

8680i

Wearable Mini Mobile Computer



User Guide

Disclaimer

Honeywell International Inc. ("HII") reserves the right to make changes in specifications and other information contained in this document without prior notice, and the reader should in all cases consult HII to determine whether any such changes have been made. The information in this publication does not represent a commitment on the part of HII.

HII shall not be liable for technical or editorial errors or omissions contained herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material. HII disclaims all responsibility for the selection and use of software and/or hardware to achieve intended results.

This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of HII.

Copyright © 2018 Honeywell International Inc. All rights reserved.

Web Address: www.honeywellaidc.com

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

Microsoft® Windows®, Windows NT®, Windows 2000, Windows ME, Windows XP, and the Windows logo are trademarks or registered trademarks of Microsoft Corporation.

The Bluetooth® word mark and logos are owned by Bluetooth SIG, Inc.

Android™ is a trademark of Google Inc.

Apple is a trademark of Apple Inc., registered in the U.S. and other countries.

Other product names or marks mentioned in this document may be trademarks or registered trademarks of other companies and are the property of their respective owners.

TABLE OF CONTENTS

Customer Support	iii
Technical Assistance	iii
Product Service and Repair	iii
Limited Warranty	iii
Chapter 1 - Get Started	1
About This Manual.....	1
Unpack Your Device.....	1
8680i Overview.....	2
Use the 8680i with a Triggered Ring Wearable Accessory	2
Attach the 8680i to a Triggered Ring Wearable Accessory	2
Remove Bottom Latch Plate.....	6
Reading Technique.....	6
Center the Aimer	6
Battery and Charge Information	7
Replace the Battery.....	7
Battery Recommendations	7
Proper Disposal of the Battery	8
Charge the Battery	8
User Window	11
WiFi and Bluetooth Status	11
Connect the 8680i to Your Network.....	12
Pair the 8680i with Bluetooth Devices.....	12
Pair with Bluetooth Low Energy (BLE) Devices.....	13
Pair with an Android™ Mobile Device	14

Tap and Pair	14
Pair with an Android, Apple™ or Windows® Mobile Device	14
Enter a Bluetooth PIN.....	15
Virtual Keyboard	16
Pair with a Honeywell Vehicle Mount Computer.....	16
Pair with a Honeywell Communication and Charge Base or Access Point.....	17
Pair with a Vocollect Device.....	18
Disconnect from the Host.....	19
Unpair When Charging.....	19
Configure the 8680i with EZConfig for Scanning	19
Connect the 8680i to WiFi	20
Menu Bar Code Security Settings	21
Set Custom Defaults.....	21
Reset Custom Defaults.....	22

Chapter 2 - Wireless System Operation..... 23

Change the 8680i's Bluetooth PIN Code	23
Minimize Bluetooth/ISM Band Network Activity	23
Auto Reconnect Mode	24
Maximum Link Attempts.....	24
Relink Time-Out.....	25
Bluetooth/ISM Network Activity Examples	25
Communication Between the 8680i and the Host.....	26
RF (Radio Frequency) Operation	26
System Conditions	26
8680i Is Out of Range.....	27
8680i Is Moved Back Into Range	27
Reset Scanner	27
Scanner Report.....	27
Scanner Address	27
Unlink a Scanner	28
Override Locked Scanner.....	28

Out-of-Range Alarm	28
Alarm Sound Type	28
Scanner Power Time-Out Timer	29
Flexible Power Management.....	30
Batch Mode	31
Batch Mode Beep	32
Batch Mode Storage.....	32
Batch Mode Quantity.....	33
Enter Quantities	33
Batch Mode Output Order	35
Total Records.....	35
Delete Last Code.....	35
Clear All Codes.....	36
Transmit Records to Host.....	36
Batch Mode Transmit Delay.....	36
Device Name	37
Host Acknowledgment.....	38
Host ACK On/Off	39
Host ACK Timeout	40
Host ACK Responses.....	40

Chapter 3 - Input/Output Settings41

Power Up Beeper	41
Beep on BEL Character	41
Trigger Click.....	42
Good Read and Error Indicators.....	42
Beeper – Good Read	42
Beeper Volume – Good Read	42
Beeper Pitch – Good Read	43
Vibrate – Good Read.....	43
Beeper Pitch – Error	44
Beeper Duration – Good Read.....	44
LED – Good Read.....	45
Number of Beeps – Good Read.....	45

Number of Beeps – Error.....	45
Good Read Delay	46
User-Specified Good Read Delay.....	46
Manual Trigger Modes.....	46
Serial Trigger Mode.....	47
Read Time-Out.....	47
Object Detection Mode.....	47
Object Detection Deactivation.....	48
Poor Quality Codes.....	49
Poor Quality 1D Codes.....	49
Poor Quality PDF Codes	49
Illumination Lights.....	49
Aimer Delay	50
User-Specified Aimer Delay	50
Aimer Mode.....	51
Centering	51
Single Code Centering	51
Custom Centering Settings.....	51
Keyboard Wedge Modifiers.....	53
ALT Mode.....	53
Keyboard Modifiers	53
Preferred Symbology.....	54
High Priority Symbology	55
Low Priority Symbology.....	55
Preferred Symbology Time-out.....	55
Preferred Symbology Default.....	56
Output Sequence Overview	56
Output Sequence Editor.....	56
To Add an Output Sequence	56
Other Programming Selections.....	57
Enter Output Sequence.....	60
Partial Sequence	60
Require Output Sequence	62

Good Read Tone - Output Sequences	63
Multiple Symbols	63
No Read.....	64
Video Reverse.....	64
Working Orientation.....	65

Chapter 4 - Data Edit67

Prefix/Suffix Overview	67
Add a Prefix or Suffix:	68
Clear One or All Prefixes or Suffixes.....	69
Add a Carriage Return Suffix to All Symbologies.....	69
Prefix Selections	69
Suffix Selections	70
Function Code Transmit.....	70
Intercharacter, Interfunction, and Intermessage Delays	70
Intercharacter Delay.....	71
User Specified Intercharacter Delay	71
Interfunction Delay	72
Intermessage Delay	72

Chapter 5 - Data Format73

Data Format Editor Introduction	73
Show Data Format	74
Add a Data Format.....	74
Other Programming Selections	75
Data Format Editor Commands	76
Move Commands.....	82
Search Commands.....	83
Miscellaneous Commands	86
Data Formatter.....	89
Data Format Non-Match Error Tone.....	90
Primary/Alternate Data Formats	91
Single Scan Data Format Change.....	91

Chapter 6 - Symbologies..... 93

- All Symbologies 94
- Message Length Description..... 94
- Codabar 94
- Code 39..... 97
- Interleaved 2 of 5 101
- NEC 2 of 5..... 102
- Code 93..... 104
- Straight 2 of 5 Industrial (three-bar start/stop)..... 105
- Straight 2 of 5 IATA (two-bar start/stop)..... 106
- Matrix 2 of 5 107
- Code 11..... 108
- Code 128..... 109
 - ISBT 128 Concatenation 109
- GS1-128 111
- Telepen..... 112
- UPC-A..... 113
- UPC-A/EAN-13 with Extended Coupon Code..... 116
- Coupon GS1 DataBar Output 117
- UPC-E0..... 117
- UPC-E1 120
- EAN/JAN-13 120
 - ISBN Translate..... 127
- EAN/JAN-8 127
- MSI..... 129
- GS1 DataBar Omnidirectional..... 131
- GS1 DataBar Limited 132
- GS1 DataBar Expanded 132
- Trioptic Code..... 133
- Codablock A 133
- Codablock F 134

Label Code	135
PDF417	135
MacroPDF417	136
MicroPDF417	136
GS1 Composite Codes	137
GS1 Emulation.....	138
TCIF Linked Code 39 (TLC39).....	139
QR Code	139
DotCode.....	141
Data Matrix	142
MaxiCode.....	144
Aztec Code	145
Chinese Sensible (Han Xin) Code.....	146
Postal Codes - 2D.....	147
Planet Code Check Digit.....	150
Postnet Check Digit	151
Australian Post Interpretation	151
Postal Codes - Linear	152
China Post (Hong Kong 2 of 5).....	152
Korea Post.....	153

Chapter 7 - Imaging Commands 155

Single-Use Basis	155
Command Syntax.....	155
Image Snap - IMGSNP.....	156
IMGSNP Modifiers	156
Image Ship - IMGSHIP	159
IMGSHIP Modifiers	160
Image Size Compatibility.....	168
Intelligent Signature Capture - IMGBOX.....	169
Signature Capture Optimize	169
IMGBOX Modifiers	170

RF Default Imaging Device	174
---------------------------------	-----

Chapter 8 - Utilities.....175

Add a Test Code I.D. Prefix to All Symbologies	175
Show Software Revision	175
Test Menu	175
TotalFreedom.....	176
Application Plug-Ins (Apps)	176
EZConfig-Scanning Introduction.....	177
Reset the Factory Defaults.....	177

Chapter 9 - Serial Programming Commands.....179

Conventions	179
Menu Command Syntax	179
Query Commands.....	180
Trigger Commands.....	182
Reset the Custom Defaults	182
Menu Commands	183

Chapter 10 - Advanced Application Programming.....203

Beeper and LED Sequences	203
Text Settings	204
Text Size Line 1.....	205
Text Size Line 2.....	205
Single Line Display or Large Font	205
Text Color - Foreground Line 1	206
Text Color - Foreground Line 2	206
Text Color - Background	206
Screen Display Settings	207
Backlight Level.....	207
Scan Time	207
Display Time.....	208
Button Notifications.....	208

Language Setting.....	208
Icon Bar.....	209
Chapter 11 - Product Specifications.....	211
8680i Wearable Mini Mobile Computer.....	211
MB4-SCN02 Charge Base Product Specifications	213
MB4-BAT-SCN02 Charge Base Product Specifications	213
Required Safety Labels.....	214
Chapter 12 - Maintenance and Troubleshooting	217
Repairs.....	217
Maintenance	217
Clean the Scanner	217
Clean the Window or Display	217
Replace the Finger Strap.....	218
Troubleshooting.....	218
Chapter A - Reference Charts	221
Symbology Charts.....	221
Linear Symbologies	221
2D Symbologies	222
Postal Symbologies	223
ASCII Conversion Chart (Code Page 1252)	224
Lower ASCII Reference Table.....	225
ISO 2022/ISO 646 Character Replacements	228
Keyboard Key References.....	231
Sample Symbols.....	233
Programming Chart	235

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**.

About This Manual

This User Guide provides installation and programming instructions for the 8680i wearable mini mobile computer. Product specifications, dimensions, warranty, and customer support information are also included.

Honeywell devices 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.

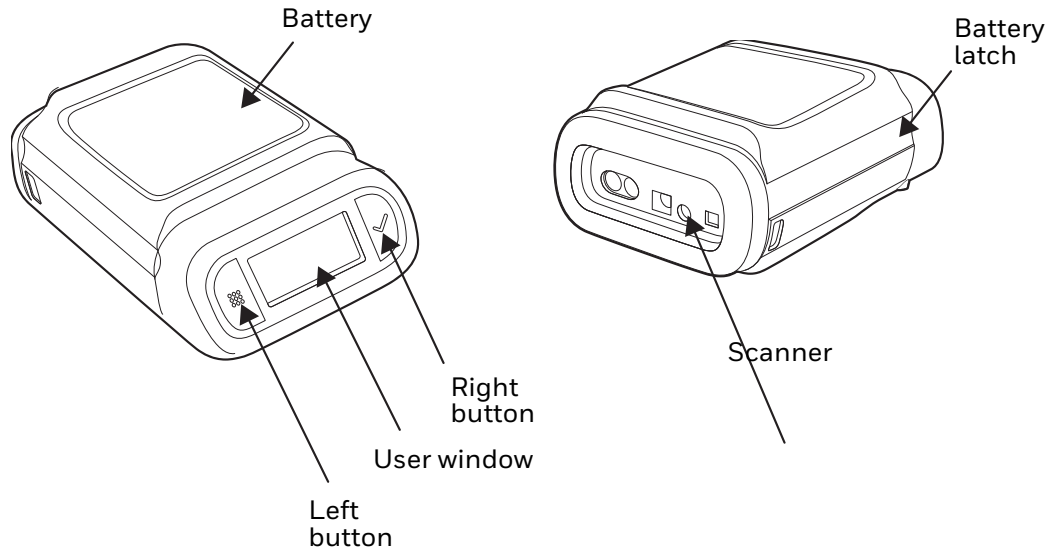
An asterisk (*) next to an option indicates the default setting.

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.

8680i Overview

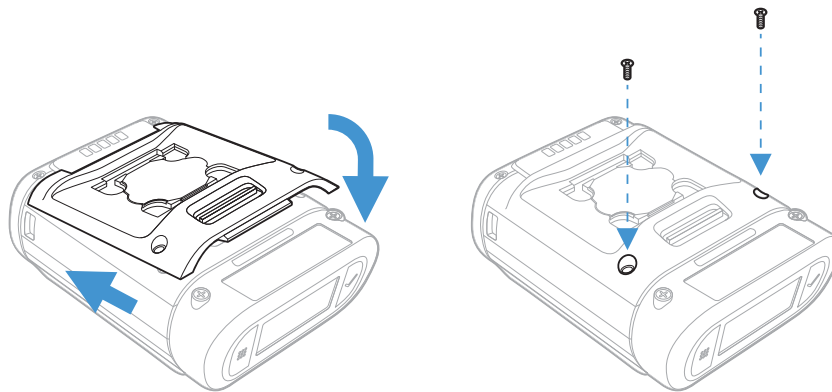


Use the 8680i with a Triggered Ring Wearable Accessory

The 8680i module can be attached to a triggered ring.

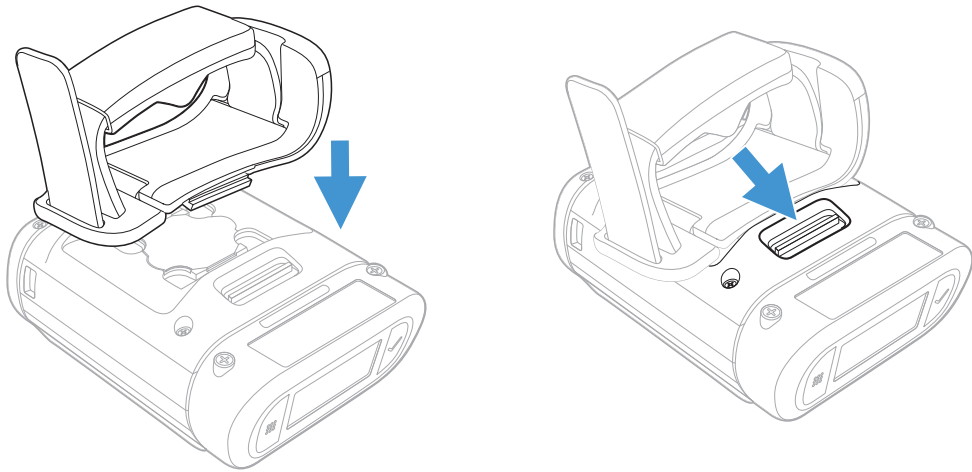
Attach the 8680i to a Triggered Ring Wearable Accessory

1. Turn over the 8680i and line up the 2 longer tabs of the bottom plate (supplied with the triggered ring) with the front edge of the scanner.
2. Slide the spring latch back to lock the bottom plate in place.

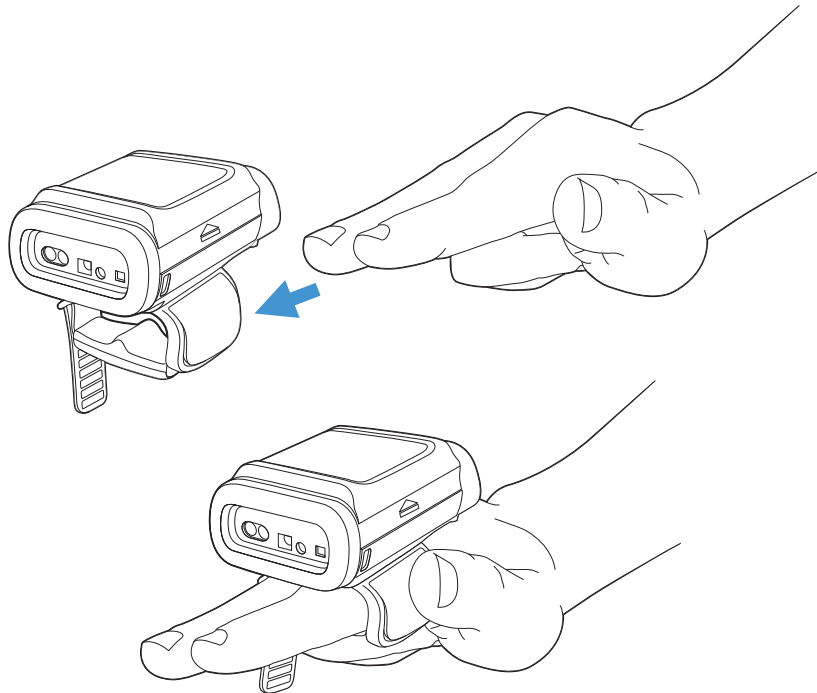


3. Use the 2 screws supplied with the trigger to secure the plate to the 8680i.

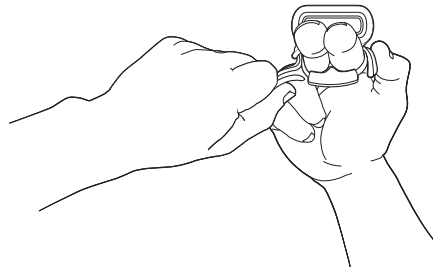
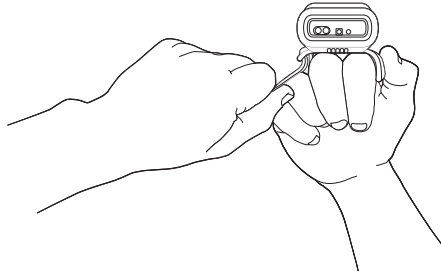
4. Place the finger strap in the correct orientation (right or left hand), and push into the bottom plate. The spring latch locks into place.



