

Laser

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

⚠Caution

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

⚠Atención

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

⚠Attention

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

EMC

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

Immunity
CISPR 24, EN 55024

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

Class A Devices

The following is applicable when the scanner cable is greater in length than 3 meters (9.8 feet) when fully extended:
Les instructions ci-dessous s'appliquent aux cables de scanner dépassant 3 métres (9.8 pieds) de long en extension maximale:
Folgendes trifft zu, wenn das Scannerkabel länger als 3 Meter ist:

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense. Any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

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

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

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

European Standard

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

Funkstöreigenschaften nach EN55022:1998

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

Standard Europeo

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

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

EMC

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

Class B Devices

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

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

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

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

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

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

LIMITED WARRANTY

The MS5145 Eclipse™ scanners are manufactured by Metrologic at its Suzhou, China facility. The MS5145 Eclipse scanners have a three (3) year limited warranty from the date of manufacture. Metrologic warrants and represents that all MS5145 Eclipse 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

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

U.S. Patent No.;

5,216,232; 5,260,553; 5,340,971; 5,424,525; 5,484,992; 5,525,789; 5,528,024; 5,616,908; 5,627,359; 5,661,292; 5,777,315; 5,789,730; 5,789,731; 5,811,780; 5,828,048; 5,925,870; 6,029,894; 6,209,789; 6,227,450; 6,283,375; 6,347,743; 6,607,133; 6,619,549; 6,874,689;

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Other worldwide patents pending.

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