

HF510

Wide-Angle Area-Imaging Scanner

User's Guide

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Customer Support

Technical Assistance

If you need assistance installing or troubleshooting your device, please contact us by using one of the methods below:

Knowledge Base: www.hasknowledgebase.com

Our knowledge Base provides thousands of immediate solutions. If the knowledge Base cannot help, our Technical Support Portal (see below) provides an easy way to report your problem or ask your question.

Technical Support Portal: www.hsmsupportportal.com

The technical Support Portal not only allows you to report your problem, but it also provides immediate solutions to your technical issues by searching our Knowledge Base. With the Portal, you can submit and track your questions online and send and receive attachments.

Web form: www.hsmcontactsupport.com

You can contact our technical support team directly by filling out our online support. Enter your contact details and the description of the question/problem.

Telephone: www.honeywellaidc.com/locations

For our latest contact information, please check our website at the link above.

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To obtain warranty or non-warranty service, please visit www.honeywellaidc.com and select **Support>Contact Service and Repair** to see your region's instructions on who to obtain a Return Material Authorization (RMA#). You should do this prior to returning the product.

Limited Warranty

Refer to www.honeywellaidc.com/warranty_information for your product's warranty information.

Send Feedback

Your feedback is crucial to the continual improvement of documentation. To provide feedback about this manual, contact the Honeywell Technical Communications department at ACSHSMTechnicalCommunications@Honeywell.com.

Getting Started

About This Manual

This User's Guide provides installation and programming instructions for the HF510 corded area-imaging scanner. Product specifications, dimensions, warranty, and customer support information are also included.

Honeywell barcode scanners are factory programmed for the most common terminal and communications settings. If you need to change these settings, programming is accomplished by scanning the bar codes in this guide.

An asterisk (*) next to an option indicates the default setting.

Unpacking Your Device

After you open the shipping carton containing the product, take the following steps:

- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

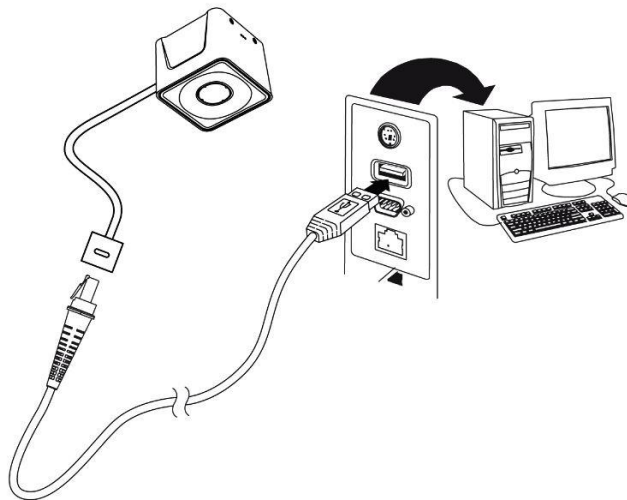
Connecting the Device

Connecting with USB

A scanner can be connected to the USB port of a computer.

1. Connect the appropriate interface cable to the device first, then to the computer.

HF510 USB Connection:



2. The scanner beeps.
3. Verify the scanner operation by scanning a barcode from the [Sample Symbols](#) in the back of this manual.

The unit defaults to a USB PC Keyboard.

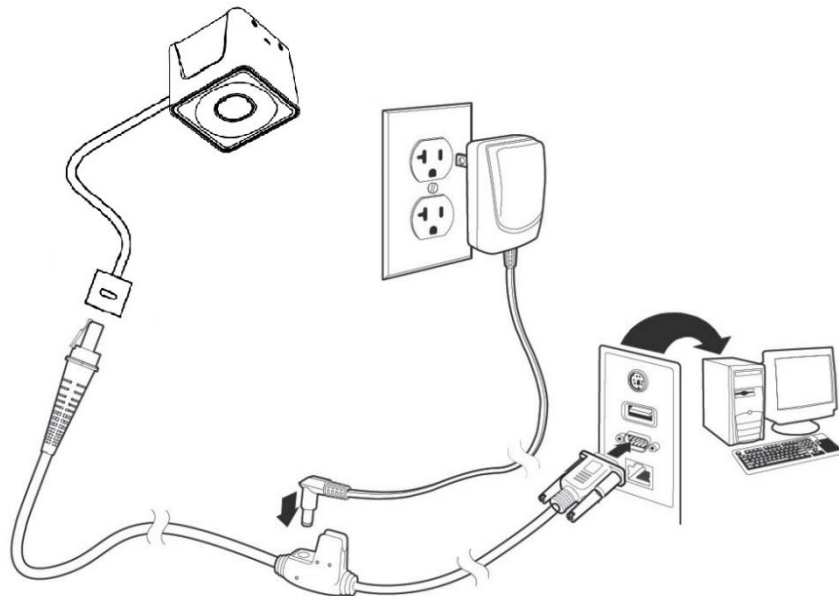
Connecting with RS232 Serial Port

1. Turn off power to the terminal/computer.
2. Connect the appropriate interface cable to the device.

Note: For the scanner to work properly, you must have the correct cable for your type of terminal/computer.

HF510

RS232 Serial Port Connection:



Note: The power supply must be ordered separately, if needed.

3. Plug the serial connector into the serial port on your computer. Tighten the two screws to secure the connector to the port.
4. Once the scanner has been fully connected, power up the computer.

This interface programs 115,200 baud, 8 data bits, no parity, and 1 stop bit.

Barcode Configuration Guide

Your new scanner has been configured at the factory with a set of default communication protocol. Since many host systems have unique formats and protocol requirements, Honeywell provides a wide range of configurable features that may be selected with the use of this barcode configuration guide.