5. Place the 8680i on your hand.

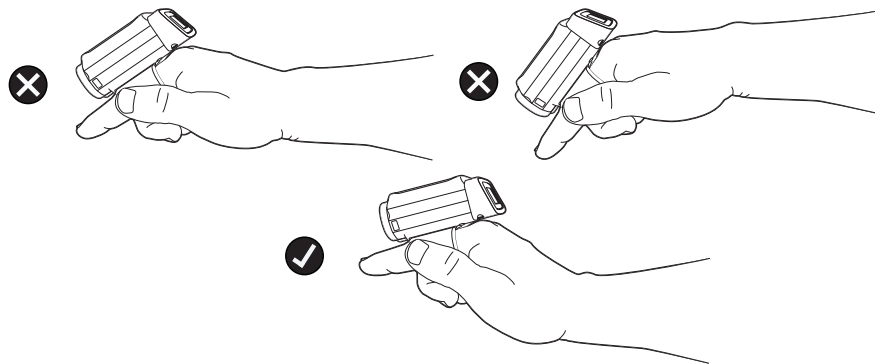


6. Pull the finger strap to secure it and tuck the excess strap length into the finger guide channel.



7. Press the trigger to power up the scanner. The battery, WiFi, and Bluetooth status appear in the window.

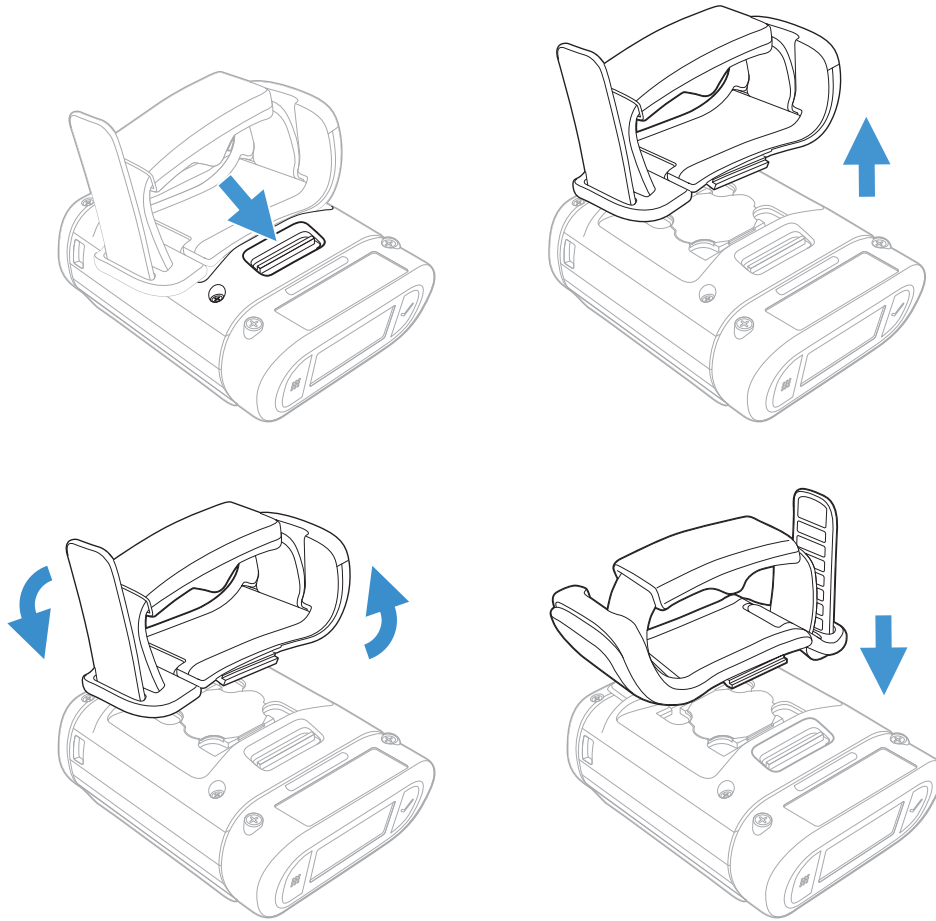
Wrist Position When Scanning



Warning: Do not stare directly into the laser beam.

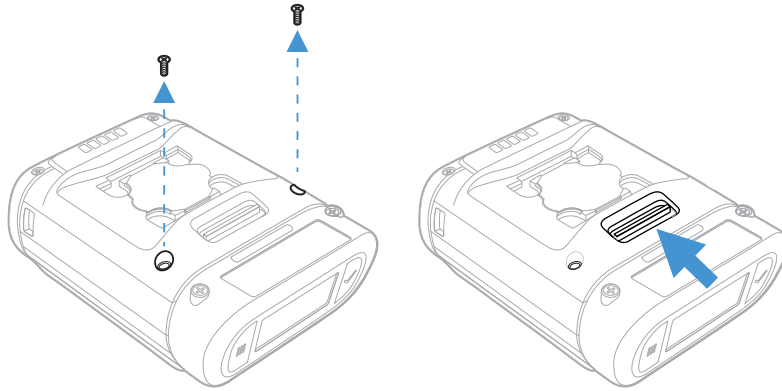
Right or Left Handed Operation

To release the triggered ring, turn over the 8680i. Slide the spring latch forward to release the triggered ring. Turn the finger strap around and snap it into place to change the operation to the correct hand.



Remove Bottom Latch Plate

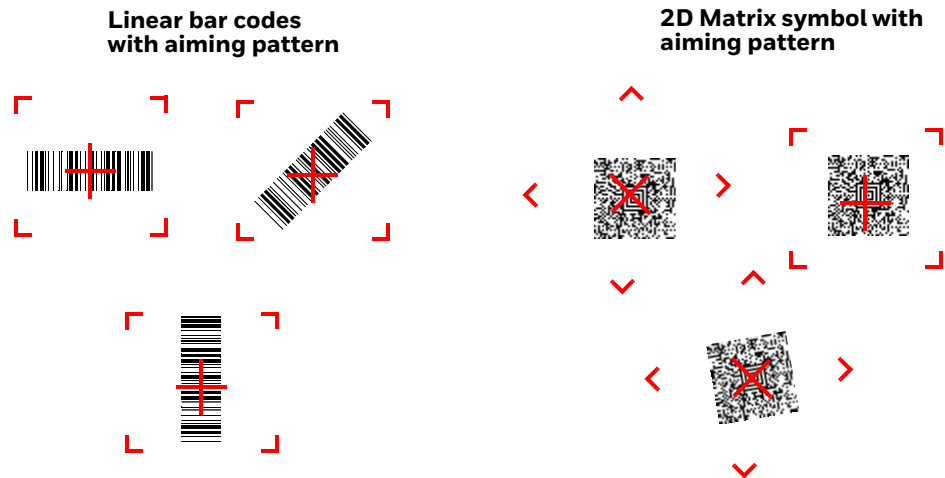
1. Turn over the 8680i and remove the 2 screws that secure the bottom plate.
2. Slide the spring latch toward the charging contacts to remove the bottom plate.



Reading Technique

Center the Aimer

The 8680i has a view finder that projects a bright aiming pattern. This aiming pattern should be centered over the bar code, but it can be positioned in any direction for a good read.



The aiming pattern is smaller when the 8680i is closer to the code and larger when it is farther from the code. Symbologies with smaller bars or elements (mil size) should be read closer to the unit. Symbologies 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 8680i at an appropriate distance from the target, press the trigger, and center the aiming pattern 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.

Battery and Charge Information

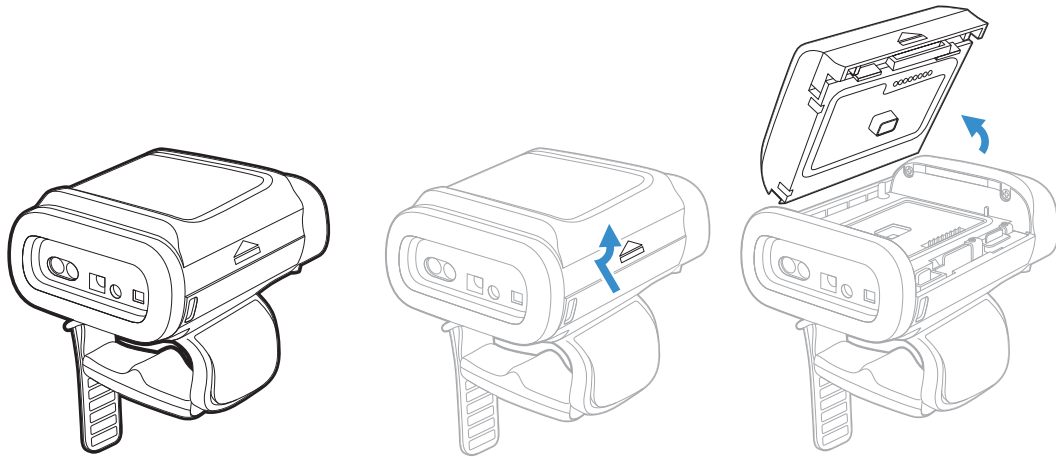
The battery must be fully charged before the first use. An MB4/MB12-BAT-SCN02 or an MB4/MB12-SCN02 Charging Station must be purchased separately.

Replace the Battery

When the battery is low, the 8680i beeps and vibrates and the window shows a **Battery Low** warning. You can also press both the right and left buttons at any time to view the battery's charge status.

Note: The battery should be replaced in an environment free from excessive dust or particulate to avoid an internal buildup of dust in the unit.

To replace the battery, squeeze the battery latch and lift up on the battery.



Replace the battery by snapping it in to the 8680i.

The BAT-SCN02 high capacity lithium ion battery or the BAT-SCN03 standard capacity lithium ion battery can be used. Batteries are not fully charged when shipped. The battery should be charged for a minimum of 4 hours before initial use to ensure optimal performance.



Caution: There is a danger of explosion if the batteries are incorrectly replaced. Use only Honeywell lithium ion battery packs, model numbers BAT-SCN02 or BAT-SCN03 in this device. Use of any non-Honeywell battery may result in damage not covered by the warranty. 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.

Battery Recommendations

- The battery is a lithium ion cell that 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.

- Replace a defective battery immediately since it could damage the 8680i.
- Although your battery can be recharged many times, it will eventually be depleted. Replace it after the battery is unable to hold an adequate charge.
- 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](#) on page iii for additional information.

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.

Proper Disposal of the Battery



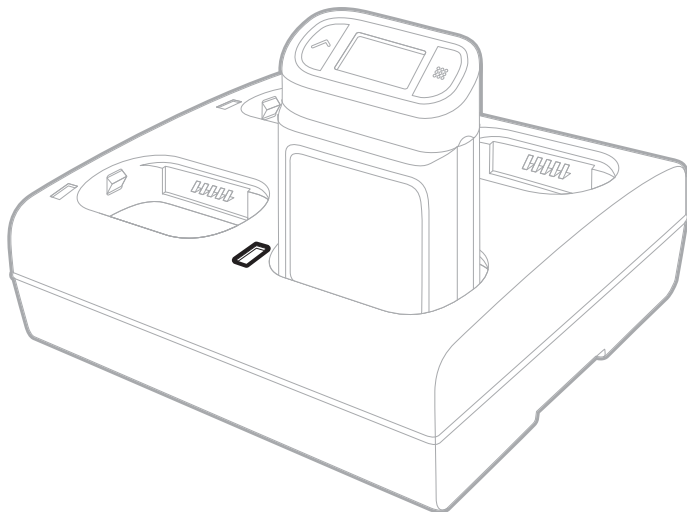
When the battery has reached the end of its useful life, the battery should be disposed of by a qualified recycler or hazardous materials handler. Do not incinerate the battery or dispose of the battery with general waste materials. You may send the 8680i's battery to us. (postage paid). The shipper 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 the [Customer Support](#) (page iii) 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.

Charge the Battery

Refer to the MB4-SCN02/MB12-SCN02 Multi-Bay Scanner Charger Quick Start Guide or the MB4-BAT-SCN02/MB12-BAT-SCN02 Multi-Bay Battery Charger Quick Start Guide, available at www.honeywellaidc.com, for complete information about the operation of the chargers.

Multi-Bay Device Chargers

Line the 8680i's battery contacts up with the contacts in the charging pocket. Firmly press the 8680i straight down into the battery charging pocket. The LED to the left of the pocket lights up in white when the 8680i is properly inserted.

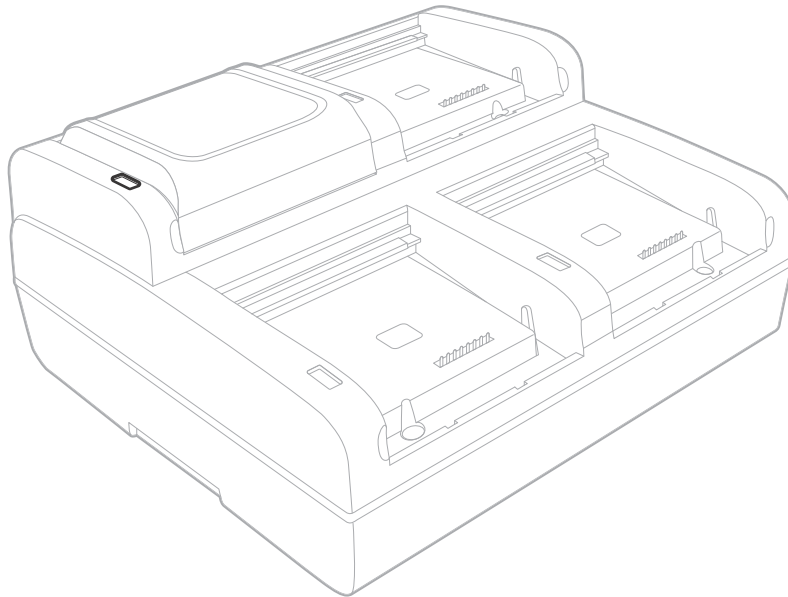


It is important that 8680is are inserted into the charging pocket correctly. Inserting the battery incorrectly could result in damage to the 8680i or the charger.

When the 8680i is placed in a charging pocket, the charger begins charging the battery. There is a slight delay while the charger evaluates the condition of the battery before charging begins. While charging, the user window shows the battery status.

Multi-Bay Battery Chargers

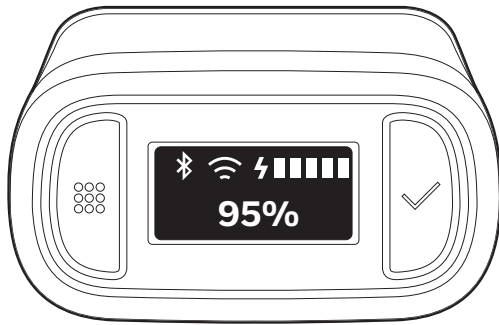
Line the battery's contacts up with the contacts on the charging pocket. Firmly press the battery into the battery charging pocket. The LED to the left of the pocket lights up in an amber color when the battery is properly inserted.



It is important that batteries are inserted into the charging pocket correctly. Inserting the battery incorrectly could result in damage to the battery or the charger.

When a battery is placed in a charging pocket, the charger begins charging the battery. There is a slight delay while the charger evaluates the condition of the battery before charging begins. While charging, the red LED on the battery charger indicates the battery has a low charge, yellow indicates a moderate charge, and green indicates the battery has been fully charged and can be removed.

User Window











The window shows prompts for using the scanner in your environment. The buttons to the left and right of the window are used to scroll through the windows or to enter responses to screen prompts.

- Press both the right and left buttons at the same time to view the WiFi, Bluetooth, and battery status.
- Press and hold the left button for 6 seconds to restart the scanner.

WiFi and Bluetooth Status

The following symbols indicate the status of your WiFi and Bluetooth connections.

WiFi Icons	Indication
No WiFi icon	WiFi Off
	WiFi On - Strong Signal
	WiFi On - Weak Signal
	WiFi On - Poor Signal
	WiFi On and Disconnected
	WiFi - No Connection

Bluetooth Icons	Indication
No Bluetooth icon	Bluetooth Off
Flashing Bluetooth icon	Bluetooth Attempting to Connect
	Bluetooth On and Connected
	Bluetooth On and Disconnected
	Bluetooth - No Connection

Connect the 8680i to Your Network

Pair the 8680i with Bluetooth Devices

Note: For additional security, your Bluetooth devices should require a PIN when pairing.

Pair with a PC or Laptop Bluetooth Serial Port: Host Reconnect Mode

The 8680i can pair with host Bluetooth devices such as personal computers, laptops, and tablets. In this mode, the host will continually attempt to connect with the scanner. If the scanner and the host become disconnected, the host will manage the reconnection.

1. Scan the **Host Reconnect Mode** bar code below.



PAPSPP;BT_DNG1.

Host Reconnect Mode

2. Set your host device so it searches for other Bluetooth devices. (Refer to your host device's User's Guide for pairing instructions.)
3. Once your host device has located the scanner, select the 8680i scanner name from the list displayed.

Note: See [Enter a Bluetooth PIN](#) on page 15 if your host device displays a PIN.

The Bluetooth symbol appears in the scanner window when the scanner pairs with a host.

Pair with a PC or Laptop Bluetooth Serial Port: Scanner Reconnect Mode

In this mode, the scanner will continually attempt to connect with the host. If the scanner and the host become disconnected, the scanner will manage the reconnection.

1. Scan the **Scanner Reconnect Mode** bar code below.



BT_TRM0,DNG5.

Scanner Reconnect Mode

2. Set your host device so it searches for other Bluetooth devices. (Refer to your host device's User's Guide for pairing instructions.)
3. Once your host device has located the scanner, select the 8680i scanner name from the list displayed.

Note: See [Enter a Bluetooth PIN](#) on page 15 if your host device displays a PIN.

The Bluetooth symbol appears in the scanner window when the scanner pairs with a host.

Pair with a PC or Laptop Bluetooth: HID Keyboard Mode

In this mode, the 8680i pairs with a Bluetooth device using a HID keyboard.

1. Scan a **Bluetooth HID Keyboard Connect** bar code below.



2. Set your host device so it searches for other Bluetooth devices. (Refer to your host device's User's Guide for pairing instructions.)
3. Once your host device has located the scanner, select the 8680i scanner name from the list displayed.

Note: See [Enter a Bluetooth PIN](#) on page 15 if your host device displays a PIN.

The Bluetooth symbol appears in the scanner window when the scanner pairs with a host.

Pair with Bluetooth Low Energy (BLE) Devices

Use the following codes to connect to Bluetooth low energy devices. Scan **HID BLE Connect** to connect the 8680i to Bluetooth Low Energy HID devices. Scan **Serial BLE Connect** to establish two-way communication between the 8680i and Bluetooth Low Energy serial devices.



Pair with an Android™ Mobile Device

Tap and Pair

You can pair your Android™ phone with the 8680i by touching the devices together.

1. Scan the **NFC On** bar code with the 8680i.



2. Make sure the NFC setting is **On** in your phone.
3. Touch the Android phone to the scanner.
4. The phone recognizes the scanner and prompts you to pair.
5. Verify the pairing of the 8680i in your phone's Bluetooth settings.

Pair with an Android, Apple™ or Windows® Mobile Device

The 8680i can pair with Android, Apple, and Windows mobile devices, excluding Windows CE and Mobile.

1. *The 8680i only supports connecting to Apple devices using Bluetooth HID mode. Set your mobile device so it searches for other Bluetooth devices. (Refer to your mobile device's User's Guide for pairing instructions.)*

1. Scan the **Bluetooth HID Keyboard Connect** bar code below.



2. On the mobile device, the 8680i scanner is shown as a keyboard. Click on it to pair.

Note: See [Enter a Bluetooth PIN](#) on page 15 if your host device displays a PIN.

The Bluetooth symbol appears in the scanner window when the scanner pairs with a mobile device.

Enter a Bluetooth PIN

If your host device does not automatically pair with the 8680i, a PIN is displayed. This PIN must be scanned within 30 seconds. Using the 8680i, you must quickly scan **Bluetooth PIN Code** below, then scan the numeric bar code(s) for the PIN code from the chart below, then scan the **Save** bar code.



BT_PIN.

Bluetooth PIN Code



K1K

1



K3K

3



K5K

5



K7K

7



K0K

0



K2K

2



K4K

4



K6K

6



K8K

8



The Bluetooth symbol appears in the scanner window when the scanner pairs with a host.

