Honeywell

Quantum*T*™ 3580

Omnidirectional Laser Scanner

User's Guide

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Patents

For patent information, refer to www.hsmpats.com.

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The Quantum*T*™ is a hands-free, omnidirectional bar code scanner with optional single-line scanning capabilities. It utilizes the powerful Honeywell Quantum*E* scan engine to provide an outstanding scan performance on all standard 1D barcode symbologies, including GS1 DataBar™ (RSS). This fully enclosed scanner includes large easily visible LEDs and a rugged protective boot with an adjustable stand. The Quantum*T* can be mounted to a countertop, wall or be left free standing for handheld scanning.

Key Product Features

- Fully Automatic Scanning Operation
- Single-Line Mode for Menu Reading
- User-Replaceable Single Cable Interface to Host (PowerLink Compatible)
- Decoding of All Standard 1D and GS1 DataBar™ (RSS) Bar Codes
- 7 Beeper Tones
- Configurable Depth of Field
- Flash - Upgradeable Firmware
- OPOS and JPOS System Compatible
- CodeGate™
- Sunrise 2005 Compliant

Maintenance

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

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

Scanner Components

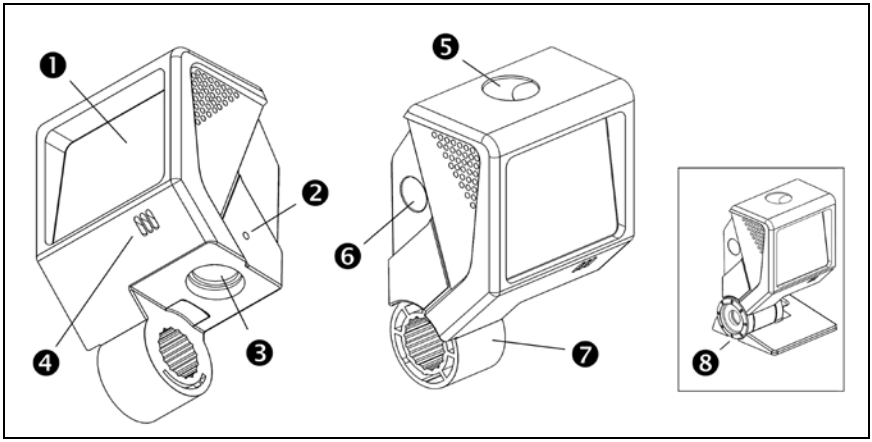


Figure 1. Scanner Components

ITEM NO.	DESCRIPTION
1	Red Output Window (Laser Aperture)
2	Pin Hole for Cable Release
3	10-Pin RJ45, Female Socket
4	Speaker
5	Blue and White LED Indicators
6	Button
7	Protective Boot and Stand Connection Never remove the protective boot from the MS3580. Removing the protective boot will expose electrical components of the scanner that are highly susceptible to electrostatic discharge (ESD).
8	Pedestal Stand The type of stand provided is dependent on the specific MS3540 kit purchased.

Caution and Serial Number Labels

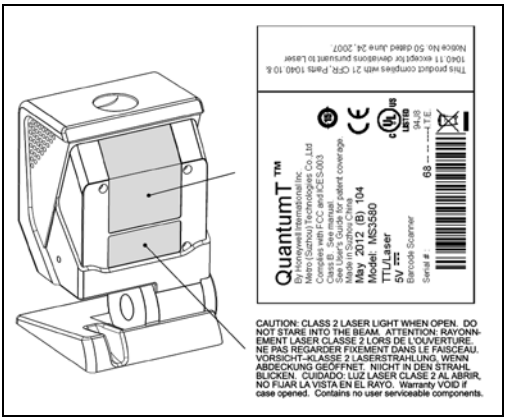


Figure 2. Labeling Example

> **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

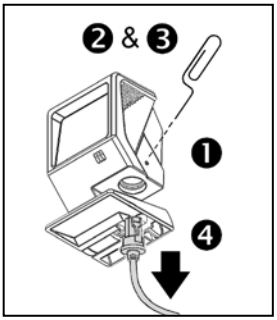


Figure 3. Cable Release

1. Locate the small 'pin-hole' on the side of the Quantum*T* near the cable.
2. Bend an ordinary paperclip into the shape shown.
3. Insert the paperclip (or other small metallic pin) into the small 'pin-hole'.
4. You will hear a faint 'click' when the cable lock is released. Pull gently on the strain-relief of the PowerLink cable to remove it from the scanner.

Mounting Specifications and Stand Assembly

Pedestal Stand

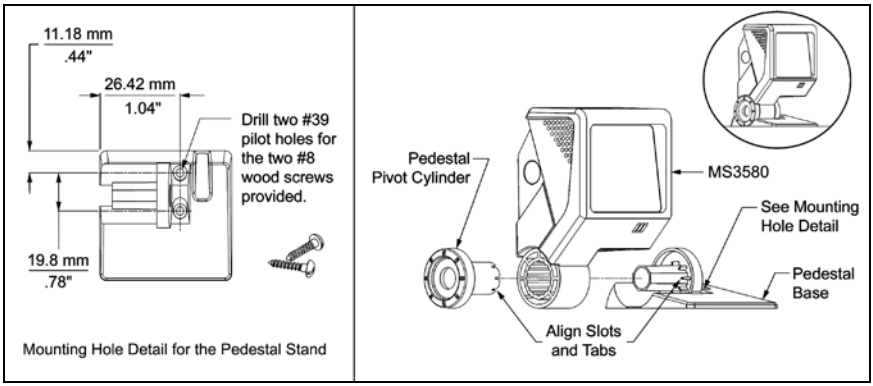


Figure 4. Pedestal Stand Assembly

Optional Flex Stand

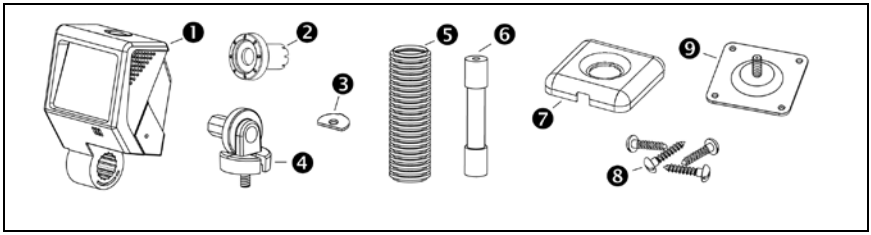


Figure 5. Assembly Components for Optional Flex Stand

Item	Description	Qty.
1	MS3580, Quantum*T*	1
2	Pivot Cylinder	1
3	Bearing Plate	1
4	Pole Mount Adapter	1
5	Flexible Shaft Cover*	1