Once the configuration is completed, the scanner stores the settings into the Flash and the settings won't lose when the power is turned off.

Symbol Key	
* (asterisk)	Default Feature
~ (tilde)	Feature requires the Multi-Code Configuration Method, See section "Barcode Configuration Method".

Barcode Configuration Methods

This scanner can be barcode configured in two ways: the Single-Code Method and the Multi-Code Method.

Single-Code Method

Most features can be enabled or disabled using the Single-Code Method.

1. Power up the scanner.
2. Scan the barcode(s) for the desired feature(s).
3. Observe a multi-tones, "save setting" beep that indicates the configuration has been saved.

Multi-Code Method

All features can be enabled or disabled using the Multi-Code Method.

A features marked with a "~" requires the Multi-Code Method.

1. Power up the scanner.
2. Scan the Enter/Exit Configuration Mode barcode. [3 beeps]
3. Scan the barcode(s) for the desired feature(s). [1 beep]
4. Scan the Enter/Exit Configuration Mode barcode [3 beeps] and save new configuration.



Enter/Exit Configuration Mode

Note: To abort a configuration change, power off the scanner before scanning the Enter/Exit Configuration Mode barcode.

Factory Default Settings



This selection erases all your settings and resets the scanner to the original factory defaults.

Scan the Recall Default barcode. This will erase all previous settings and return to the scanner's factory default settings.



Recall Default

Get Firmware Revision Number

Scan the following barcode, scanner will output the software revision number.



Firmware Revision

Get Product Serial Number

Scan the following barcode, scanner will output the product serial number. It's a unique number to each unit.



Product Serial Number

Operating Modes Settings

Streaming Presentation Mode



Note: In this mode, the unit will keep to scan and decode bar code symbols all the time. Bar code data will be output in a format determined by the selected terminal interface.

In the case where a menu bar code symbol is decoded, the scanner will switch operation to the respective mode.

Presentation Mode



Note: In this mode, the unit work with optical trigger to detect barcode symbol. When optical trigger is trigger on, it will start to scan and decode bar code symbols. When optical trigger is trigger off, the unit will enter a power save mode and stop decoding. the Bar code data will be output in a format determined by the selected terminal interface.

Programming the Interface

Introduction

This chapter describes how to program your system for the desired interface.

Currently the scanner support three kinds of communication interface, RS232, USB HID and USB Serial.

You can scan the following barcodes to switch the scanner into specific interface.

You should also change the cable after that.

(1) **RS232**



RS232 Interface

(2) **USB HID**



USB HID Interface

(3) **USB Serial**



USB Serial Interface

Note: No extra configuration (e.g., baud rate) is necessary.

RS232 Settings

Factory default settings of RS232 interface are in the below table.

Option	Setting
Baud Rate	115,200 bps
Data Format	8 data bits, no parity bit, 1 stop bit

1. Baud Rates

A “Baud” or “Baud Rate” is the speed at which data is transmitted. Select a Baud for the scanner that matched the host device.



*115200



57600



38400



19200



9600



4800



2400



1200



600



300

2. Parity Features

A parity bit is an extra data bit used for help catch data transmission errors. The scanner's parity must match the host's parity.



*No Parity



Odd Parity



Even Parity

3. Data/Stop Bits

Choose the number of bits transmitted for each character.



7 Data Bits



*8 Data Bits



*1 Stop Bits



2 Stop Bits

4. Hardware Handshaking

When enable this feature, scanner will output a Request to Send (RTS) signal and wait for a Clear to Send(CTS) signal before transmitting data.



Enable RTS/CTS Handshaking



*Disable RTS/CTS Handshaking



*Character RTS/CTS
Activate/Deactivate RTS
signal for each character.



Message RTS/CTS
Activate RTS before sending the first
character and leave it active until
after the last character has been
transmitted.



Invert RTS Polarity



*Standard RTS Polarity



Invert CTS Polarity



*Standard CTS Polarity



Activate RTS, Do not wait
for CTS.



*Activate RTS,wait for CTS

5. Software Handshaking



Enable XON/XOFF Handshaking

The scanner will stop transmission whenever an XOFF(ASCII 13H) is received. Transmission will resume after an XON(ASCII 11H) is received.



*Disable XON/XOFF Handshaking

*Note: When Disabled this feature, please do not transfer XOFF(ASCII 13H) to the scanner. The may cause the scanner abnormal.
If sent, transfer DC2(ASCII 12H) can recover the scanner.*

ACK/NAK Feature

If enable this feature, after transmitting data, wait for an ACK(06H) or a NAK(15H) response from the host.
If ACK is received, the scanner will beep 1 time and complete the communications cycle and looks for more barcodes.
If NAK is received, retransmit the last set of barcode data and waits for ACK/NAK again.



Enable ACK/NAK



*Disable ACK/NAK



Support BEL/CAN in ACK/NAK



*Ignore BEL/CAN in ACK/NAK

If enable this feature, when BEL(07H) is received, the scanner beeps 3 times and exits the communications loop.
If a CAN(18H) is received, then the scanner will exit the communications loop silently.



Enable 5 Retries on
ACK/NAK Time Out

Allow up to 5 NAK
Retransmissions of the data
Before dropping out of the
Communications loop.



*Disable 5 Retries on
ACK/NAK Time Out

Do not limit retransmission
To 5 NAK cycles.

*Note: The ACK/NAK Time Out value equals to the communication time outs value.
Please refer to the section "Communication Time Out Options".*

Input/Output Settings

Illumination LED Setup

Use these codes to control illumination LED ON/OFF.