Virtual Keyboard

Once your 8680i has been connected directly to a smart phone or laptop, you can toggle the virtual keyboard on your device using the 8680i trigger. If you have paired with an Apple device, the on-screen keyboard is activated by pressing the 8680i trigger twice, quickly. If you have paired with an Android device (v 4.4 and higher), the on-screen keyboard must be configured by going to **Settings - Language & input**. Tap on **Default** and change the setting for **Hardware Physical keyboard** to **Off**.

Pair with a Honeywell Vehicle Mount Computer

The 8680i can pair with Honeywell vehicle mount computers, such as the Thor VM1 or VM2, or with Tecton mobile computers.

1. Scan the **Bluetooth HID Keyboard Disconnect** bar code below.



Bluetooth HID Keyboard Disconnect

2. Use the 8680i to scan the EZPairing bar code that is either supplied with the device, attached to the device, or displayed on the screen. The EZPairing bar code begins with {FNC3} LnkB, followed by 12 digits, like the sample below.



The Bluetooth symbol appears in the user window when the 8680i pairs with a host. Once the 8680i battery is charged and you have paired it to a host device, you may begin scanning bar codes. Verify the 8680i operation by scanning a bar code from the [Sample Symbols](#), beginning on page 233.

Pair with a Honeywell Communication and Charge Base or Access Point

The 8680i can communicate with the following Honeywell Communication and Charge base (CCB) and Honeywell Bluetooth Access Points:

Granit CCBs:

- CCB02-100BT-07N
- CCB05-100BT-07N

Xenon CCBs:

- CCB01-010BT-07N

Access Points:

- AP-100BT-07N
- AP05-100BT-07N
- AP-010BT-07N

To connect to a CCB or Access Point, scan the **CCB/AP Connect** bar code. To remove this connection, scan the **CCB/AP Disconnect**.



BT_TRM0;BT_EHM0;WIDSCN0.

CCB/AP Connect



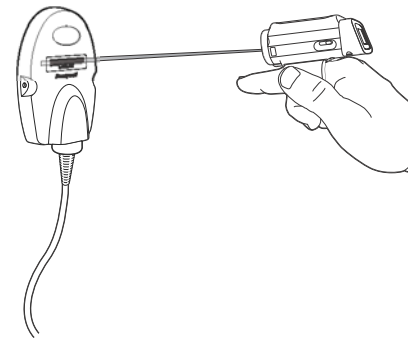
BT_EHM1,DNG1;WIDSCN1.

CCB/AP Disconnect

Note: *The 8680i cannot be charged with a CCB.*

1. Turn on the computer (laptop/desktop) that hosts the CCB or Access Point and be sure all the CCB or Access Point connections have been made.
2. Apply the linking bar code that came with your CCB or Access Point to that device.

3. Scan the linking bar code on the CCB or Access Point to establish a connection between the CCB or Access Point and the scanner. The scanner emits a short beep and a green check mark appears in the User Window to confirm a connection with the CCB or Access Point.



Pair with a Vocollect Device

In this mode, the scanner will continually attempt to connect with the host. If the scanner and the host become disconnected, the scanner will manage the reconnection.

1. Scan the **Scanner Reconnect Mode** bar code below.



BT_TRM0,DNG5.

Scanner Reconnect Mode

2. Configure the 8680i with the termination characters used for your workflow. This is often a carriage return and line feed, which can be programmed by scanning the following bar code:



SUFBK2990D0A.

CR/LF Suffix

See [Suffix Selections](#) if you require other termination characters.

3. In the VoiceConsole, set the Vocollect device to:
 - Pairing type **Bluetooth Scanner**
 - Connection mode **Device listens for peripheral connection**
 - Security type **Disabled**
4. Simple scan-based pairing can be accomplished by creating a dedicated pairing bar code and applying it to each Vocollect device. The EZPairing bar code begins with {FNC3} LnkB, followed by 12 digits, like the sample below.



LnkBxxxxxxxxxxxx

5. The Bluetooth symbol changes from crossed out or flashing to continuously lit in the user window status screen when the 8680i pairs with a host. (See [WiFi and Bluetooth Status](#).) Once the 8680i battery is charged and you have paired it to a host device, you may begin scanning bar codes. Verify the 8680i

operation by scanning a bar code from the [Sample Symbols](#), beginning on page 233.

Disconnect from the Host

Once your scanner has been connected to a host, you must disconnect it in order to communicate with a different device. Scan the **Bluetooth Disconnect** bar code to unlink the scanner from the currently linked host.



BT_DNG4,ADR.

Bluetooth Disconnect

Unpair When Charging

If you want the 8680i to automatically unpair when placed in a charger, scan the **Unpair When Charging** bar code below. When set to **Off**, placing the 8680i in the charger has no effect on pairing. *Default = Off.*



BT_DSC0.

*Off



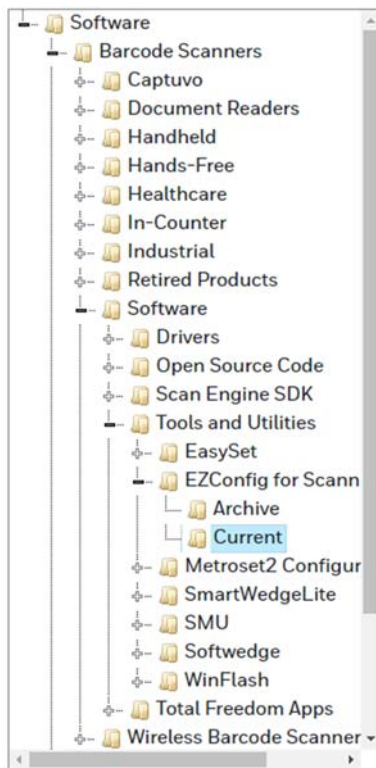
BT_DSC2.

Unpair When Charging

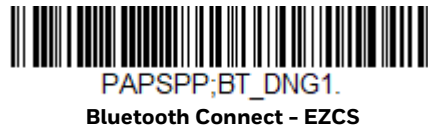
Configure the 8680i with EZConfig for Scanning

Use the EZConfig for Scanning tool to configure your 8680i online:

1. Access the Honeywell Technical Support Downloads Portal at <https://hsmftp.honeywell.com>.
2. Go to **Software > Barcode Scanners > Software > Tools and Utilites > EZConfig for Scanning > Current.**



3. Download the **Setup** version of EZConfig for Scanning.
4. Once EZConfig is installed, scan the **Bluetooth Connect - EZCS** bar code below.



5. Open EZConfig to configure your 8680i.

Connect the 8680i to WiFi

Note: *WiFi capability is only supported by the advanced version of the 8680i.*

The 8680i goes into sleep mode when there is no activity for 10 seconds. It must be awake to connect to WiFi. Press the trigger to make sure it is awake for this process.

The 8680i can be configured for WiFi networks using EZConfig for Scanning.

1. Open **EZConfig for Scanning** after connecting via Bluetooth ([page 19.](#))
2. Select the **Scan Data Window** tab, then the **Create WiFi Bar Code** tab.
3. Access the WiFi settings on your PC.
4. When your WiFi list appears, select the network to which you want to connect the 8680i and click on **Properties**.

5. Use the information shown for the **IPv4 address**, the **IPv4 DNS servers**, and the **network name** to fill in the EConfig screen.

Note: The TCP Port is always **3390**.

6. Click on either **Create 1D Wifi Bar Code** or **Create 2D Wifi Bar Code**.
7. Print the bar code and scan it with the 8680i to connect to the WiFi network.

Menu Bar Code Security Settings

Honeywell scanners are programmed by scanning menu bar codes or by sending serial commands to the 8680i. 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 [Technical Assistance](#) on page iii) for further information.

Set Custom Defaults

You have the ability to 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 is 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.



MNUCDP.

Set Custom Defaults



MNUCDS.

Save Custom Defaults

Note: Scanning the **Save Defaults** bar code also causes both the 8680i and the host to perform a reset and become unlinked. You must relink (pair) the 8680i to the host.

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 remain, but the beeper volume setting is updated.

Reset Custom Defaults

If you want the custom default settings restored to your 8680i, scan the **Activate Custom Defaults** bar code below. This is the recommended default bar code for most users. It resets the 8680i to the custom default settings. If there are no custom defaults, it resets the 8680i to the factory default settings. Any settings that have not been specified through the custom defaults are defaulted to the factory default settings.



DEFAULT.

Activate Custom Defaults

Note: *The 8680i resets and becomes unlinked from the host after using the Defaults commands. See [Auto Reconnect Mode](#) on page 24 to relink the 8680i.*

The following information describes wireless settings. For information about connecting to a wireless or Bluetooth network, see [Connect the 8680i to Your Network](#), beginning on page 12.

Change the 8680i's Bluetooth PIN Code

Some devices require a PIN code as part of the Bluetooth security features. The 8680i default PIN is **1234**, which you may need to enter the first time you connect to your host. When using multiple 8680is, you may want to change the PIN so each 8680i is uniquely identified. The PIN code must be between 1 and 16 characters. To change the PIN for the 8680i, scan the bar code below and then scan the appropriate numeric bar codes from the [Programming Chart](#), beginning on page 235. Scan **Save** to save your selection.



BT_PIN.

Bluetooth PIN

Minimize Bluetooth/ISM Band Network Activity

The settings described below can help you customize the relinking behavior of your wireless system to obtain the best compromise between convenience and low interference.

Note: *ISM band refers to the 2.4 to 2.48 GHz frequency band used by wireless networks, cordless phones, and Bluetooth.*

Auto Reconnect Mode

Auto Reconnect controls whether or not the 8680i automatically begins the relink process when a loss of connection is detected. When the **Auto Reconnect On** bar code is scanned, the 8680i begins the relink process immediately, without user intervention. *Default = Auto Reconnect On.*



BT_ACM1.

* Auto Reconnect On



BT_ACM0.

Auto Reconnect Off

Note: If you are connecting to a Bluetooth Interface Module, set **Auto Reconnect** to **Off**.

The table below shows the results of the Auto Reconnect On and Off settings:

Event	Auto Reconnect On	Auto Reconnect Off
8680i out of range	Relink occurs automatically. If maximum number of link attempts is unsuccessful, then the 8680i must be relinked by either pressing the trigger or relinking the 8680i to the host. See Maximum Link Attempts on page 24.	The 8680i is relinked by pressing the trigger or relinking to the host.
Host reset (firmware upgrade or power cycle)	8680i behaves as if out of range.	No attempt to relink made while host is powered off. Trigger must be pressed to initiate relinking.
8680i power down due to Power Time-Out Timer setting (see page 2-29)	Trigger must be pressed.	
8680i reset due to firmware upgrade	Relink occurs automatically.	
8680i reset due to battery change	Relink occurs automatically.	

Maximum Link Attempts

The Maximum Link Attempts setting controls the number of times the 8680i tries to form a connection with a host. During the connection setup process, the 8680i transmits in order to search for and connect to a host. In order to prevent continuous transmissions that could interfere with other users of the ISM band, the number of attempts to connect is limited by this setting. After the maximum number of attempts is reached, the 8680i does not attempt to reconnect to a host. Pressing the trigger, scanning a host linking bar code, or pairing the 8680i with a host resets the attempt count and the 8680i tries to link again.

Scan the **Maximum Link Attempts** bar code, then scan the number of attempts for the setting (from 0-100) from the [Programming Chart](#), beginning on page 235. Scan **Save** to save the setting. *Default = 0.*



Note: *When Auto Reconnect Mode is On, setting Maximum Link Attempts to zero causes the 8680i to try to link until the Power Time-Out Timer setting (see [page 2-29](#)) expires. When Auto Reconnect Mode is Off, setting Maximum Link Attempts to zero causes the 8680i to only attempt linking one time after a trigger press.*

Relink Time-Out

Relink Time-Out controls the idle time between relink attempts. An attempt to link the 8680i to a host typically lasts up to 5 seconds. This is the time when the 8680i is actually attempting a contact. Relink Time-Out controls the amount of time, in seconds, that elapses between the end of one connection attempt and the start of the next.

Note: *The length of time for an attempt depends on the number of 8680is that are connected to a host. An extra 7 seconds may be required when a connection is successful.*

Scan the **Relink Time-Out** bar code, then scan the number of seconds for the setting (from 1-100) from the [Programming Chart](#), beginning on page 235. Scan **Save** to save the setting. *Default = 3 seconds.*



Bluetooth/ISM Network Activity Examples

Default values

When the 8680i goes out of range, the 8680i repeatedly attempts to connect to the host. Each attempt consists of approximately 5 seconds of active time followed by 3 seconds of idle time. After one hour, the 8680i powers off and data is lost.

Maximum Link Attempts set to 15 **Other values at default setting**

When the 8680i goes out of range, 15 attempts are made to link to the host. Each attempt consists of approximately 5 seconds of active time followed by 3 seconds of idle time. After 15 cycles ($8 \times 15 = 120$), or about 2 minutes, the 8680i stops trying to connect to the host. After one hour, the 8680i powers off and data is lost.

Auto Reconnect Mode set to 0
Maximum Link Attempts set to 15
Other values at default setting

When the 8680i goes out of range, no action is taken to relink. When the trigger is pressed, 15 attempts are made to link to the host. Each attempt consists of approximately 5 seconds of active time followed by 3 seconds of idle time. After 15 cycles (8*15 =120), or about 2 minutes, the 8680i stops trying to connect to the host. After one hour, the 8680i powers off and data is lost. Refer to [Auto Reconnect Mode](#), page 24, to review other events that can start the relink process.

Auto Reconnect Mode set to 1
Maximum Link Attempts set to 0
Relink Time-Out set to 10
Scanner Power Time-Out Timer set to 1800

Note: See [Scanner Power Time-Out Timer](#) on page 2-29.

The 8680i attempts to connect to the host every 15 seconds, measured from one attempt start to the next attempt start. After one half hour, the 8680i powers off.

Communication Between the 8680i and the Host

When data is scanned, the data is sent to the host system. The 8680i provides immediate feedback in the form of a “good read” indication on the screen, an audible beep, and a vibration. This indicates only that the bar code has been scanned correctly.

RF (Radio Frequency) Operation

The wireless system uses a two-way Bluetooth radio utilizing adaptive frequency hopping (AFH) to transmit and receive data between the 8680i and the host. Designed for point-to-point and multiple point-to-single-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. This makes the wireless system highly responsive to a wide variety of data collection applications and resistant to noisy RF environments. The communication range between the 8680i and host, depending on the environment, is 328 feet (100m). See [Flexible Power Management](#), page 30, for information about controlling this range.

System Conditions

The components of the wireless system interact in specific ways as you move the 8680i out of range, bring the 8680i back in range, or swap 8680is between two hosts. The following information explains the wireless system operating conditions.

8680i Is Out of Range

The 8680i is in communication with its host, even when it is not transmitting bar code data. Whenever the 8680i can't communicate with the host for a few seconds, it is out of range. If the 8680i is out of range and you scan a bar code, the 8680i issues an error tone indicating that there was no communication with the host. Refer to [Out-of-Range Alarm](#), page 28 and [Auto Reconnect Mode](#), page 24.

8680i Is Moved Back Into Range

The 8680i relinks if the 8680i or the host have been reset, or the 8680i comes back into range. If the 8680i relinks, you will hear a single chirp when the relinking process (uploading of the parameter table) is complete. Refer to [Out-of-Range Alarm](#) on page 28 and [Auto Reconnect Mode](#), page 24 for further information.

Reset Scanner

Scanning this bar code reboots the 8680i and causes it to relink with the host.



Scanner Report

Scan the bar code below to generate a report for the connected 8680is. The report indicates the port, 8680i name, and address. To assign a name to your 8680i, refer to [Device Name](#), page 37.



Scanner Address

Scan the bar code below to determine the address of the 8680i you are using.



Unlink a Scanner

If a host has an 8680i linked to it, that 8680i must be unlinked before a new 8680i can be linked. Once the previous 8680i is unlinked, it no longer communicates with the host. To unlink the 8680i from a host, scan the **Unlink Scanner** bar code below.



Override Locked Scanner

If you need to replace a broken or lost 8680i that is linked to a host, scan the **Override Locked Scanner** bar code below with a new 8680i and pair that 8680i with the host. The locked link is overridden; the broken or lost 8680i's link with the host is removed, and the new 8680i is linked.



Out-of-Range Alarm

If your 8680i is out range of the host, an alarm sounds from the 8680i. The alarm stops when the 8680i is moved closer to the host, when the host links to another 8680i, or when the alarm duration expires. To set the alarm duration, scan the bar code below and then set the time-out duration (from 0-3000 seconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 0 sec (no alarm).*



Note: *If you are out of range when you scan a bar code, you will receive an error tone even if you do not have the alarm set because the data could not be sent to the host.*

Alarm Sound Type

Change the alarm type by scanning the following bar code and then scanning a digit (0-7) bar code and the **Save** bar code on the [Programming Chart](#), beginning on page 235. *Default = 0.*

The sounds are as follows:

Setting	Sound
0	3 long beeps, medium pitch
1	3 long beeps, high pitch
2	4 short beeps, medium pitch
3	4 short beeps, high pitch
4	single chirps, medium pitch
5	2 chirps, then 1 chirp, medium pitch
6	single chirps, high pitch
7	2 chirps, then 1 chirp, high pitch



BT_ORW.

Scanner Alarm Type

Scanner Power Time-Out Timer

When there is no activity within a specified time period, the 8680i enters low power mode. Scan the appropriate power time-out bar code to change the time-out duration (in seconds).

Note: Scanning zero (0) is the equivalent of setting no time-out.

If there are no trigger presses during the timer interval, the 8680i goes into power down mode. Whenever the trigger is pressed, the timer is reset. The 8680i does not go into power down mode when the battery is charging. *Default = 3600 seconds.*



BT_LPT0.
0 seconds



BT_LPT200.
200 seconds



BT_LPT400.
400 seconds



BT_LPT900.
900 seconds



BT_LPT3600.
* 3600 seconds

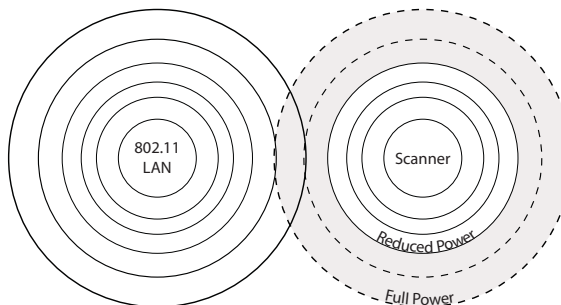


BT_LPT7200.
7200 seconds

Note: When the 8680i is in power down mode, press the trigger to power the unit back up. There is a set of power up beeps and a delay of up to a few seconds for the radio to join. The 8680i is then ready to use.

Flexible Power Management

If you are experiencing network performance issues and suspect the 8680i is interfering with other devices, you can turn down the power output of the 8680i. This reduces the range between the 8680i and a host as shown in the following illustration:



Scan one of the bar codes below to set the 8680i's power output to **Full Power** (100%), **Medium Power** (35%), **Medium Low Power** (5%), or **Low Power** (1%).
Default = Full Power.



Batch Mode

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

Automatic Batch Mode stores bar code data when the scanner is out of range of the base or Access Point. The data is automatically transmitted to the base or Access Point 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 or Access Point so data can be transmitted.