Item	Description	Qty
6	Flexible Shaft*	1
7	Base Plate Cover	1
8	#8 x 1.00" Wood Screw	4
9	Base Plate	1
10	Cable (*Not Shown*)	1

* Length of the Flexible Shaft and Shaft Cover are Kit Dependent	
Kit Number	Length of Flexible Shaft and Flexible Shaft Cover
46-00288	3 inches
46-00289	6 inches

Mounting Specifications and Stand Assembly

Optional Flex Stand

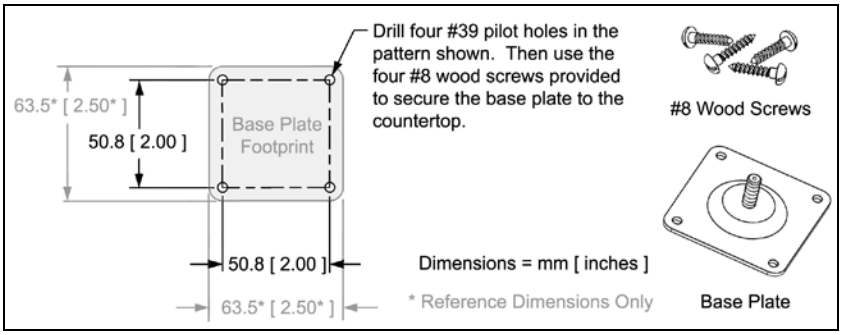


Figure 6. Mounting Hole Detail for the Flex Stand Base Plate (Optional)

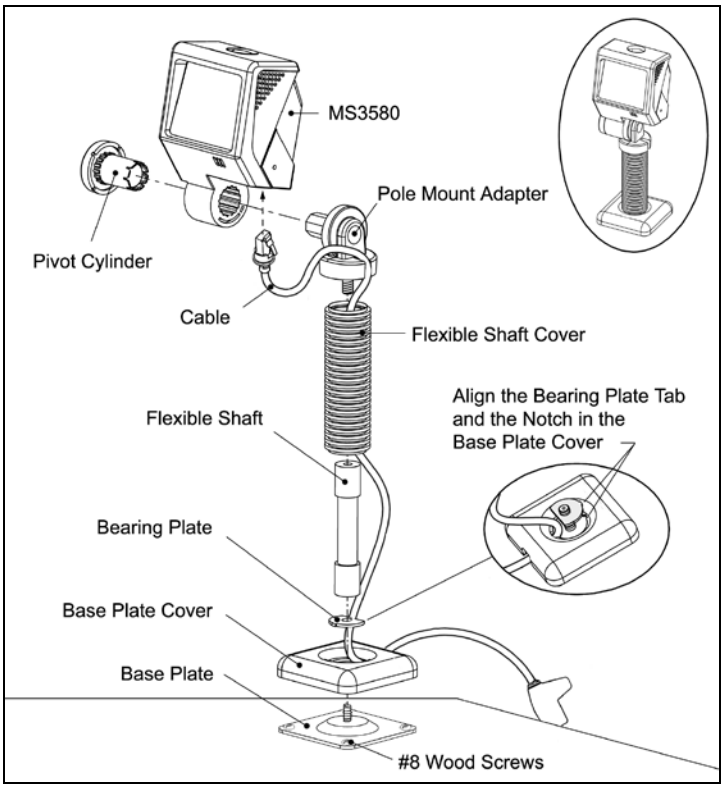


Figure 7. Assembling the Optional Flex Stand

RS232, RS232 TTL, Light Pen or Laser Emulation

1. Turn off the host device.
2. Plug the male 10-pin RJ45 end of the PowerLink cable into the 10-pin socket on the MS3580.
3. Connect the 9-pin female end of the PowerLink cable to 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 and be easily accessible.

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

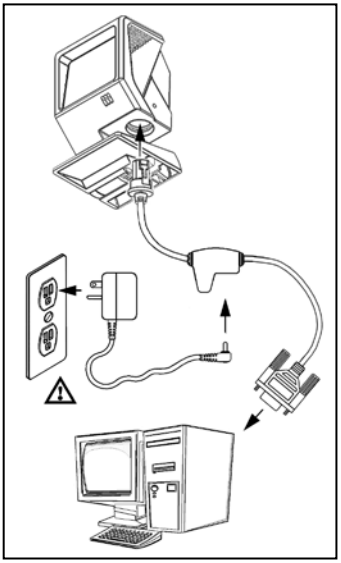


Figure 8.

> When the scanner first receives power, the blue LED will turn on; the scanner will simultaneously emit a beep and flash the white LED.

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

> The **MS3580-104** leaves the factory with the Laser Emulation enabled. If the Recall Defaults bar code is scanned while reconfiguring the scanner, laser emulation will no longer be enabled. Scan the Laser Emulation barcode in *Section J: Laser Emulation* of the MetroSelect Configuration Guide to re-enable the laser emulation interface. This feature is only supported for **MS3580-104** models.

> See page 3.

RS485

1. Turn off the host device.
2. Plug the male 10-pin RJ45 end of the MVC cable into the 10-pin socket on the MS3580.
3. Connect the other end of the MVC cable to the host device.
4. Turn on the host device.

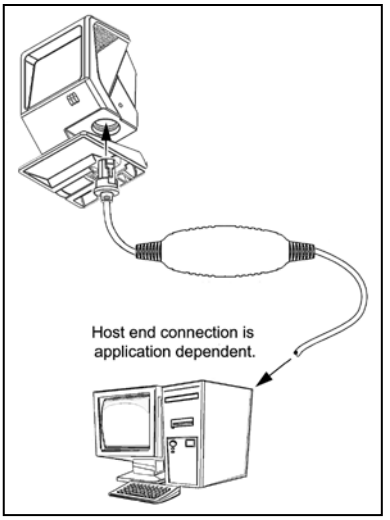


Figure 9.

When the scanner first receives power, the blue LED will turn on; the scanner will simultaneously emit a beep and flash the white LED.

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

See page 3.

Keyboard Wedge

1. Turn off the host device.
2. Plug the male 10-pin RJ45 end of the PowerLink cable into the 10-pin socket on the MS3580.
3. Disconnect the keyboard from the host device.
4. Connect the "Y" end of the PowerLink cable to the keyboard and the keyboard port on the host PC. If necessary use the male/female adapter cable supplied with the scanner for proper connections.
5. Plug the external power supply into the power jack on the PowerLink cable.

