

HH492

Wireless Area-Imaging Scanner

User Guide

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TABLE OF CONTENTS

Customer Support.....	x
Technical Assistance	x
Product Service and Repair	x
Limited Warranty	x
 Chapter 1 - GET STARTED	 1
About This Manual.....	1
Unpack Your Device.....	1
Connect the Device.....	2
Connect with USB.....	2
Mount a Charge Base	2
Reading Techniques.....	3
Menu Bar Code Security Settings.....	3
Set Custom Defaults	3
Reset the Custom Defaults	4
 Chapter 2 - PROGRAM THE INTERFACE	 5
Introduction.....	5
 CHAPTER 3 - CORDLESS SYSTEM OPERATION	 6
How the Cordless Communication Base Works.....	6
Link the Scanner to a Communication Base.....	6
Unlink/Replace a Linked Scanner	6
RF (Radio Frequency) Module Operation	7
System Conditions	7

Link Process.....	7
Scanner Is Out of Range	7
Scanner Is Moved Back Into Range.....	7
Out of Range and Back into Range with Batch Mode On.....	7
About the Battery.....	8
Charge Information.....	8
Battery Recommendations	8
Safety Precautions for Lithium Batteries	9
Proper Disposal of the Battery.....	9
Beeper and LED Sequences and Meaning	9
Scanner LED Sequences and Meaning	10
Base LED Meaning.....	10
Reset Scanner.....	10
Batch Mode.....	11

Chapter 4 - INPUT/OUTPUT SETTINGS 12

Power Up Beeper	12
Beep on BEL Character.....	12
Trigger Click.....	12
Good Read and Error Indicators	13
Beeper – Good Read	13
Beeper Volume – Good Read.....	13
Beeper Pitch – Good Read.....	13
Beeper Pitch – Error.....	14
Beeper Duration – Good Read	14
LED – Good Read.....	14
Number of Beeps – Good Read	15
Number of Beeps – Error	15
Good Read Delay.....	15
User-Specified Good Read Delay	16
Manual Trigger Mode	16
LED Illumination - Manual Trigger.....	16
Read Time-Out.....	17
Presentation Mode	17

Presentation Centering	17
Poor Quality Codes	19
Poor Quality 1D Codes.....	19
Poor Quality PDF Codes.....	19
CodeGate®	20
Hands Free Time-Out	20
Reread Delay.....	20
User-Specified Reread Delay	21
2D Reread Delay	21
Illumination Lights	22
Aimer Delay	22
User-Specified Aimer Delay	22
Aimer Mode.....	23
Centering	23
No Read	25
Video Reverse	25
Working Orientation	26

Chapter 5 - DATA EDIT 27

Prefix/Suffix Overview	27
Points to Keep In Mind	27
To Add a Prefix or Suffix:	28
Example: Add a Tab Suffix to All Symbolologies.....	28
Clear One or All Prefixes or Suffixes	28
Add a Carriage Return Suffix to All Symbolologies	29
Prefix Selections	29
Suffix Selections	29
Intercharacter, Interfunction, and Intermesssage Delays	30
Intercharacter Delay	30
User Specified Intercharacter Delay	30
Interfunction Delay	32
Intermesssage Delay	32

CHAPTER 6 - DATA FORMAT..... 33

Data Format Editor Introduction.....	33
Show Data Format.....	34
Add a Data Format	34
Other Programming Selections	35
Data Format Editor Commands	35
Send Commands	36
Move Commands	38
Search Commands.....	39
Miscellaneous Commands	41
Data Formatter	44
Primary/Alternate Data Formats.....	45

CHAPTER 7 - SYMBOLOGIES 46

All Symbolologies	47
Message Length Description	47
Codabar	48
Codabar On/Off	48
Codabar Start/Stop Characters.....	48
Codabar Check Character	48
Codabar Concatenation	49
Codabar Message Length.....	50
Code 39.....	50
Code 39 On/Off.....	50
Code 39 Start/Stop Characters	50
Code 39 Check Character	51
Code 39 Message Length	51
Code 39 Append.....	52
Code 32 Pharmaceutical (PARAF)	52
Full ASCII	52
Code 39 Code Page.....	53
Interleaved 2 of 5	53
Interleaved 2 of 5 On/Off	53
Check Digit.....	54
Interleaved 2 of 5 Message Length.....	54

NEC 2 of 5.....	54
NEC 2 of 5 On/Off.....	55
Check Digit.....	55
NEC 2 of 5 Message Length	55
Code 93.....	56
Code 93 On/Off.....	56
Code 93 Message Length	56
Code 93 Append.....	56
Code 93 Code Page.....	57
Straight 2 of 5 Industrial (three-bar start/stop)	57
Straight 2 of 5 Industrial On/Off.....	57
Straight 2 of 5 Industrial Message Length	57
Straight 2 of 5 IATA (two-bar start/stop)	58
Straight 2 of 5 IATA On/Off	58
Straight 2 of 5 IATA Message Length.....	58
Matrix 2 of 5.....	58
Matrix 2 of 5 On/Off.....	58
Matrix 2 of 5 Message Length	59
Code 11.....	59
Code 11 On/Off.....	59
Check Digits Required	59
Code 11 Message Length	59
Code 128.....	60
Code 128 On/Off	60
ISBT 128 Concatenation.....	60
Code 128 Message Length	60
Code 128 Append	61
Code 128 Code Page	61
GS1-128.....	61
GS1-128 On/Off.....	62
GS1-128 Message Length.....	62
UPC-A.....	62
UPC-A On/Off.....	62
UPC-A Check Digit.....	62

UPC-A Number System.....	63
UPC-A Addenda	63
UPC-A Addenda Required.....	63
UPC-A Addenda Separator	64
UPC-A/EAN-13 with Extended Coupon Code.....	64
Coupon GS1 DataBar Output.....	64
UPC-E0.....	65
UPC-E0 On/Off.....	65
UPC-E0 Expand	65
UPC-E0 Addenda Required.....	65
UPC-E0 Addenda Separator	66
UPC-E0 Check Digit.....	66
UPC-E0 Leading Zero.....	66
UPC-E0 Addenda.....	66
UPC-E1	67
EAN/JAN-13.....	67
EAN/JAN-13 On/Off.....	67
Convert UPC-A to EAN-13.....	67
EAN/JAN-13 Check Digit.....	68
EAN/JAN-13 Addenda	68
EAN/JAN-13 Addenda Required.....	68
EAN/JAN-13 Addenda Separator	68
ISBN Translate	69
EAN/JAN-8	69
EAN/JAN-8 On/Off.....	69
EAN/JAN-8 Check Digit.....	69
EAN/JAN-8 Addenda	70
EAN/JAN-8 Addenda Required.....	70
EAN/JAN-8 Addenda Separator.....	70
MSI	70
MSI On/Off.....	71
MSI Check Character	71
MSI Message Length.....	72
GS1 DataBar Omnidirectional.....	72

GS1 DataBar Omnidirectional On/Off.....	72
GS1 DataBar Limited	72
GS1 DataBar Limited On/Off	72
GS1 DataBar Expanded	73
GS1 DataBar Expanded On/Off	73
GS1 DataBar Expanded Message Length.....	73
Codablock A.....	73
Codablock A On/Off	73
Codablock A Message Length.....	74
Codablock F.....	74
Codablock F On/Off	74
Codablock F Message Length.....	74
PDF417.....	74
PDF417 On/Off.....	75
PDF417 Message Length	75
MacroPDF417	75
MicroPDF417	75
MicroPDF417 On/Off.....	75
MicroPDF417 Message Length	76
GS1 Composite Codes.....	76
UPC/EAN Version.....	76
GS1 Composite Code Message Length.....	77
GS1 Emulation	77
TCIF Linked Code 39 (TLC39)	78
QR Code.....	78
QR Code On/Off.....	78
QR Code Message Length	78
QR Code Append	79
QR Code Page	79
Data Matrix.....	80
Data Matrix On/Off.....	80
Data Matrix Message Length	80
Data Matrix Code Page.....	80
MaxiCode.....	81

MaxiCode On/Off	81
MaxiCode Message Length.....	81
Aztec Code.....	81
Aztec Code On/Off.....	81
Aztec Code Message Length.....	82
Aztec Append.....	82
Aztec Code Page.....	83
Chinese Sensible (Han Xin) Code	83
Han Xin Code On/Off.....	83
Han Xin Code Message Length	83
Postal Codes - 2D.....	84
Single 2D Postal Codes:	84
Combination 2D Postal Codes:	85
Planet Code Check Digit.....	86
Postnet Check Digit.....	86
Australian Post Interpretation.....	87
Postal Codes - Linear.....	87
China Post (Hong Kong 2 of 5).....	87
Korea Post.....	88

Chapter 8 - UTILITIES 90

Add a Test Code I.D. Prefix to All Symbologies	90
Show Software Revision.....	90
Show Data Format.....	90
Test Menu.....	90
Reset the Factory Defaults.....	91

Chapter 9 - SECURITY 92

System Architecture	92
Connect with USB.....	92
Security Checklist	93
Security Updates and Service Packs	95

Chapter 10 - PRODUCT SPECIFICATIONS 96

H492Cordless Scanner Product Specifications	96
Communication Base Product Specifications.....	97
Depth of Field Charts	98
Typical Performance.....	98
Guaranteed Performance	99
Standard Cable Pinouts	99
USB.....	100
Required Safety Labels	101
 Chapter 11 - MAINTENANCE AND TROUBLESHOOTING	 102
Repairs	102
Maintenance	102
Clean the Scanner	102
Replace Cables in Cordless Systems.....	103
Replace an Interface Cable in a Base.....	103
Troubleshoot a Cordless System.....	104
Troubleshoot a Base	104
Troubleshoot a Cordless Scanner	104
 Appendix A - REFERENCE CHARTS	 105
Symbology Charts	105
Linear Symbologies	105
2D Symbologies.....	106
Postal Symbologies.....	107
ASCII Conversion Chart (Code Page 1252).....	108
Lower ASCII Reference Table.....	109
ISO 2022/ISO 646 Character Replacements.....	110
Keyboard Key References.....	112
 SAMPLE SYMBOLS	 113
 PROGRAMMING CHART	 115

Customer Support

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 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**.

GET STARTED

About This Manual

This User Guide provides installation and programming instructions for the HH492 cordless area- imaging scanners. Product specifications, dimensions, warranty, and customer support information are also included.

Note: Honeywell bar code 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.

Unpack Your Device

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

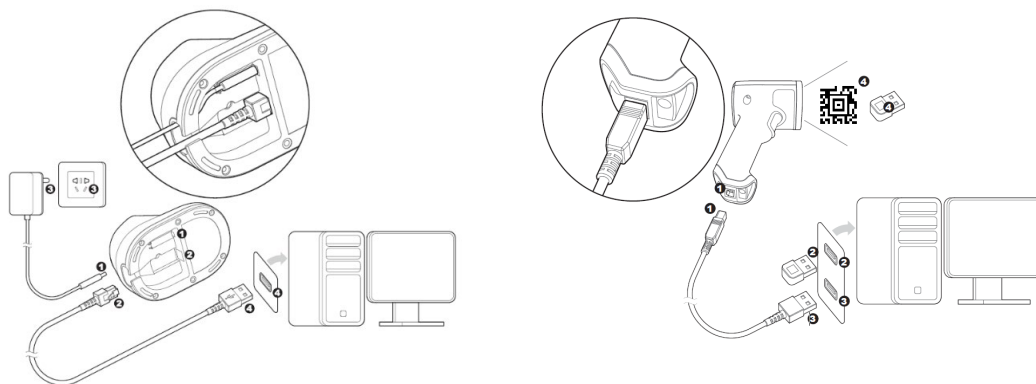
- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

Connect the Device

Connect with USB

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

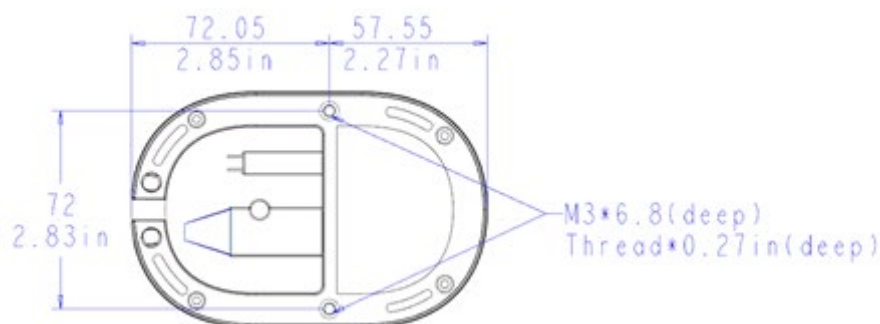
1. Connect the appropriate interface cable to the device first, then to the computer.



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

1. If you connect a HH492 Base, make sure the cables are secured in the wire ways in the bottom of the cordless base and the base sits flat on a horizontal surface.
2. Verify the cordless base operation by scanning a bar code from the Sample Symbols in the back of this manual.
3. The unit defaults to a USB HID. Refer to page 14 for other USB terminal settings.

Mount a Charge Base



Reading Techniques

The scanner has a view finder that projects a bright red aiming dot that corresponds to the scanner's horizontal field of view. The aiming dot should be centered over the bar code, but it can be positioned in any direction for a good read.

Linear bar code



2D Matrix symbol



The aiming dot is smaller when the scanner is closer to the code and larger when it is farther from the code. Symbolologies with smaller bars or elements (mil size) should be read closer to the unit. Symbolologies with larger bars or elements (mil size) should be read farther from the unit. To read single or multiple symbols (on a page or on an object), hold the scanner at an appropriate distance from the target, press the trigger, and center the aiming dot on the symbol. If the code being scanned is highly reflective (e.g., laminated), it may be necessary to tilt the code up 15° to 18° to prevent unwanted reflection.

Menu Bar Code Security Settings

Honeywell scanners are programmed by scanning menu bar codes or by sending serial commands to the scanner. If you want to restrict the ability to scan menu codes, you can use the Menu Bar Code Security settings. Please contact the nearest technical support office (see [Customer Support](#) on page xiii) for further information.