Inventory Batch Mode stores bar code data, whether or not you are in range of the base or Access Point. To transmit the stored data to the base or Access Point, either place the scanner in the base, or scan [Transmit Inventory Records](#) (page 36). When the scanner's buffer space is full, any bar codes scanned generate an error tone. In order to scan bar codes again, the data must be transmitted to the base or Access Point. Once the data is transmitted, it is cleared in the scanner.

Persistent Batch Mode is the same as Inventory Batch Mode, except that once the data is transmitted to the base or Access Point, it is retained in the scanner. If you want to transmit more than once, you can do so using this mode. In order to clear the scanner's buffer, you must scan [Clear All Codes](#) (see page 36).

Default = Batch Mode Off.



Batch Mode Beep

When scanning in [Inventory Batch Mode](#) (page 32), the scanner beeps every time a bar code is scanned. When Batch Mode Beep is **On**, you will also hear a click when each bar code is sent to the host. If you do not want to hear these clicks, scan **Batch Mode Beep Off**. Default = Batch Mode Beep On.



Batch Mode Storage

When a scanner is storing data during a Batch Mode process, you can select whether the data is stored in Flash memory or in RAM.

Flash Storage: The scanner writes any untransmitted data to flash memory prior to powering down. The data will still be there when the scanner powers back up. However, the scanner will power down, even with untransmitted data, if it reaches a power down timeout or if the battery power is very low.

RAM Storage: The scanner will not power down while it contains data that has not been transmitted to the base or Access Point, even if it reaches a power down timeout. However, if the scanner runs out of power, it will power down and the data will be lost.

Default = Flash Storage.



Batch Mode Quantity

When in Batch Mode, you may wish to transmit the number of multiple bar codes scanned, rather than a single bar code multiple times. For example, if you scan three bar codes called XYZ with **Batch Mode Quantity Off**, when you transmit your data it will appear as XYZ three times. Using **Batch Mode Quantity On** and the Quantity Codes ([page 34](#)), you could output your data as “XYZ, 00003” instead.

Note: If you wish to format your output, for example, place a CR or tab between the bar code data and the quantity, refer to [Data Format](#) beginning on page 73.

Default = Batch Mode Quantity Off.



Enter Quantities

Quantity Codes ([page 34](#)) allow you to enter a quantity for the last item scanned, up to 9999 (default = 1). Quantity digits are shifted from right to left, so if a fifth digit is scanned, the first digit scanned is discarded and the second, third and fourth digits are moved to the left to accommodate the new digit.

For example, if the Quantity 5 bar code is scanned after the quantity has been set to 1234, then the 1 is dropped, the quantity will be 2345.

Example: Add a quantity of 5 for the last item scanned.

1. Scan the item's bar code.
2. Scan the quantity **5** bar code.

Example: Add a quantity of 1,500 for the last item scanned.

1. Scan the item's bar code.
2. Scan the quantity **1** bar code.
3. Scan the quantity **5** bar code.
4. Scan the quantity **0** bar code.
5. Scan the quantity **0** bar code.

Example: Change a quantity of 103 to 10.

To correct an incorrect quantity, scan the quantity 0 bar code to replace the incorrect digits, then scan the correct quantity bar codes.

1. Scan the quantity **0** bar code to change the quantity to 1030.
2. Scan the quantity **0** bar code to change the quantity to 0300.
3. Scan the quantity **1** bar code to change the quantity to 3001.
4. Scan the quantity **0** bar code to change the quantity to 0010.

Default = 1.

Quantity Codes



BATNUM0.

0



BATNUM1.

1



BATNUM2.

2



BATNUM3.

3



BATNUM4.

4



BATNUM5.

5



BATNUM6.

6

Quantity Codes (Continued)



Batch Mode Output Order

When batch data is transmitted, select whether you want that data sent as **FIFO** (first-in first-out), or **LIFO** (last-in first-out). *Default = Batch Mode FIFO.*



Total Records

If you wish to output the total number of bar codes scanned when in Batch Mode, scan **Total Records**.



Delete Last Code

If you want to delete the last bar code scanned when in Batch Mode, scan **Delete Last Code**.



Clear All Codes

If you want to clear the scanner's buffer of all data accumulated in Batch Mode, scan **Clear All Codes**.



BATCLR.

Clear All Codes

Transmit Records to Host

If you are operating in Inventory Batch Mode (see [Inventory Batch Mode](#) on page 32), you must scan the following bar code to transmit all the stored data to the host system.



BAT_TX.

Transmit Inventory Records

Batch Mode Transmit Delay

Sometimes when accumulated scans are sent to the host system, the transmission of those scans is too fast for the application to process. To program a transmit delay between accumulated scans, scan one of the following delays. *Default = Off.*

Note: *In most cases, a short (250 ms (milliseconds)) delay is ideal, however, longer delays may be programmed. Contact Technical Support ([page iii](#)) for additional information.*



BATDLY0.

* Batch Mode Transmit Delay Off
(No Delay)



BATDLY250.

Batch Mode Transmit Delay Short
(250 ms)



BATDLY500.

Batch Mode Transmit Delay Medium
(500 ms)



BATDLY1000.

Batch Mode Transmit Delay Long
(1000 ms)

Device Name

You may assign a name to each 8680i you are using for identification purposes. For example, you may want to have a unique identifier for an 8680i that is receiving specific commands sent from the host.

The default name is in the format “Honeywell-8680i-SN-##### (12 digit serial number)”. If you have more than one 8680i linked to a host and they all have the same name, the first 8680i linked to the host receives commands. When renaming a series of 8680is with identical names, unlink all except one of the 8680is from the host.

Perform the rename operation using either the bar codes on [page 38](#), or by sending the serial command **:DeviceName:BT_NAMNewName.** where *DeviceName* is the current name of the 8680i, and *NewName* is the new name for the 8680i. If you wish to change the names of additional 8680is, link them one at a time and repeat the **:DeviceName:BT_NAMNewName.** command for each 8680i.

To rename 8680is with sequential numeric names, scan the bar codes below. Scan the **Reset** code after each name change and wait for the 8680i to relink to the host before scanning a bar code to rename the next 8680i.



BT_NAM0001.
0001



BT_NAM0002.
0002



BT_NAM0003.
0003



BT_NAM0004.
0004



BT_NAM0005.
0005



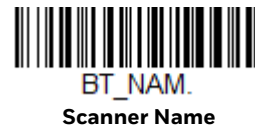
BT_NAM0006.
0006



BT_NAM0007.
0007



You may also scan the **Scanner Name** bar code below and scan a number for the 8680i name. For example, if you wanted to name the linked 8680i “312,” you would scan the bar code below, scan the **3**, **1**, and **2** bar codes on the [Programming Chart](#), beginning on page 235, then scan **Save**. Scan the **Reset** bar code and wait for the 8680i to relink to the host.



Host Acknowledgment

Some applications require that the host terminal (or server) validate incoming bar code data (database look-up) and provide acknowledgment to the scanner whether or not to proceed. In Host ACK Mode, the scanner waits for this acknowledgment after each scan. Visual and audible acknowledgments provide valuable feedback to the scan operator. The Host ACK functionality is controlled via a number of pre-defined escape commands that are sent to the scanner to make it behave in different ways.

Note: *System performance degrades when using Host ACK at rates lower than 9600 baud.*

The following criteria must be met for the Host ACK to work correctly:

- The cordless system must be configured for Host Port RS232 (terminal ID = 000) or USB COM Emulation (terminal ID = 130).
- RTS/CTS is defaulted off. You must enable it if the host system requires it.
- Host ACK must be set to **On** ([page 39](#)).
- A comma must be used as a terminator.
- The host terminal software must be capable of interpreting the bar code data, make decisions based on the data content, and send out appropriate escape commands to the scanner.

The commands to which the scanner responds are listed on [page 40](#). The **[ESC]** is a **1B** in hex. A typical command string is **y [ESC] x**, where “y” is the application work group number, “[ESC] x” is the escape command, and the comma is the terminator, which is required. (When “y” is not specified, the command is sent to the default Application Work Group 0.)

Example: Commands may be strung together to create custom response sequences. An example of a command string is listed below.

[ESC]4,[ESC]5,[ESC]6,

The above example will make a scanner beep low, then medium, then high.

Example: A good read beep is required for any item on file, but a razz or error tone is required if the item is not on file. In this case,

[ESC]7, is sent from the host to the scanner for an on-file product

[ESC]8,[ESC]8, is sent from the host to the scanner for a not-on-file product

When a bar code is scanned, the scanner enters a timeout period until either the host ACK sequence is received, or the timeout expires (in 10 seconds, by default).

Once Host ACK is enabled, the system works as follows when a bar code is scanned:

- The scanner reads the code and sends data to the base or Access Point to transmit to the host system. No audible or visual indication is emitted until the scanner receives an escape command. The scanner read illumination goes out when there's a successful read.
- Scanner operation is suspended until 1) a valid escape string is received from the host system or 2) the scanner times out.
- Once condition 1 or 2 above has been met, the scanner is ready to scan again, and the process repeats.

A time-out occurs if the scanner does not receive a valid escape command within 10 seconds. A time-out is indicated by an error tone. If a time-out occurs, the operator should check the host system to understand why a response to the scanner was not received.

Host ACK On/Off



HSTACK1.
Host ACK On



HSTACK0.
* Host ACK Off

Host ACK Timeout

You can set a timeout for the length of time the scanner waits for a valid escape command when using Host Acknowledgment Mode. Set the length (in seconds) for a timeout by scanning the following bar code, then setting the timeout (from 1-90 seconds) by scanning digits from the [Programming Chart](#), beginning on page 235, then **Save**. *Default = 10.*



HSTATO.

Host ACK Timeout

Host ACK Responses

Command	Action
[ESC] a,	Double beeps to indicate a successful menu change was made.
[ESC] b,	Razz or error tone to indicate a menu change was unsuccessful.
[ESC] 1,	The green LED illuminates for 135 milliseconds followed by a pause.
[ESC] 2,	The green LED illuminates for 2 seconds followed by a pause.
[ESC] 3,	The green LED illuminates for 5 seconds followed by a pause.
[ESC] 4,	Emits a beep at a low pitch.
[ESC] 5,	Emits a beep at a medium pitch.
[ESC] 6,	Emits a beep at a high pitch.
[ESC] 7,	Beeps to indicate a successful decode and communication to host.
[ESC] 8,[ESC] 8,	Razz or error tone to indicate a decode/communication to host was unsuccessful.

Power Up Beeper

The 8680i can be programmed to beep when it's powered up. Scan the **Off** bar code 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 8680i to beep upon a command sent from the host. If you scan the **Beep on BEL On** bar code below, the 8680i beeps 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 8680i 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 8680i 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 8680i emits on a good read. *Default = Medium.*



BEPFQ11600.
Low (1600 Hz)



BEPFQ12700.
* Medium
(2700 Hz)



BEPFQ14200.
High (4200 Hz)

Vibrate – Good Read

The 8680i vibrates once when a bar code is successfully read, and twice when a programming bar code is successfully read. When a programming bar code is unsuccessful, the 8680i emits one long vibration (2 times the Vibrate Duration length). Scan **Vibrate – Good Read Off** to keep the 8680i from vibrating. *Default = Vibrate – Good Read On.*



TFBGRD0.
Vibrate- Good Read Off



TFBGRD1.
* Vibrate- Good Read On

Vibrate Duration

If you want to set the length for the good read vibration, scan the bar code below, then set the duration (from 100 - 2,000 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 300 ms.*



TFBDUR.
Vibrate Duration

Beeper Pitch – Error

The beeper pitch codes modify the pitch (frequency) of the sound the 8680i emits when there is a bad read or error. *Default = Razz.*



BEPFQ2250.
* Razz (250 Hz)



BEPFQ23250.
Medium (3250 Hz)



BEPFQ24200.
High (4200 Hz)

Beeper Duration – Good Read

The beeper duration codes modify the length of the beep the 8680i emits on a good read. *Default = Normal.*



BEPBIP0.
* Normal Beep



BEPBIP1.
Short Beep

LED – Good Read

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



BEPLED1.

* LED – Good Read On



BEPLED0.

LED – Good Read Off

Number of Beeps – Good Read

The number of beeps of a good read can be programmed from 1 - 9. The same number of beeps are 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 from the [Programming Chart](#) on page 235. *Default = 1.*



BEPRPT.

Number of Good Read Beeps/LED Flashes

Number of Beeps – Error

The number of beeps and LED flashes emitted by the 8680i 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 from the [Programming Chart](#) on page 235. *Default = 1.*



BEPERR.

Number of Error Beeps/LED Flashes

Good Read Delay

This sets the minimum amount of time before the 8680i can read another bar code.
Default = 0 ms (No Delay).



DLYGRD0.

* No Delay



DLYGRD500.

Short Delay (500 ms)



DLYGRD1000.

Medium Delay (1,000 ms)



DLYGRD1500.

Long Delay (1,500 ms)

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, then the **Save** bar code from the [Programming Chart](#) on page 235.



DLYGRD.

User-Specified Good Read Delay

Manual Trigger Modes

When in manual trigger mode, the 8680i scans until a bar code is read, or until the trigger is released. Two modes are available, Normal and Enhanced. **Normal** mode offers good scan speed and the longest working ranges (depth of field). **Enhanced** mode gives you the highest possible scan speed but slightly less range than Normal mode. Enhanced mode is best used when you require a very fast scan speed and don't require a long working range. *Default = Manual Trigger-Normal.*



PAPHHF.

* Manual Trigger - Normal



PAPHHS.

Manual Trigger - Enhanced

Serial Trigger Mode

You can activate the 8680i either by pressing the trigger, or using a serial trigger command (see [Trigger Commands](#) on page 182). You must be in a serial interface mode in order to use serial triggering. Refer to [RS232 Serial Port](#) (page 3-38) or [USB Serial](#) (page 3-41) for further information. When in serial mode, the 8680i scans until a bar code has been read or until the deactivate command is sent. The 8680i can also be set to turn itself off after a specified time has elapsed (see [Read Time-Out](#), which follows).

Read Time-Out

Use this selection to set a time-out (in milliseconds) of the 8680i's trigger when using serial commands to trigger the 8680i. Once the 8680i has timed out, you can activate the 8680i 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, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 30,000 ms.*



TRGSTO.

Read Time-Out

Object Detection Mode

Object Detection Mode uses an infrared (IR) beam to detect when an object is in the scanner's field of view. When an object is detected, the scanner attempts to scan the bar code. Scan the **Short Range** code for a target that's approximately 6 inches (16cm) away, or the **Long Range** code for a target that's approximately 13 inches (32cm) away. *Default = Object Detection - Long Range.*



TRGMOD9;AOSRNG1.

Object Detection - Short Range



TRGMOD9;AOSRNG2.

Object Detection - Mid Range



TRGMOD9;AOSRNG3.
Object Detection - Long Range

Object Detection Deactivation

If desired, you can turn off Object Detection with the press of a button. This maximizes battery life and prevents unintentional scans. Scan one of the timeouts below to set the length of time the user must press the right button in order to turn off the Object Detection feature. *Default = Off.*



AOSTIM0.
* Off



AOSTIM10.
Quick Press



AOSTIM2000.
2 Second Press

Object Detection Trigger Hold

As you move in and out of the range of objects, you may want to keep the Object Detection triggering on rather than reverting to triggered scanning. To set a 1 second trigger hold, scan the **1 Second Hold** bar code below. *Default = Off.*



TRGHTO0.
* Off



TRGHTO100.
1 Second Hold

Poor Quality Codes

Poor Quality 1D Codes

This setting improves the 8680i'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 8680i'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.*



DECLD11.

Poor Quality 1D Reading On



DECLD10.

*** Poor Quality 1D Reading Off**

Poor Quality PDF Codes

This setting improves the 8680i's ability to read damaged or badly printed PDF codes by combining information from multiple images. When **Poor Quality PDF On** is scanned, poor quality PDF code reading is improved, but the 8680i's snappiness is decreased, making it less aggressive when reading good quality bar codes. 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 Off**

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](#) (page 51).



SCNLED1.
* Lights On



SCNLED0.
Lights Off

Aimer Delay

The aimer delay allows a delay time for the operator to aim the 8680i before the image is taken. Use these codes to set the time between when the trigger is pressed and when the image is taken. During the delay time, the aiming light appears, but the LEDs won't turn on until the delay time is over. *Default = Off.*



SCNDLY200.
200 milliseconds



SCNDLY400.
400 milliseconds



SCNDLY0.
* Off (no delay)

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 (from 0 - 4,000 ms) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235.



SCNDLY.
Delay Duration

Aimer Mode

This feature allows you to turn the aimer on and off. When the Interlaced bar code is scanned, the aimer is interlaced with the illumination LEDs. *Default = Interlaced*



Centering

Use Centering to narrow the 8680i's field of view to make sure that it reads only those bar codes you intend to read. For instance, if multiple codes are placed closely together, centering insures that only the desired codes are read. (Centering can be used in conjunction with [Aimer Delay](#), page 50, for the most error-free operation in applications where multiple codes are spaced closely together. Using the Aimer Delay and Centering features, the 8680i can emulate the operation of older systems, such as linear laser bar code scanners.)

Single Code Centering

Scan **Single Code Centering** to target the bar code closest to the center of the image. Singling out a bar code in this manner increases scanning accuracy when there are multiple bar codes close together.

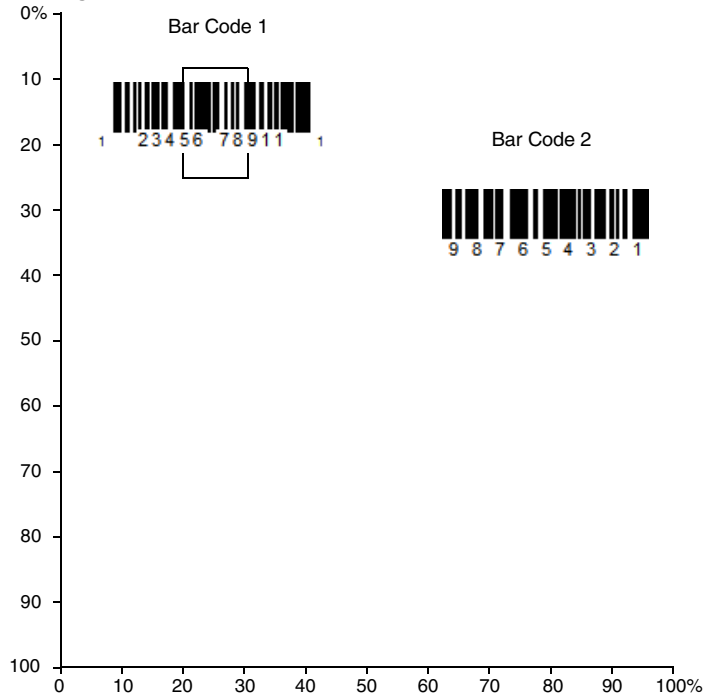


Single Code Centering

Custom Centering Settings

Use the following settings to customize your centering window. If a bar code is not touched by a predefined window, it will not be decoded or output by the 8680i. If centering is turned on by scanning **Centering On**, the 8680i 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 by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. Default Centering = 40% for Top and Left, 60% for Bottom and Right.



DECWIN1.
Centering On



DECWIN0.
* Centering Off



DECTOP.
Top of Centering Window



DECBOT.
Bottom of Centering Window



DECLFT.

Left of Centering Window



DECRGT.