Illumination LED ON



Illumination LED OFF

Illumination LED Level

Use these codes to control illumination level



Low level



Mid level



High level

Illumination LED Mode

Use these codes to control illumination mode



Normal



Cellphone



Pure cellphone

Same Symbol Time Outs

These numbers determine the length of time before a barcode can be rescanned after it is removed from the scan field. Single code fixed settings in msec of No,50,100,200,750,1200(1.2 sec),2000(2.0 sec) and infinite are available. User configurable values can be set in user-configurable increments of 50 msec to 6350 msec (6.35 sec).

Note: This feature only take effect in Presentation Mode.



No Same Symbol Time Out



Same Symbol Time Out 100 msecs



Same Symbol Time Out 200 msecs



* Same Symbol Time Out 750 msecs



Same Symbol Time Out 1200 msecs



Same Symbol Time Out 2000 msec



Infinite Same Symbol Time Out

The scanner will not repetitively Scan the same barcode.



~ Variable Same Symbol Time Out

Using the Multi-Code Method, scan this barcode and a code byte sequence from section "Code Byte Usage" to set the same symbol time-out duration. Values range from 001 to 127(50 to 6350 msec).

Inter-Character Data Transmission Delays

Use these codes to select the amount of delay between sending data characters and “Bar Code” records from the scanner to the host. This helps prevent the scanner from overflowing host input buffers.



*1 msec Inter-Character Delay



10 msec Inter-Character Delay



25 msec Inter-Character Delay



~ Variable msec
Inter-Character Delay

Scan this barcode and sequence of code bytes in Section “Code Byte Usage” to set the delay. Delay range can be set from 1 to 255 msec.
Refer to the Multi-Code Configuration Method.

Note: This feature only applies for RS232 Interface.

Communication Time Out Options



Enable Communications Time Outs



*Disable Communications Time Outs



~ Variable Communications Time Out
Unit: 50 ms.



* Default Communications Time Out (2 secs)



Short Communications Time Out (1 sec)



Long Communications Time Out (4 secs)



Three Beeps on Time Out



* No Beeps on Time Out



Razzberry Tone on Time Out



* No Razzberry Tone on Time Out

Data Editing

CR/LF Suffix Settings

1,CR Suffix Setting



*Enable CR Suffix



Disable CR Suffix

2,LF Suffix Settings



*Enable LF Suffix



Disable LF Suffix

Symbologies

In this section, contains all the configuration barcodes to switch each symbology on/off.

1D Barcode Type Settings

1, UPC/EAN



*Enable UPC/EAN



Disable UPC/EAN



*Enable UPC-A



Disable UPC-A



*Enable UPC-E



Disable UPC-E



*Enable EAN-13



Disable EAN-13



*Enable EAN-8



Disable EAN-8



Enable EAN-UCC
Composite Codes



*Disable EAN-UCC
Composite Codes

Note: Enable this feature may cause normal EAN or UCC barcode decode fail.

2, Code128



*Enable



Disable

3, Coupon Code 128



Enable



*Disable

4, EAN99 Coupon



Enable



*Disable

5, Number System 4 Coupon Code 128



Enable



*Disable

Note: To enable this feature, you should enable coupon code 128 first.

6, Code39



*Enable



Disable



Enable MOD 43
Check on Code 39



*Disable MOD 43
Check on Code 39



Transmit Mode 43
Check Digit on Code 39



*Do Not Transmit Mode 43
Check Digit on Code 39



Enable Full ASCII Code 39



*Disable Full ASCII Code 39



Enable PARAF Support
(Italian Pharmaceutical Codes)



*Disable PARAF Support



*Allow PARAF Codes Only



Allow Non-PARAF Codes

Note: To configure this feature, you should enable code39 and enable PARAF support first.

7, Trioptic Code



Enable



*Disable

8, Interleaved 2 of 5(ITF)



*Enable



Disable

9, Standard 2 of 5



*Enable



Disable

10, Matrix 2 of 5



*Enable



Disable



*Disable checksum checking



Enable checksum checking



Enable checksum checking and strip the checksum from the result string

11, Airline 2 of 5



Enable



*Disable

12, Codabar



*Enable



Disable

13, Code 93



*Enable



Disable

14, Code 11



*Enable



Disable

15, Telepen



Enable



*Disable

16, MSI Plessey



Enable



*Disable

17, RSS 14



Enable



*Disable



*Transmit RSS 14
Check Digit



Do Not Transmit RSS 14
Check Digit



*Transmit RSS 14
Application ID



Do Not Transmit RSS 14
Application ID



Transmit RSS 14
Symbology ID



*Do Not Transmit RSS 14
Symbology ID

18, RSS Limited



Enable

*Disable



*Transmit RSS Limited
Check Digit



Do Not Transmit RSS Limited
Check Digit



*Transmit RSS Limited
Application ID



Do Not Transmit RSS Limited
Application ID



Transmit RSS Limited
Symbology ID



*Do Not Transmit RSS Limited
Symbology ID

19, GS1 DataBar Expanded



Enable



*Disable



Transmit RSS Expanded
Symbology ID



Do Not Transmit RSS Expanded
Symbology ID

Postal Codes Settings

Note: Only one Postal Code selection can be active at one time.