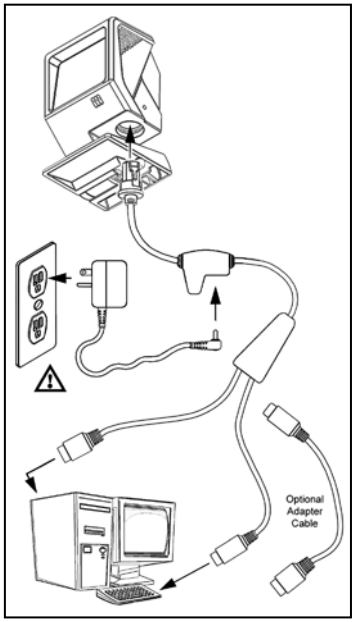


Figure 10.

> 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 and be easily accessible.

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

> When the scanner first receives power, the blue LED will turn on; the scanner will simultaneously emit a beep and flash the white LED.

> Powering the MS3580 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 through the keyboard port. For this reason, Honeywell recommends using an external power supply. For additional information contact a customer service representative.

See page 3.

Stand-Alone Keyboard

1. Turn off the host device.
2. Plug the male 10-pin RJ45 end of the PowerLink cable into the 10-pin socket on the MS3580.
3. Connect the other end of the PowerLink cable to the keyboard port on the host device.
4. Plug the external power supply into the power jack on the PowerLink cable.

> 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 and be easily accessible.

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

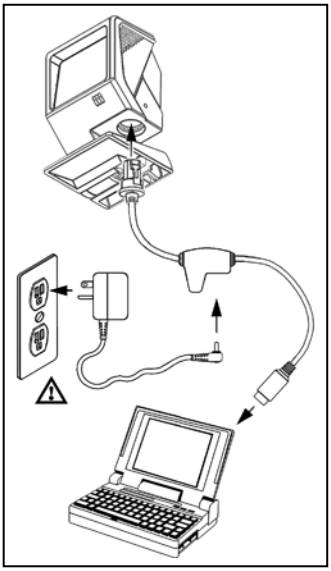


Figure 11.

> When the scanner first receives power, the blue LED will turn on; the scanner will simultaneously emit a beep and flash the white LED.

> Powering the MS3580 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 through the keyboard port. For this reason, Honeywell recommends using an external power supply. For additional information contact a customer service representative.

See page 3.

USB

1. Turn off the host device.
2. Plug the male 10-pin RJ45 end of the USB cable into the 10-pin socket on the MS3580.
3. Plug the other end of the USB interface cable into the host device's USB port.
4. Turn on the host device.

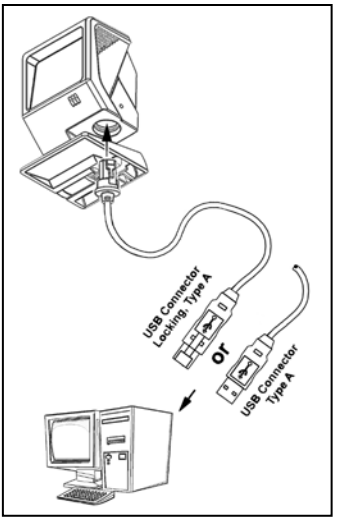


Figure 12.

When the scanner first receives power, the blue LED will turn on; the scanner will simultaneously emit a beep and flash the white LED.

As a default, the MS3580-**38** leaves the factory with USB Keyboard Emulation Mode enabled.

For information on configuring the MS3580-**38** for USB Serial Emulation Mode, please refer to *Section P: Low Speed USB* in the MetroSelect Configuration Guide (MLPN 00-02407).

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

See page 3.

Configurable Primary and Single Line Scan Pattern Modes

There are two configurable scan pattern modes available with the MS3580.

- The **primary** scan pattern mode is the default scan pattern active when the scanner starts.
- The **single line** scan pattern mode is activated by pressing the button located on the side of the scanner. This mode is also referred to as the button mode. For additional information on Quantum's button modes and an example of each, please refer to *Configurable Button Functions* below.

The scanner returns to the primary scan pattern mode after a double click of the button or if the unit has not scanned a bar code for the duration of a pre-configured time limit.

Each pattern mode can be configured to use one of three scan patterns listed below. Please refer to the MetroSelect Configuration Guide for information on changing the default scan pattern settings.

- all scan lines on (omnidirectional reading)
- single-line (menu reading)
- horizontal raster

If CodeGate is *enabled*, it will apply to the secondary pattern mode when scanning. For detailed information on CodeGate and the button refer to the *Configurable Button Functions*.

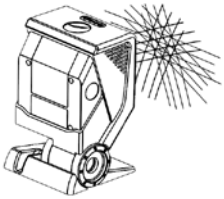
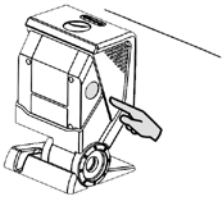
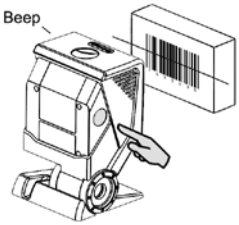
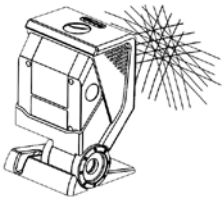
Configurable Button Functions

The button on the side of the MS3580 can be configured to function in one of four modes.

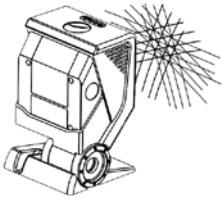
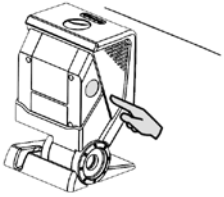
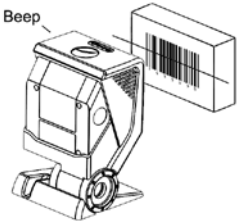
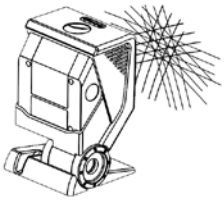
- Button *Click* Mode, with CodeGate Enabled (Default)
- Button *Click* Mode, with CodeGate Disabled
- Button *Hold* Mode, with CodeGate Enabled
- Button *Hold* Mode, with CodeGate Disabled

The following pages include examples of how the button will function when the unit has been configured to operate in each of the four button modes.

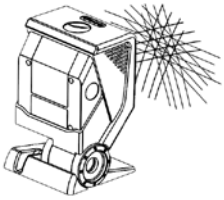
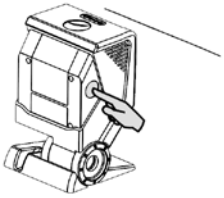
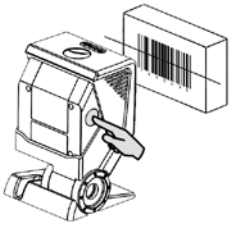
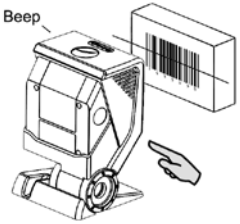
Configurable Button Functions

SINGLE SCAN PATTERN BUTTON CLICK MODE WITH CODEGATE ENABLED	
For illustration purposes the unit's primary scan pattern has been set to *all scan lines (omnidirectional reading)* and the single line pattern has been set to *single-line (menu reading)* with a 5 second button click timeout configured.	
	1. The primary scan pattern is active when the scanner starts.
	2. To activate the single line scan pattern, **press** and **release** the button.
	3. To decode and transmit the bar code, **press** and **release** the button. The scanner will beep once.
	4. To reactivate the primary scan pattern, **double click** the button or after 5-seconds of no-scanning the unit will automatically reactivate the primary pattern.