Right of Centering Window

Keyboard Wedge Modifiers

ALT Mode

If your bar code contains special characters from the extended ASCII chart, for example, an e with an accent grave (è), you will use ALT Mode. (See [Extended ASCII Characters](#).)

Note: Scan the ALT mode bar code after scanning the appropriate Keyboard Country code.

If your keystrokes require the ALT key and 4 characters, scan the **4 Characters** bar code. The data is then output with the special character(s). *Default = Off.*



KBDALT0.

* Off



KBDALT7.

4 Characters

Keyboard Modifiers

This modifies special keyboard features, such as CTRL+ ASCII codes and Turbo Mode.

Control + X (Control + ASCII) Mode On: The scanner sends key combinations for ASCII control characters for values 00-1F. Windows is the preferred mode. All keyboard country codes are supported. DOS mode is a legacy mode, and it does not support all keyboard country codes. New users should use the Windows mode. Refer to [ASCII Conversion Chart \(Code Page 1252\)](#), page 224 for CTRL+ X Values.

Windows Mode Prefix/Suffix Off: The scanner sends key combinations for ASCII control characters for values 00-1F, but it does not translate prefix or suffix information.

Default = Control + X Mode Off.



KBDCAS2.
Windows Mode Control + X
Mode On



KBDCAS0.
* Control + X Mode Off



KBDCAS1.
DOS Mode Control + X Mode On



KBDCAS3.
Windows Mode Prefix/Suffix

Preferred Symbology

The 8680i can be programmed to specify one symbology as a higher priority over other symbologies in situations where both bar code symbologies appear on the same label, but the lower priority symbology cannot be disabled.

For example, you may be using the 8680i in a retail setting to read U.P.C. symbols, but have occasional need to read a code on a drivers license. Since some licenses have a Code 39 symbol as well as the PDF417 symbol, you can use Preferred Symbology to specify that the PDF417 symbol be read instead of the Code 39.

Preferred Symbology classifies each symbology as high priority, low priority, or as an unspecified type. When a low priority symbology is presented, the 8680i ignores it for a set period of time (see [Preferred Symbology Time-out](#) on page 55) while it searches for the high priority symbology. If a high priority symbology is located during this period, then that data is read immediately.

If the time-out period expires before a high priority symbology is read, the 8680i reads any bar code in its view (low priority or unspecified). If there is no bar code in the 8680i's view after the time-out period expires, then no data is reported.

Note: *A low priority symbol must be centered on the aiming pattern to be read.*

Scan a bar code below to enable or disable Preferred Symbology. *Default = Preferred Symbology Off.*



PRFENA1.
Preferred Symbology On



High Priority Symbology

To specify the high priority symbology, scan the **High Priority Symbology** bar code below. On the [Symbology Charts](#) on page 221, find the symbology you want to set as high priority. Locate the hex value for that symbology and scan the 2 digit hex value by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = None*



Low Priority Symbology

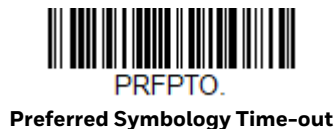
To specify the low priority symbology, scan the **Low Priority Symbology** bar code below. On the [Symbology Charts](#) on page 221, find the symbology you want to set as low priority. Locate the hex value for that symbology and scan the 2 digit hex value from the [Programming Chart](#) on page 235.

If you want to set additional low priority symbologies, scan **FF**, then scan the 2 digit hex value from the [Programming Chart](#) for the next symbology. You can program up to 5 low priority symbologies. Scan **Save** to save your selection. *Default = None.*



Preferred Symbology Time-out

Once you have enabled Preferred Symbology and entered the high and low priority symbologies, you must set the time-out period. This is the period of time the 8680i searches for a high priority bar code after a low priority bar code has been encountered. Scan the bar code below, then set the delay (from 1-3,000 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 500 ms.*



Preferred Symbology Default

Scan the bar code below to set all Preferred Symbology entries to their default values.



Preferred Symbology Default

Output Sequence Overview

Output Sequence Editor

This programming selection allows you to program the 8680i to output data (when scanning more than one symbol) in whatever order your application requires, regardless of the order in which the bar codes are scanned. You can define up to 15 bar codes in an output sequence.

Note: To make Output Sequence Editor selections, you'll need to know the code I.D., code length, and character match(es) your application requires. Use the alphanumeric symbols in the [Programming Chart](#) (page 235) to enter these options. You must hold the trigger while reading each bar code in the sequence.

To Add an Output Sequence

An output sequence is created using a string of serial commands that is sent to the 8680i. This string is most easily sent to the 8680i using the EZConfig software tool (see [EZConfig-Scanning Introduction](#) on page 177). You can also accomplish this by scanning alphanumeric bar codes (see the [Programming Chart](#), beginning on page 235).

1. If you are using bar codes to create your output sequence, scan the **Enter Sequence** symbol (see [Require Output Sequence](#), page 62).
2. **Code I.D.**
On the [Symbology Charts](#) on page 221, find the symbology to which you want to apply the output sequence format. Locate the hex value for that symbology and scan the 2 digit hex value from the [Programming Chart](#), beginning on page 235.
3. **Length**
Specify what length (up to 9999 characters) of data output is acceptable for this symbology. Make a note of the length. If you are using bar codes to create your output sequence, scan the four digit data length from the [Programming Chart](#), beginning on page 235. (Note: 50 characters is entered as **0050**. 9999 is a universal number, indicating all lengths.) When calculating the length, you must count any programmed prefixes, suffixes, or formatted characters as part of the length (unless using 9999).

4. Character Match Sequences

On the [ASCII Conversion Chart \(Code Page 1252\)](#), page 224, find the hex value that represents the character(s) you want to match. Make a note of the hex value for the character(s). If you are using bar codes to create your output sequence, use the [Programming Chart](#) (page 235) to read the alphanumeric combination that represents the ASCII characters. (99 is the Universal number, indicating all characters.)

5. End Output Sequence Editor

Scan **FF** to enter an Output Sequence for an additional symbology, or **Save** to save your entries.

Other Programming Selections

If you are creating an output sequence using bar codes, scan **Discard** ([page 236](#)) to exit without saving any output sequence changes.

Output Sequence Example

SEQBLK	Sequence editor start command.
SEQPRE	Add prefix to complete output sequences.
SEQSUF	Add suffix to complete output sequences.
SEQSEP	Add separators to complete output sequences.
SEQTTS1	Transmit partial sequence.
SEQIPR	Add prefix to partial output sequences.
SEQISU	Add suffix to partial output sequences.
SEQISE	Add separators to partial output sequences.
TRGSTO	Timeout for partial output sequences.
FF	Termination string.

Examples outlining how to use these commands are shown below.

Output Sequence Example 1 - Three Symbologies



In this example, you are scanning PDF417, Code 128, and Code 39 bar codes, but you want the 8680i to output Code 39 first, Code 128 second, and PDF417 third.

Set up the sequence editor with the following command line:

SEQBLK	sequence editor start command
62	code identifier for Code 39
9999	code length that must match for Code 39, 9999 = all lengths
43	start character match for Code 39, 43h = "C"
FF	termination string for first code
6A	code identifier for Code 128
9999	code length that must match for Code 128, 9999 = all lengths
54	start character match for Code 128, 54h = "T"
FF	termination string for first code
72	code identifier for PDF417
9999	code length that must match for PDF417, 9999 = all lengths
4D	start character match for PDF417, 4Dh = "M"
FF	termination string for third code

The whole command line would look like this:

SEQBLK62999943FF6A999954FF7299994DFF

The data is output as:

CODE39SMPLTSTMSGCODE128MSGPDF417

See the next example to further refine this output.

Output Sequence Example 2 - Three Symbologies with <> Separators

In this example, you are scanning the same three bar codes, but you want <> brackets and a carriage return and line feed to separate your output.



The sequence editor would use the same command line as shown in [Output Sequence Example](#) (page 57):

SEQBLK	sequence editor start command
62	code identifier for Code 39
9999	code length that must match for Code 39, 9999 = all lengths
43	start character match for Code 39, 43h = "C"
FF	termination string for first code
6A	code identifier for Code 128
9999	code length that must match for Code 128, 9999 = all lengths
54	start character match for Code 128, 54h = "T"
FF	termination string for first code
72	code identifier for PDF417
9999	code length that must match for PDF417, 9999 = all lengths
4D	start character match for PDF417, 4Dh = "M"
FF	termination string for third code

But you would add your <> separators for each sequence:

SEQSEP99	separator for each sequence, 99 = all symbologies
3C	left bracket (<)
3E	right bracket (>)

And add the carriage return and line feed as a suffix:

SEQSUF99	separator for suffixes, 99 = all symbologies
0D	carriage return
0A	line feed

The whole command line would look like this:

```
SEQBLK62999943FF6A999954FF7299994DFFSEQSEP993C3ESEQSUF990D0A
```

The data is output as:

```
<CODE39SMPL>  
<TSTMSGCODE128>  
<MSGPDF417>
```

Enter Output Sequence

If you are using bar codes to create your output sequence, scan **Enter Output Sequence** to begin scanning your string.



SEQBLK.

Enter Output Sequence

Partial Sequence

If an output sequence operation is terminated before all your output sequence criteria are met, the bar code data acquired to that point is a “partial sequence.” You can define how partial sequences are output using the same types of command strings you used to create output sequences.

Partial Sequence Example - Three Symbologies with <> Separators, but with a Damaged Code

In this example, you are scanning PDF417, Code 128, and Code 39 bar codes, and you want the 8680i to output Code 39 first, Code 128 second, and PDF417 third, in brackets, as shown below, but the Code 39 bar code has been damaged and cannot be output.



MSGPDF417



TSTMSGCODE128



CODE39SMPL

You would use the same command line as shown in [Output Sequence Example 2 - Three Symbologies with <> Separators](#) (page 58):

SEQBLK	sequence editor start command
62	code identifier for Code 39
9999	code length that must match for Code 39, 9999 = all lengths
43	start character match for Code 39, 43h = "C"
FF	termination string for first code
6A	code identifier for Code 128
9999	code length that must match for Code 128, 9999 = all lengths

54	start character match for Code 128, 54h = "T"
FF	termination string for first code
72	code identifier for PDF417
9999	code length that must match for PDF417, 9999 = all lengths
4D	start character match for PDF417, 4Dh = "M"
FF	termination string for third code
SEQSEP99	separator for each sequence, 99 = all symbologies
3C	left bracket (<)
3E	right bracket (>)
SEQSUF99	separator for suffixes, 99 = all symbologies
0D	carriage return
0A	line feed

And you would add **>PARTIAL<** as the prefix to note the partial sequence:

SEQTTS1	transmit partial sequence
SEQISU99	add partial sequence prefix, 99 = all symbologies
3E	right bracket (>)
50	P
41	A
52	R
54	T
49	I
41	A
4C	L
3C	left bracket (<)

The whole command line would look like this:

**SEQBLK62999943FF6A999954FF7299994DFFSEQSEP993C3ESEQSUF990D0
ASEQTTS1SEQISU993E5041525449414C3C**

The data is output as:

>PARTIAL<
<TSTMSGCODE128>
<MSGPDF417>

Discard Partial Output Sequence

If you want to discard partial sequences when the output sequence operation is terminated before completion, scan **Discard Partial Sequence**.



Default Output Sequence

Default Sequence programs the 8680i to all universal values. Be certain you want to delete or clear all formats before you read the **Default Sequence** symbol.



Require Output Sequence

When an output sequence is **Required**, all output data must conform to an edited sequence or the 8680i does not transmit the output data to the host device. When it's **On/Not Required**, the 8680i attempts to get the output data to conform to an edited sequence but, if it cannot, the 8680i transmits all output data to the host device as is, or formatted according to the partial sequence output format (see [Partial Sequence](#) on page 60).

When the output sequence is **Off**, the bar code data is output to the host as the 8680i decodes it. *Default = Off.*

Note: *This selection is unavailable when the Multiple Symbols Selection is turned on.*



Good Read Tone - Output Sequences

The 8680i may be programmed to either beep or click in response to a good read of each bar code in an output sequence, or to emit a beep or error tone for a partial sequence. *Default = Good Read Click - Each Code in Sequence and Error Tone - Partial Sequence Output.*



BEPSIN0.

Good Read Beep - Each Code in Sequence



BEPISE0.

Good Read Beep - Partial Sequence Output



BEPSIN1.

*** Good Read Click - Each Code in Sequence**



BEPISE1.

*** Error Tone - Partial Sequence Output**

Multiple Symbols

When this programming selection is turned **On**, it allows you to read multiple symbols with a single press of the 8680i's trigger. If you press and hold the trigger, aiming the 8680i at a series of symbols, it reads unique symbols once, beeping and vibrating for each read. The 8680i attempts to find and decode new symbols as long as the trigger is pressed. When this programming selection is turned Off, the 8680i only reads the symbol closest to the aiming beam. *Default = Off.*



SHOTGN1.

On



SHOTGN0.

*** Off**

No Read

With No Read turned **On**, the 8680i notifies you if a code cannot be read. If using an EZConfig-Scanning Tool Scan Data Window (see page 177), an “NR” appears when a code cannot be read. When No Read is turned **Off**, the “NR” does not appear. *Default = Off.*



If you want a different notation than “NR,” for example, “Error,” or “Bad Code,” you can edit the output message (see [Data Format](#) beginning on page 5-73). The hex code for the No Read symbol is **9C**.

Video Reverse

Video Reverse is used to allow the 8680i 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.





* Video Reverse Off

Working Orientation

Some bar codes are direction-sensitive. For example, KIX codes and OCR can mis-read when scanned sideways or upside down. Use the working orientation settings if your direction-sensitive codes are not usually presented upright to the 8680i.
Default = Upright.

Upright:



Upside Down:



Vertical, Top to Bottom:
(Rotate CW 90°)



Vertical, Bottom to Top:
(Rotate CCW 90°)



ROTATN0.

* Upright



ROTATN2.

Upside Down



ROTATN1.

Vertical, Bottom to Top



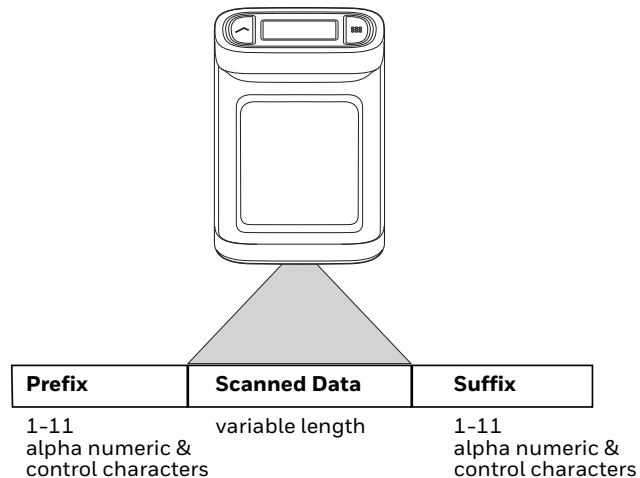
ROTATN3.

Vertical, Top to Bottom

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 \(Code Page 1252\)](#), beginning on page 224, 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.

Add a Prefix or Suffix:

- Step 1. Scan the **Add Prefix** or **Add Suffix** symbol ([page 69](#)).
- Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in the [Symbology Charts](#), beginning on page 221) 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 by scanning digits from the [Programming Chart](#) on page 235, or scan **9, 9** for all symbologies.

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

To add 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: To add 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](#), beginning on page 235 to apply this suffix to all symbologies.
- Step 3. Scan **0, 9** from the [Programming Chart](#), beginning on page 235. This corresponds with the hex value for a horizontal tab, shown in the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224.
- Step 4. Scan **Save** to exit and 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 Chart (included in the [Symbology Charts](#), beginning on page 221) 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](#), beginning on page 235, 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 symbologies at once. This action first clears all current suffixes, then programs a carriage return suffix for all symbologies.



VSUFCR.
Add CR Suffix
All Symbologies

Prefix Selections



PREBK2.
Add Prefix



PRECL2.
Clear One Prefix



PRECA2.
Clear All Prefixes

Suffix Selections



SUFBK2.
Add Suffix



SUFCL2.
Clear One Suffix



SUFCA2.
Clear All Suffixes

Function Code Transmit

By default, all ASCII control characters are transmitted with bar code data. These non-printable characters are translated into predefined key strokes, or CTRL+X functions (see [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224). If these key strokes interfere with your host's software application, scan **Disable** to keep these ASCII control characters from being transmitted. *Default = Enable.*



RMVFNC0.
* Enable



RMVFNC1.
Disable

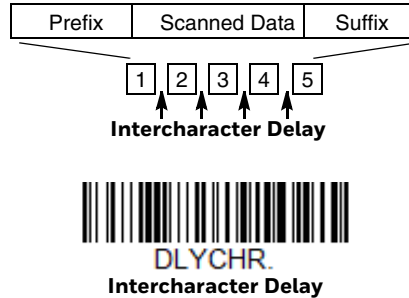
Note: You can also use a custom data format (see [Data Format](#), beginning on page 73) to translate these characters into a more meaningful output.

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 from the [Programming Chart](#), beginning on page 235.



To remove this delay, scan the **Intercharacter Delay** bar code, then set the number of delays to **0**. Scan the **Save** bar code from the [Programming Chart](#), beginning on page 235.

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 from the [Programming Chart](#), beginning on page 235.

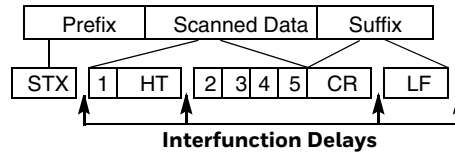
Next, scan the **Character to Trigger Delay** bar code, then the 2-digit hex value for a printable character to trigger the delay (see [Lower ASCII Reference Table](#), page 225.)



To remove this delay, scan the **Delay Length** bar code, and set the number of delays to **0**. Scan the **Save** bar code from the [Programming Chart](#), beginning on page 235.

Interfunction Delay

An interfunction delay of up to 5000 milliseconds (in 5ms increments) may be placed between the transmission of each control character in the message string. Scan the **Interfunction Delay** bar code below, then scan the number of 5ms delays, and the **Save** bar code from the [Programming Chart](#), beginning on page 235.



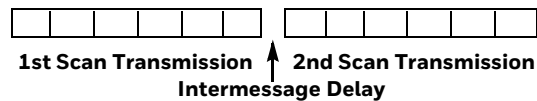
DLYFNC.

Interfunction Delay

To remove this delay, scan the **Interfunction Delay** bar code, then set the number of delays to **0**. Scan the **Save** bar code from the [Programming Chart](#), beginning on page 235.

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 from the [Programming Chart](#), beginning on page 235.



DLYMSG.

Intermessage Delay

To remove this delay, scan the **Intermessage Delay** bar code, then set the number of delays to **0**. Scan the **Save** bar code from the [Programming Chart](#), beginning on page 235.

Data Format Editor Introduction

You may use the Data Format Editor to change the 8680i'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 is output automatically. However, when you create a format, you must use a "send" command (see [Send Commands](#) on page 76) within the format program to output data.

Multiple formats may be programmed into the 8680i. 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 a bar code is read that fails the first data format, the next data format, if there is one, will be used on the bar code data. If there is no other data format, the raw data is output.

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.