Set Custom Defaults

You can create a set of menu commands as your own, custom defaults. To do so, scan the **Set Custom Defaults** bar code below before scanning the menu commands for your custom defaults. If a menu command requires scanning numeric codes from the [programming chart](#), then a **Save** code, that entire sequence will be saved to your custom defaults. When you have entered all the commands you want to save for your custom defaults, scan the **Save Custom Defaults** bar code.



Note: You may have a series of custom settings and want to correct a single setting. To do so, just scan the new setting to overwrite the old one. For example, if you had previously saved the setting for Beeper Volume at Low to your custom defaults, and decide you want the beeper volume set to High, just scan the **Set Custom Defaults** bar code, then scan the **Beeper Volume High** menu code, and then **Save Custom Defaults**. The rest of the custom defaults will remain, but the beeper volume setting will be updated.

Reset the Custom Defaults

If you want the custom default settings restored to your scanner, scan the **Activate Custom Defaults** bar code below. This is the recommended default bar code for most users. It resets the scanner to the custom default settings. If there are no custom defaults, it will reset the scanner to the factory default settings. Any settings that have not been specified through the custom defaults will be defaulted to the factory default settings.



PROGRAM THE INTERFACE

Introduction

HH492 communication base only supports **USB HID** port. No other interface supported.



CORDLESS SYSTEM OPERATION

How the Cordless Communication Base Works

A cordless communication base provides the link between the cordless scanner and the host system. The base contains an interface assembly and an RF communication module. The RF communication module performs the data exchange between the cordless scanner and the interface assembly. The control assembly coordinates the central interface activities including transmitting/receiving data to/from the host system.

Link the Scanner to a Communication Base

Turn off power before connecting a base, then power up the computer once the base is fully connected. When the base is connected and powered up, use scanner to scan the 2D MAC code in the bottom label of base, you'll see green LED in scanner flash and two beeps when connect successfully.

Unlink/Replace a Linked Scanner

If the base has a scanner linked to it, that scanner must be unlinked before a new scanner can be linked. Once the previous scanner is unlinked, it will no longer communicate with the base. Scan the Unlink Scanner bar code to unlink a scanner.

After previous scanner unlinked, use new scanner to scan the MAC barcode in bottom label of base to start a new link.



RF (Radio Frequency) Module Operation

The cordless system uses a two-way Bluetooth® radio utilizing adaptive frequency hopping (AFH) to transmit and receive data between the scanner and the base. Designed for point-to-point applications, the radio operates using a license free ISM band, which sends relatively small data packets at a fast data rate over a radio signal with randomly changing frequencies, makes the cordless system highly responsive to a wide variety of data collection applications and resistant to noisy RF environments. The base provides a communication range of 100 feet (30m) between the scanner and base.

System Conditions

The components of the cordless system interact in specific ways as you associate a scanner to a base, as you move a scanner out of range, bring a scanner back in range, or swap scanners between two cordless systems. The following information explains the cordless system operating conditions.

Link Process

Once a scanner scans the 2D MAC code in base label, a new link will start and you'll hear 2 beeps when it's linked.

Scanner Is Out of Range

The cordless scanner is in communication with its base, even when it is not transmitting bar code data. Whenever the scanner can't communicate with the base for a few seconds, it is out of range. If the scanner is out of range and you scan a bar code, the scanner issues an error tone indicating no communication with the base.

Scanner Is Moved Back Into Range

The scanner relinks if the scanner comes back into range. If the scanner relinks, you will hear 2 chirps when the relinking process is complete.

Out of Range and Back into Range with Batch Mode On

The scanner may store a number of symbols (approximately 500 U.P.C. symbols; others may vary) when it is out of range and then send them to the base when back in range (see [Batch Mode](#)).

You will not hear a communication error tone in this mode, but you will hear a short buzz when you pull the trigger if the radio communication is not working. Once the radio connection is made, the scanner produces a series of beeps while the data is being transferred to the base.

About the Battery



Warning: There is a danger of explosion if the batteries are incorrectly replaced. Replace the batteries with only the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the recycle program for batteries as directed by the governing agency for the country where the batteries are to be discarded.

Power is supplied to the cordless scanner by a rechargeable battery that is integrated in the scanner handle. Batteries are shipped approximately 30% to 60% charged. The battery should be charged for a minimum of 4 hours before initial use to ensure optimal performance.

Charge Information

The battery is designed to charge while the scanner is positioned in the cordless base unit. Refer to [Scanner LED Sequences and Meaning](#).

Place the scanner in the base that is connected to an appropriate power supply. Use only a Listed Limited Power Source (LPS) or Class 2 type power supply with output rated 5 to 5.2Vdc, 1A.

Note: *If you are powering the base through the interface cable (for example, a USB cable) and not using an external power supply plugged into the aux port, the current available for charging is reduced and charge times are increased.*

Battery Recommendations

- The battery is a lithium ion cell and can be used without a full charge, and can also be charged without fully discharging, without impacting the battery life. There is no need to perform any charge/discharge conditioning on this type of battery.
- Keep the base connected to power when the host is not in use.
- Replace a defective battery immediately since it could damage the scanner.
- Although your battery can be recharged many times, it will eventually be depleted.
- If you are not sure if the battery or charger is working properly, send it to Honeywell International Inc. or an authorized service center for inspection. Refer to [Customer Support](#) for additional information.



Caution: Use only Honeywell Li-ion battery packs in this device. Use of any non- Honeywell battery may result in damage not covered by the warranty.

Safety Precautions for Lithium Batteries

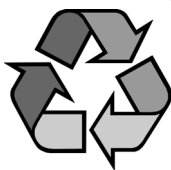
- Do not place batteries in fire or heat the batteries.
- Do not store batteries near fire or other high temperature locations.
- Do not store or carry batteries together with metal objects.
- Do not expose batteries to water or allow the batteries to get wet.
- Do not connect (short) the positive and negative terminals, of the batteries, to each other with any metal object.
- Do not pierce, strike or step on batteries or subject batteries to strong impacts or shocks.
- Do not disassemble or modify batteries.



Caution: Danger of explosion if batteries are incorrectly replaced.

Dispose of used batteries according to the recycle program for batteries as directed by the governing agency for the country where the batteries are to be discarded.

Proper Disposal of the Battery



When the battery has reached the end of its useful life, the battery should be disposed of by a qualified recycler or hazardous materials handler. Do not incinerate the battery or dispose of the battery with general waste materials. You may send the scanner's battery to us. (postage paid). The shipper is responsible for complying with all federal, state, and local laws and regulations related to the packing, labeling, manifesting, and shipping of spent batteries. Contact [Customer Support](#) for recycling or disposal information. Since you may find that your cost of returning the batteries significant, it may be more cost effective to locate a local recycle / disposal company.

Beeper and LED Sequences and Meaning

The scanner contains LEDs on the rear of the unit that indicates linking status, decoding state, and battery condition. The base has LEDs on the top of the unit that indicates its power up. The red LED = error; green LED = success of any type. Scanners have audible indicators as well: 1 razz or error tone = error; 2 beeps = menu change; 1 beep = all other successes.

The table below lists the indication and cause of the LED indication, beeps, and vibrations for the scanner.

Scanner LED Sequences and Meaning

HH492 Scanner		
LED Indication	Beeper Indication	Cause
Normal Operating		
Red on	None	Battery low
Green Flash	1 beep	Successful communication or linking
None	Razz or error tone	Failed communication or unlink
Green Flash, 1s on, 1s off	None	Pre-charge or Charging
Green On continuously	None	Charge done
Red Flash, 1s on, 1s off	None	Charge error
Menu Operating		
Green Flash	2 beeps	Successful menu change
Red, blinking	Razz or error tone	Unsuccessful menu change

Base LED Meaning

The base contains a green LED to indicator base power status.

LED Indication	Cause
Green on continuously	Base power on successfully
Green off	Base has no power input

Reset Scanner

Scanning this bar code reboots the scanner and causes it to relink with the base.



RESET_
Reset Scanner

Note:

Batch Mode

Note: *Batch Mode is only supported by the Honeywell Communication Base.*

Batch mode is used to store bar code data when a scanner is out of range of its base, or when performing inventory. The data is transmitted to the base once the scanner is back in range.

Automatic Batch Mode stores bar code data when the scanner is out of range of the base. The data is automatically transmitted to the base once the scanner is back in range. When the scanner's buffer space is full, any bar codes scanned generate an error tone. In order to scan bar codes again, the scanner must be moved back into range of the base so data can be transmitted.

Default = Batch Mode Off.



INPUT/OUTPUT SETTINGS

Power Up Beeper

The scanner can be programmed to beep when it's powered up. If you are using a cordless system, the base can also be programmed to beep when it is powered up. Scan the **Off** bar code(s) if you don't want a power up beep. *Default = Power Up*

Beeper On - Scanner.



BEPPWR0.
**Power Up Beeper Off -
Scanner**



BEPPWR1.
*** Power Up Beeper On -
Scanner**

Beep on BEL Character

You may wish to force the scanner to beep upon a command sent from the host. If you scan the **Beep on BEL On** bar code below, the scanner will beep every time a BEL character is received from the host. *Default = Beep on BEL Off.*



BELBEP0.
***Beep on BEL Off**



BELBEP1.
Beep on BEL On

Trigger Click

To hear an audible click every time the scanner trigger is pressed, scan the **Trigger Click On** bar code below. Scan the **Trigger Click Off** code if you don't wish to hear the click. (This feature has no effect on serial or automatic triggering.) *Default = Trigger Click Off.*



BEPTRG0.
*Trigger Click Off



BEPTRG1.
Trigger Click On

Good Read and Error Indicators

Beeper – Good Read

The beeper may be programmed **On** or **Off** in response to a good read. Turning this option off, only turns off the beeper response to a good read indication. All error and menu beeps are still audible. *Default = Beeper - Good Read On.*



BEPBEP0.
Beeper - Good Read Off



BEPBEP1.
* Beeper - Good Read On

Beeper Volume – Good Read

The beeper volume codes modify the volume of the beep the scanner emits on a good read. *Default = High.*



BEPLVL1.
Low



BEPLVL2.
Medium



BEPLVL3.
* High



BEPLVL0.
Off

Beeper Pitch – Good Read

The beeper pitch codes modify the pitch (frequency) of the beep the scanner emits on a good read. *Default = Medium.*



BEPFQ11600.
Low (1600 Hz)



Beeper Pitch – Error

The beeper pitch codes modify the pitch (frequency) of the sound the scanner emits when there is a bad read or error. *Default = Razz.*



Beeper Duration – Good Read

The beeper duration codes modify the length of the beep the scanner emits on a good read. *Default = Normal.*



LED – Good Read

The LED indicator can be programmed **On** or **Off** in response to a good read. *Default = On.*



Number of Beeps – Good Read

The number of beeps of a good read can be programmed from 1 - 9. The same number of beeps will be applied to the beeper and LED in response to a good read. For example, if you program this option to have five beeps, there will be five beeps and five LED flashes in response to a good read. The beeps and LED flashes are in sync with one another. To change the number of beeps, scan the bar code below and then scan a digit (1-9) bar code and the **Save** bar code on the [Programming Chart](#). *Default = 1.*



Number of Beeps – Error

The number of beeps and LED flashes emitted by the scanner for a bad read or error can be programmed from 1 - 9. For example, if you program this option to have five error beeps, there will be five error beeps and five LED flashes in response to an error. To change the number of error beeps, scan the bar code below and then scan a digit (1-9) bar code and the **Save** bar code on the [Programming Chart](#). *Default = 1.*



Good Read Delay

This sets the minimum amount of time before the scanner can read another bar code. *Default = 0 ms (No Delay).*



User-Specified Good Read Delay

If you want to set your own length for the good read delay, scan the bar code below, then set the delay (from 0-30,000 milliseconds) by scanning digits from the [Programming Chart](#), then scanning **Save**.



Manual Trigger Mode

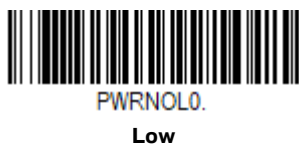
When in manual trigger mode, the scanner scans until a bar code is read, or until the trigger is released. *Default = Manual Trigger-Normal.*



LED Illumination - Manual Trigger

If you wish to set the illumination LED brightness, scan one of the bar codes below. This sets the LED illumination for the scanner when the trigger is pressed. *Default = High.*

Note: *The LEDs are like a flash on a camera. The lower the ambient light in the room, the brighter the LEDs need to be so the scanner can “see” the bar codes*



Read Time-Out

Use this selection to set a time-out (in milliseconds) of the scanner's trigger when using serial commands to trigger the scanner. Once the scanner has timed out, you can activate the scanner either by pressing the trigger or using a serial trigger command. After scanning the **Read Time-Out** bar code, set the time-out duration (from 0-300,000 milliseconds) by scanning digits on the [Programming Chart](#), then scanning **Save**. Default = 30,000 ms.



Presentation Mode

Presentation Mode uses ambient light to detect bar codes. The LED dims until a bar code is presented to the scanner, then the LED brightens to read the code. If the light level in the room is not high enough, Presentation Mode may not work properly.

Note: *If you are using a cordless charge base in Presentation Mode, the battery will not charge unless the power supply is plugged into the base's auxiliary power port.*

Scan the following bar code to program your scanner for Presentation Mode.