1, Hong Kong 2 of 5



Enable



*Disable

2, Australian Post



Enable



*Disable

3, British Post



Enable



*Disable

4, Canadian Post



Enable



*Disable

5, Japanese Post



Enable



*Disable

6, Korean Post



Enable



*Disable

Koread Post Reverse



*Enable



Disable

7, Netherlands Post



Enable



*Disable

8, Postnet Code



Enable



*Disable

9, Planet Code



Enable



*Disable

2D Barcodes Type Settings

1, PDF417



Enable



*Disable

2, Micro-PDF417



Enable



*Disable

3, Codablock A



Enable



*Disable

4, Codablock F



Enable



*Disable

5, Data Matrix



Enable



*Disable

6, Aztec Code



Enable



*Disable

7, MaxiCode



Enable



*Disable

8, QR Code



*Enable



Disable

9, Micro QR Code



Enable



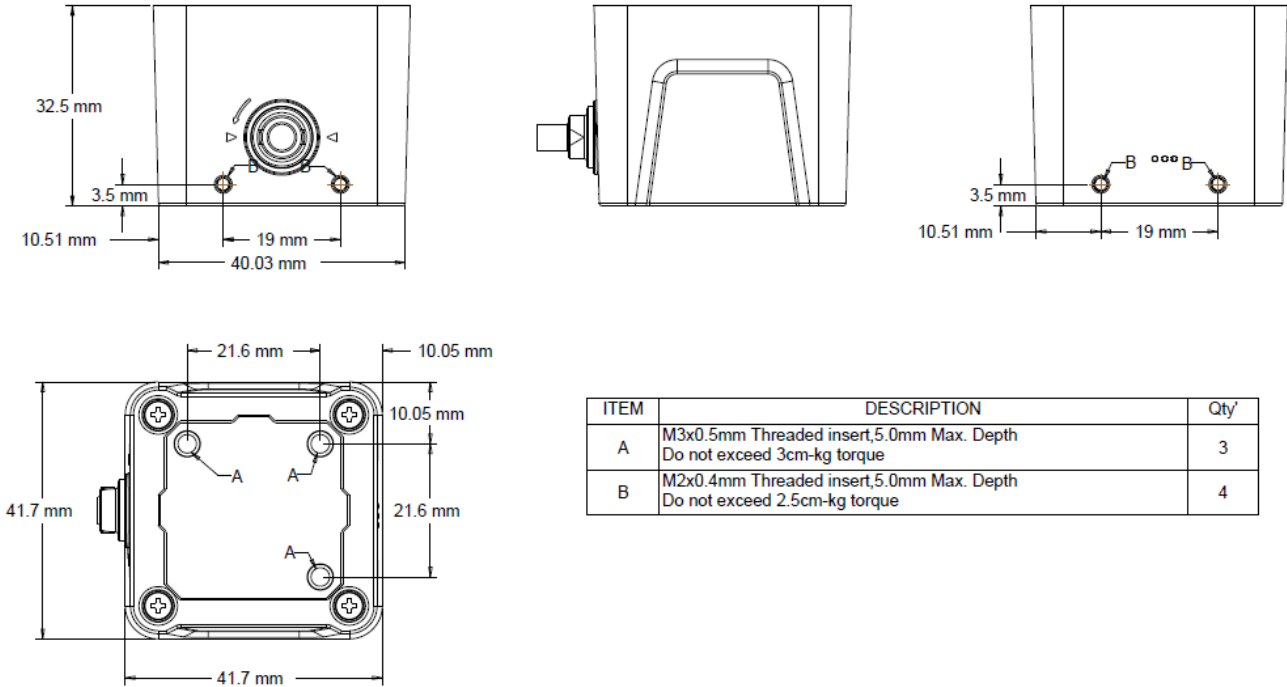
*Disable

HF510 Scanner Product Specifications

Parameter	Specification
Mechanical	
Height	1.28 in. (32.5mm)
Length	8.58 in. (218.0mm)
Width	1.65 in. (42.0mm)
Weight	1.96 oz. (55.5g)
Electrical	
Input Voltage	4.5 - 5.5VDC
Operating Power	2.25W (450mA @ 5VDC)
Standby Power	1.25W (250mA @ 5VDC)
Illumination LED	White emitting color
Aiming	624nm peak wavelength
Environmental	
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Humidity	0 to 95% relative humidity, non-condensing
Drop	Withstands 1.5m drops (2 times)
Environmental Sealing	IP40
Light Levels	0 to 100,000 lux
ESD	10kV Air, 6kV contact
Image	
Image Size	640 x 480 pixels
Scan Performance	
Pitch, Skew	+55°, +65°
Motion Tolerance: Presentation Mode	up to 1.2m/s (47 in/s) per second for 13 mil UPC-a barcode
Symbol Contrast	35%
Depth of Field	
Typical Performance	
10 mil Code 39	15 - 40mm (0.6 - 1.6in.)
13 mil UPC-A	15- 110mm (0.6 - 4.3in.)
20mil Code 39	18- 150mm (0.7 - 5.9in.)
20mil QR	12- 90mm (0.5 - 3.5in.)
Guaranteed Performance	
5 mil Code 39	20- 30mm (0.8 - 1.2in.)
13 mil UPC-A	20- 100mm (0.8 - 3.9in.)
20mil Code 39	20- 120mm (0.8 - 4.7in.)
20mil QR	18- 70mm (0.7 - 2.7in.)

Mounting Specifications

The HF510 has three M3*0.5mm threaded inserts on the bottom, four M2*0.4mm threaded inserts on the right and left of the scanner for mounting with screws.

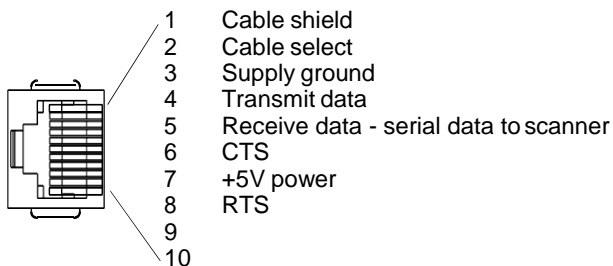


Standard Cable Pinouts

Note: The following pin assignments are not compatible with Youjie legacy products. Use of a cable with improper pin assignments may lead to damage to the unit. Use of any cables not provided by the manufacturer may result in damage not covered by your warranty.