Show Data Format

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



Add a Data Format

- Step 1. Scan the **Enter Data Format** symbol ([page 75](#)).
- 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** from the [Programming Chart](#), beginning on page 235. 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](#)" on [page 91](#) for further information.)
- Step 3. **Terminal Type**
Refer to [Terminal ID Table](#) (page 76) and locate the Terminal ID number for your PC. Scan three numeric bar codes from the [Programming Chart](#), beginning on page 235 to program the 8680i 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](#), beginning on page 221, 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](#), beginning on page 235.

If you wish to create a data format for all symbologies, with the exception of some specific symbologies, refer to B8 ([page 89](#)).

Note: **99** indicates all symbologies.

- Step 5. **Length**
Specify what length (up to 9999 characters) of data are acceptable for this symbology. Scan the four digit data length from the [Programming](#)

[Chart](#), beginning on page 235. For example, 50 characters is entered as **0050**.

Note: **9999** indicates all lengths.

Step 6. **Editor Commands**

Refer to [Data Format Editor Commands](#) (page 76). 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.



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](#), beginning on page 235. 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](#) on page 221), 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**

Exit and save your data format changes.

- **Discard**

Exit without saving any data format changes.





Terminal ID Table

Terminal	Model(s)	Terminal ID
USB	PC keyboard (HID)	124
	Mac Keyboard	125
	PC Keyboard (Japanese)	134
	Serial (COM driver required)	130
	HID POS	131
	USB SurePOS Handheld	128
	USB SurePOS Tabletop	129
Serial	RS232 TTL	000
	RS232 True	000
	RS485 (IBM-HHBCR 1+2, 46xx)	051
Keyboard	PS2 compatibles	003
	AT compatibles	002

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 \(Code Page 1252\)](#), beginning on page 224 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 224 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 \(Code Page 1252\)](#), beginning on page 224 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 characters up to a string

B9 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 string “s...s.” The cursor is moved forward to the beginning of the “s...s” string. *Syntax = B9nnns...s* where nnnn stands for the length of the string, and s...s stands for the string to be matched. The string is made up of hex values for the characters in the string. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224 for decimal, hex and character codes.

B9 Example: Send all characters up to a defined string



Using the bar code above, send all characters up to but not including “AB.”

Command string: **B90024142**

B9 is the “Send all characters up to a string” command

0002 is the length of the string (2 characters)

41 is the hex value for A

42 is the hex value for B

The data is output as: **1234567890**

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 224 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>**

Insert a string

BA Send “ss” string of “nn” length in the output message, leaving the cursor in the current position. *Syntax = BAnnnns...s* where nnnn stands for the length of the string, and s...s stands for the string. The string is made up of hex values for the characters in the string. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224 for decimal, hex and character codes.

B9 and BA Example: Look for the string “AB” and insert 2 asterisks ()**



Using the bar code above, send all characters up to but not including “AB.” Insert 2 asterisks at that point, and send the rest of the data with a carriage return after.

Command string: **B900024142BA00022A2AF10D**

B9 is the “Send all characters up to a string” command

0002 is the length of the string (2 characters)

41 is the hex value for A

42 is the hex value for B

BA is the “Insert a string” command

0002 is the length of the string to be added (2 characters)

2A is the hex value for an asterisk (*)

2A is the hex value for an asterisk (*)

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

1234567890ABCDEFGHIJ**
<CR>

Insert symbology name

B3 Insert the name of the bar code’s symbology in the output message, without moving the cursor. Only symbologies with a Honeywell ID are included (see [Symbology Charts](#) on page 221). Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224 for decimal, hex and character codes.

Insert bar code length

B4 Insert the bar code’s length in the output message, without moving the cursor. The length is expressed as a numeric string and does not include leading zeroes.

B3 and B4 Example: Insert the symbology name and length



Send the symbology name and length before the bar code data from the bar code above. Break up these insertions with spaces. End with a carriage return.

Command string: **B3F42001B4F42001F10D**

B3 is the “Insert symbology name” command
 F4 is the “Insert a character multiple times” command
 20 is the hex value for a space
 01 is the number of times the space character is sent
 B4 is the “Insert bar code length” command
 F4 is the “Insert a character multiple times” command
 20 is the hex value for a space
 01 is the number of times the space character is sent
 F1 is the “Send all characters” command
 0D is the hex value for a CR

The data is output as:
Code128 20 1234567890ABCDEFGHIJ
<CR>

Insert key strokes

B5 Insert a key stroke or combination of key strokes. Key strokes are dependent on your keyboard (see [Keyboard Key References](#) on page 231). Any key can be inserted, including arrows and functions. *Syntax = B5xxssnn* where xx is the number of keys pressed (without key modifiers), ss is the key modifier from the table below, and nn is the key number from the [Keyboard Key References](#), page 231.

Key Modifiers	
No Key Modifier	00
Shift Left	01
Shift Right	02
Alt Left	04
Alt Right	08
Control Left	10
Control Right	20

For example, B501021F inserts an “A” on a 104 key, U.S. style keyboard. B5 = the command, 01 = number of keys pressed (without the key modifier), 02 is the key modifier for Shift Right, and 1F is the “a” key. If a lower case “a” were to be inserted, B501001F would be entered.

If there are three keystrokes, the syntax would change from B5xxssnn for one keystroke to B5xxssnnssnnssnn. An example that would insert "abc" is as follows: B503001F00320030F833.

Note: Key modifiers can be added together when needed. Example: Control Left+Shift Left = 11.

Example: Control Left+Shift Left = 17, converted to hexadecimal = 11.

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 224 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 224 for decimal, hex and character codes.

Search forward for a string

- B0** Search forward for “s” string from the current cursor position, leaving cursor pointing to “s” string. *Syntax = B0nnnnS* where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B0000454657374 searches forward for the first occurrence of the 4 character string “Test.” Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224 for decimal, hex and character codes.

B0 Example: Send bar code data that starts after a string of characters



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

Command string: **B00003464748F10D**

B0 is the “Search forward for a string” command

0003 is the string length (3 characters)

46 is the hex value for “F”

47 is the hex value for “G”

48 is the hex value for “H”

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

FGHIJ
<CR>

Search backward for a string

- B1** Search backward for “s” string from the current cursor position, leaving cursor pointing to “s” string. *Syntax = B1nnnnS* where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B1000454657374 searches backward for the first occurrence of the 4 character string “Test.” Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224 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 224 for decimal, hex and character codes.

E6 Example: Remove zeroes 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 224 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 zeroes 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 224 for decimal, hex and character codes.

Compare string

B2 Compare the string in the input message to the string “s.” If the strings are equal, move the cursor forward past the end of the string. *Syntax = B2nnnnS* where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B2000454657374 compares the string at the current cursor position with the 4 character string “Test.” Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page 224 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,  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:  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,  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:  the data is output as:
AB1234

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.

Discard Data

B8 Discards types of data. For example, you may want to discard Code 128 bar codes that begin with the letter A. In step 4 ([page 74](#)), select 6A (for Code 128), and in step 5, select 9999 (for all lengths). Enter FE41B8 to compare and discard Code 128 bar codes that begin with the letter A. *Syntax = B8*.

Note: *The B8 command must be entered after all other commands. The Data Format must be **Required** (see [page 90](#)) in order for the B8 command to work. If Data Format is On, but Not Required ([page 90](#)), bar code data that meets the B8 format is scanned and output as usual. Because the data format needs to be **On** and **Required** ([page 90](#)) for the B8 command, you must input data formats for all bar codes you wish to discard as well as all bar codes you wish to output. Other data format settings impact the B8 command. If Data Format Non-Match Error Tone is On ([page 91](#)), the 8680i emits an error tone. If Data format Non-Match Error Tone is Off, the code is disabled for reading and no tone is sounded.*

Data Formatter

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



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 Formatter On, Not Required, Drop Prefix/Suffix**
Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. If

a data format is *not* found for that symbol, the 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. If you wish to process this type of bar code without generating an error tone, see [Data Format Non-Match Error Tone](#).
- **Data Format Required, Drop Prefix/Suffix**
Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. Any data that does not match your data format requirements generates an error tone. If you wish to process this type of bar code without generating an error tone, see [Data Format Non-Match Error Tone](#).

Choose one of the following options. *Default = Data Formatter On, Not Required, Keep Prefix/Suffix.*



DFM_EN1.
* Data Formatter On,
Not Required,
Keep Prefix/Suffix



DFM_EN3.
Data Formatter On,
Not Required,
Drop Prefix/Suffix



DFM_EN2.
Data Format Required,
Keep Prefix/Suffix



DFM_EN4.
Data Format Required,
Drop Prefix/Suffix

Data Format Non-Match Error Tone

When a bar code is encountered that doesn't match your required data format, the 8680i normally generates an error tone. However, you may want to continue scanning bar codes without hearing the error tone. If you scan the **Data Format Non-Match Error Tone Off** bar code, data that doesn't conform to your data format is

not transmitted, and no error tone sounds. If you wish to hear the error tone when a non-matching bar code is found, scan the **Data Format Non-Match Error Tone On** bar code. *Default = Data Format Non-Match Error Tone On.*



DFMDEC0.

* Data Format Non-Match Error Tone On



DFMDEC1.

Data Format Non-Match Error Tone Off

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



ALTFNM1.

Data Format 1



ALTFNM2.

Data Format 2



ALTFNM3.

Data Format 3

Single Scan Data Format Change

You can also switch between data formats for a single scan. The next bar code is scanned using an alternate data format, then reverts to the format you have selected above (either Primary, 1, 2, or 3).

For example, you may have set your device to the data format you saved as Data Format 3. You can switch to Data Format 1 for a single trigger press by scanning the **Single Scan-Data Format 1** bar code below. The next bar code that is scanned uses Data Format 1, then reverts back to Data Format 3.



VSAF_0.

**Single Scan-Primary
Data Format**



VSAF_1.

Single Scan-Data Format 1



VSAF_2.

Single Scan-Data Format 2



VSAF_3.

Single Scan-Data Format 3

SYMBOLOLOGIES

This programming section contains the following menu selections. Refer to [Chapter 9](#) for settings and defaults.

- 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
- DotCode
- 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
- Label Code
- 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)
- Telepen
- Trioptic Code
- UPC-A
- UPC-A/EAN-13 with Extended Coupon Code
- UPC-E0
- UPC-E1

All Symbologies

For best scanning 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.



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 8680i to read fixed length bar code data. This helps reduce the chances of a mis-read.

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

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

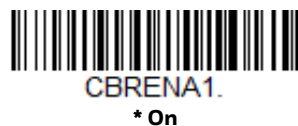
For a value other than the minimum and maximum message length defaults, scan the bar codes included in the explanation of the symbology, then scan the digit value of the message length and **Save** bar codes from the [Programming Chart](#), beginning on page 235. The minimum and maximum lengths and the 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 “modulos.” You can program the 8680i to read only Codabar bar codes with Modulo 16 check characters. *Default = No Check Character.*

No Check Character indicates that the 8680i reads and transmits bar code data with or without a check character.

When Check Character is set to **Validate and Transmit**, the 8680i only reads Codabar bar codes printed with a check character, and transmits this character at the end of the scanned data.

When Check Character is set to **Validate, but Don't Transmit**, the 8680i only reads Codabar bar codes printed *with* a check character, but does not transmit the check character with the scanned data.



Codabar Concatenation

Codabar supports symbol concatenation. When you enable concatenation, the 8680i 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 8680i from decoding a single “D” Codabar symbol without its companion. This selection has no effect on Codabar symbols without Stop/Start D characters.



Codabar Redundancy

If you are encountering errors when reading Codabar bar codes, you may want to adjust the redundancy count. Redundancy adjusts the number of times a bar code is decoded before transmission, which may reduce the number of errors. Note that the higher the redundancy count, the longer it will take to decode the bar code. To adjust the redundancy, scan the Codabar Redundancy bar code below, then scan a redundancy count between 0 and 10 on the [Programming Chart](#), beginning on page 235. Then scan the **Save** bar code. *Default = 0.*



Codabar Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 2-60. Minimum Default = 4, Maximum Default = 60.



Code 39

< Default All Code 39 Settings >



Code 39 On/Off



If you are reading Code 39 bar codes, Codablock A should remain disabled. If you are enabling Codablock A (see [Codablock A](#) on page 133), you should disable Code 39.

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.*





Code 39 Check Character

No Check Character indicates that the 8680i 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 does not transmit the check character with the scanned data.

When Check Character is set to **Validate and Transmit**, the 8680i only reads Code 39 bar codes printed with a check character, and transmits this character at the end of the scanned data. *Default = No Check Character.*



Code 39 Redundancy

If you are encountering errors when reading Code 39 bar codes, you may want to adjust the redundancy count. Redundancy adjusts the number of times a bar code is decoded before transmission, which may reduce the number of errors. Note that the higher the redundancy count, the longer it will take to decode the bar code. To adjust the redundancy, scan the **Code 39 Redundancy** bar code below, then scan a redundancy count between 0 and 10 on the [Programming Chart](#), beginning on page 235. Then scan the **Save** bar code. *Default = 0.*



Code 39 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 0-48. Minimum Default = 0, Maximum Default = 48.



Code 39 Append

This function allows the 8680i to append the data from several Code 39 bar codes together before transmitting them to the host computer. When the 8680i 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.

Note: *Trioptic Code* ([page 133](#)) must be turned off while scanning Code 32 Pharmaceutical codes.



Full ASCII

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

Full ASCII Table																	
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.



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 228), and scan the value and the **Save** bar code from the [Programming Chart](#), beginning on page 235. The data characters should then appear properly.



Interleaved 2 of 5

< Default All Interleaved 2 of 5 Settings >



Interleaved 2 of 5 On/Off



Check Digit

No Check Digit indicates that the 8680i 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 does not transmit the check digit with the scanned data.

When Check Digit is set to **Validate and Transmit**, the 8680i only reads Interleaved 2 of 5 bar codes printed with a check digit, and transmits this digit at the end of the scanned data. *Default = No Check Digit.*



Interleaved 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 6, Maximum Default = 80.



FEBRABAN Decode

Scan the bar codes below to turn FEBRABAN Boletto decoding on or off. *Default = Off.*



NEC 2 of 5

< Default All NEC 2 of 5 Settings >



NEC 2 of 5 On/Off



Check Digit

No Check Digit indicates that the 8680i 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 does not transmit the check digit with the scanned data.

When Check Digit is set to **Validate and Transmit**, the 8680i only reads NEC 2 of 5 bar codes printed with a check digit, and transmits 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 94) 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 94) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.



Code 93 Append

This function allows the 8680i to append the data from several Code 93 bar codes together before transmitting them to the host computer. When this function is enabled, the 8680i 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 8680i stores the data in the order in which the bar codes are read, deleting the first space from each. The 8680i 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 228), and scan the value and the **Save** bar code from the [Programming Chart](#), beginning on page 235. The data characters should then appear properly.



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

<Default All Straight 2 of 5 Industrial Settings>



Straight 2 of 5 Industrial On/Off



Straight 2 of 5 Industrial Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) 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>



A25DFT.

Straight 2 of 5 IATA On/Off



A25ENA1.
On



A25ENA0.
* Off

Straight 2 of 5 IATA Redundancy

If you are encountering errors when reading Straight 2 of 5 IATA bar codes, you may want to adjust the redundancy count. Redundancy adjusts the number of times a bar code is decoded before transmission, which may reduce the number of errors. Note that the higher the redundancy count, the longer it will take to decode the bar

code. To adjust the redundancy, scan the Straight 2 of 5 IATA Redundancy bar code below, then scan a redundancy count between 0 and 10 on the [Programming Chart](#), beginning on page 235. Then scan the **Save** bar code. *Default = 0.*



A25VOT.
Straight 2 of 5 IATA
Redundancy

Straight 2 of 5 IATA Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.



A25MIN.
Minimum Message Length



A25MAX.
Maximum Message Length

Matrix 2 of 5

<Default All Matrix 2 of 5 Settings>



X25DFT.

Matrix 2 of 5 On/Off



X25ENA1.
On



X25ENA0.
* Off

Matrix 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) 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 94) 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



If you are reading Code 128 bar codes, Codablock F should remain disabled. If you are enabling Codablock F (see [Codablock F](#) on page 134), you should disable Code 128.

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 Redundancy

If you are encountering errors when reading Code 128 bar codes, you may want to adjust the redundancy count. Redundancy adjusts the number of times a bar code is decoded before transmission, which may reduce the number of errors. Note that the higher the redundancy count, the longer it will take to decode the bar code. To adjust the redundancy, scan the Code 128 Redundancy bar code below, then scan a redundancy count between 0 and 10 on the [Programming Chart](#), beginning on page 235. Then scan the **Save** bar code. *Default = 0.*



Code 128 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.



Code 128 Append

This function allows the 8680i to append the data from several Code 128 bar codes together before transmitting them to the host computer. When the 8680i 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 = Off.



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 228), and scan the value and the **Save** bar code from the [Programming Chart](#), beginning on page 235. 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 94) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 1, Maximum Default = 80.



Telepen

<Default All Telepen Settings>



Telepen On/Off



Telepen Output

Using **AIM Telepen Output**, the 8680i reads symbols with start/stop pattern 1 and decodes them as standard full ASCII (start/stop pattern 1). When **Original Telepen Output** is selected, the 8680i reads symbols with start/stop pattern 1 and decodes them as compressed numeric with optional full ASCII (start/stop pattern 2).

Default = AIM Telepen Output.





TELOLD1.

Original Telepen Output

Telepen Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-60. Minimum Default = 1, Maximum Default = 60.



TELMIN.

Minimum Message Length



TELMAX.

Maximum Message Length

UPC-A

<Default All UPC-A Settings>



UPADFT.

UPC-A On/Off



UPBENA1.

* On



UPBENA0.

Off

Note: To convert UPC-A bar codes to EAN-13, see [Convert UPC-A to EAN-13](#) on page 120.

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.*



UPACKX1.

* On



UPACKX0.

Off

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 can be programmed so it is not transmitted (**Off**).
Default = On.



UPANSX1.

* On



UPANSX0.

Off

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.



UPAAD21.

2 Digit Addenda On



UPAAD20.

* 2 Digit Addenda Off



UPAAD51.

5 Digit Addenda On



UPAAD50.

* 5 Digit Addenda Off

UPC-A Addenda Required

When **Required** is scanned, the 8680i only reads UPC-A bar codes that have addenda. You must then turn on a 2 or 5 digit addenda listed on [page 114](#).
Default = Not Required.



Addenda Timeout

You can set a time during which the 8680i looks for an addenda. If an addenda is not found within this time period, the data can be either transmitted or discarded, based on the setting you are using for [UPC-A Addenda Required](#). Set the length (in milliseconds) for this timeout by scanning the bar code below, then setting the timeout (from 0-120 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 500.*

Note: *The Addenda Timeout setting is applied to all addenda and coupon code searches.*



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 8680i treats Coupon Codes and Extended Coupon Codes as single bar codes.

If you scan the **Allow Concatenation** code, when the 8680i sees the coupon code and the extended coupon code in a single scan, it transmits both as one symbologies. Otherwise, it transmits the first coupon code it reads.