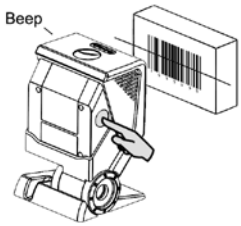
Configurable Button Functions

SINGLE SCAN PATTERN BUTTON CLICK MODE WITH CODEGATE DISABLED
For illustration purposes the unit's primary scan pattern has been set to *all scan lines (omnidirectional reading)* and the single line pattern has been set to *single-line (menu reading)* with a 5 second button click timeout configured.
 1. The primary scan pattern is active when the scanner starts.
 2. To activate the single line scan pattern, **press** and **release** the button.
 3. The unit will beep once as it decodes and transmits the bar code.
 4. To reactivate the primary scan pattern, **double click** the button or after 5-seconds of no-scanning the unit will automatically reactivate the primary pattern.

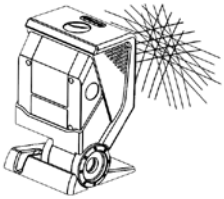
Configurable Button Functions

SINGLE SCAN PATTERN BUTTON HOLD MODE WITH CODEGATE ENABLED	
For illustration purposes the unit's* primary scan pattern has been set to *all scan lines (omnidirectional reading)* and the single line pattern has been set to *single-line (menu reading)* with a 5 second button click timeout configured.	
	1. The primary scan pattern is active when the scanner starts.
	2. To activate the single line scan pattern, **press** and **hold** the button.
	3. To scan the bar code, **align** the laser line over the bar code while continuing to **hold** down the button.
	4. To transmit the bar code, **release** the button. The scanner will beep once.

Configurable Button Functions

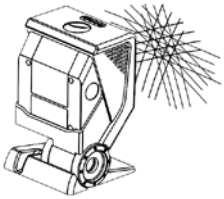
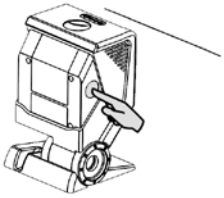
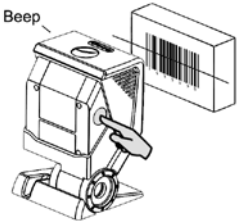
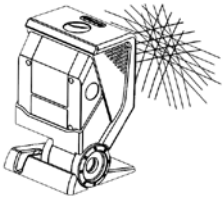


5. To scan and transmit additional bar codes, **repeat** steps 2 through 4.



6. The primary scan pattern will automatically reactivate after the button is released and no bar code is present in the scan field.

Configurable Button Functions

SECONDARY SCAN PATTERN BUTTON HOLD MODE WITH CODEGATE DISABLED	
For illustration purposes the unit's* primary scan pattern has been set to *all scan lines (omnidirectional reading)* and the secondary pattern has been set to *single-line (menu reading)* with a 5 second button click timeout configured.	
	1. The primary scan pattern is active when the scanner starts.
	2. To activate the secondary scan pattern, **press** and **hold** the button.
	3. To scan and transmit the bar code, **align** the laser line over the bar code while continuing to **hold** down the button. The scanner will beep once to indicate the bar code has been scanned and transmitted.
	4. The primary scan pattern will automatically reactivate after the button is released and no bar code is present in the scan field.

Audible Indicators

When the MS3580 is in operation, it provides audible feedback to indicate the status of the scanner. Eight settings are available for the tone of the beep (normal, 6 alternate tones and no tone). For instructions on how to change the tone of the beeper, refer to the MetroSelect Configuration Guide (00-02407).

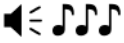
One Beep

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 will emit a beep (*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 Mode Indicators* on page 19.

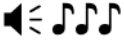


Three Beeps - during operation

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 Mode Indicators* on page 19.

Visual Indicators

The Quantum*T* is equipped with a blue and white LED that indicates the scanner's state and the status of the current scan when the unit is in operation.

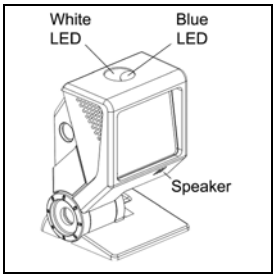


Figure 13. Speaker Location and LED Location

No LEDs

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

Steady Blue

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

Alternating Blue and White Flashes

This indicates the scanner is in configuration mode. A razzberry tone indicates that an invalid bar code has been scanned in this mode.

Steady White, Blue Off

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

Failure Mode Indicators

Flashing Blue and One Razzberry Tone

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

Flashing Blue and White and Two Razzberry Tones

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

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 to an authorized service center for repair.

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 to an authorized service center for repair.

Depth of Field Specifications*

Normal Scan Zone

Specifications are based on a 0.33 mm (13 mil) bar code.