Serial Output

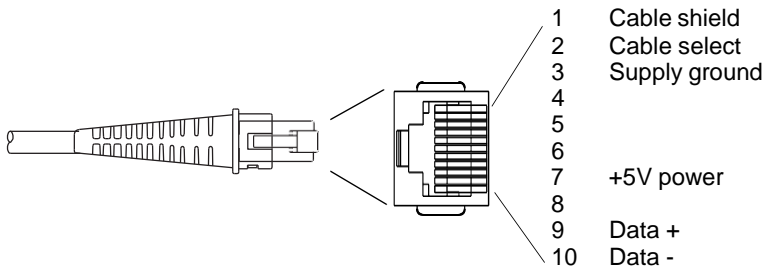
10 Pin RJ41 Modular Plug



Product Specifications

USB

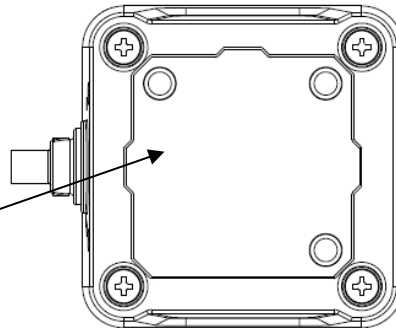
10 Pin Modular Plug



Required Safety Labels

HF510 Scanner

Part Number,
Serial
Number and
Revision
Information
location



Maintenance and Troubleshooting

Repairs

Repairs and/or upgrades are not to be performed on this product. These services are to be performed only by an authorized service center (see [Technical Assistance](#) on page Customer Support).

Maintenance

Your device provides reliable and efficient operation with a minimum of care. Although specific maintenance is not required, the following periodic checks ensure dependable operation:

Cleaning the Device

Reading performance may degrade if the scanner's window is not clean. If the window is visibly dirty, or if the scanner isn't operating well, clean the window with a soft cloth or lens tissue dampened with water (or a mild detergent- water solution). If a detergent solution is used, rinse with a clean lens tissue dampened with water only.

The scanner housing may also be cleaned the same way.



Caution:

Do not submerge the scanner in water. The scanner's housing is not watertight.

Do not use abrasive wipes or tissues on the scanner's window – abrasive wipes may scratch the window. Never use solvents (e.g., alcohol or acetone) on the housing or window – solvents may damage the finish or the window.

Inspecting Cords and Connectors

Inspect the interface cable and connector for wear or other signs of damage. A badly worn cable or damaged connector may interfere with scanner operation. Contact your distributor for information about cable replacement. Cable replacement instructions are on [page Customer Support](#).

Replacing Cable in the Scanner

The standard interface cable is attached to the scanner with a 10-pin modular connector. When properly seated, the connector is held in the scanner by a flexible retention tab. The interface cable is designed to be field replaceable.

- Order replacement cables from Honeywell or from an authorized distributor.
- When ordering a replacement cable, specify the cable part number of the original interface cable.

Troubleshooting the Scanner

The scanner automatically performs self-tests whenever you turn it on. If your scanner is not functioning properly, review the following Troubleshooting Guide to try to isolate the problem.

Is the power on?

If the white LED isn't illuminated, check that:

- The cable is connected properly.
- The host system power is on (if external power isn't used).

Is the scanner having trouble reading your symbols?

If the scanner isn't reading symbols well, check that the scanner window is clean and that the symbols:

- Aren't smeared, rough, scratched, or exhibiting voids.
- Aren't coated with frost or water droplets on the surface.
- Are enabled in the scanner or in the decoder to which the scanner connects.

Is the bar code displayed but not entered?

The bar code is displayed on the host device correctly, but you still have to press a key to enter it (the Enter/Return key or the Tab key, for example).

- You need to program a suffix. Programming a suffix enables the scanner to output the bar code data plus the key you need (such as "CR") to enter the data into your application. Refer to [CR/LF Suffix Setting](#) beginning on page 4-1 for further information.

Does the scanner read the bar code incorrectly?

If the scanner reads a bar code, but the data is not displayed correctly on the host screen:

- The scanner may not be programmed for the appropriate terminal interface.
For example, you scan "12345" and the host displays "@es%."

Reprogram the scanner with the correct Plug and Play bar code. See [Programming the Interface](#) beginning on page 2-1.

- The scanner may not be programmed to output your bar code data properly.
For example, you scan "12345" and the host displays "A12345B."

Reprogram the scanner with the proper symbology selections. See [Chapter 5](#).

The scanner won't read your bar code at all.

1. Scan the sample bar codes in the back of this manual. If the scanner reads the sample bar codes, check that your bar code is readable.
Verify that your bar code symbology is enabled (see [Chapter 5](#)).

If the scanner still can't read the sample bar codes, scan [All Symbologies](#) (see [Chapter 5](#)).

If you aren't sure what programming options have been set in the scanner, or if you want the factory default settings restored, refer to [Factory Default Settings](#) on page 1-5.

Code Byte Usage

User configurable prefixes, symbol length and other features that use these code bytes for configuration, require that the scanner be in configuration mode.

Scan the Enter/Exit Configuration Mode barcode before starting the configuration cycle.

Single code configuration mode does not work for these multi-code sequences.



Enter/Exit Configuration Mode

Example

Use configurable inter-character delays in section “Inter-Character Data Transmission Delays” can be saved into the scanner by scanning the 3 digit decimal equivalent of the ASCII character into the appropriate character location with the code byte barcodes.

To set the inter-character delay to 15ms scan the following barcodes in order:

1. Enter/Exit Configuration Mode (3 beeps)
2. Configurable “~ Variable msec Inter-Character Delay” (1 beep)
3. Code Byte 0 (1 beep)
4. Code Byte 1 (2 beep)
5. Code Byte 5 (3 beeps)
6. Enter/Exit Configuration Mode (3 beeps)



Code Byte 0



Code Byte 1



Code Byte 2



Code Byte 3

9



Code Byte 4



Code Byte 5



Code Byte 6



Code Byte 7



Code Byte 8



Code Byte 9

Reference Charts

Symbology Charts

Note: “m” represents the AIM modifier character. Refer to International Technical Specification, Symbology Identifiers, for AIM modifier character details.