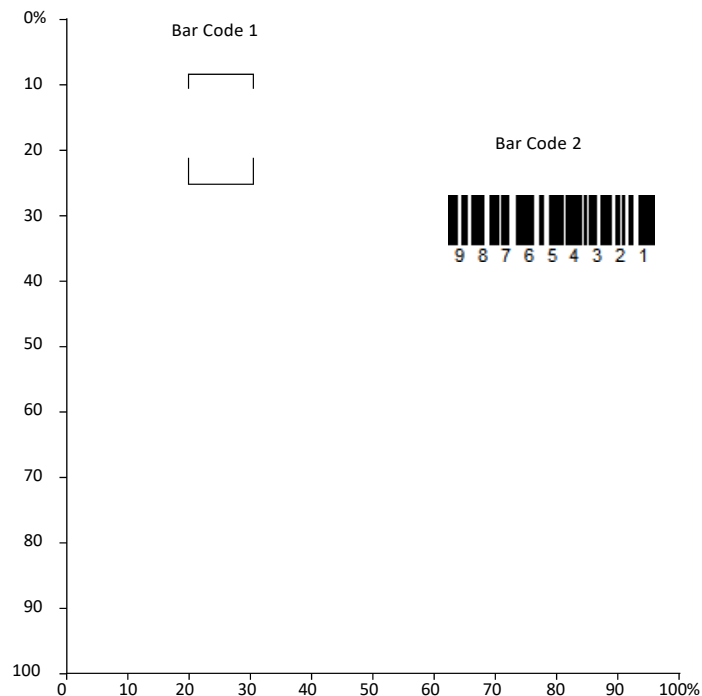
Presentation Centering

Use Presentation Centering to narrow the scanner's field of view when it is in the stand to make sure the scanner reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, Presentation Centering will insure that only the desired codes are read.

Note: *To adjust centering when the scanner is hand-held, see [Centering](#).*

If a bar code is not touched by a predefined window, it will not be decoded or output by the scanner. If Presentation Centering is turned on by scanning **Presentation Centering On**, the scanner only reads codes that pass through the centering window you specify using the **Top of Presentation Centering Window**, **Bottom of Presentation Centering Window**, **Left**, and **Right of Presentation Centering Window** bar codes.

In the example below, the white box is the centering window. The centering window has been set to 20% left, 30% right, 8% top, and 25% bottom. Since Bar Code 1 passes through the centering window, it will be read. Bar Code 2 does not pass through the centering window, so it will not be read.



Note: A bar code needs only to be touched by the centering window in order to be read. It does not need to pass completely through the centering window.

Scan **Presentation Centering On**, then scan one of the following bar codes to change the top, bottom, left, or right of the centering window. Then scan the percent you want to shift the centering window using digits on the [Programming Chart](#). Scan **Save**. Default Presentation Centering = 40% for Top and Left, 60% for Bottom and Right.





PDCTOP.
Top of Presentation
Centering Window



PDCBOT.
Bottom of Presentation
Centering Window



PDCLFT.
Left of Presentation
Centering
Window



PDCRGT.
Right of Presentation
Centering Window

Poor Quality Codes

Poor Quality 1D Codes

This setting improves the scanner's ability to read damaged or badly printed linear bar codes. When **Poor Quality 1D Reading On** is scanned, poor quality linear bar code reading is improved, but the scanner's snappiness is decreased, making it less aggressive when reading good quality bar codes. This setting does not affect 2D bar code reading. *Default = Poor Quality 1D Reading Off.*



DECLD1.
Poor Quality 1D Reading On



DECLD0.
* Poor Quality 1D Reading Off

Poor Quality PDF Codes

This setting improves the scanner's ability to read damaged or badly printed PDF codes by combining information from multiple images. It is useful when a complete bar code cannot be seen in one image. This setting does not affect 1D bar code reading. *Default = Poor Quality PDF Reading Off.*



PDFXPR1.
Poor Quality PDF Reading On



PDFXPR0.
* Poor Quality PDF Reading

CodeGate®

When CodeGate is **On**, the trigger is used to allow decoded data to be transmitted to the host system. The scanner remains on, scanning and decoding bar codes, but the bar code data is not transmitted until the trigger is pressed. When CodeGate is **Off**, bar code data is transmitted when it is decoded. *Default = CodeGate Off Out-of- Stand.*



AOSCGD0.
* CodeGate Off Out-of-Stand



AOSCGD1.
CodeGate On Out-of-Stand

Hands Free Time-Out

The Scan Stand and Presentation Modes are referred to as “hands free” modes. If the scanner’s trigger is pressed when using a hands free mode, the scanner changes to manual trigger mode. You can set the time the scanner should remain in manual trigger mode by setting the Hands Free Time-Out. Once the time-out value is reached, (if there have been no further trigger presses) the scanner reverts to the original hands free mode.

Scan the **Hands Free Time-Out** bar code, then scan the time-out duration (from 0- 300,000 milliseconds) from the [Programming Chart](#), and **Save**. *Default = 5,000 ms.*



TRGPT0.
Hands Free Time-Out

Reread Delay

This sets the time period before the scanner can read the *same* bar code a second time. Set a reread delay to protect against accidental rereads of the same bar code. Longer delays are effective in minimizing accidental rereads. Use shorter delays in applications where repetitive bar code scanning is required. Reread Delay only works when in [Presentation Mode](#). *Default = Medium.*



DLYRRD500.
Short (500 ms)



DLYRRD750.
* Medium (750 ms)



DLYRRD1000.
Long (1000 ms)



DLYRRD2000.
Extra Long (2000 ms)

User-Specified Reread Delay

If you want to set your own length for the reread delay, scan the bar code below, then set the delay (from 0-30,000 milliseconds) by scanning digits from the [Programming Chart](#), then scanning **Save**.



DLYRRD.
User-Specified Reread Delay

2D Reread Delay

Sometimes 2D bar codes can take longer to read than other bar codes. If you wish to set a separate Reread Delay for 2D bar codes, scan one of the programming codes that follows **2D Reread Delay Off** indicates that the time set for [Reread Delay](#) is used for both 1D and 2D bar codes. *Default = 2D Reread Delay Off.*



DLY2RR0.
* 2D Reread Delay Off



DLY2RR2000.
Medium (2000ms)



DLY2RR4000.
Extra Long (4000ms)



DLY2RR1000.
Short (1000ms)



DLY2RR3000.
Long (3000ms)

Illumination Lights

If you want the illumination lights on while reading a bar code, scan the **Lights On** bar code, below. However, if you want to turn just the lights off, scan the **Lights Off** bar code. *Default = Lights On.*

Note: *This setting does not affect the aimer light. The aiming light can be set using [Aimer Mode](#).*



Aimer Delay

The aimer delay allows a delay time for the operator to aim the scanner before the picture is taken. Use these codes to set the time between when the trigger is pulled and when the picture is taken. During the delay time, the aiming light will appear, but the LEDs won't turn on until the delay time is over. *Default = Off.*



User-Specified Aimer Delay

If you want to set your own length for the duration of the delay, scan the bar code below, then set the time-out by scanning digits (0 - 4,000 ms) from the [Programming Chart](#), then scan **Save**.



Aimer Mode

This feature allows you to turn the aimer so that it is always on, always off, or in pulse mode. Pulse mode provides the best scan performance. *Default = Pulse Mode.*



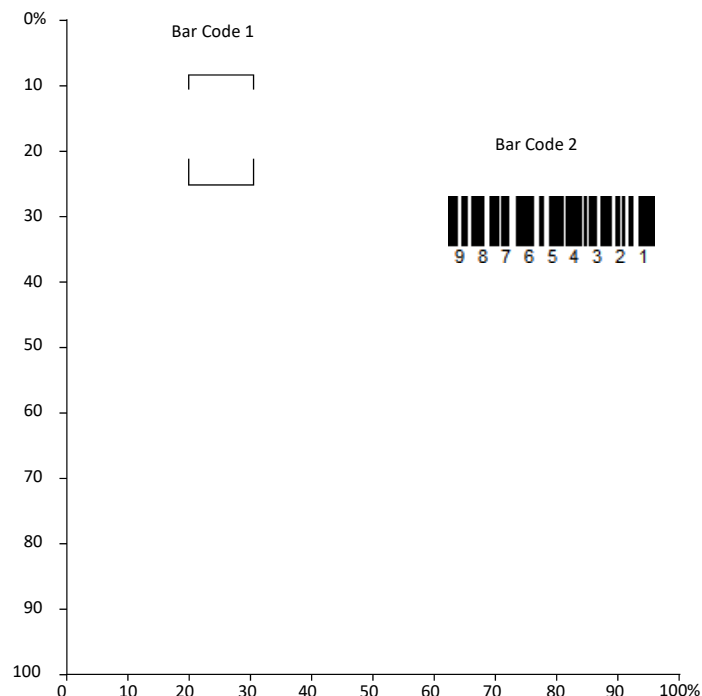
Centering

Use Centering to narrow the scanner's field of view to make sure that when the scanner is hand-held, it reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, centering will insure that only the desired codes are read.

Note: To adjust centering when the scanner is in the stand, see [Presentation Centering](#) (page 4-79).

If a bar code is not touched by a predefined window, it will not be decoded or output by the scanner. If centering is turned on by scanning **Centering On**, the scanner only reads codes that pass through the centering window you specify using the **Top of Centering Window**, **Bottom of Centering Window**, **Left**, and **Right of Centering Window** bar codes.

In the example below, the white box is the centering window. The centering window has been set to 20% left, 30% right, 8% top, and 25% bottom. Since Bar Code 1 passes through the centering window, it will be read. Bar Code 2 does not pass through the centering window, so it will not be read.



Note: A bar code needs only to be touched by the centering window in order to be read. It does not need to pass completely through the centering window.

Scan **Centering On**, then scan one of the following bar codes to change the top, bottom, left, or right of the centering window. Then scan the percent you want to shift the centering window using digits on the [Programming Chart](#). Scan **Save**.
 Default Centering = 40% for Top and Left, 60% for Bottom and Right.



DECWIN1.
Centering On



DECTOP.
Top of Centering Window



DECLFT.
Left of Centering Window



DECWIND.
* Centering Off



DECBOT.
Bottom of Centering Window



DECRGT.
Right of Centering Window

No Read

With No Read turned On, the scanner notifies you if a code cannot be read. If using a Scanning Tool Scan Data Window (see page 168), an “NR” appears when a code cannot be read. If No Read is turned Off, the “NR” will not appear.

Default = Off.



SHWNRD1.

On



SHWNRD0.

*** Off**

Video Reverse

Video Reverse is used to allow the scanner to read bar codes that are inverted. The **Video Reverse Off** bar code below is an example of this type of bar code. Scan **Video Reverse Only** to read *only* inverted bar codes. Scan **Video Reverse and Standard Bar Codes** to read both types of codes.

Note: After scanning **Video Reverse Only**, menu bar codes cannot be read. You must scan **Video Reverse Off** or **Video Reverse and Standard Bar Codes** in order to read menu bar codes.

Note: Images downloaded from the unit are not reversed. This is a setting for decoding only.



VIDREV1.

Video Reverse Only



VIDREV2.

**Video Reverse and Standard
Bar Codes**

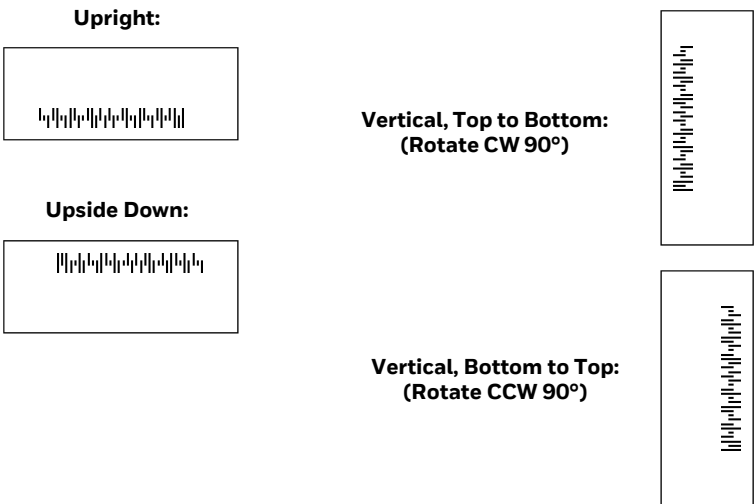


VIDREV0.

*** Video Reverse Off**

Working Orientation

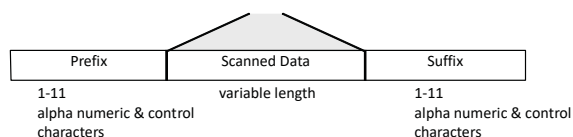
Some bar codes are direction-sensitive. For example, KIX codes can misread when scanned sideways or upside down. Use the working orientation settings if your direction-sensitive codes will not usually be presented upright to the scanner.
Default = Upright.



Prefix/Suffix Overview

When a bar code is scanned, additional information is sent to the host computer along with the bar code data. This group of bar code data and additional, user-defined data is called a “message string.” The selections in this section are used to build the user-defined data into the message string.

Prefix and Suffix characters are data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. The following illustration shows the breakdown of a message string:



Points to Keep In Mind

- It is not necessary to build a message string. The selections in this chapter are only used if you wish to alter the default settings. *Default prefix = None. Default suffix = None.*
- A prefix or suffix may be added or cleared from one symbology or all symbologies.
- You can add any prefix or suffix from the [ASCII Conversion Chart \(Code Page 1252\)](#), plus Code I.D. and AIM I.D.
- You can string together several entries for several symbologies at one time.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

- When setting up for specific symbologies (as opposed to all symbologies), the specific symbology ID value counts as an added prefix or suffix character.
- The maximum size of a prefix or suffix configuration is 200 characters, which includes header information.

To Add a Prefix or Suffix:

- Step 1. Scan the **Add Prefix** or **Add Suffix** symbol ([page 29](#)).
- Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in the [Symbology Charts](#)) for the symbology to which you want to apply the prefix or suffix. For example, for Code 128, Code ID is “j” and Hex ID is “6A”.
- Step 3. Scan the 2 hex digits from the [Programming Chart](#) or scan **9, 9** for all symbologies.

To add the Code I.D., scan **5, C, 8, 0**.

To add the AIM I.D., scan **5, C, 8, 1**.

To add the serial number, scan **5, C, 8, 8**.

To add a backslash (\), scan **5, C, 5, C**.

Note: *When adding a backslash (\), you must scan 5C twice – once to create the leading backslash and then to create the backslash itself.*

- Step 4. Repeat Steps 2 and 3 for every prefix or suffix character.
 - Step 5. Scan **Save** to exit and save, or scan **Discard** to exit without saving.
- Repeat the steps above to add a prefix or suffix for another symbology.