If you scan the **Require Concatenation** code, the 8680i 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.*



Addenda Timeout

You can set a time during which the 8680i looks for an addenda. If an addenda is not found within this time period, the data can be either transmitted or discarded, based on the setting you are using for [UPC-A/EAN-13 with Extended Coupon Code](#). Set the length (in milliseconds) for this timeout by scanning the bar code below, then setting the timeout (from 0-120 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 500.*

Note: *The Addenda Timeout setting is applied to all addenda and coupon code searches.*



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.*



UPC-E0

<Default All UPC-E Settings>



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 120). *Default = On.*



UPC-E0 Expand

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





UPC-E0 Addenda Required

When **Required** is scanned, the 8680i only reads UPC-E bar codes that have addenda. *Default = Not Required.*



Addenda Timeout

You can set a time during which the 8680i looks for an addenda. If an addenda is not found within this time period, the data can be either transmitted or discarded, based on the setting you are using for [UPC-E0 Addenda Required](#). Set the length (in milliseconds) for this timeout by scanning the bar code below, then setting the timeout (from 0-120 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 500.*

Note: *The Addenda Timeout setting is applied to all addenda and coupon code searches.*



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.*



UPECKX1.

* On



UPECKX0.

Off

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.*



UPENSX1.

* On



UPENSX0.

Off

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.*



UPEAD21.

2 Digit Addenda On



UPEAD20.

* 2 Digit Addenda Off



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 117). If you need to read codes that lead with the 1 number system, use the **UPC-E1 On** selection. *Default = Off.*



EAN/JAN-13

<Default All EAN/JAN Settings>



EAN/JAN-13 On/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.



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.*



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.*



EAN/JAN-13 Addenda Required

When **Required** is scanned, the 8680i only reads EAN/JAN-13 bar codes that have addenda. *Default = Not Required.*





EAN-13 Beginning with 290 Addenda Required

This setting programs the 8680i to require a 5 digit addenda only on EAN-13 bar codes that begin with “290.” The following settings can be programmed:

Require 5 Digit Addenda: All EAN-13 bar codes that begin with “290” must have a 5 digit addendum. The EAN-13 bar code with the 5 digit addendum is then transmitted as a single, concatenated bar code. If a 5 digit addendum is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don’t Require 5 Digit Addenda: If you have selected Require 5 Digit Addenda, and you want to disable this feature, scan **Don’t Require 5 Digit Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don’t Require 5 Digit Addenda.



* Don’t Require 5 Digit Addenda



EAN-13 Beginning with 378/379 Addenda Required

This setting programs the 8680i to require any combination of a 2 digit addenda or a 5 digit addenda on EAN-13 bar codes that begin with a “378” or “379.” The following settings can be programmed:

Require Addenda: All EAN-13 bar codes that begin with a “378” or “379” must have a 2 digit addenda, a 5 digit addenda, or a combination of these addenda. The EAN-13 bar code with the addenda is then transmitted as a single, concatenated bar code. If the required addenda is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don’t Require Addenda: If you have selected Require Addenda, and you want to disable this feature, scan **Don’t Require Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don't Require Addenda.



ARQ3780.

* Don't Require Addenda



ARQ3781.

Require 2 Digit Addenda



ARQ3782.

Require 5 Digit Addenda



ARQ3783.

Require 2 or 5 Digit Addenda

EAN-13 Beginning with 414/419 Addenda Required

This setting programs the 8680i to require any combination of a 2 digit addenda or a 5 digit addenda on EAN-13 bar codes that begin with a “414” or “419.” The following settings can be programmed:

Require Addenda: All EAN-13 bar codes that begin with a “414” or “419” must have a 2 digit addenda, a 5 digit addenda, or a combination of these addenda. The EAN-13 bar code with the addenda is then transmitted as a single, concatenated bar code. If the required addenda is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don't Require Addenda: If you have selected Require Addenda, and you want to disable this feature, scan **Don't Require Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don't Require Addenda.



ARQ4140.

* Don't Require Addenda



ARQ4141.

Require 2 Digit Addenda



ARQ4142.

Require 5 Digit Addenda



ARQ4143.

Require 2 or 5 Digit Addenda

EAN-13 Beginning with 434/439 Addenda Required

This setting programs the 8680i to require any combination of a 2 digit addenda or a 5 digit addenda on EAN-13 bar codes that begin with a “434” or “439.” The following settings can be programmed:

Require Addenda: All EAN-13 bar codes that begin with a “434” or “439” must have a 2 digit addenda, a 5 digit addenda, or a combination of these addenda. The EAN-13 bar code with the addenda is then transmitted as a single, concatenated bar code. If the required addenda is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don’t Require Addenda: If you have selected Require Addenda, and you want to disable this feature, scan **Don’t Require Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don’t Require Addenda.



ARQ4340.

* Don’t Require Addenda



ARQ4341.

Require 2 Digit Addenda



ARQ4342.

Require 5 Digit Addenda



ARQ4343.

Require 2 or 5 Digit Addenda

EAN-13 Beginning with 977 Addenda Required

This setting programs the 8680i to require a 2 digit addenda only on EAN-13 bar codes that begin with “977.” The following settings can be programmed:

Require 2 Digit Addenda: All EAN-13 bar codes that begin with “977” must have a 2 digit addendum. The EAN-13 bar code with the 2 digit addendum is then transmitted as a single, concatenated bar code. If a 2 digit addendum is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don't Require 2 Digit Addenda: If you have selected Require 2 Digit Addenda, and you want to disable this feature, scan **Don't Require 2 Digit Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don't Require 2 Digit Addenda.



* Don't Require 2 Digit Addenda



Require 2 Digit Addenda

EAN-13 Beginning with 978 Addenda Required

These settings program the 8680i to require a 5 digit addenda only on EAN-13 bar codes that begin with “978.” The following settings can be programmed:

Require 5 Digit Addenda: All EAN-13 bar codes that begin with “978” must have a 5 digit addendum. The EAN-13 bar code with the 5 digit addendum is then transmitted as a single, concatenated bar code. If a 5 digit addendum is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don't Require 5 Digit Addenda: If you have selected Require 5 Digit Addenda, and you want to disable this feature, scan **Don't Require 5 Digit Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don't Require 5 Digit Addenda.



* Don't Require 5 Digit Addenda



Require 5 Digit Addenda

EAN-13 Beginning with 979 Addenda Required

These settings program the 8680i to require a 5 digit addenda only on EAN-13 bar codes that begin with “979.” The following settings can be programmed:

Require 5 Digit Addenda: All EAN-13 bar codes that begin with “979” must have a 5 digit addendum. The EAN-13 bar code with the 5 digit addendum is then transmitted as a single, concatenated bar code. If a 5 digit addendum is not found within the [Addenda Timeout](#) period, the EAN-13 bar code is discarded.

Don't Require 5 Digit Addenda: If you have selected Require 5 Digit Addenda, and you want to disable this feature, scan **Don't Require 5 Digit Addenda**. EAN-13 bar codes are transmitted, depending on the setting you are using for [EAN/JAN-13 Addenda Required](#).

Default = Don't Require 5 Digit Addenda.



* Don't Require 5 Digit Addenda



Addenda Timeout

You can set a time during which the 8680i looks for an addenda. If an addenda is not found within this time period, the data can be either transmitted or discarded, based on the setting you are using for [UPC-E0 Addenda Required](#). Set the length (in milliseconds) for this timeout by scanning the bar code below, then setting the timeout (from 0-120 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 500.*

Note: *The Addenda Timeout setting is applied to all addenda and coupon code searches.*



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.*



Note: *If you want to enable or disable EAN13 with Extended Coupon Code, refer to [UPC-A/EAN-13 with Extended Coupon Code](#) (page 116).*

ISBN Translate

When **On** is scanned, EAN-13 Bookland 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 or not the check digit should be transmitted at the end of the scanned data. *Default = On.*



EA8CKX1.

*** On**



EA8CKX0.

Off

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.



EA8AD21.
2 Digit Addenda On



EA8AD20.
* 2 Digit Addenda Off



EA8AD51.
5 Digit Addenda On



EA8AD50.
* 5 Digit Addenda Off

EAN/JAN-8 Addenda Required

When **Required** is scanned, the 8680i only reads EAN/JAN-8 bar codes that have addenda. *Default = Not Required.*



EA8ARQ1.
Required



EA8ARQ0.
* Not Required

Addenda Timeout

You can set a time during which the 8680i looks for an addenda. If an addenda is not found within this time period, the data can be either transmitted or discarded, based on the setting you are using for [UPC-E0 Addenda Required](#). Set the length

(in milliseconds) for this timeout by scanning the bar code below, then setting the timeout (from 0-120 milliseconds) by scanning digits, then the **Save** bar code from the [Programming Chart](#) on page 235. *Default = 500.*

Note: *The Addenda Timeout setting is applied to all addenda and coupon code searches.*



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 8680i 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 8680i only reads MSI bar codes printed with the specified type check character(s), and transmits 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 only reads MSI bar codes printed with the specified type check character(s), but does not transmit the check character(s) with the scanned data.



MSICK0.

* Validate Type 10, but Don't Transmit



MSICK1.

Validate Type 10 and Transmit



MSICK2.

Validate 2 Type 10 Characters, but Don't Transmit



MSICK3.

Validate 2 Type 10 Characters and Transmit



MSICK4.

Validate Type 11 then Type 10 Character, but Don't Transmit



MSICK5.

Validate Type 11 then Type 10 Character and Transmit



MSICK6.

Disable MSI Check Characters

MSI Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) 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 >



GS1 DataBar Limited On/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 94) for additional information. Minimum and Maximum lengths = 4-74. Minimum Default = 4, Maximum Default = 74.





Trioptic Code

Note: If you are going to scan Code 32 Pharmaceutical codes ([page 99](#)), Trioptic Code must be off.

Trioptic Code is used for labeling magnetic storage media.

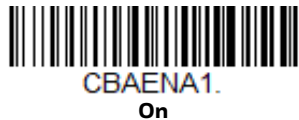


Codablock A

<Default All Codablock A Settings>



Codablock A On/Off



If you are reading Code 39 bar codes, Codablock A should remain disabled. If you are enabling Codablock A, you should disable Code 39 (see [Code 39](#) on page 97).

Codablock A Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) 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.

Codablock F On/Off



CBFENA1.

On



CBFENA0.

*** Off**

If you are reading Code 128 bar codes, Codablock F should remain disabled. If you are enabling Codablock F, you should disable Code 128 (see [Code 128](#) on page 109).

Codablock F Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-2048. Minimum Default = 1, Maximum Default = 2048.



CBFMIN.

Minimum Message Length



Label Code

The standard Label Code is used in libraries. *Default = Off.*



PDF417

< Default All PDF417 Settings >



PDF417 On/Off



PDF417 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-2750. Minimum Default = 1, Maximum Default = 2750.





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.*



MicroPDF417

< Default All MicroPDF417 Settings >



MicroPDF417 On/Off



MicroPDF417 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-366. Minimum Default = 1, Maximum Default = 366.



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.*



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.*



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 117) for further information.

GS1 Composite Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-2435. Minimum Default = 1, Maximum Default = 2435.



GS1 Emulation

The 8680i 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.)

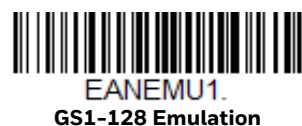
If **GS1-128 Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the **AIM ID** is enabled, the value will be the GS1-128 AIM ID,]C1 (see [Symbology Charts](#) on page 221).

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,]em (see [Symbology Charts](#) on page 221).

If **GS1 Code Expansion Off** is scanned, retail code expansion is disabled, and UPC-E expansion is controlled by the [UPC-E0 Expand](#) (page 117) setting. If the AIM ID is enabled, the value will be the GS1-128 AIM ID,]C1 (see [Symbology Charts](#) on page 221).

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

Default = GS1 Emulation Off.





EANEMU3.
GS1 Code Expansion Off



EANEMU4.
EAN8 to EAN13 Conversion



EANEMU0.
* GS1 Emulation 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.*



T39ENA1.
On



T39ENA0.
* Off

QR Code

< Default All QR Code Settings >



QRCDFT.

QR Code On/Off

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



QRCENA1.
* On



QR Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-7089. Minimum Default = 1, Maximum Default = 7089.



QR Code Append

This function allows the 8680i to append the data from several QR Code bar codes together before transmitting them to the host computer. When the 8680i 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. *Default = On.*



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 228), and scan the value and the **Save** bar code from the [Programming Chart](#), beginning on page 235. The data characters should then appear properly.



DotCode

< Default All DotCode Settings >



DotCode On/Off



Poor Quality DotCodes

This setting improves the 8680i's ability to read damaged or badly printed DotCodes. *Default = Poor Quality DotCodes Off.*



DotCode Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-2400. Minimum Default = 1, Maximum Default = 2400.



DOTMIN.

Minimum Message Length



DOTMAX.

Maximum Message Length

Data Matrix

< Default All Data Matrix Settings >



IDMDFT.

Data Matrix On/Off



IDMENA1.

* On



IDMENA0.

Off

Low Contrast Data Matrix Enhancements

if you are having trouble reading non-dot peen Data Matrix bar codes, it may be helpful to scan **Low Contrast Data Matrix Enhancements Off**. *Default = Low Contrast Data Matrix Enhancements On.*



DPMENA1.

* Low Contrast Data Matrix
Enhancements On



Data Matrix Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-3116. Minimum Default = 1, Maximum Default = 3116.



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 228), and scan the value and the **Save** bar code from the [Programming Chart](#), beginning on page 235. The data characters should then appear properly.



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 94) 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 94) for additional information. Minimum and Maximum lengths = 1-3832. Minimum Default = 1, Maximum Default = 3832.



Aztec Append

This function allows the 8680i to append the data from several Aztec bar codes together before transmitting them to the host computer. When the 8680i 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. *Default = On.*





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 228), and scan the value and the **Save** bar code from the [Programming Chart](#), beginning on page 235. The data characters should then appear properly.

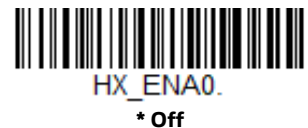


Chinese Sensible (Han Xin) Code

< Default All Han Xin Settings >



Han Xin Code On/Off



Han Xin Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) for additional information. Minimum and Maximum lengths = 1-7833. Minimum Default = 1, Maximum Default = 7833.



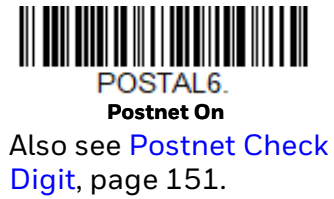
Postal Codes - 2D

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 = Intelligent Mail Bar Code On.*



Single 2D Postal Codes:





Combination 2D Postal Codes:





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



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
Intelligent Mail Bar Code On



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



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



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 94) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.



Korea Post

<Default All Korea Post Settings>



Korea Post



Korea Post Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 94) 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 or not. *Default = Don't Transmit.*



The 8680i is like a digital camera in the way it captures, manipulates, and transfers images. The following commands allow you to alter the way the 8680i performs these functions.

Single-Use Basis

Imaging Commands with their modifiers send instructions to the 8680i on a single-use basis, and take effect for a single image capture. Once that capture is complete, the 8680i reverts to its imaging default settings. If you want to permanently change a setting, you must use the serial default commands (see [Chapter 9](#)). When the serial default command is used, that selection becomes the new, permanent setting for the 8680i.

Command Syntax

Multiple modifiers and commands can be issued within one sequence. If additional modifiers are to be applied to the same command, just add the modifiers to that command. For example, to add 2 modifiers to the Image Snap command, such as setting the Imaging Style to 1P and the Wait for Trigger to 1T, you would enter **IMG SNP1P1T**.

Note: After processing an image capture command (*IMG SNP* or *IMG BOX*), you must follow it with an *IMG SHP* command if you want to see it on your terminal.

To add a command to a sequence, each new command is separated with a semicolon. For example, to add the Image Ship command to the above sequence, you would enter *IMG SNP1P1T;IMG SHP*.

The imaging commands are:

[Image Snap - IMG SNP](#) (page 156)

[Image Ship - IMG SHP](#) (page 159)

[Intelligent Signature Capture - IMG BOX](#) (page 169)

The modifiers for each of these commands follow the command description.

Note: *The images included with each command description are examples only. The results you achieve may be different from those included in this manual. The quality of the output you receive will vary depending on lighting, quality of the initial image/object being captured, and distance of the 8680i from the image/object. To achieve a high quality image, it is recommended that you position your 8680i 4-6" (10.2-15.2 cm) away from the object you are capturing.*

Step 1 - Take a Picture Using IMGSNP

Image Snap - IMGSNP

An image is taken whenever the hardware trigger is pressed, or when the Image Snap (IMGSNP) command is processed.

The image snap command has many different modifiers that can be used to change the look of the image in memory. Any number of modifiers may be appended to the IMGSNP command.

Example: You can use the following command to snap an image, increase the gain, and have the beeper sound once the snap is complete: **IMGSNP2G1B**

IMGSNP Modifiers

P - Imaging Style

This sets the Image Snap style.

- 0P **Decoding Style.** This processing allows a few frames to be taken until the exposure parameters are met. The last frame is then available for further use.
- 1P **Photo Style (default).** This mimics a simple digital camera, and results in a visually optimized image.
- 2P **Manual Style.** This is an advanced style that should only be used by an experienced user. It allows you the most freedom to set up the 8680i, and has no auto-exposure.

B - Beeper

Causes a beep to sound after an image is snapped.

- 0B No beep (*default*)
- 1B Sounds a beep when the image is captured.

T - Wait for Trigger

Waits for a hardware trigger press before taking the image. This is only available when using Photo Style (1P).

- 0T Takes image immediately (*default*)
- 1T Waits for a trigger press, then takes the image

L - LED State

Determines if the LEDs should be on or off, and when. Ambient illumination (OL) is preferred for taking pictures of color documents, such as ID cards. LED State is not available when using Decoding Style (OP).

- 0L LEDs off (*default*)
- 1L LEDs on

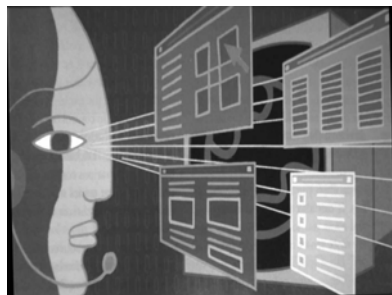
E - Exposure

Exposure is used in Manual Style only (2P), and allows you to set the exposure time. This is similar to setting a shutter speed on a camera. The exposure time determines how long the 8680i takes to record an image. On a bright day, exposure times can be very short because plenty of light is available to help record an image. At nighttime, exposure time can increase dramatically due to the near absence of light. Units are 127 microseconds. (*Default = 7874*)

- nE Range: 1 - 7874

Example:

Exposure at 7874E with fluorescent lighting:



Exposure at 100E with fluorescent lighting:



G - Gain

Gain is used in Manual Style only (2P). Like a volume control, the gain modifier boosts the signal and multiplies the pixel value. As you increase the gain, the noise in an image is also amplified.