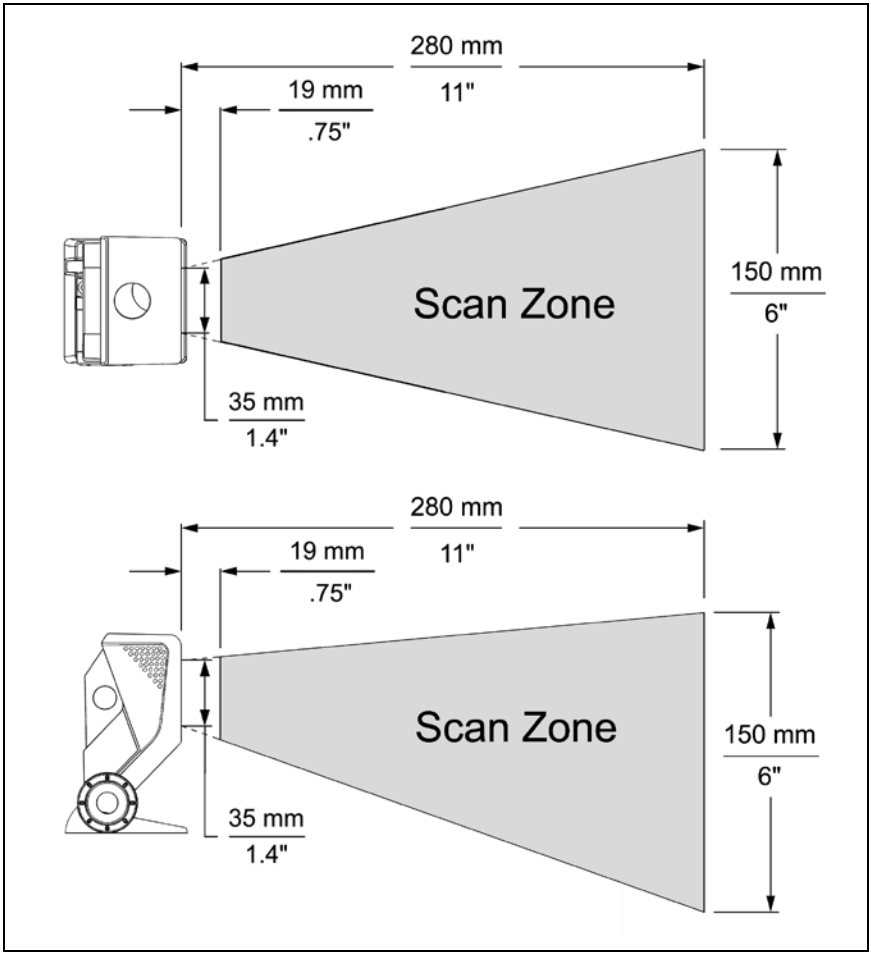


Figure 14. MS3580† Normal Depth of Field

* *All specifications are subject to change without notice.*
† *MS3580 shown with pedestal stand.*

Depth of Field Specifications*

Reduced Scan Zone

Specifications are based on a 0.33 mm (13 mil) bar code.

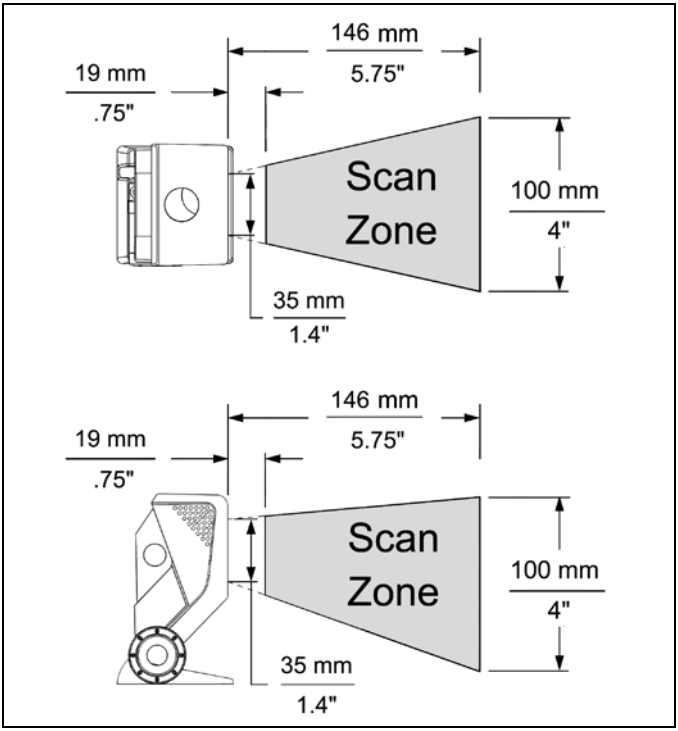
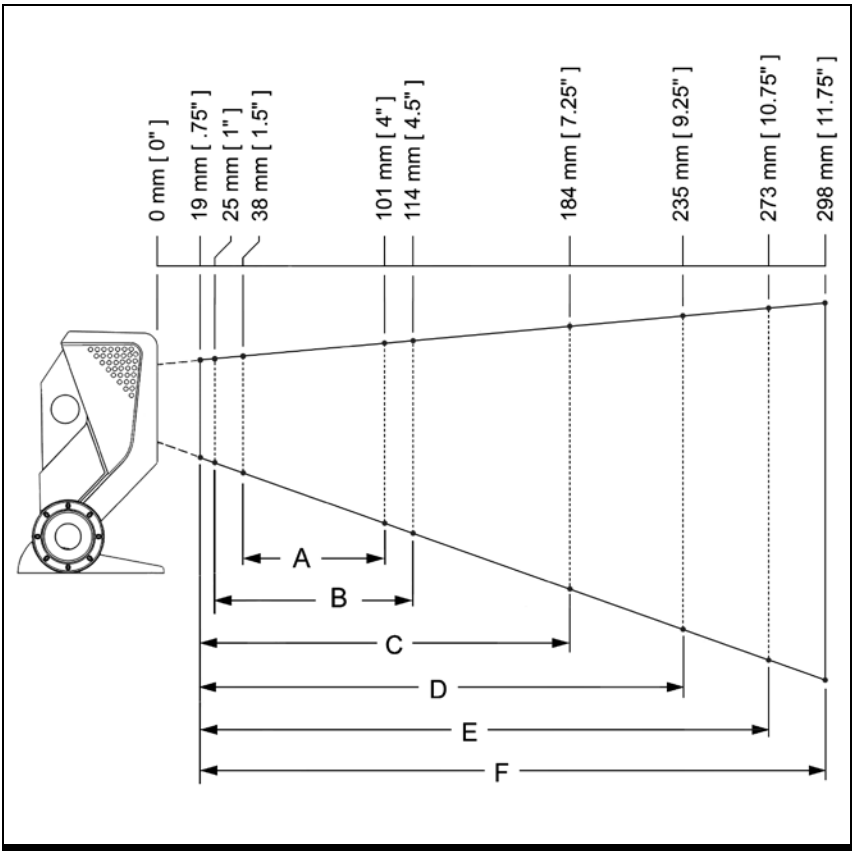


Figure 15. MS3580† Reduced Depth of Field

* *All specifications are subject to change without notice.*
† *MS3580 shown with pedestal stand.*

Depth of Field by Bar Code Element Width*

Normal Scan Zone



MINIMUM BAR CODE ELEMENT WIDTH

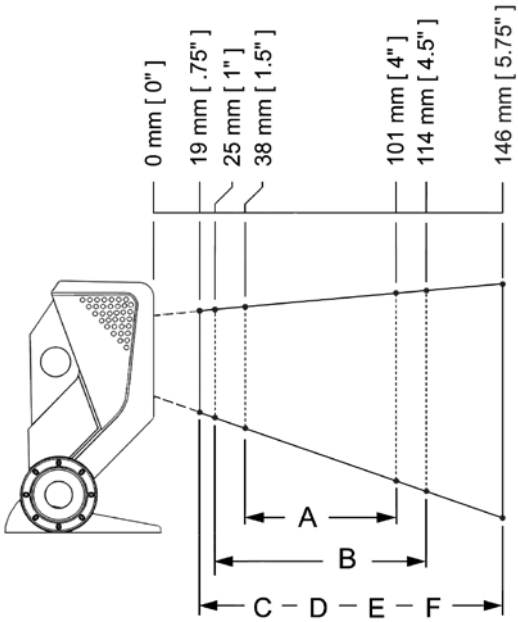
	A	B	C	D	E	F
mm	.13	.15	.19	.25	.33	.66
mils	5.2	5.7	7.5	10	13	26