Example: Add a Tab Suffix to All Symbologies

- Step 1. Scan **Add Suffix**.
- Step 2. Scan **9, 9** from the [Programming Chart](#) to apply this suffix to all symbologies.
- Step 3. Scan **0, 9** from the [Programming Chart](#). This corresponds with the hex value for a horizontal tab, shown in the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216.
- Step 4. Scan **Save**, or scan **Discard** to exit without saving.

Clear One or All Prefixes or Suffixes

You can clear a single prefix or suffix, or clear all prefixes/suffixes for a symbology. If you have been entering prefixes and suffixes for single symbologies, you can use **Clear One Prefix (Suffix)** to delete a specific character from a symbology. When you **Clear All Prefixes (Suffixes)**, all the prefixes or suffixes for a symbology are deleted.

- Step 1. Scan the **Clear One Prefix** or **Clear One Suffix** symbol.
- Step 2. Determine the 2 digit Hex value from the [Symbology Charts](#) for the symbology from which you want to clear the prefix or suffix.
- Step 3. Scan the 2 digit hex value from the [Programming Chart](#) or scan **9,9** for all symbologies.

Your change is automatically saved.

Add a Carriage Return Suffix to All Symbologies

Scan the following bar code if you wish to add a carriage return suffix to all symbol- ogies at once. This action first clears all current suffixes, then programs a carriage return suffix for all symbologies.



Prefix Selections



Suffix Selections

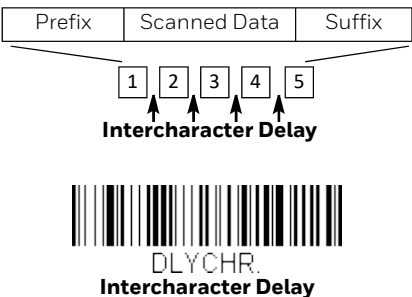


Intercharacter, Interfunction, and Intermessage Delays

Some terminals drop information (characters) if data comes through too quickly. Intercharacter, interfunction, and intermessage delays slow the transmission of data, increasing data integrity.

Intercharacter Delay

An intercharacter delay of up to 5000 milliseconds (in 5ms increments) may be placed between the transmission of each character of scanned data. Scan the **Intercharacter Delay** bar code below, then scan the number of 5ms delays, and the **Save** bar code using the [Programming Chart](#).



To remove this delay, scan the Intercharacter Delay bar code, then set the number of delays to **0**. Scan the **Save** bar code using the [Programming Chart](#).

Note: *Intercharacter delays are not supported in USB serial emulation.*

User Specified Intercharacter Delay

An intercharacter delay of up to 5000 milliseconds (in 5ms increments) may be placed after the transmission of a particular character of scanned data. Scan the **Delay Length** bar code below, then scan the number of 5ms delays, and the **Save** bar code using the [Programming Chart](#).

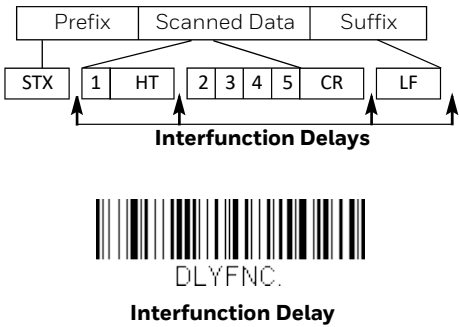
Next, scan the **Character to Trigger Delay** bar code, then the 2-digit hex value for a printable character to trigger the delay See [ISO 2022/ISO 646 Character Replacements](#) on page A-220..



To remove this delay, scan the **Delay Length** bar code, and set the number of delays to **0**. Scan the **Save** bar code using the [Programming Chart](#).

Interfunction Delay

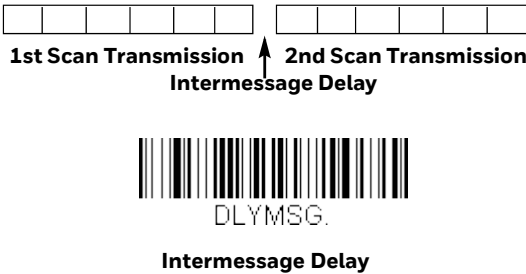
An interfunction delay of up to 5000 milliseconds (in 5ms increments) may be placed between the transmission of each segment of the message string. Scan the **Interfunction Delay** bar code below, then scan the number of 5ms delays, and the **Save** bar code using the [Programming Chart](#).



To remove this delay, scan the **Interfunction Delay** bar code, then set the number of delays to **0**. Scan the **Save** bar code using the [Programming Chart](#).

Intermessage Delay

An intermessage delay of up to 5000 milliseconds (in 5ms increments) may be placed between each scan transmission. Scan the **Intermessage Delay** bar code below, then scan the number of 5ms delays, and the **Save** bar code using the [Programming Chart](#).



To remove this delay, scan the **Intermessage Delay** bar code, then set the number of delays to **0**. Scan the **Save** bar code using the [Programming Chart](#).

Data Format Editor Introduction

You may use the Data Format Editor to change the scanner's output. For example, you can use the Data Format Editor to insert characters at certain points in bar code data as it is scanned. The selections in the following pages are used only if you wish to alter the output. *Default Data Format setting = None.*

Normally, when you scan a bar code, it gets outputted automatically; however when you create a format, you must use a "send" command [Send Commands](#) within the format program to output data.

Multiple formats may be programmed into the scanner. They are stacked in the order in which they are entered. However, the following list presents the order in which formats are applied:

1. Specific Terminal ID, Actual Code ID, Actual Length
2. Specific Terminal ID, Actual Code ID, Universal Length
3. Specific Terminal ID, Universal Code ID, Actual Length
4. Specific Terminal ID, Universal Code ID, Universal Length
5. Universal Terminal ID, Actual Code ID, Actual Length
6. Universal Terminal ID, Actual Code ID, Universal Length
7. Universal Terminal ID, Universal Code ID, Actual Length
8. Universal Terminal ID, Universal Code ID, Universal Length

The maximum size of a data format configuration is 2000 bytes, which includes header information.

If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.



DFMDF3.

* Default Data Format

Show Data Format

Scan the bar code below to show current data format settings.



DFMBK3?

Data Format Settings

Add a Data Format

- Step 1. Scan the [Enter Data Format](#) symbol.
- Step 2. Select **Primary/Alternate** Format
Determine if this will be your primary data format, or one of 3 alternate formats. This allows you to save a total of 4 different data formats. To program your primary format, scan **0** using the [Programming Chart](#). If you are programming an alternate format, scan **1**, **2**, or **3**, depending on which alternate format you are programming. (See [Primary/Alternate Data Formats](#) for further information.)
- Step 3. **Terminal Type**
Refer to [Terminal ID Table](#) and locate the Terminal ID number for your PC. Scan three numeric bar codes on the [Programming Chart](#) to program the scanner for your terminal ID (you must enter 3 digits). For example, scan **0 0 3** for an AT wedge.

Note: **099** indicates all terminal types.

- Step 4. **Code I.D.**
In the [Symbology Charts](#), find the symbology to which you want to apply the data format. Locate the Hex value for that symbology and scan the 2 digit hex value from the [Programming Chart](#).

Note: If you are creating a data format for Batch Mode Quantity, use **35** for the Code I.D.

- Step 5. **Length**
Specify what length (up to 9999 characters) of data will be acceptable for this symbology. Scan the four digit data length from the [Programming Chart](#). (Note: 50 characters is entered as 0050. 9999 is a universal number, indicating all lengths.)

Note: **9999** indicates all lengths.

- Step 6. **Editor Commands**
Refer to [Data Format Editor Commands](#). Scan the symbols that represent the command you want to enter.
- Step 7. Scan **Save** to save your data format, or **Discard** to exit without saving your changes.



DFMBK3.

Enter Data Format



Other Programming Selections

- **Clear One Data Format**

This deletes one data format for one symbology. If you are clearing the primary format, scan **0** from the [Programming Chart](#). If you are clearing an alternate format, scan **1, 2,** or **3**, depending on the format you are clearing. Scan the Terminal Type and Code I.D. (see [Symbology Charts](#)), and the bar code data length for the specific data format that you want to delete. All other formats remain unaffected.

- **Clear all Data Formats**

This clears all data formats.

- **Save** to exit and save your data format changes.

- **Discard** to exit without saving any data format changes.



Data Format Editor Commands

When working with the Data Format Editor, a virtual cursor is moved along your input data string. The following commands are used to both move this cursor to different positions, and to select, replace, and insert data into the final output.

Send Commands

Send all characters

- F1** Include in the output message all of the characters from the input message, starting from current cursor position, followed by an insert character. *Syntax = F1xx* where xx stands for the insert character's hex value for its ASCII code.

Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#) for decimal, hex and character codes.

Send a number of characters

- F2** Include in the output message a number of characters followed by an insert character. Start from the current cursor position and continue for "nn" characters or through the last character in the input message, followed by character "xx." *Syntax = F2nnxx* where nn stands for the numeric value (00-99) for the number of characters, and xx stands for the insert character's hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for decimal, hex and character codes.

F2 Example: Send a number of characters



Send the first 10 characters from the bar code above, followed by a carriage return.
Command string: F2100D

F2 is the "Send a number of characters" command

10 is the number of characters to send

0D is the hex value for a CR

The data is output as: **1234567890**

F2 and F1 Example: Split characters into 2 lines

Send the first 10 characters from the bar code above, followed by a carriage return, followed by the rest of the characters.

Command string: **F2100DF10D**

F2 is the "Send a number of characters" command

10 is the number of characters to send for the first line

0D is the hex value for a CR

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

1234567890
ABCDEFGHIJ
<CR>

Send all characters up to a particular character

- F3** Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the search character “ss,” followed by an insert character. The cursor is moved forward to the “ss” character. *Syntax = F3ssxx* where ss stands for the search character’s hex value for its ASCII code, and xx stands for the insert character’s hex value for its ASCII code.

Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#) for decimal, hex and character codes.

F3 Example: Send all characters up to a particular character



Using the bar code above, send all characters up to but not including “D,” followed by a carriage return.

Command string: **F3440D**

F3 is the “Send all characters up to a particular character” command

44 is the hex value for a ‘D’

0D is the hex value for a CR

The data is output as:

1234567890ABC
<CR>

Send all but the last characters

- E9** Include in the output message all but the last “nn” characters, starting from the current cursor position. The cursor is moved forward to one position past the last input message character included. *Syntax = E9nn* where nn stands for the numeric value (00-99) for the number of characters that will not be sent at the end of the message.

Insert a character multiple times

- F4** Send “xx” character “nn” times in the output message, leaving the cursor in the

current position. *Syntax = F4xxnn* where xx stands for the insert character's hex value for its ASCII code, and nn is the numeric value (00-99) for the number of times it should be sent.

Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for decimal, hex and character codes.

E9 and F4 Example: Send all but the last characters, followed by 2 tabs



Send all characters except for the last 8 from the bar code above, followed by 2 tabs.

Command string: **E908F40902**

E9 is the "Send all but the last characters" command

08 is the number of characters at the end to ignore

F4 is the "Insert a character multiple times" command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

The data is output as: **1234567890AB <tab><tab>**

Move Commands

Move the cursor forward a number of characters

- F5** Move the cursor ahead "nn" characters from current cursor position.
Syntax = F5nn where nn is the numeric value (00-99) for the number of characters the cursor should be moved ahead.

F5 Example: Move the cursor forward and send the data



Move the cursor forward 3 characters, then send the rest of the bar code data from the bar code above. End with a carriage return.

Command string: **F503F10D**

F5 is the "Move the cursor forward a number of characters" command

03 is the number of characters to move the cursor

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

4567890ABCDEFGHIJ

<CR>

Move the cursor backward a number of characters

- F6** Move the cursor back “nn” characters from current cursor position.
Syntax = F6nn where nn is the numeric value (00-99) for the number of characters the cursor should be moved back.

Move the cursor to the beginning

- F7** Move the cursor to the first character in the input message. *Syntax = F7.*

FE and F7 Example: Manipulate bar codes that begin with a 1



Search for bar codes that begin with a 1. If a bar code matches, move the cursor back to the beginning of the data and send 6 characters followed by a carriage return. Using the bar code above:

Command string: **FE31F7F2060D**

FE is the “Compare characters” command

31 is the hex value for 1

F7 is the “Move the cursor to the beginning” command

F2 is the “Send a number of characters” command

06 is the number of characters to send

0D is the hex value for a CR

The data is output as:

123456

<CR>

Move the cursor to the end

- EA** Move the cursor to the last character in the input message. *Syntax = EA.*

Search Commands

Search forward for a character

- F8** Search the input message forward for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character. *Syntax = F8xx* where xx stands for the search character’s hex value for its ASCII code.

Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for

decimal, hex and character codes.

F8 Example: Send bar code data that starts after a particular character



Search for the letter “D” in bar codes and send all the data that follows, including the “D.” Using the bar code above:

Command string: **F844F10D**

F8 is the “Search forward for a character” command

44 is the hex value for “D”

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

DEFGHIJ

<CR>

Search backward for a character

- F9** Search the input message backward for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character. *Syntax = F9xx* where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for decimal, hex and character codes.

Search forward for a non-matching character

- E6** Search the input message forward for the first non-“xx” character from the current cursor position, leaving the cursor pointing to the non-“xx” character. *Syntax = E6xx* where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for decimal, hex and character codes.

E6 Example: Remove zeros at the beginning of bar code data



This example shows a bar code that has been zero filled. You may want to ignore the zeroes and send all the data that follows. E6 searches forward for the first character that is not zero, then sends all the data after, followed by a carriage return. Using the bar code above:

Command string: **E630F10D**

E6 is the “Search forward for a non-matching character” command

30 is the hex value for 0

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

37692

<CR>

Search backward for a non-matching character

- E7** Search the input message backward for the first non-“xx” character from the current cursor position, leaving the cursor pointing to the non-“xx” character. Syntax = E7xx where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for decimal, hex and character codes.

Miscellaneous Commands

Suppress characters

- FB** Suppress all occurrences of up to 15 different characters, starting at the current cursor position, as the cursor is advanced by other commands. When the FC command is encountered, the suppress function is terminated. The cursor is not moved by the FB command. Syntax = FBnnxxyy..zz where nn is a count of the number of suppressed characters in the list, and xxyy..zz is the list of characters to be suppressed.