Prefix/Suffix entries for specific symbologies override the universal (All Symbologies, 99) entry.

Linear Symbologies

Symbology	AIM	
	ID	Possible modifiers (m)
<i>All Symbologies</i>		
Codabar	]Fm	0-1
Code 11	]H3	
Code 128	]Cm	0, 1, 2, 4
Code 32 Pharmaceutical (PARAF)	]X0	
Code 39 (supports Full ASCII mode)	]Am	0, 1, 3, 4, 5, 7
TCIF Linked Code 39 (TLC39)	]L2	
Code 93 and 93i	]Gm	0-9, A-Z, a-m
EAN	]Em	0, 1, 3, 4
EAN-13 (including Bookland EAN)	]E0	
EAN-13 with Add-On	]E3	
EAN-13 with Extended Coupon Code	]E3	
EAN-8	]E4	
EAN-8 with Add-On	]E3	
GS1		
GS1 DataBar	]em	0
GS1 DataBar Limited	]em	
GS1 DataBar Expanded	]em	
GS1-128	]C1	
2 of 5		
China Post (Hong Kong 2 of 5)	]X0	
Interleaved 2 of 5	]Im	0, 1, 3
Matrix 2 of 5	]X0	
NEC 2 of 5	]X0	
Straight 2 of 5 IATA	]Rm	0, 1, 3
Straight 2 of 5 Industrial	]S0	
MSI	]Mm	0, 1
UPC		0, 1, 2, 3, 8, 9, A, B, C
UPC-A	]E0	

Symbology	AIM	
	ID	Possible modifiers (m)
UPC-A with Add-On	]E3	
UPC-A with Extended Coupon Code	]E3	
UPC-E	]E0	
UPC-E with Add-On	]E3	
UPC-E1	]X0	

2D Symbologies

Symbology	AIM	
	ID	Possible modifiers (m)
<i>All Symbologies</i>		
Aztec Code	]zm	0-9, A-C
Chinese Sensible Code (Han Xin Code)	]X0	
Codablock A	]O6	0, 1, 4, 5, 6
Codablock F	]Om	0, 1, 4, 5, 6
Code 49	]Tm	0, 1, 2, 4
Data Matrix	]dm	0-6
GS1	]em	0-3
GS1 Composite	]em	0-3
GS1 DataBar Omnidirectional	]em	0-3
MaxiCode	]Um	0-3
PDF417	]Lm	0-2
MicroPDF417	]Lm	0-5
QR Code	]Qm	0-6
Micro QR Code	]Qm	

Postal Symbologies

Symbology	AIM	
	ID	Possible modifiers (m)
<i>All Symbologies</i>		
Australian Post	]X0	
British Post	]X0	

Symbology	AIM	
	ID	Possible modifiers (m)
Canadian Post	]X0	
China Post	]X0	
InfoMail	]X0	
Intelligent Mail Bar Code	]X0	
Japanese Post	]X0	
KIX (Netherlands) Post	]X0	
Korea Post	]X0	
Planet Code	]X0	
Postal-4i	]X0	
Postnet	]X0	

ASCII Conversion Chart (Code Page 1252)

In keyboard applications, ASCII Control Characters can be represented in 3 different ways, as shown below. The CTRL+X function is OS and application dependent. The following table lists some commonly used Microsoft functionality. This table applies to U.S. style keyboards. Certain characters may differ depending on your Country Code/PC regional settings.

Non-printable characters		ASCII control		Keyboard Control + ASCII (CTRL+X) Mode		
DEC	HEX	Char		Windows Mode Control + X Mode On (KBDCAS2)		
DEC	HEX	Char	Control + X Mode Off (KBDCAS0)	CTRL + X	CTRL + X function	
0	00	NUL	Reserved	CTRL+ @		
1	01	SOH	NP Enter	CTRL+ A	Select all	
2	02	STX	Caps Lock	CTRL+ B	Bold	
3	03	ETX	ALT Make	CTRL+ C	Copy	
4	04	EOT	ALT Break	CTRL+ D	Bookmark	
5	05	ENQ	CTRL Make	CTRL+ E	Center	
6	06	ACK	CTRL Break	CTRL+ F	Find	
7	07	BEL	Enter / Ret	CTRL+ G		
8	08	BS	(Apple Make)	CTRL+ H	History	
9	09	HT	Tab	CTRL+ I	Italic	
10	0A	LF	(Apple Break)	CTRL+ J	Justify	
11	0B	VT	Tab	CTRL+ K	hyperlink	
12	0C	FF	Delete	CTRL+ L	list, left align	
13	0D	CR	Enter / Ret	CTRL+ M		
14	0E	SO	Insert	CTRL+ N	New	
15	0F	SI	ESC	CTRL+ O	Open	
16	10	DLE	F11	CTRL+ P	Print	
17	11	DC1	Home	CTRL+ Q	Quit	
18	12	DC2	PrtScn	CTRL+ R		
19	13	DC3	Backspace	CTRL+ S	Save	
20	14	DC4	Back Tab	CTRL+ T		
21	15	NAK	F12	CTRL+ U		
22	16	SYN	F1	CTRL+ V	Paste	
23	17	ETB	F2	CTRL+ W		

Non-printable characters		ASCII control	Keyboard Control + ASCII (CTRL+X) Mode		
DEC	HEX	Char	Control + X Mode Off (KBDCAS0)	Windows Mode Control + X Mode On (KBDCAS2)	
				CTRL + X	CTRL + X function
24	18	CAN	F3	CTRL+ X	
25	19	EM	F4	CTRL+ Y	
26	1A	SUB	F5	CTRL+ Z	
27	1B	ESC	F6	CTRL+ [
28	1C	FS	F7	CTRL+ \	
29	1D	GS	F8	CTRL+]	
30	1E	RS	F9	CTRL+ ^	
31	1F	US	F10	CTRL+ -	
127	7F	␣	NP Enter		

Lower ASCII Reference Table

Note: Windows Code page 1252 and lower ASCII use the same characters.