Figure 16. Normal Scan Zone by Bar Code Element Width

* *All specifications are subject to change without notice.*

Depth of Field by Bar Code Element Width*

Reduced Scan Zone



MINIMUM BAR CODE ELEMENT WIDTH

	A	B	C	D	E	F
mm	.13	.15	.19	.25	.33	.66
mils	5.2	5.7	7.5	10	13	26

Figure 17. Reduced Scan Zone by Bar Code Element Width

* *All specifications are subject to change without notice.*

IR Activation Range*

Quantum*T*'s default power save mode† is *Laser OFF*. This power save mode turns the laser off after a configured period of non-use. Any movement detected by the IR in the activation area will cause the scanner to exit power save mode. The laser will automatically turn back on preparing the scanner for bar code recognition, decoding and transmission.

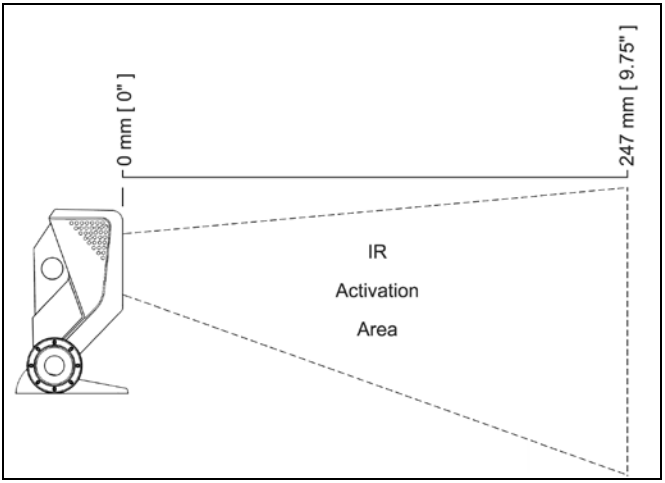


Figure 18. Normal IR Activation Range

* *All specifications are subject to change without notice.*

† *Refer to the MetroSelect Configuration Guide (00-02407) for additional information on configurable power save modes.*

TROUBLESHOOTING GUIDE

The following guide is for reference purposes only. Contact a Honeywell representative to preserve the limited warranty terms on page 43.

Symptoms	Possible Cause(s)	Solution
All Interfaces		
The unit has no LEDs, beeper or motor spin.	No power is being supplied to the scanner.	Check the transformer, outlet and power strip. Make sure the cable is plugged into the scanner.
The unit has no LEDs and / or beeper.	No power is being supplied to the scanner from host.	Some host systems cannot supply enough current to power the MS3580. Use the power supply included with the scanner.
There are multiple scans upon presentation of code.	The same symbol timeout is set too short.	Adjust the same symbol timeout for a longer time increment.
The unit powers up but does not beep.	The beeper is disabled.	Enable the beeper.
	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, Code 39, Interleaved 2 of 5, Code 93, Code 128 and Codabar are enabled by default. Verify that the type of bar code being read has been selected
	The scanner has been configured for a character length lock, or a minimum length and 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.*

Symptoms	Possible Cause(s)	Solution
All Interfaces		
The unit scans a bar code, 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 the format required by the host. Make sure that the scanner is connected to the proper host port.
Scanner beeps at some bar codes and NOT for others of the same bar code symbology.	The 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 the 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.

Symptoms	Possible Cause(s)	Solution
All Interfaces		
During power up the unit beeps 3 times.	There is a non-volatile RAM failure.	Contact a service representative.
During power up the unit razzes continuously.	There is a RAM or ROM failure.	Contact a service representative.
During power up the unit razzes once and the blue LED flashes.	There is a VLD failure.	Contact a service representative.
During power up the unit razzes twice and both LEDs flash.	There is a scanner motor failure.	Contact a service representative.
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 that the program is looking for RS232 data.
	The cable is not connected to the proper com port.	
	The com port is not operating properly.	

Symptoms	Possible Cause(s)	Solution
RS232 Only		
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 00-02407).
Keyboard Wedge Only		
The unit scans the bar code but there is no data.	The unit may not be configured correctly.	Make sure the scanner is configured for the appropriate mode.
The unit scans but the data is not correct.	The unit may not be configured correctly.	Make sure that the proper PC type (ie. AT, PS2 or XT) is selected.
		Verify correct country code and data formatting are selected.
		Adjust the intercharacter delay.
The unit is not transmitting each character.	The unit may not be configured correctly.	Increase the interscan code delay setting. Adjust whether the F0 break is transmitted. It may be necessary to try both settings.
Alpha characters show as lower case.	The computer is in caps lock mode.	Enable *caps lock detect* setting of the scanner to detect whether the PC is operating in caps lock.
Everything works except for a couple of characters.	These characters may not be supported by the current country's key look up table.	Try operating the scanner in *Alt Mode*.

DESIGN SPECIFICATIONS

		MS3580	
Operational			
Normal Depth of Field:		19 mm - 273 mm (.75"- 10.75")	0.33 mm (13 mil) bar code
Reduced Depth of Field:		19 mm - 146 mm (.75"- 5.75")	
Omni Scan			
	Scan Speed:	1650 scan lines per second	
	No. of Scan Lines:	20	
Single-Line			
	Scan Speed:	80 scan lines per second	
	No. of Scan Lines:	1	
Motor Speed:		5000 RPM	
Min Bar Width:		0.127 mm (5.0 mil)	
Decode Capability:		All standard 1-D bar codes including GS1 DataBar	
System Interfaces:		RS232, Keyboard Wedge, Stand-Alone Keyboard, Light Pen Emulation, RS485, USB (low speed and full speed), Laser Emulation, RS232 TTL	
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	
Indicators (LED):		Blue = laser on, ready to scan	
		White = good read, decoding	
Light Source Visible Laser Diode:		650 nm	
Maximum Laser Power:		<1 mW (peak)	
Embedded Laser			
Max Optical Power:		10 mW	
Wavelength:		640 – 660 nm	

Specifications subject to change without notice.