FB Example: Remove spaces in bar code data



This example shows a bar code that has spaces in the data. You may want to remove the spaces before sending the data. Using the bar code above:

Command string: **FB0120F10D**

FB is the “Suppress characters” command

01 is the number of character types to be suppressed

20 is the hex value for a space

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

34567890

<CR>

Stop suppressing characters

FC Disables suppress filter and clear all suppressed characters. *Syntax = FC.*

Replace characters

E4 Replaces up to 15 characters in the output message, without moving the cursor. Replacement continues until the E5 command is encountered. *Syntax = E4nnxx₁xx₂yy₁yy₂...zz₁zz₂* where nn is the total count of the number of characters in the list (characters to be replaced plus replacement characters); xx₁ defines characters to be replaced and xx₂ defines replacement characters, continuing through zz₁ and zz₂.

E4 Example: Replace zeros with CRs in bar code data



If the bar code has characters that the host application does not want included, you can use the E4 command to replace those characters with something else. In this example, you will replace the zeroes in the bar code above with carriage returns.

Command string: **E402300DF10D**

E4 is the “Replace characters” command

02 is the total count of characters to be replaced, plus the replacement characters (0 is replaced by CR, so total characters = 2)

30 is the hex value for 0

0D is the hex value for a CR (the character that will replace the 0)

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

1234

5678

ABC

<CR>

Stop replacing characters

E5 Terminates character replacement. *Syntax = E5.*

Compare characters

FE Compare the character in the current cursor position to the character “xx.” If characters are equal, move the cursor forward one position. *Syntax = FExx* where xx

stands for the comparison character's hex value for its ASCII code.

Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 216 for decimal, hex and character codes.

Check for a number

EC Check to make sure there is an ASCII number at the current cursor position. The format is aborted if the character is not numeric.

EC Example: Only output the data if the bar code begins with a number

If you want only data from bar codes that begin with a number, you can use EC to check for the number.

Command string: **ECF10D**

EC is the "Check for a number" command

F1 is the "Send all characters" command

0D is the hex value for a CR



If this bar code is read, **AB1234** the next data format, if there is one, will be used on the data. If there is no other format, the format fails and the raw data is output as **AB1234**.



If this bar code is read: **1234AB** the data is output as:
1234AB
<CR>

Check for non-numeric character

ED Check to make sure there is a non-numeric ASCII character at the current cursor position. The format is aborted if the character is numeric.

ED Example: Only output the data if the bar code begins with a letter

If you want only data from bar codes that begin with a letter, you can use ED to check for the letter.

Command string: **EDF10D**

ED is the "Check for a non-numeric character" command

F1 is the "Send all characters" command

0D is the hex value for a CR



If this bar code is read, **1234AB** the next data format, if there is one, will be used on this data. If there is no other format, the format fails and the raw data is output as **1234AB**.



If this bar code is read: AB1234 the data is output as:

AB1234

<CR>

Insert a delay

- EF** Inserts a delay of up to 49,995 milliseconds (in multiples of 5), starting from the current cursor position. Syntax = EFnnnn where nnnn stands for the delay in 5ms increments, up to 9999. This command can only be used with keyboard emulation.

Data Formatter

When Data Formatter is turned **Off**, the bar code data is output to the host as read, including prefixes and suffixes.



DFM_END.

Data Formatter Off

You may wish to require the data to conform to a data format you have created and saved. The following settings can be applied to your data format:

- **Data Formatter On, Not Required, Keep Prefix/Suffix**
Scanned data is modified according to your data format, and prefixes and suffixes are transmitted.
- **Data Format Required, Keep Prefix/Suffix**
Scanned data is modified according to your data format, and prefixes and suffixes are transmitted. Any data that does not match your data format requirements generates an error tone and the data in that bar code is not transmitted.

Default = Data Formatter On, Not Required, Keep Prefix/Suffix.



DFM_EN1.

*** Data Formatter On, Not
Required, Keep Prefix/Suffix**



DFM_EN2.

**Data Format Required, Keep
Prefix/Suffix**

Primary/Alternate Data Formats

You can save up to four data formats, and switch between these formats. Your primary data format is saved under **0**. Your other three formats are saved under **1**, **2**, and **3**. To set your device to use one of these formats, scan one of the bar codes below.



ALTFNM0.
Primary Data Format



ALTFNM2.
Data Format 2



ALTFNM1.
Data Format 1



ALTFNM3.
Data Format 3

7 SYMBOLOGIES

This programming section contains the following menu selections.

- All Symbolologies
- Aztec Code
- China Post (Hong Kong 2 of 5)
- Chinese Sensible (Han Xin) Code
- Codabar
- Codablock A
- Codablock F
- Code 11
- Code 128
- Code 32 Pharmaceutical (PARAF)
- Code 39
- Code 93
- Data Matrix
- EAN/JAN-13
- EAN/JAN-8
- GS1 Composite Codes
- GS1 DataBar Expanded
- GS1 DataBar Limited
- GS1 DataBar Omnidirectional
- GS1 Emulation
- GS1-128
- Interleaved 2 of 5
- Korea Post On/Off
- Matrix 2 of 5
- MaxiCode
- MicroPDF417
- MSI
- NEC 2 of 5
- Postal Codes - 2D
- Postal Codes - Linear
- PDF417
- GS1 DataBar Omnidirectional
- QR Code
- Straight 2 of 5 IATA (two-bar start/stop)
- Straight 2 of 5 Industrial (three-bar start/stop)
- TCIF Linked Code 39 (TLC39)
- UPC-A
- UPC-A
- UPC-A/EAN-13 with Extended Coupon Code
- UPC-E0
- UPC-E1

All Symbologies

For best scanner performance, we recommend you only enable the symbologies that you need. Scan **All Symbologies Off** to disable all symbologies, then enable the symbologies you need by scanning the **On** bar code for each symbology.



If you want to decode all the symbologies allowable for your scanner, scan the *All Symbologies On* code. If on the other hand, you want to decode only a particular symbology, scan All Symbologies Off followed by the On symbol for that particular symbology.

Note: *All Symbologies On should only be used when needed (or you are instructed to do so) and may result in slower performance.*



Note: *When All Symbologies On is scanned, 2D Postal Codes are not enabled. 2D Postal Codes must be enabled separately.*

Message Length Description

You are able to set the valid reading length of some of the bar code symbologies. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

Example: Decode only those bar codes with a count of 9-20 characters.
Min. length = 09Max. length = 20

Example: Decode only those bar codes with a count of 15 characters.
Min. length = 15Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes included in the explanation of the symbology, then scan the digit value of the message length and **Save** bar codes on the [Programming Chart](#). The minimum and maximum lengths and the defaults are included with the respective symbologies.

Codabar

<Default All Codabar Settings>



Codabar On/Off



Codabar Start/Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. *Default = Don't Transmit.*



Codabar Check Character

Codabar check characters are created using different "modulus". You can program the scanner to read only Codabar bar codes with Modulo 16 check characters. *Default = No Check Character.*

No Check Character indicates that the scanner reads and transmits bar code data with or without a check character.

When Check Character is set to **Validate and Transmit**, the scanner will only read Codabar bar codes printed with a check character, and will transmit this character at the end of the scanned data.

When Check Character is set to **Validate, but Don't Transmit**, the unit will only read Codabar bar codes printed *with* a check character, but will not transmit the check character with the scanned data.



Codabar Concatenation

Codabar supports symbol concatenation. When you enable concatenation, the scanner looks for a Codabar symbol having a “D” start character, adjacent to a symbol having a “D” stop character. In this case the two messages are concatenated into one with the “D” characters omitted.



Select **Require** to prevent the scanner from decoding a single “D” Codabar symbol without its companion. This selection has no effect on Codabar symbols without Stop/Start D characters.



Codabar Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 2-60. Minimum Default = 4, Maximum Default = 60.



CBRMIN.

Minimum Message Length



CBRMAX.

Maximum Message Length

Code 39

< Default All Code 39 Settings >



C39DFT.

Code 39 On/Off



C39ENA1.

*** On**



C39ENA0.

Off

Code 39 Start/Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. *Default = Don't Transmit.*



C39SSX1.

Transmit



C39SSX0.

*** Don't Transmit**

Code 39 Check Character

No Check Character indicates that the scanner reads and transmits bar code data with or without a check character.

When Check Character is set to **Validate, but Don't Transmit**, the unit only reads Code 39 bar codes printed with a check character, but will not transmit the check character with the scanned data.

When Check Character is set to **Validate and Transmit**, the scanner only reads Code 39 bar codes printed with a check character, and will transmit this character at the end of the scanned data. *Default = No Check Character.*



C39CK20.
*** No Check Character**



C39CK21.
**Validate, but Don't
Transmit**



C39CK22.
Validate and Transmit

Code 39 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 0-48. Minimum Default = 0, Maximum Default = 48.



C39MIN.
Minimum Message Length



C39MAX.
Maximum Message Length

Code 39 Append

This function allows the scanner to append the data from several Code 39 bar codes together before transmitting them to the host computer. When the scanner encounters a Code 39 bar code with the append trigger character(s), it buffers Code 39 bar codes until it reads a Code 39 bar code that does not have the append trigger. The data is then transmitted in the order in which the bar codes were read (FIFO). *Default = Off.*



Code 32 Pharmaceutical (PARAF)

Code 32 Pharmaceutical is a form of the Code 39 symbology used by Italian pharmacies. This symbology is also known as PARAF.



Full ASCII

If Full ASCII Code 39 decoding is enabled, certain character pairs within the bar code symbol will be interpreted as a single character. For example: \$V will be decoded as the ASCII character SYN, and /C will be decoded as the ASCII character #. *Default = Off.*

NUL	%U	DLE	\$P	SP	SPACE	0	0	@	%V	P	P	'	%W	p	+P
SOH	\$A	DC1	\$Q	!	/A	1	1	A	A	Q	Q	a	+A	q	+Q
STX	\$B	DC2	\$R	*	/B	2	2	B	B	R	R	b	+B	r	+R
ETX	\$C	DC3	\$S	#	/C	3	3	C	C	S	S	c	+C	s	+S
EOT	\$D	DC4	\$T	\$	/D	4	4	D	D	T	T	d	+D	t	+T
ENQ	\$E	NAK	\$U	%	/E	5	5	E	E	U	U	e	+E	u	+U
ACK	\$F	SYN	\$V	&	/F	6	6	F	F	V	V	f	+F	v	+V
BEL	\$G	ETB	\$W	'	/G	7	7	G	G	W	W	g	+G	w	+W
BS	\$H	CAN	\$X	(	/H	8	8	H	H	X	X	h	+H	x	+X
HT	\$I	EM	\$Y	)	/I	9	9	I	I	Y	Y	i	+I	y	+Y
LF	\$J	SUB	\$Z	*	/J	:	/Z	J	J	Z	Z	j	+J	z	+Z
VT	\$K	ESC	%A	+	/K	:	%F	K	K	[	%K	k	+K	{	%P

FF	\$L	FS	%B	,	/L	<	%G	L	L	\	%L	l	+L		%Q
CR	\$M	GS	%C	-	-	=	%H	M	M	]	%M	m	+M	}	%R
SO	\$N	RS	%D	.	.	>	%I	N	N	^	%N	n	+N	~	%S
SI	\$O	US	%E	/	/O	?	%J	O	O	-	%O	o	+O	DEL	%T

Character pairs /M and /N decode as a minus sign and period respectively.

Character pairs /P through /Y decode as 0 through 9.



C39ASCII.
Full ASCII On



C39ASCII.
* Full ASCII Off

Code 39 Code Page

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, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page 220), and scan the value and the Save bar code from the [Programming Chart](#). The data characters should then appear properly.



C39DCP.
Code 39 Code Page

Interleaved 2 of 5

< Default All Interleaved 2 of 5 Settings >



I25DFT.

Interleaved 2 of 5 On/Off



I25ENA1.
* On



I25ENA0.
Off

Check Digit

No Check Digit indicates that the scanner reads and transmits bar code data with or without a check digit.

When Check Digit is set to **Validate, but Don't Transmit**, the unit only reads Interleaved 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data.

When Check Digit is set to **Validate and Transmit**, the scanner only reads Interleaved 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. *Default = No Check Digit.*



I25CK20.
*** No Check Digit**



I25CK21.
Validate, but Don't Transmit



I25CK22.
Validate and Transmit

Interleaved 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.



I25MIN.
Minimum Message Length



I25MAX.
Maximum Message Length

NEC 2 of 5

< Default All NEC 2 of 5 Settings >



N25DFT.

NEC 2 of 5 On/Off



N25ENA1.
* On



N25ENA0.
Off

Check Digit

No Check Digit indicates that the scanner reads and transmits bar code data with or without a check digit.

When Check Digit is set to **Validate, but Don't Transmit**, the unit only reads NEC 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data.

When Check Digit is set to **Validate and Transmit**, the scanner only reads NEC 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. *Default = No Check Digit.*



N25CK20.
* No Check Digit



N25CK21.
Validate, but Don't
Transmit



N25CK22.
Validate and Transmit

NEC 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.



N25MIN.
Minimum Message Length



N25MAX.
Maximum Message Length

Code 93

< Default All Code 93 Settings >



Code 93 On/Off



Code 93 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.



Code 93 Append

This function allows the scanner to append the data from several Code 93 bar codes together before transmitting them to the host computer. When this function is enabled, the scanner stores those Code 93 bar codes that start with a space (excluding the start and stop symbols), and does not immediately transmit the data. The scanner stores the data in the order in which the bar codes are read, deleting the first space from each. The scanner transmits the appended data when it reads a Code 93 bar code that starts with a character other than a space. *Default = Off.*



Code 93 Code Page

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, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page 220), and scan the value and the **Save** bar code from the [Programming Chart](#). The data characters should then appear properly.



C93DCP.
Code 93 Code Page

Straight 2 of 5 Industrial (three-bar start/stop)

<Default All Straight 2 of 5 Industrial Settings>



R25DFT.