Printable Characters								
DEC	HEX	Character	DEC	HEX	Character	DEC	HEX	Character
32	20	<SPACE>	64	40	@	96	60	`
33	21	!	65	41	A	97	61	a
34	22	"	66	42	B	98	62	b
35	23	#	67	43	C	99	63	c
36	24	\$	68	44	D	100	64	d
37	25	%	69	45	E	101	65	e
38	26	&	70	46	F	102	66	f
39	27	'	71	47	G	103	67	g
40	28	(	72	48	H	104	68	h
41	29	)	73	49	I	105	69	i
42	2A	*	74	4A	J	106	6A	j
43	2B	+	75	4B	K	107	6B	k
44	2C	,	76	4C	L	108	6C	l
45	2D	-	77	4D	M	109	6D	m
46	2E	.	78	4E	N	110	6E	n
47	2F	/	79	4F	O	111	6F	o
48	30	0	80	50	P	112	70	p
49	31	1	81	51	Q	113	71	q
50	32	2	82	52	R	114	72	r
51	33	3	83	53	S	115	73	s
52	34	4	84	54	T	116	74	t
53	35	5	85	55	U	117	75	u
54	36	6	86	56	V	118	76	v
55	37	7	87	57	W	119	77	w
56	38	8	88	58	X	120	78	x
57	39	9	89	59	Y	121	79	y
58	3A	:	90	5A	Z	122	7A	z
59	3B	;	91	5B	[	123	7B	{
60	3C	<	92	5C	\	124	7C	|
61	3D	=	93	5D	]	125	7D	}
62	3E	>	94	5E	^	126	7E	~
63	3F	?	95	5F	_	127	7F	␣

Extended ASCII Characters					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
128	80	€	Ç	up arrow ↑	0x48
129	81		ü	down arrow ↓	0x50
130	82	,	é	right arrow →	0x4B
131	83	f	â	left arrow ←	0x4D
132	84	„	ä	Insert	0x52
133	85	...	à	Delete	0x53
134	86	†	á	Home	0x47
135	87	‡	ç	End	0x4F
136	88	^	ê	Page Up	0x49
137	89	%o	ë	Page Down	0x51
138	8A	Š	è	Right ALT	0x38
139	8B	‹	ï	Right CTRL	0x1D
140	8C	Œ	î	Reserved	n/a
141	8D		ì	Reserved	n/a
142	8E	Ž	Ä	Numeric Keypad Enter	0x1C
143	8F		Å	Numeric Keypad /	0x35
144	90		É	F1	0x3B
145	91	‘	æ	F2	0x3C
146	92	’	Æ	F3	0x3D
147	93	“	ô	F4	0x3E
148	94	”	ö	F5	0x3F
149	95	•	ò	F6	0x40
150	96	–	ù	F7	0x41
151	97	—	û	F8	0x42
152	98	˜	ÿ	F9	0x43
153	99	™	Ö	F10	0x44
154	9A	š	Ü	F11	0x57
155	9B	›	ø	F12	0x58
156	9C	œ	£	Numeric Keypad +	0x4E
157	9D		¥	Numeric Keypad -	0x4A
158	9E	ž	Þ	Numeric Keypad *	0x37
159	9F	ÿ	f	Caps Lock	0x3A
160	A0		á	Num Lock	0x45
161	A1	ı	í	Left Alt	0x38
162	A2	ç	ó	Left Ctrl	0x1D
163	A3	£	ú	Left Shift	0x2A
164	A4	¤	ñ	Right Shift	0x36
165	A5	¥	Ñ	Print Screen	n/a
166	A6	ı	ª	Tab	0x0F
167	A7	§	º	Shift Tab	0x8F
168	A8	ˆ	¿	Enter	0x1C
169	A9	©	ƒ	Esc	0x01
170	AA	ª	¬	Alt Make	0x36
171	AB	«	½	Alt Break	0xB6
172	AC	¬	¼	Control Make	0x1D
173	AD		ı	Control Break	0x9D
174	AE	®	«	Alt Sequence with 1 Character	0x36
175	AF	–	»	Ctrl Sequence with 1 Character	0x1D
176	B0	º	█		
177	B1	±	█		
178	B2	²	█		

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
179	B3	³	|		
180	B4	´	|		
181	B5	µ	|		
182	B6	¶	|		
183	B7	·	|		
184	B8	¸	|		
185	B9	¹	|		
186	BA	º	|		
187	BB	»	|		
188	BC	¼	|		
189	BD	½	|		
190	BE	¾	|		
191	BF	¿	|		
192	C0	À	|		
193	C1	Á	|		
194	C2	Â	|		
195	C3	Ã	|		
196	C4	Ä	|		
197	C5	Å	|		
198	C6	Æ	|		
199	C7	Ç	|		
200	C8	È	|		
201	C9	É	|		
202	CA	Ê	|		
203	CB	Ë	|		
204	CC	Ì	|		
205	CD	Í	|		
206	CE	Î	|		
207	CF	Ï	|		
208	D0	Ð	|		
209	D1	Ñ	|		
210	D2	Ò	|		
211	D3	Ó	|		
212	D4	Ô	|		
213	D5	Õ	|		
214	D6	Ö	|		
215	D7	×	|		
216	D8	Ø	|		
217	D9	Ù	|		
218	DA	Ú	|		
219	DB	Û	|		
220	DC	Ü	|		
221	DD	Ý	|		
222	DE	Þ	|		
223	DF	ß	|		
224	E0	à	α		
225	E1	á	β		
226	E2	â	Γ		
227	E3	ã	π		
228	E4	ä	Σ		
229	E5	å	σ		
230	E6	æ	μ		