	MS3580
Mechanical	
Width:	63 mm (2.48")
Depth:	50 mm (1.97")
Height:	68 mm (2.68")
Weight:	6 oz (170 g)
Electrical	
Voltage Supply:	5VDC ± 0.25V
Operating Power:	1.375 W
Standby Power:	1.0 W
Operating Current:	275 mA typical at 5VDC
Standby Current:	230 mA typical at 5VDC
DC Transformers:	Class II; 5.2VDC @ 1 A
For regulatory compliance information, see pages 43 - ***Error! Bookmark not defined.****.*	
Environmental	
Operating Temperature:	-20°C to 40°C (-4°F to 104°F)
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.

APPLICATIONS AND PROTOCOLS

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

SCANNER	VERSION IDENTIFIER	COMMUNICATION PROTOCOL(S)
MS3580	11	RS485 and Full RS232C
	38	USB HID Keyboard or USB Serial, Limited RS232
	40	USB IBM SurePOS
	41	Full RS232C/Light Pen Emulation
	47	Keyboard Wedge, Stand-Alone Keyboard and RS232 Transmit/Receive
	104	RS232, **T**ransistor - **T**ransistor **L**ogic (TTL), Laser Emulation

The MS3580 scanner with built-in PC Keyboard Wedge Interface is designed to be used for keyboard emulation only. Many RS232 configurable functions (e.g. formatting) available in other Honeywell scanners are also available as keyboard wedge functions.

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

Keyboard Type

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

Keyboard Country Type

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

** Default setting. Refer to the MetroSelect Configuration Guide (MLPN 00-02407) or MetroSet2's help files for information on how to change the default settings.

DEFAULT SETTINGS - COMMUNICATION PARAMETERS

Many functions of the scanner can be "configured" - that is enabled or disabled. The scanner is shipped from the factory 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	USB	RS232* OR RS232 TTL	LIGHT PEN	RS485	KBW	LASER EMULATION
UPC/EAN	*	✓	✓	✓	✓	✓	✓
Code 128	*	✓	✓	✓	✓	✓	✓
Code 93	*	✓	✓	✓	✓	✓	✓
Codabar	*	✓	✓	✓	✓	✓	✓
Interleaved 2 of 5 (ITF)	*	✓	✓	✓	✓	✓	✓
MOD 10 Check on ITF		✓	✓	✓	✓	✓	✓
Code 11		✓	✓	✓	✓	✓	✓
Code 39	*	✓	✓	✓	✓	✓	✓
Full ASCII Code 39		✓	✓	✓	✓	✓	✓
MOD 43 Check on Code 39		✓	✓	✓	✓	✓	✓
MSI-Plessey		✓	✓	✓	✓	✓	✓
MSI-Plessey 10/10 Check Digit		✓	✓	✓	✓	✓	✓
MSI-Plessey MOD 10 Check Digit		✓	✓	✓	✓	✓	✓
Paraf Support		✓	✓	✓	✓	✓	✓
ITF Symbol Lengths	Variable	✓	✓	✓	✓	✓	✓
Minimum Symbol Length	4	✓	✓	✓	✓	✓	✓
Symbol Length Lock	None	✓	✓	✓	✓	✓	✓
RSS14 Enable		✓	✓	✓	✓	✓	✓
RSS14 ID “]e0”	*	✓	✓	✓	✓	✓	✓
RSS14 App ID “01”	*	✓	✓	✓	✓	✓	✓
RSS14 Check Digit	*	✓	✓	✓	✓	✓	✓
RSS Expanded Enable		✓	✓	✓	✓	✓	✓

DEFAULT SETTINGS - COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	USB	RS232* OR RS232 TTL	LIGHT PEN	RS485	KBW	LASER EMULATION
Expanded ID "]e0"	*	✓	✓	✓	✓	✓	✓
RSS Limited Enable		✓	✓	✓	✓	✓	✓
RSS Limited ID "]e0"	*	✓	✓	✓	✓	✓	✓
RSS Limited App ID "01"	*	✓	✓	✓	✓	✓	✓
RSS Limited Check Digit	*	✓	✓	✓	✓	✓	✓
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		✓	✓	✓	✓	✓	✓
No Beeps on Timeout	*	✓	✓	✓	✓	✓	✓
Enter Power Save Mode	5 mins.	✓	✓	✓	✓	✓	✓
Same Symbol Rescan Timeout: 500 msecs Configurable in 50 msec steps (MAX 6.35 seconds)	*	✓	✓	✓	✓	✓	✓
Intercharacter Delay Configurable in 1 msec steps (MAX 255 msecs)	1 msecs 10 msecs in KBW	✓	✓		✓	✓	
Number of Scan Buffers	1	✓	✓	✓	✓	✓	✓

DEFAULT SETTINGS - COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	USB	RS232* OR RS232 TTL	LIGHT PEN	RS485	KBW	LASER EMULATION
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		✓	✓	✓	✓	✓	✓
Convert EAN-8 to EAN-13		✓	✓		✓	✓	
Transmit UPC-A Number System	*	✓	✓	✓	✓	✓	✓
Transmit UPC-A Manufacturer ID#	*	✓	✓	✓	✓	✓	✓
Transmit UPC-A Item ID#	*	✓	✓	✓	✓	✓	✓
Transmit Codabar Start/Stop Characters		✓	✓		✓	✓	
CLSI Editing (Enable)		✓	✓		✓	✓	
Transmit Mod 43 Check Digit on Code 39		✓	✓		✓	✓	
Transmit Code 39 Stop/Start Characters		✓	✓		✓	✓	
Transmit Mod 10/ITF		✓	✓		✓	✓	
Transmit MSI-Plessey Check Characters		✓	✓		✓	✓	
Parity	Space		✓				
Baud Rate	9600		✓				
8 Data Bits			✓				
7 Data Bits	*		✓				
Stop Bits	2		✓				
Transmit Sanyo ID Characters		✓	✓			✓	

DEFAULT SETTINGS - COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	USB	RS232* OR RS232 TTL	LIGHT PEN	RS485	KBW	LASER EMULATION
Nixdorf ID		✓	✓			✓	
LRC Enabled		✓	✓			✓	
UPC Prefix		✓	✓			✓	
UPC Suffix		✓	✓			✓	
Transmit AIM ID Characters		✓	✓			✓	
STX Prefix		✓	✓			✓	
ETX 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 RTS/CTS	*		✓				
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		✓	✓	✓	✓	✓	✓

DEFAULT SETTINGS - COMMUNICATION PARAMETERS

PARAMETER	DEFAULT	USB	RS232* OR RS232 TTL	LIGHT PEN	RS485	KBW	LASER EMULATION
Supplements are not Required	*	✓	✓	✓	✓	✓	✓
Two Digit Redundancy	*	✓	✓	✓	✓	✓	✓
Five Digit Redundancy		✓	✓	✓	✓	✓	✓
100 msec to Find Supplement Configurable in 100msec steps (MAX 800 msec)	*	✓	✓	✓	✓	✓	✓
Coupon Code 128		✓	✓	as code 39	✓	✓	as code 39
Configurable Code Lengths	7 avail.	✓	✓	✓	✓	✓	✓
Configurable Prefix Characters	10 avail.	✓	✓			✓	
Configurable Suffix Characters	10 avail.	✓	✓			✓	
Prefixes for individual Code Types		✓	✓			✓	
Editing		✓	✓	✓	✓	✓	✓
Inter Scan-Code Delay Configurable (100 µsec steps)	800 µsec					✓	
Function/Control Key Support						✓	
Configurable in 5.6 µsec steps	1 msec			✓			✓
Normal Depth of Field	*	✓	✓	✓	✓	✓	✓
Reduced Depth of Field		✓	✓	✓	✓	✓	✓

CONFIGURATION MODES

The MS3580 Series scanner has three modes of configuration.