Straight 2 of 5 Industrial On/Off



R25ENA1.
On



R25ENA0.
*** Off**

Straight 2 of 5 Industrial Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.



R25MIN.
Minimum Message Length



R25MAX.
Maximum Message Length

Straight 2 of 5 IATA (two-bar start/stop)

<Default All Straight 2 of 5 IATA Settings>



Straight 2 of 5 IATA On/Off



Straight 2 of 5 IATA Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.



Matrix 2 of 5

<Default All Matrix 2 of 5 Settings>



Matrix 2 of 5 On/Off



Matrix 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.



Code 11

<Default All Code 11 Settings>



Code 11 On/Off



Check Digits Required

This option sets whether 1 or 2 check digits are required with Code 11 bar codes.
Default = Two Check Digits.



Code 11 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.



Code 128

<Default All Code 128 Settings>



Code 128 On/Off



ISBT 128 Concatenation

In 1994 the International Society of Blood Transfusion (ISBT) ratified a standard for communicating critical blood information in a uniform manner. The use of ISBT formats requires a paid license. The ISBT 128 Application Specification describes 1) the critical data elements for labeling blood products, 2) the current recommendation to use Code 128 due to its high degree of security and its space-efficient design, 3) a variation of Code 128 that supports concatenation of neighboring symbols, and 4) the standard layout for bar codes on a blood product label. Use the bar codes below to turn concatenation on or off. *Default = Off.*



Code 128 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.



Code 128 Append

This function allows the scanner to append the data from several Code 128 bar codes together before transmitting them to the host computer. When the scanner encounters a Code 128 bar code with the append trigger character(s), it buffers Code 128 bar codes until it reads a Code 128 bar code that does not have the append trigger. The data is then transmitted in the order in which the bar codes were read (FIFO). *Default = On.*



Code 128 Code Page

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, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page 220), and scan the value and the Save bar code from the [Programming Chart](#). The data characters should then appear properly.



GS1-128

<Default All GS1-128 Settings>



GS1-128 On/Off



GS1-128 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 1, Maximum Default = 80.



UPC-A

<Default All UPC-A Settings>



UPC-A On/Off



Note: To convert UPC-A bar codes to EAN-13, see [Convert UPC-A to EAN-13](#) on page 138.

UPC-A Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*





UPC-A Number System

The numeric system digit of a U.P.C. symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will not transmit it. *Default = On.*



UPC-A Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-A data. *Default = Off for both 2 Digit and 5 Digit Addenda.*



UPC-A Addenda Required

When **Required** is scanned, the scanner will only read UPC-A bar codes that have addenda. You must then turn on a 2 or 5 digit addenda listed on [page 133](#). *Default = Not Required.*



UPC-A Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. *Default = On.*



UPC-A/EAN-13 with Extended Coupon Code

Use the following codes to enable or disable UPC-A and EAN-13 with Extended Coupon Code. When left on the default setting (**Off**), the scanner treats Coupon Codes and Extended Coupon Codes as single bar codes.

If you scan the **Allow Concatenation** code, when the scanner sees the coupon code and the extended coupon code in a single scan, it transmits both as one symbology. Otherwise, it transmits the first coupon code it reads.

If you scan the **Require Concatenation** code, the scanner must see and read the coupon code and extended coupon code in a single read to transmit the data. No data is output unless both codes are read. *Default = Off.*



Coupon GS1 DataBar Output

If you scan coupons that have both UPC and GS1 DataBar codes, you may wish to scan and output only the data from the GS1 DataBar code. Scan the **GS1 Output On** code below to scan and output only the GS1 DataBar code data. *Default = GS1 Output Off.*



CPNGS10.
* GS1 Output Off



CPNGS11.
GS1 Output On

UPC-E0

<Default All UPC-E Settings>



UPEDFT.

UPC-E0 On/Off

Most U.P.C. bar codes lead with the 0 number system. To read these codes, use the **UPC-E0 On** selection. If you need to read codes that lead with the 1 number system, use [UPC-E1](#) (page 137). *Default = On.*



UPEEND01.
* UPC-E0 On



UPEEND00.
UPC-E0 Off

UPC-E0 Expand

UPC-E Expand expands the UPC-E code to the 12 digit, UPC-A format. *Default = Off.*



UPEEXP1.
On



UPEEXP0.
* Off

UPC-E0 Addenda Required

When **Required** is scanned, the scanner will only read UPC-E bar codes that have addenda. *Default = Not Required.*



UPEARQ1.
Required



UPC-E0 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. *Default = On.*



UPC-E0 Check Digit

Check Digit specifies whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



UPC-E0 Leading Zero

This feature allows the transmission of a leading zero (0) at the beginning of scanned data. To prevent transmission, scan **Off**. *Default = On.*



UPC-E0 Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-E data. *Default = Off for both 2 Digit and 5 Digit Addenda.*





UPEAD51.
5 Digit Addenda On



UPEAD50.
* 5 Digit Addenda Off

UPC-E1

Most U.P.C. bar codes lead with the 0 number system. For these codes, use [UPC-E0](#) (page 135). If you need to read codes that lead with the 1 number system, use the **UPC-E1 On** selection. *Default = Off.*



UPEEN11.
UPC-E1 On



UPEEN10.
* UPC-E1 Off

EAN/JAN-13

<Default All EAN/JAN Settings>



E13DFT.

EAN/JAN-13 On/Off



E13ENA1.
* On



E13ENA0.
Off

Convert UPC-A to EAN-13

When **UPC-A Converted to EAN-13** is selected, UPC-A bar codes are converted to 13 digit EAN-13 codes by adding a zero to the front. When **Do not Convert UPC-A** is selected, UPC-A codes are read as UPC-A.



UPAENA0.
UPC-A Converted to
EAN-13



UPAENA1.
* Do not Convert UPC-A

EAN/JAN-13 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



E13CKX1.
* **On**



E13CKX0.
Off

EAN/JAN-13 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-13 data. *Default = Off for both 2 Digit and 5 Digit Addenda.*



E13AD21.
2 Digit Addenda On



E13AD20.
* **2 Digit Addenda Off**



E13AD51.
5 Digit Addenda On



E13AD50.
* **5 Digit Addenda Off**

EAN/JAN-13 Addenda Required

When **Required** is scanned, the scanner will only read EAN/JAN-13 bar codes that have addenda. *Default = Not Required.*



E13ARQ1.
Required



E13ARQ0.
* **Not Required**

EAN/JAN-13 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. *Default = On.*



E13ADS1.
* On



E13ADS0.
Off

Note: If you want to enable or disable EAN13 with Extended Coupon Code, refer to [UPC-A/EAN-13 with Extended Coupon Code](#) (page 134).

ISBN Translate

When **On** is scanned, EAN-13 Book land symbols are translated into their equivalent ISBN number format. *Default = Off.*



E13ISB1.
On



E13ISB0.
* Off

EAN/JAN-8

<Default All EAN/JAN-8 Settings>



EA8DFT.

EAN/JAN-8 On/Off



EA8ENA1.
* On



EA8ENA0.
Off

EAN/JAN-8 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



EA8CKX1.
* On



EA8CKX0.

EAN/JAN-8 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-8 data. *Default = Off for both 2 Digit and 5 Digit Addenda.*



EAN/JAN-8 Addenda Required

When **Required** is scanned, the scanner will only read EAN/JAN-8 bar codes that have addenda. *Default = Not Required.*



EAN/JAN-8 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. *Default = On.*



MSI

<Default All MSI Settings>



MSI On/Off

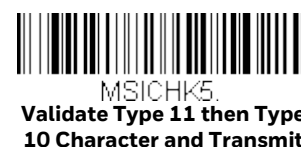
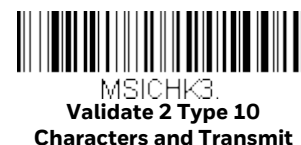
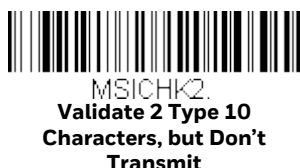


MSI Check Character

Different types of check characters are used with MSI bar codes. You can program the scanner to read MSI bar codes with Type 10 check characters. *Default = Validate Type 10, but Don't Transmit.*

When Check Character is set to **Validate Type 10/11 and Transmit**, the scanner will only read MSI bar codes printed with the specified type check character(s), and will transmit the character(s) at the end of the scanned data.

When Check Character is set to **Validate Type 10/11, but Don't Transmit**, the unit will only read MSI bar codes printed with the specified type check character(s), but will not transmit the check character(s) with the scanned data.





MSICHB.
Disable MSI Check
Characters

MSI Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 4-48. Minimum Default = 4, Maximum Default = 48.



MSIMIN.
Minimum Message Length



MSIMAX.
Maximum Message Length

GS1 DataBar Omnidirectional

< Default All GS1 DataBar Omnidirectional Settings >



RSSDFT.

GS1 DataBar Omnidirectional On/Off



RSSENA1.
* On



RSSENA0.
Off

GS1 DataBar Limited

< Default All GS1 DataBar Limited Settings >



RSLDFT.

GS1 DataBar Limited On/Off



RSLENA1.
* On



RSLENA0.
Off

GS1 DataBar Expanded

< Default All GS1 DataBar Expanded Settings >



GS1 DataBar Expanded On/Off



GS1 DataBar Expanded Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 4-74. Minimum Default = 4, Maximum Default = 74.



Codablock A

<Default All Codablock A Settings>



Codablock A On/Off



Codablock A Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-600. Minimum Default = 1, Maximum Default = 600.



CBAMIN.
Minimum Message Length



CBAMAX.
Maximum Message Length

Codablock F

<Default All Codablock F Settings>



CBFDF.T.

Codablock F On/Off



CBFENA1.
On



CBFENA0.
*** Off**

Codablock F Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-2048. Minimum Default = 1, Maximum Default = 2048.



CBFMIN.
Minimum Message Length



CBFMAX.
Maximum Message Length

PDF417

< Default All PDF417 Settings >



PDFDF.T.

PDF417 On/Off



PDFENA1.
*** On**



PDFENA0.
Off

PDF417 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-2750. Minimum Default = 1, Maximum Default = 2750.



PDFMIN.
Minimum Message Length



PDFMAX.
Maximum Message Length

MacroPDF417

MacroPDF417 is an implementation of PDF417 capable of encoding very large amounts of data into multiple PDF417 bar codes. When this selection is enabled, these multiple bar codes are assembled into a single data string. *Default = On.*



PDFMAC1.
*** On**



PDFMAC0.
Off

MicroPDF417

< Default All MicroPDF417 Settings >



MPDDFT.

MicroPDF417 On/Off



MPDENA1.
On



MPDENAD.

* Off

MicroPDF417 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-366. Minimum Default = 1, Maximum Default = 366.



MPDMIN.

Minimum Message Length



MPDMAX.

Maximum Message Length

GS1 Composite Codes

Linear codes are combined with a unique 2D composite component to form a new class called GS1 Composite symbology. GS1 Composite symbologies allow for the co-existence of symbologies already in use. *Default = Off.*



COMENA1.

On



COMENAD.

* Off

UPC/EAN Version

Scan the **UPC/EAN Version On** bar code to decode GS1 Composite symbols that have a U.P.C. or an EAN linear component. (This does not affect GS1 Composite symbols with a GS1-128 or GS1 linear component.) *Default = UPC/EAN Version Off.*



COMUPC1.

UPC/EAN Version On



COMUPCD.

* UPC/EAN Version Off

Note: If you scan coupons that have both UPC and GS1 DataBar codes, you may wish to scan and output only the data from the GS1 DataBar code. See [Coupon GS1 DataBar Output](#) (page 135) for further information.

GS1 Composite Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-2435. Minimum Default = 1, Maximum Default = 2435.



COMMUN.
Minimum Message Length



COMMAX.
Maximum Message Length

GS1 Emulation

The scanner can automatically format the output from any GS1 data carrier to emulate what would be encoded in an equivalent GS1-128 or GS1 DataBar symbol. GS1 data carriers include UPC-A and UPC-E, EAN-13 and EAN-8, ITF-14, GS1-128, and GS1-128 DataBar and GS1 Composites. (Any application that accepts GS1 data can be simplified since it only needs to recognize one data carrier type.)

If **GS1-128 Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-128 AIM ID, Jc1 (see [Symbology Charts](#) on page 213).

If **GS1 DataBar Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-DataBar AIM ID, Jem (see [Symbology Charts](#) on page 213).

If **GS1 Code Expansion Off** is scanned, retail code expansion is disabled, and UPC-E expansion is controlled by the [UPC-E0 Expand](#) (page 135) setting. If the AIM ID is enabled, the value will be the GS1-128 AIM ID, Jc1 (see [Symbology Charts](#) on page 213).

If **EAN8 to EAN13 Conversion** is scanned, all EAN8 bar codes are converted to EAN13 format.

Default = GS1 Emulation Off.



EANEMU1.
GS1-128 Emulation



EANEMU2.
GS1 DataBar Emulation



EANEMU3.
GS1 Code Expansion Off



TCIF Linked Code 39 (TLC39)

This code is a composite code since it has a Code 39 linear component and a MicroPDF417 stacked code component. All bar code readers are capable of reading the Code 39 linear component. The MicroPDF417 component can only be decoded if TLC39 On is selected. The linear component may be decoded as Code 39 even if TLC39 is off. *Default = Off.*



QR Code

< Default All QR Code Settings >



QR Code On/Off

This selection applies to both QR Code and Micro QR Code.



QR Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-7089. Minimum Default = 1, Maximum Default = 7089.



QR Code Append

This function allows the scanner to append the data from several QR Code bar codes together before transmitting them to the host computer. When the scanner encounters an QR Code bar code with the append trigger character(s), it buffers the number of QR Code bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. There are 3 ways to scan appended QR Code:

- **One scan**—Pull the trigger one time and all appended QR Codes in the same image are decoded
- **Swipe**—Pull and hold down the trigger and scan all appended QR Codes while keeping the trigger pressed. The scanner emits short beeps for each partial QR Code that is scanned and buffered. One long beep is emitted after the last QR Code is scanned and the data is complete. Not compatible with Presentation mode.
- **Point and shoot**—Pull the trigger one time for each image. The scanner emits a short beep for each partial QR Code that is scanned and buffered. One long beep is emitted after the last QR Code is scanned and the data is complete. Not compatible with Presentation mode.