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
231	E7	ç	τ		
232	E8	è	ϕ		
233	E9	é	⊖		
234	EA	ê	Ω		
235	EB	ë	δ		
236	EC	ì	∞		
237	ED	í	φ		
238	EE	î	ε		
239	EF	ï	∩		
240	F0	ð	≡		
241	F1	ñ	±		
242	F2	ò	≥		
243	F3	ó	≤		
244	F4	ô	∫		
245	F5	õ	∫		
246	F6	ö	÷		
247	F7	÷	≈		
248	F8	ø	°		
249	F9	ù	·		
250	FA	ú	·		
251	FB	û	√		
252	FC	ü	ⁿ		
253	FD	ý	²		
254	FE	þ	■		
255	FF	ÿ			

ISO 2022/ISO 646 Character Replacements

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code page with which the bar codes were created. The data characters should then appear properly.

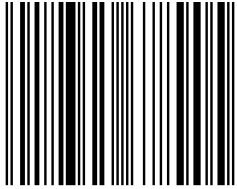
Code Page Selection Method/Country	Standard	Keyboard Country	Honeywell Code Page Option
United States (standard ASCII)	ISO/IEC 646-IRV	n/a	1
Automatic National Character Replacement	ISO/IEC 2022	n/a	2 (default)
Binary Code page	n/a	n/a	3
<i>Default "Automatic National Character replacement" will select the below Honeywell Code Page options for Code 128, Code 39 and Code 93.</i>			
United States	ISO/IEC 646-06	0	1
Canada	ISO /IEC 646-121	54	95
Canada	ISO /IEC 646-122	18	96
Japan	ISO/IEC 646-14	28	98
China	ISO/IEC 646-57	92	99
Great Britain (UK)	ISO /IEC 646-04	7	87
France	ISO /IEC 646-69	3	83

Code Page Selection Method/Country	Standard	Keyboard Country	Honeywell Code Page Option
Germany	ISO/IEC646-21	4	84
Switzerland	ISO /IEC 646-CH	6	86
Sweden / Finland (extended Annex C)	ISO/IEC 646-11	2	82
Ireland	ISO /IEC 646-207	73	97
Denmark	ISO/IEC 646-08	8	88
Norway	ISO/IEC 646-60	9	94
Italy	ISO/IEC 646-15	5	85
Portugal	ISO/IEC 646-16	13	92
Spain	ISO/IEC 646-17	10	90
Spain	ISO/IEC 646-85	51	91

Dec			35	36	64	91	92	93	94	96	123	124	125	126
Hex			23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
US	0	1	#	\$	@	[	\	\]	^	`	{	|	}	~
CA	54	95	#	\$	à	â	ç	ê	î	ô	é	ù	è	û
CA	18	96	#	\$	à	â	ç	ê	É	ô	é	ù	è	û
JP	28	98	#	\$	@	[	¥	]	^	`	{	|	}	.
CN	92	99	#	¥	@	[	\	\]	^	`	{	|	}	.
GB	7	87	£	\$	@	[	\	\]	^	`	{	|	}	~
FR	3	83	£	\$	à	°	ç	§	^	μ	é	ù	è	..
DE	4	84	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
CH	6	86	ù	\$	à	é	ç	ê	î	ô	ä	ö	ü	û
SE/FI	2	82	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
DK	8	88	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
NO	9	94	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	-
IE	73	97	£	\$	Ó	É	Í	Ú	Á	ó	é	í	ú	á
IT	5	85	£	\$	§	°	ç	é	^	ù	à	ò	è	ì
PT	13	92	#	\$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
ES	10	90	#	\$	§	í	Ñ	¿	^	`	°	ñ	ç	~
ES	51	91	#	\$	.	í	Ñ	Ç	¿	`	.	ñ	ç	..
COUNTRY	Country Keyboard	Honeywell CodePage	ISO / IEC 646 National Character Replacements											

Sample Symbols

UPC-A



012345678905

Interleaved 2 of 5



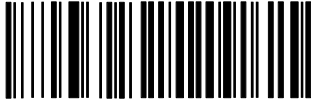
1234567890

EAN-13



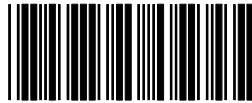
9 780330 290951

Code 128



Code 128

Code 39



BC321

Codabar



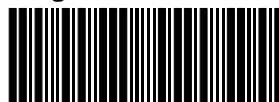
A13579B

Code 93



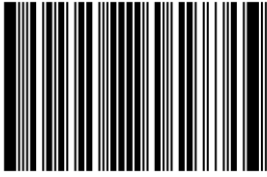
123456-9\$

Straight 2 of 5 Industrial



123456

Matrix 2 of 5



01234567890

GS1 DataBar



(01)00123456789012

PDF417



Car Registration

Data Matrix



Test Symbol

QR Code



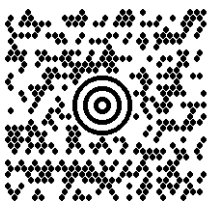
Numbers

Aztec



Package Label

MaxiCode



Test Message

Micro PDF417



Test Message

Postnet



4-CB (4-State Customer Bar Code)



01,234,567094,987654321,01234567891

ID-tag (UPU 4-State)



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