- **Bar Codes**
  The MS3580 can be configured by scanning the bar codes included in the Single-Line Configuration Guide or the Supplemental Configuration Guide. The manuals are available for download at www.honeywellaidc.com.

- **MetroSet*2***
  This user-friendly Windows®-based configuration program allows you to simply 'point-and-click' at the desired imager options. MetroSet2 is available for download at www.honeywellaidc.com.

- **Serial Programming**
  This mode of configuration is ideal for OEM applications. Serial programming 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.

UPGRADING THE FIRMWARE

The MS3580 is part of Honeywell's line of scanners with flash upgradeable firmware. The upgrade process requires a new firmware file supplied to the customer by a customer service representative◆ and Honeywell's MetroSet*2* software◆◆. A personal computer running Windows 95 or greater with an available RS232 serial or USB port is also required to complete the upgrade.

> PowerLink Cable #54-54014 is required when using RS232 for the upgrade process. **Do not** use the standard cable supplied with keyboard wedge or RS485 scanner interface kits. If using USB for the upgrade process, the standard USB Type A cable provided with the scanner can be used.

To upgrade the firmware in the MS3580:

1. Plug the scanner into a serial communication port on the host system.
2. Start the MetroSet*2* software.
3. Click on the plus sign (+) next to *POS Scanners* to expand the supported scanner list.
4. Choose the *Quantum E/T* from the list.
5. Click on the *Configure Quantum E/T Scanner* button.
6. Choose *Flash Utility* from the options list located on the left side of the screen.
7. Click on the *Open File* button in the Flash Utility window.
8. Locate and open the flash upgrade file supplied by Honeywell.
9. Select the COM port that the scanner is connected to on the host system.
10. Verify the settings listed in the Flash Utility window.
11. Click on the *Flash Scanner* button to begin the flash upgrade.
12. A message will appear on the screen when the upgrade is complete.

◆ See Contact Information on page 45.

◆◆ MetroSet*2* is available for download, at no additional cost, from www.honeywellaidc.com.

Scanner Pinout Connections

The MS3580 scanner interfaces terminate to a 10-pin modular socket.
The serial # label indicates the interface enabled when the scanner is shipped from the factory.

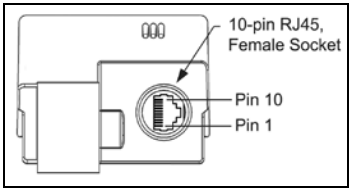


Figure 19. Bottom View of MS3580 (Stand Removed)

MS3580-**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

MS3580-**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

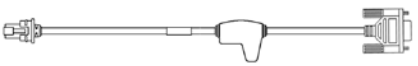
MS3580-**40** USB IBM SurePOS	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output
5	CTS Input
6	USB D+
7	V USB
8	USB D-
9	+5VDC
10	Shield Ground

MS3580-**38** USB HID Keyboard or USB Serial, Limited RS232	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output
5	CTS Input
6	D+
7	V USB
8	D-
9	+5VDC
10	Shield Ground

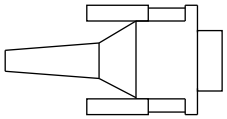
MS3580-**11** RS485	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output
5	CTS Input
6	DTR Input
7	IBM B-Transmit
8	IBM A+ Receive
9	+5VDC
10	Shield Ground

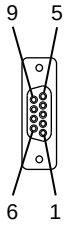
MS3580-**104** RS232 TTL, Laser Emulation	
Pin	**Function**
1	Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	RTS Output (TTL RS232) / Flip Sense
5	CTS Input (TTL RS232) / Trigger Emulation Output
6	DTR Input (TTL RS232) / Scan Enable
7	Receive (TTL RS232) / Good Read
8	Transmit (TTL RS232) / Scan Data
9	+5VDC
10	Shield Ground

Cable Connector Configurations (Host End)

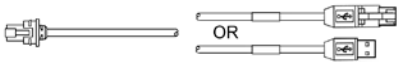
"Standard" PowerLink Cable MLPN 59-59000-3 *straight*	

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
7	CTS Input
8	RTS Output
9	+5VDC





9-Pin D-Type Connector

USB Power/Communication Cable MLPN *54-54213-N-3, 54-54214-N-3 or 54-54235-N-3*	

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

USB Type A
Locking with Power

USB
Non-Locking

Stand Alone Keyboard PowerLink Cable MLPN *54-54020-3*	

Pin	Function
1	PC Data
2	No Connect
3	Power Ground
4	+5VDC PC Power to KB
5	PC Clock
6	No Connect

6-Pin Male Mini-DIN Connector

Cable Connector Configurations (Host End)

Keyboard Wedge PowerLink Cable *54-54002x-3*	
Pin	**Function**
1	Keyboard Clock
2	Keyboard Data
3	No Connect
4	Power Ground
5	+5 Volts DC

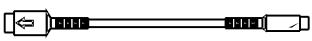
5-Pin DIN, Female

Pin	**Function**
1	PC Data
2	No Connect
3	Power Ground
4	+5 Volts DC
5	PC Clock
6	No Connect

6-Pin DIN, Male

Honeywell 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	No Connect

6-pin Mini DIN, Female

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Technical Assistance

To search our knowledge base for a solution or to log in to the Technical Support portal and report a problem, go to www.hsmcontactsupport.com.
For our latest contact information, see www.honeywellaidc.com/locations.

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To find your service center, go to www.honeywellaidc.com and select **Support**. Contact your service enter to obtain a Return Material Authorization number (RMA #) before you return the product.
To obtain warranty or non-warranty service, return your product to Honeywell (postage paid) with a copy of the dated purchase record. To learn more, go to www.honeywellaidc.com and select **Service & Repair** at the bottom of the page.

Limited Warranty

For warranty information, go to www.honeywellaidc.com and click **Get Resources > Product Warranty.**

Honeywell Scanning & Mobility
9680 Old Bailes Road
Fort Mill, SC 29707

www.honeywellaidc.com

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