Default = One Scan.



QRCAPP1.
* One Scan



QRCAPP3.
Point and Shoot



QRCAPP2.
Swipe



QRCAPP0.
Off

QR Code Page

QR 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, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page 220), and scan the value and the Save bar code

from the [Programming Chart](#). The data characters should then appear properly.



QR Code Page

Data Matrix

< Default All Data Matrix Settings >



IDMDFT.

Data Matrix On/Off



**IDMENA1.
* On**



**IDMENA0.
Off**

Data Matrix Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-3116. Minimum Default = 1, Maximum Default = 3116.



**IDMMIN.
Minimum Message Length**



**IDMMAX.
Maximum Message Length**

Data Matrix Code Page

Data Matrix 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, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page 220), and scan the value and the Save bar code from the [Programming Chart](#). The data characters should then appear properly.



**IDMDCP.
Data Matrix Code Page**

MaxiCode

< Default All MaxiCode Settings >



MaxiCode On/Off



MaxiCode Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-150. Minimum Default = 1, Maximum Default = 150.



Aztec Code

< Default All Aztec Code Settings >



Aztec Code On/Off



Aztec Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-3832. Minimum Default = 1, Maximum Default = 3832.



AZTMIN.
Minimum Message Length



AZTMAX.
Maximum Message Length

Aztec Append

This function allows the scanner to append the data from several Aztec bar codes together before transmitting them to the host computer. When the scanner encounters an Aztec bar code with the append trigger character(s), it buffers the number of Aztec bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. There are 3 ways to scan appended Aztec Code:

- **One scan**—Pull the trigger one time and all appended Aztec Codes in the same image are decoded
- **Swipe**—Pull and hold down the trigger and scan all appended Aztec Codes while keeping the trigger pressed. The scanner emits short beeps for each partial Aztec Code that is scanned and buffered. One long beep is emitted after the last Aztec Code is scanned and the data is complete. Not compatible with Presentation mode.
- **Point and shoot**—Pull the trigger one time for each image. The scanner emits a short beep for each partial Aztec Code that is scanned and buffered. One long beep is emitted after the last Aztec Code is scanned and the data is complete. Not compatible with Presentation mode.

Default = One Scan.



AZTAPP1.
* One Scan



AZTAPP2.
Swipe



AZTAPP3.
Point and Shoot



AZTAPP0.
Off

Aztec Code Page

Aztec 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, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page 220), and scan the value and the Save bar code from the [Programming Chart](#). The data characters should then appear properly.



AZTDCP.
Aztec Code Page

Chinese Sensible (Han Xin) Code

< Default All Han Xin Settings >



HX_DFT.

Han Xin Code On/Off



HX_ENA1.
On



HX_ENA0.
*** Off**

Han Xin Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 1-7833. Minimum Default = 1, Maximum Default = 7833.



HX_MIN.
Minimum Message Length



HX_MAX.
Maximum Message Length

Postal Codes - 2D

The following lists the possible 2D postal codes, and 2D postal code combinations that are allowed. Only one 2D postal code selection can be active at a time. If you scan a second 2D postal code selection, the first selection is overwritten. *Default = 2D Postal Codes Off.*



Single 2D Postal Codes:





POSTAL2.
InfoMail On

Combination 2D Postal Codes:



POSTAL8.
InfoMail and British Post On



POSTAL14.
Postnet and Postal-4i On



POSTAL17.
Postal-4i and Intelligent Mail
Bar Code On



POSTAL12.
Planet Code and Postnet On



POSTAL13.
Planet Code and Postal-4i On



POSTAL21.
Planet Code, Postnet, and
Postal-4i On



POSTAL20.
Intelligent Mail Bar Code and
Postnet with B and B' Fields
On



POSTAL16.
Postnet and Intelligent Mail
Bar Code On



POSTAL19.
Postal-4i and
Postnet with B and B' Fields
On



POSTAL18.
Planet Code and Postnet with
B and B' Fields On



POSTAL15.
Planet Code and Intelligent
Mail Bar Code



POSTAL22.
Planet Code, Postnet, and



POSTAL23.
Planet Code, Postal-4i, and
Intelligent Mail Bar Code On



POSTAL25.
Planet Code, Postal-4i, and
Postnet with B and B' Fields
On



POSTAL27.
Postal-4i, Intelligent Mail Bar
Code, and Postnet with B and
B' Fields On



POSTAL29.
Planet Code, Postal-4i,
Intelligent Mail Bar Code, and
Postnet with B and B' Fields
On

Intelligent Mail Bar Code On



POSTAL24.
Postnet, Postal-4i, and
Intelligent Mail Bar Code On



POSTAL26.
Planet Code, Intelligent Mail
Bar Code, and Postnet with B
and B' Fields On



POSTAL28.
Planet Code, Postal-4i,
Intelligent Mail Bar Code, and
Postnet On

Planet Code Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of Planet Code data. *Default = Don't Transmit.*



PLNCKX1.
Transmit Check Digit



PLNCKXD.
* Don't Transmit Check Digit

Postnet Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of Postnet data. *Default = Don't Transmit.*



Australian Post Interpretation

This option controls what interpretation is applied to customer fields in Australian 4-State symbols.

Bar Output lists the bar patterns in “0123” format.

Numeric N Table causes that field to be interpreted as numeric data using the N Table.

Alphanumeric C Table causes the field to be interpreted as alphanumeric data using the C Table. Refer to the Australian Post Specification Tables.

Combination C and N Tables causes the field to be interpreted using either the C or N Tables.



Postal Codes - Linear

The following lists linear postal codes. Any combination of linear postal code selections can be active at a time.

China Post (Hong Kong 2 of 5)

<Default All China Post (Hong Kong 2 of 5) Settings>



China Post (Hong Kong 2 of 5) On/Off



China Post (Hong Kong 2 of 5) Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.



Korea Post

<Default All Korea Post Settings>



Korea Post On/Off



Korea Post Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 114) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 48.



Korea Post Check Digit

This selection allows you to specify whether the check digit should be transmitted.
Default = Don't Transmit.



KPCCHK1.
Transmit Check Digit



KPCCHK0.
*** Don't Transmit Check Digit**

Add a Test Code I.D. Prefix to All Symbologies

This selection allows you to turn on transmission of a Code I.D. before the decoded symbology. (See the [Symbology Charts](#), beginning on page 213) for the single character code that identifies each symbology.) This action first clears all current prefixes, then programs a Code I.D. prefix for all symbologies. This is a temporary setting that will be removed when the unit is power cycled.



PRECA2,BK2995C80!
**Add Code I.D. Prefix to
All Symbologies (Temporary)**

Show Software Revision

Scan the bar code below to output the current software revision, unit serial number, and other product information for both the scanner and the base.



REVINF.
Show Revision

Show Data Format

See ["Show Data Format" on page 100.](#)

Test Menu

When you scan the **Test Menu On** code, then scan a programming code in this manual, the scanner displays the content of a programming code. The programming function will still occur, but in addition, the content of that programming code is output to the terminal.

Note: *This feature should not be used during normal scanner operation.*



Reset the Factory Defaults



Caution: *This selection erases all your settings and resets the scanner to the original factory defaults. It also disables all plugins.*

If you aren't sure what programming options are in your scanner, or you've changed some options and want to restore the scanner to factory default settings, first scan the **Remove Custom Defaults** bar code, then scan **Activate Defaults**. This resets the scanner to the factory default settings.



Note: *If using a cordless system, scanning the **Activate Defaults** bar code also causes both the scanner and the base or Access Point to perform a reset and become unlinked. The scanner must be placed in its base to re-establish the link before any setup codes are entered. If using an Access Point, the linking bar code must be scanned. See [cordless System Operation](#) beginning on page 37 for additional information.*

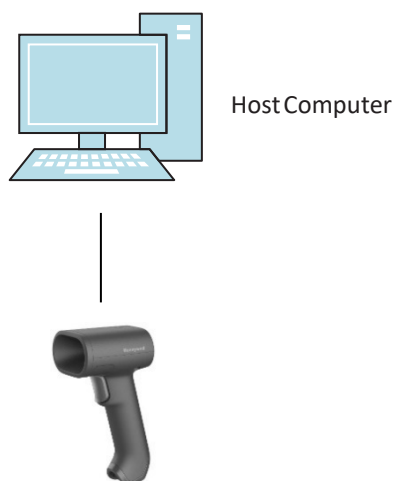
The [Menu Commands](#), beginning on page 175 list the factory default settings for each of the commands (indicated by an asterisk (*) on the programming pages).

This section defines the security processes, both implemented and recommended by Honeywell, for using HH492 cordless area-imaging scanner.

System Architecture

Connect with USB

HH492 cordless scanner can be connected to the USB port of a computer.



Security Checklist

The checklists cover some of the main threats that may exist on a barcode scanner and the steps that can be used to mitigate them.

Bluetooth Security

Follow these security recommendations and precautions for Bluetooth security:

- If possible, pair devices ONLY when in a physically secure area.
- Keep paired devices close together when possible to monitor both devices.
- Remove paired devices that are no longer in use.
- Use a strong PIN or Password.
- Set Bluetooth to non-discoverable mode.
- If Bluetooth technology is enabled, the device should only be made discoverable when necessary. The default and recommended setting are off(non-discoverable)

Note: Honeywell recommends turning off Bluetooth communication if it is not required for your application.

Infection by Malicious Software Agents

This threat encompasses malicious software agents, for example viruses, spyware (Trojans), and worms. The intrusion of malicious software agents can result in:

- Performance degradation
- Loss of system availability, and
- The capture, modification or deletion of data

Mitigation Steps
Ensure virus protection is installed, signature files are up-to-date, and subscriptions are active on all machine hosting Honeywell products.
Allow only digitally signed software from trusted sources to run.
Use a firewall at the interface between other networks and Honeywell Solution components

Unauthorized External Access

This threat includes intrusion into the Honeywell system from the business network or other external networks including the Internet. Unauthorized external access can result in:

- Loss of system availability
- Capturing, modifying, or deleting data
- Reputation damage if the external access security breach becomes public knowledge

Mitigation Steps	
Implement file system encryption.	
Use a two-factor authentication method such as Google Authenticator when the Honeywell device is connecting to Web applications.	
Secure Bluetooth devices.	For information, see Bluetooth Security
Set the minimum level of privilege for all external accounts and enforce a strong password policy.	
Use the most recent version of the SDK that supports your application.	
Disable all unnecessary access ports, such as FTP.	
Use a VPN when the Linux system requires data to traverse an untrusted network.	
Use SSL for communication between native applications and specialty servers.	
Use intrusion detection on WLAN networks.	

Unauthorized Internal Access

This threat encompasses unauthorized access from people or systems with direct access to a Honeywell system component. This threat is most difficult since attackers may have legitimate access to part of the systems and are simply trying to exceed their permitted access.

Unauthorized internal access can result in:

- Loss of system availability.
- The capture, modification, or deletion of data, and
- The theft or damage of system contents.

Mitigation Steps	
Implement strong password protection on Honeywell Solution components and include a password lifetime management policy, reuse policy, and strength of policy for passwords.	Go to download the user guide specific to your computer model.
Monitor system access	

Securing barcode scanner series

Honeywell recommendations for securing barcode scanner series:

- Enforce the most restrictive set of rights/privilege to access barcode scanner series and its assets needed by users or processes for the performance or specific tasks. Specifically prohibit, remove, and/or restrict the use of unnecessary functions, ports, protocols, and/or services. This would include access to scripts debuggers, etc. Log requests for access to assets.
- Use the proper setting of privilege.

- Ensure access is restricted to administrators for secure process channels, devices, and components related to barcode scanner series.
- Enforce proper configuration at installation of barcode scanner series and its components, including secure by default, baseline configurations for detection of unauthorized changes, and configuration of least functionality required and management of configuration changes. When possible, the configuration should be automatically traced and reported.

Security Updates and Service Packs

One of the common weaknesses of system management as reported by, Open Web Application Security Project (OWASP) is "not keeping software up to date". It is critical to keep the latest patches and software versions on your Honeywell device. This is especially true for software that has reported Common Vulnerabilities and Exposures (CVE). The MITRE Corporation and the National Institute of Standards and Technology (NIST) track CVEs and mark their level of criticalness. For example, when a critical vulnerability was found in the popular OpenSSL® cryptographic software in April of 2014, the TLS heartbeat read overrun (CVE-2014-0160) was tracked and marked by both organizations. A CVE such as the CVE-2014-0160 must be addressed as soon as possible.

Honeywell provides system updates for both security and feature-related purpose. If the third-party software has been installed, Honeywell recommends testing the update on a non-production system to ensure Honeywell software continues to operate correctly.

Caution: Before installing any critical updates or making any system changes, ALWAYS back up the system. This will provide a safe and efficient recovery path if the update fails.

Additional Resources

Security Resources	
The MITRE Corporation	http://www.mitre.org/ and http://cve.mitre.org/
National Institute of Standards and Technology (NIST)	http://www.nist.gov/
Open Web Application Security Project (OWASP)	http://www.owasp.org/
U.S. National Vulnerability Database (NVD)	https://nvd.nist.gov/

PRODUCT SPECIFICATIONS

H492Cordless Scanner Product Specifications

Parameter	Specification
Mechanical	
Height	6.53 in. (165.78mm)
Length	3.33 in. (84.72mm)
Width	2.52 in. (64mm)
Weight	6.7 oz. (190g)
Electrical	
Battery: Lithium Ion	2850 mAh lithium-ion
Number of Scans	Up to 50,000 per charge
Expected Hours of Operation	14
Expected Charge Time	4.5 hours
Illumination	White color (CCT 2700K)
Aiming	Red color, 624nm peak wavelength
Radio	
Frequency	2.4 to 2.5 GHz (ISM Band) Frequency Hopping Bluetooth 5.0+
Range	100 ft. (30 m) typical
Data Rate	Up to 1 Mbps
Environmental	
Storage Temperature	-40°F to 140°F (-40°C to 60°C)
Operate Temperature (Charing)	41°F to 104°F (5°C to 40°C)
Operate Temperature (Non-Charging)	-4°F to 122°F (-20°C to 50°C)
Humidity	Up to 95% non-condensing
Drop	Operational after 5 drops to concrete from 4.9ft (1.5 m)
Environmental Sealing	IP40

Parameter	Specification
ESD	12kV Air, 8kV contact
Image	
Image Size	1040 x 720 pixels
Scan Performance	
Pitch, Skew	± 65°, ± 70°
Motion Tolerance: Presentation Mode	up to 70cm per second for 13 mil UPC
Symbol Contrast	25%

*Storage outside of this temperature range could be detrimental to battery life.

Communication Base Product Specifications

Parameter	Specification
Dimensions (Typical):	
Height	3.34 inches (84.87mm)
Length	5.1 inches (129.62mm)
Width	3.38 inches (86mm)
Weight	5.22 oz (148g)
Voltage:	4.5 to 5.5 volts
Current Draw:	
Host Terminal Port	500mA
Aux Power Port	1A
Charge Time	5 hours
Radio:	
Frequency	2.4 to 2.5 GHz (ISM Band) Frequency Hopping Bluetooth v.2.1
Range	33 ft. (10 m) typical
Data Rate	Up to 1 MBps
Temperature Ranges:	
Operating	32° F to +122° F (0° C to +50° C)
Battery Charge	41° F to +104° F (5° C to +40° C)
Storage	-40° F to +140° F (-40° C to +60° C)
Humidity	Up to 95% non-condensing

(Continued)Parameter	Specification
Mechanical Drop	Operational after 2 drops from 3.3 feet(1 m) to concrete
ESD Sensitivity	Up to 15kV direct air Up to 8 kV indirect coupling plane
Sealant Rating	IP40

Depth of Field Charts

Typical Performance

Focus			
Symbology		Near Distance	Far Distance
5 mil Code 39	in.	.8	8.1
	mm	20	205
10 mil Code 39	in.	.2	14.4
	mm	5	365
13 mil UPC-A	in.	.7	15.7
	mm	18	400
20 mil Code 39	in.	1	24.2
	mm	25	615
6.7 mil PDF417	in.	.6	7.3
	mm	15	185
10 mil PDF417	in.	.8	11
	mm	20	280
10 mil Data Matrix	in.	.4	6.5
	mm	10	165
10 mil QR Code	in.	.2	6.9
	mm	5	175
20 mil QR Code	in.	.2	12.8
	mm	5	325
NYS DL	in.	3.1	8.7
	mm	80	220

Guaranteed Performance

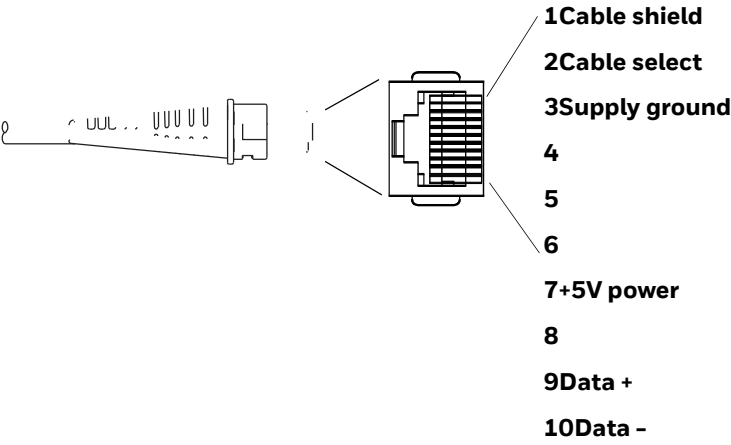
Focus			
Symbology		Near Distance	Far Distance
5 mil Code 39	in.	1	7.9
	mm	25	200
10 mil Code 39	in.	.2	13
	mm	5	330
13 mil UPC-A	in.	.8	14.6
	mm	20	370
20 mil Code 39	in.	1.2	17.9
	mm	30	455
6.7 mil PDF417	in.	1	6.9
	mm	25	175
10 mil PDF417	in.	1	10.2
	mm	25	260
10 mil Data Matrix	in.	.6	6.1
	mm	15	155
10 mil QR Code	in.	.4	6.3
	mm	10	160
20 mil QR Code	in.	.4	12
	mm	10	305
NYS DL	in.	3.1	7.9
	mm	80	200

Standard Cable Pinouts

Note: *The following pin assignments are not compatible with Honeywell 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.*

USB

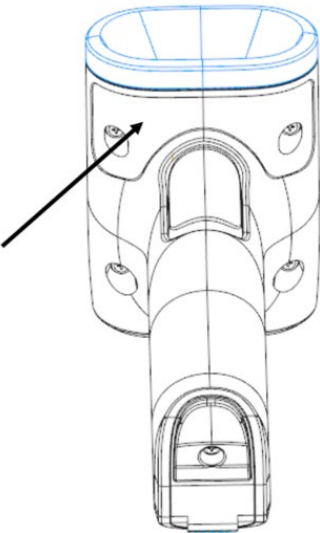
10 Pin Modular Plug



Required Safety Labels

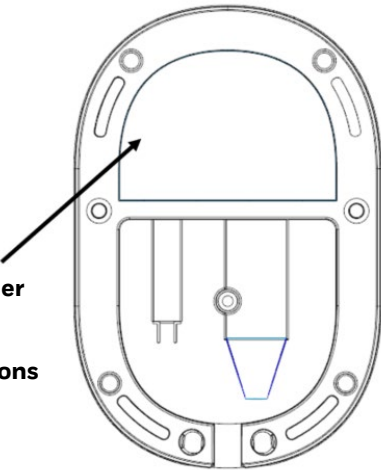
HH492 Scanner

Part Number, Serial
Number Label, and Revision
Information location



HH492 Base

Part Number, Serial Number
and Revision Information
Compliance --Label locations



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 [Customer Support](#) on page xiii).

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:

Clean the Scanner

The scanner, scanner window, or base's housing may be cleaned with a soft cloth or tissue dampened with water (or a mild detergent-water solution.) If a detergent solution is used, rinse with a clean tissue dampened with water only.



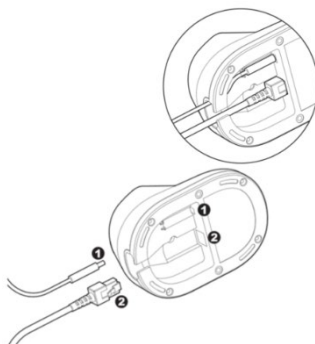
Caution: Do not submerge the scanner in water. The scanner's housing is not watertight. Do not use abrasive wipes or tissues on the scanner's window. Abrasive wipes may scratch the window. Never use solvents (e.g., acetone) on the housing or window. Solvents may damage the finish or the window.

Replace Cables in Cordless Systems

Replace an Interface Cable in a Base

1. Turn the power to the host system OFF.
2. Disconnect the base's cable from the terminal or computer.
3. Turn the base upside down.
4. Pull the connector out while maintaining pressure on the connector release clip.

HH492 Base:



5. Replace with the new cable.
Insert the connector into the opening and press firmly. The connector is keyed to go in only one way, and will click into place.

Troubleshoot a Cordless System

Troubleshoot a Base

Note: Visit the Services and Support section of our website (www.honeywellaidc.com) to check for the latest software for both the scanner and the base.

If your base is not functioning properly, review the following troubleshooting guidelines to try to isolate the problem.

Is the green LED on?

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

- The scanner is correctly powered by Honeywell adaptor or USB
- The cable is connected well, no loosen.

Troubleshoot a Cordless Scanner

Note: Make sure that your scanner's battery is charged.

Visit the Services and Support section of our website (www.honeywellaidc.com) to check for the latest software for both the scanner and the base or Access Point.

Is the scanner having trouble reading your symbols?

If the scanner isn't reading symbols well, check 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 base or Access Point to which the scanner connects.

Is the bar code displayed but not entered into the application?

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 [Prefix/Suffix Overview](#) on page 93 for further information.

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

- 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 7](#)).

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.

Refer to [Data Edit](#) beginning on page 93 and [Data Format](#) beginning on page 99 for information about using Code ID and AIM ID.

Linear Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Codabar	]Fm	0-1	a	61
Code 11	]H3		h	68
Code 128	]Cm	0, 1, 2, 4	j	6A
Code 32 Pharmaceutical (PARAF)	]X0		<	3C
Code 39 (supports Full ASCII mode)	]Am	0, 1, 3, 4, 5, 7	b	62
TCIF Linked Code 39 (TLC39)	]L2		T	54
Code 93 and 93i	]Gm	0-9, A-Z, a-m	i	69
EAN	]Em	0, 1, 3, 4	d	64
EAN-13 (including Bookland EAN)	]E0		d	64
EAN-13 with Add-On	]E3		d	64
EAN-13 with Extended Coupon Code	]E3		d	64
EAN-8	]E4		D	44

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
EAN-8 with Add-On	]E3		D	44
GS1				
GS1 DataBar	]em	0	y	79
GS1 DataBar Limited	]em		{	7B
GS1 DataBar Expanded	]em		}	7D
GS1-128	]C1		l	49
2 of 5				
China Post (Hong Kong 2 of 5)	]X0		Q	51
Interleaved 2 of 5	]lm	0, 1, 3	e	65
Matrix 2 of 5	]X0		m	6D
NEC 2 of 5	]X0		Y	59
Straight 2 of 5 IATA	]Rm	0, 1, 3	f	66
Straight 2 of 5 Industrial	]S0		f	66
MSI	]Mm	0, 1	g	67
Telepen	]Bm		t	74
UPC		0, 1, 2, 3, 8, 9, A, B, C		
UPC-A	]E0		c	63
UPC-A with Add-On	]E3		c	63
UPC-A with Extended Coupon Code	]E3		c	63
UPC-E	]E0		E	45
UPC-E with Add-On	]E3		E	45
UPC-E1	]X0		E	45
Add Honeywell Code ID				5C80
Add AIM Code ID				5C81
Add Backslash				5C5C

2D Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Aztec Code	]zm	0-9, A-C	z	7A

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
Chinese Sensible Code (Han Xin Code)	]X0		H	48
Codablock A	]O6	0, 1, 4, 5, 6	V	56
Codablock F	]Om	0, 1, 4, 5, 6	q	71
Code 49	]Tm	0, 1, 2, 4	l	6C
Data Matrix	]dm	0-6	w	77
GS1	]em	0-3	y	79
GS1 Composite	]em	0-3	y	79
GS1 DataBar Omnidirectional	]em	0-3	y	79
MaxiCode	]Um	0-3	x	78
PDF417	]Lm	0-2	r	72
MicroPDF417	]Lm	0-5	R	52
QR Code	]Qm	0-6	s	73
Micro QR Code	]Qm		s	73

Postal Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Australian Post	]X0		A	41
British Post	]X0		B	42
Canadian Post	]X0		C	43
China Post	]X0		Q	51
InfoMail	]X0		,	2c
Intelligent Mail Bar Code	]X0		M	4D
Japanese Post	]X0		J	4A
KIX (Netherlands) Post	]X0		K	4B
Korea Post	]X0		?	3F
Planet Code	]X0		L	4C
Postal-4i	]X0		N	4E
Postnet	]X0		P	50

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 ASCII control characters			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
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	
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	Δ	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	Δ

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
Default "Automatic National Character replacement" will select the below Honeywell Code Page options for Code128, Code 39 and Code 93.			
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
Germany	ISO/IEC 646-21	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	ˆ
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	ˆ
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	º
ES	10	90	#	\$	§	í	Ñ	¿	^	`	º	ñ	ç	ˆ
ES	51	91	#	\$	·	í	Ñ	Ç	¿	`	·	ñ	ç	ˆ
COUNTRY	Country Keyboard	Honeywell CodePage	ISO / IEC 646 National Character Replacements											

Keyboard Key References

6E	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E					
01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0F	4B	50	55	5A	5F	64	69
10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	4C	51	56	5B	60	65	6A
1E	1F	20	21	22	23	24	25	26	27	28	29	2B					5C	61	66	
2C	2E	2F	30	31	32	33	34	35	36	37	39			5			5D	62	67	6C
3A	3B	3C			3D			3E	3F	38	40			4F	54	59	63	68		

104 Key U.S. Style Keyboard

6E	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E					
01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0F	4B	50	55	5A	5F	64	69
10	11	12	13	14	15	16	17	18	19	1A	1B	1C	2B	4C	51	56	5B	60	65	6A
1E	1F	20	21	22	23	24	25	26	27	28	29	2A					5C	61	66	
2C	2D	2E	2F	30	31	32	33	34	35	36	37	39			5		5D	62	67	6C
3A	3B	3C			3D			3E	3F	38	40			4F	54	59	63	68		

105 Key European Style Keyboard

SAMPLE SYMBOLS

UPC-A



Interleaved 2 of 5



EAN-13



Code 128



Code 128

Code 39



Codabar



Code 93



Straight 2 of 5 Industrial



Matrix 2 of 5



RSS-14



(01) 00123456789012

PDF417



Car Registration

SAMPLE SYMBOLS (CONTINUED)

Postnet



Zip Code

Data Matrix



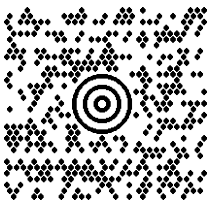
Test Symbol

QR Code



Numbers

MaxiCode



Test Message

Micro PDF417



Test Message

4-CB (4-State Customer Bar Code)



01,234,567094,987654321,01234567891

ID-tag (UPU 4-State)



J18CUSA8E6N062315014880T

PROGRAMMING CHART



PROGRAMMING CHART (CONTINUED)



KAK

A



KCK

C



KEK

E



MNUSAV.

Save



RESET_.

Reset



KBK

B



KDK

D



KFK

F



MNUABT.

Discard

Note: *If you make an error while scanning the letters or digits (before scanning **Save**), scan **Discard**, scan the correct letters or digits, and **Save** again.*

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