1G No gain (*default*)

2G Medium gain

4G Heavy gain

8G Maximum gain

Example:

Gain at 1G:



Gain at 4G:



Gain at 8G:



W - Target White Value

Sets the target for the median grayscale value in the captured image. For capturing close-up images of high contrast documents, a lower setting, such as 75, is recommended. Higher settings result in longer exposure times and brighter images, but if the setting is too high, the image may be overexposed. Target White Value is only available when using Photo Style (1P). (*Default = 125*)

*n*W Range: 0 - 255

Example:

White Value at 75W:



White Value at 125W:



White Value at 200W:



D - Delta for Acceptance

This sets the allowable range for the white value setting ([see W - Target White Value](#)). Delta is only available when using Photo Style (1P). (*Default = 25*)

*n*D Range: 0 - 255

U - Update Tries

This sets the maximum number of frames the 8680i should take to reach the [D - Delta for Acceptance](#). Update Tries is only available when using Photo Style (1P). (Default = 6)

nU Range: 0 - 10

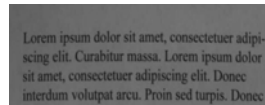
% - Target Set Point Percentage

Sets the target point for the light and dark values in the captured image. A setting of 75% means 75% of the pixels are at or below the target white value, and 25% of the pixels are above the target white value. Altering this setting from the default is not recommended under normal circumstances. To alter grayscale values, [W - Target White Value](#) should be used. (Default = 50)

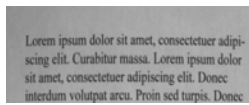
n% Range: 1 - 99

Example:

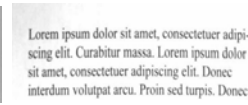
Target Set Point Percentage at 97%:



Target Set Point Percentage at 50%:



Target Set Point Percentage at 40%:



Step 2 - Ship a Picture Using IMGSHIP

Image Ship - IMGSHIP

An image is taken whenever the trigger is pressed or when the Image Snap (IMGSNP) command is processed. The last image is always stored in memory. You can “ship” the image by using the IMGSHIP command.

The image ship commands have many different modifiers that can be used to change the look of the image output. Modifiers affect the image that is transmitted, but do not affect the image in memory. Any number of modifiers may be appended to the IMGSHIP command.

Example: You can use the following command to snap and ship a bitmap image with gamma correction and document image filtering: IMGSNP;IMGSHIP8F75K26U

IMGSHHP Modifiers

A - Infinity Filter

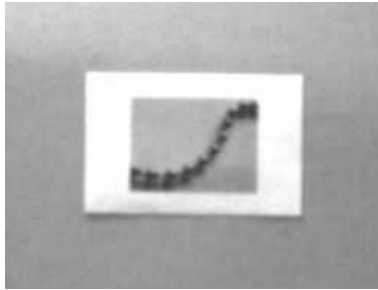
Enhances pictures taken from very long distances (greater than 10 feet or 3m). The Infinity Filter should not be used with [IMGSNP Modifiers](#) (page 156).

0A Infinity filter off (*default*)

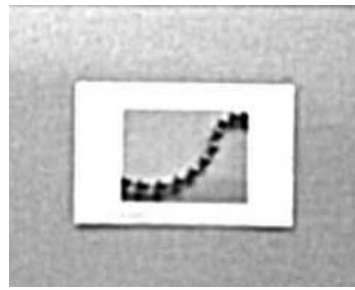
1A Infinity filter on

Example:

Infinity Filter off (0A)
from approximately 12 feet
(3.66m) away:



Infinity Filter on (1A)
from approximately 12 feet (3.66m)
away:



C - Compensation

Flattens the image to account for variations in illumination across the image.

0C Compensation disabled (*default*)

1C Compensation enabled

Example:

Compensation at 0C:



Compensation at 1C:



D - Pixel Depth

Indicates the number of bits per pixel in the transmitted image (KIM or BMP format only).

8D 8 bits per pixel, grayscale image (*default*)

1D 1 bit per pixel, black and white image

E - Edge Sharpen

An edge sharpen filter cleans up the edges of an image, making it look cleaner and sharper. While edge sharpening does make the image look cleaner, it also removes some fine detail from the original image. The strength of the edge sharpen filter can be entered from 1 to 24. Entering a **23E** gives the sharpest edges, but also increases noise in the image.

0E Don't sharpen image (*default*)

14E Apply edge sharpen for typical image

ne Apply edge sharpen using strength *n* ($n = 1-24$)

Example:

Edge Sharpen at 0E:



Edge Sharpen at 24E:



F - File Format

Indicates the desired format for the image.

- 0F KIM format
- 1F TIFF binary
- 2F TIFF binary group 4, compressed
- 3F TIFF grayscale
- 4F Uncompressed binary (upper left to lower right, 1 pixel/bit, 0 padded end of line)
- 5F Uncompressed grayscale (upper left to lower right, bitmap format)
- 6F JPEG image (*default*)
- 8F BMP format (lower right to upper left, uncompressed)
- 10F TIFF color compressed image
- 11F TIFF color uncompressed image
- 12F JPEG color image
- 14F BMP color format
- 15F BMP Uncompressed raw image

H - Histogram Stretch

Increases the contrast of the transmitted image. Not available with some image formats.

- 0H No stretch (*default*)
- 1H Histogram stretch

Example:

Histogram Stretch at 0H:



Histogram Stretch at 1H:



I - Invert Image

Invert image is used to rotate the image around the X or Y axis.

1ix Invert around the X axis (flips picture upside down)

1iy Invert around the Y axis (flips picture left to right)

Example:

Image not inverted:



Image with Invert Image set to 1ix:



Image with Invert Image set to 1iy:



IF- Noise Reduction

Used to reduce the salt and pepper noise in an image.

0if No salt and pepper noise reduction (default)

1if Salt and pepper noise reduction

Example:

Noise Reduction Off (0if):



Noise Reduction On (1if):



IR - Image Rotate

- 0ir Image as snapped (rightside up) (default)
- 1ir Rotate image 90 degrees to the right
- 2ir Rotate image 180 degrees (upside down)
- 3ir Rotate image 90 degrees to the left

Example:

Image Rotate set to 0ir:



Image Rotate set to 2ir:



Image Rotate set to 1ir:



Image Rotate set to 3ir:



J - JPEG Image Quality

Sets the desired quality when the JPEG image format is selected. Higher numbers result in higher quality, but larger files. Smaller numbers result in greater amounts of lossy compression, faster transmission times, lower quality, but smaller files. (Default = 50)

- nJ Image is compressed as much as possible while preserving quality factor of n ($n = 0 - 100$)
- 0J worst quality (smallest file)
- 100J best quality (largest file)

K - Gamma Correction

Gamma measures the brightness of midtone values produced by the image. You can brighten or darken an image using gamma correction. A higher gamma correction yields an overall brighter image. The lower the setting, the darker the image. The optimal setting for text images is 50K.

- OK Gamma correction off (*default*)
- 50K Apply gamma correction for brightening typical document image
- nK Apply gamma correction factor n ($n = 0-1,000$)

Example:

Gamma Correction set to 0K:



Gamma Correction set to 50K:



Gamma Correction set to 255K:

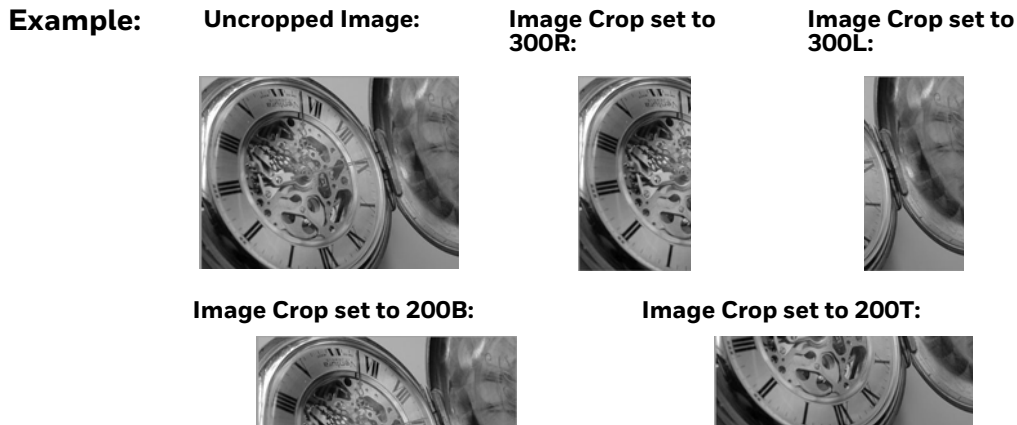


L, R, T, B, M - Image Cropping

Ships a window of the image by specifying the left, right, top, and bottom pixel coordinates. Device columns are numbered 0 through 1279, and device rows are numbered 0 through 959.

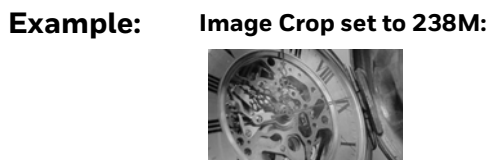
- nL The left edge of the shipped image corresponds to column n of the image in memory. Range: 000 - 843. (*Default = 0*)
- nR The right edge of the shipped image corresponds to column $n - 1$ of the image in memory. Range: 000 - 843. (*Default = all columns*)
- nT The top edge of the shipped image corresponds to row n of the image in memory. Range: 000 - 639. (*Default = 0*)

nB The bottom edge of the shipped image corresponds to row $n - 1$ of the image in memory. Range: 000 - 639. (Default = all rows)



Alternately, specify the number of pixels to cut from the outside margin of the image; thus only the center pixels are transmitted.

nM Margin: cut n columns from the left, $n + 1$ columns from the right, n rows from the top, and $n + 1$ rows from the bottom of the image. Ship the remaining center pixels. Range: 0 - 238. (Default = 0, or full image)



P - Protocol

Used for shipping an image. Protocol covers two features of the image data being sent to the host. It addresses the protocol used to send the data (Hmodem, which is an Xmodem 1K variant that has additional header information), and the format of the image data that is sent.

- 0P None (raw data)
- 2P None (default for USB)
- 3P Hmodem compressed (default for RS232)
- 4P Hmodem

S - Pixel Ship

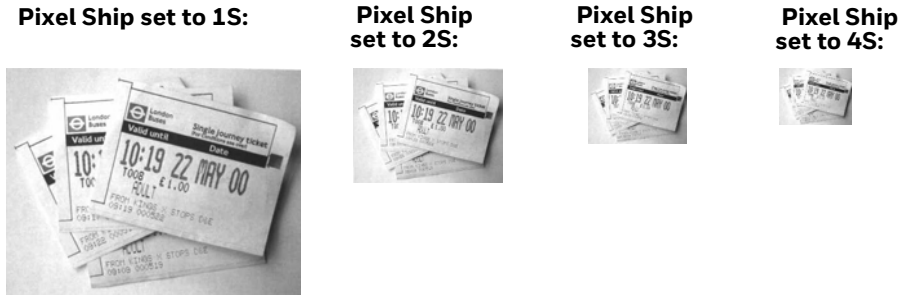
Pixel Ship sizes an image in proportion to its original size. It decimates the image by shipping only certain, regularly spaced pixels.

Example: 4S would transmit every fourth pixel from every fourth line.

The smaller number of pixels shipped, the smaller the image, however, after a certain point the image becomes unusable.

- 1S ship every pixel (*default*)
- 2S ship every 2nd pixel, both horizontally and vertically
- 3S ship every 3rd pixel, both horizontally and vertically

Example:

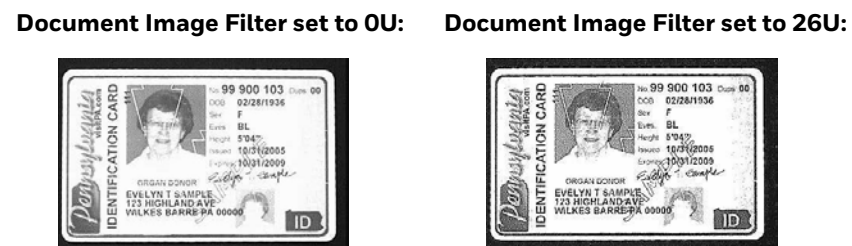


U - Document Image Filter

Allows you to input parameters to sharpen the edges and smooth the area between the edges of text in an image. This filter typically provides better JPEG compression than the standard E - Edge Sharpen command (see [page 168](#)). This filter also works well when shipping pure black and white images (1 bit per pixel). The optimal setting is 26U.

- 0U Document image filter off (*default*)
- 26U Apply document image filter for typical document image
- nU Apply document image filter using grayscale threshold n. Use lower numbers when the image contrast is lower. 1U will have a similar effect to setting [E - Edge Sharpen](#) (page 161) to 22e. Range: 0-255.

Example:



V - Blur Image

Smooths transitions by averaging the pixels next to the hard edges of defined lines and shaded areas in an image.

0V Don't blur (*default*)

1V Blur

Example:

Blur Image Off (0V):



Blur Image On (1V):



W - Histogram Ship

A histogram gives a quick picture of the tonal range of an image, or key type. A low-key image has detail concentrated in the shadows; a high-key image has detail concentrated in the highlights; and an average-key image has detail concentrated in the midtones. This modifier ships the histogram for an image.

0W Don't ship histogram (*default*)

1W Ship histogram

Example:

Image used for histogram:



Histogram of image:



Image Size Compatibility

If you have applications that expect an image ship to return exactly 640x480 pixels, scan the Force VGA Resolution bar code. *Default = Native Resolution.*





* Native Resolution

Intelligent Signature Capture - IMGBOX

IMGBOX allows you to configure the size and location of a signature capture area relative to its proximity to a bar code. This allows you to tailor a signature capture area to a specific form. In order to use IMGBOX, you need a set form where the signature box location is in a known location relative to a bar code. You can input the overall size of the signature area, as well as specify how far the signature area is from the bar code, vertically and horizontally. You can also set the resolution and file format for the final output of the signature capture image.

Note: *IMGBOX commands can only be triggered by one of the following types of bar codes: PDF417, Code 39, Code 128, Aztec, Codabar, and Interleaved 2 of 5. Once one of these symbologies has been read, the image is retained for a possible IMGBOX command.*

Signature Capture Optimize

If you will be using your 8680i to capture signatures frequently, you should optimize it for this purpose. However, the speed of scanning bar codes may be slowed when this mode is enabled. *Default = Off.*



Optimize On



*** Optimize Off**

Below is an example of a signature capture application. In this example, the aiming pattern is centered over the signature capture area and the trigger is pressed. A single beep is emitted, indicating that the 8680i has read a Code 128 bar code and the data has been transferred to the host. An IMGBOX command may now be sent from the host to specify the coordinates of the signature capture area below that code, and indicating that only that area containing the signature should be transferred as an image to the host.

To see this example, align the aiming pattern with the signature area (not with the bar code), then press the trigger.



Send the following IMGBOX command string after the trigger press:

Example: IMGBOX245w37h55y.

Note: Case is not important in the command string. It is used here only for clarity.

The following image is captured:



The IMGBOX commands have many different modifiers that can be used to change the size and appearance of the signature image output by the 8680i. Modifiers affect the image that is transmitted, but do not affect the image in memory. Any number of modifiers may be appended to the IMGBOX command.

Note: The IMGBOX command returns a NAK unless a window size (width and height) are specified. See [H - Height of Signature Capture Area](#) (page 172) and [W - Width of Signature Capture Area](#) (page 173).

IMGBOX Modifiers

A - Output Image Width

This option is used to size the image horizontally. If using this option, set the resolution (R) to zero.

Example: Image Width set to 200A:

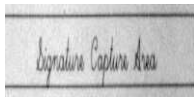
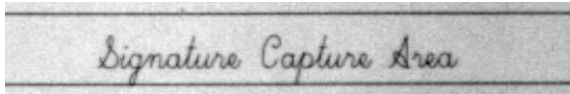


Image Width set to 600A:



B - Output Image Height

This option is used to size the image vertically. If using this option, set the resolution (R) to zero.

Example:

Image Height set to 50B:

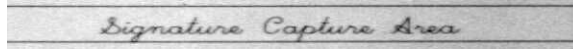
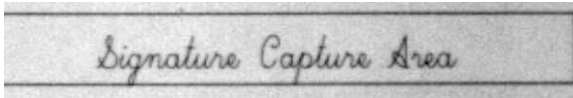


Image Height set to 100B:



D - Pixel Depth

This indicates the number of bits per pixel in the transmitted image, which defines whether it will be grayscale or black and white.

- 8D 8 bits per pixel, grayscale image (*default*)
- 1D 1 bit per pixel, black and white image

F - File Format

This option indicates the type of file format in which to save the image.

- 0F KIM format
- 1F TIFF binary
- 2F TIFF binary group 4, compressed
- 3F TIFF grayscale
- 4F Uncompressed Binary
- 5F Uncompressed grayscale
- 6F JPEG image (*default*)
- 7F Outlined image
- 8F BMP format

H - Height of Signature Capture Area

The height of the signature capture area must be measured in inches divided by .01. In the example, the height of the area to be captured is 3/8 inch, resulting in a value of $H = .375/0.01 = 37.5$.

Example: *IMGBOX245w37h55y*.

K - Gamma Correction

Gamma measures the brightness of midtone values produced by the image. You can brighten or darken an image using gamma correction. A higher gamma correction yields an overall brighter image. The lower the setting, the darker the image. The optimal setting for text images is 50K.

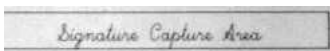
- OK Gamma correction off (*default*)
- 50K Apply gamma correction for brightening typical document image
- nK Apply gamma correction factor n ($n = 1-255$)

Example:

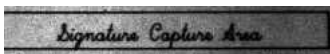
Gamma Correction set to 0K:



Gamma Correction set to 50K:



Gamma Correction set to 255K:



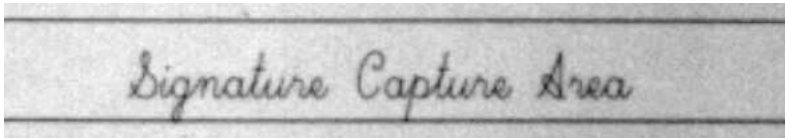
R - Resolution of Signature Capture Area

The resolution is the number of pixels that the 8680i outputs per each minimum bar width. The higher the value for R, the higher the quality of the image, but also the larger the file size. Values begin at 1000. The 8680i automatically inserts a dec-

imal point between the first and second digit. For example, use 2500 to specify a resolution of 2.5. Set to zero when using the A and B modifiers (see [A - Output Image Width](#) and [B - Output Image Height](#) on page 171).

Example:

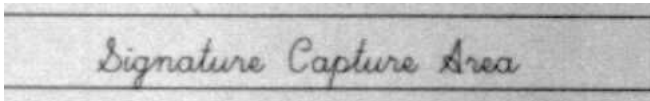
Resolution set to 0R:



Resolution set to 1000R:



Resolution set to 2000R:



S - Bar Code Aspect Ratio

All dimensions used in IMGBOX are measured as multiples of the minimum element size of the bar code. The bar code aspect ratio allows you to set the ratio of the bar code height to the narrow element width. In the example, the narrow element width is .010 inches and the bar code height is 0.400 inches, resulting in a value of $S = 0.4/0.01 = 40$.

W - Width of Signature Capture Area

The width of the signature capture area must be measured in inches divided by .01. In the example, the width of the area to be captured is 2.4 inches, resulting in a value of $W = 2.4/0.01 = 240$. (A value of 245 was used in the example to accommodate a slightly wider image area.)

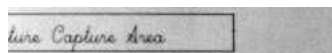
Example: *IMGBOX245w37h55y*.

X - Horizontal Bar Code Offset

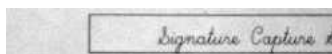
The horizontal bar code offset allows you to offset the horizontal center of the signature capture area. Positive values move the horizontal center to the right and negative values to the left. Measurements are in multiples of the minimum bar width.

Example:

Horizontal Offset set to 75X:



Horizontal Offset set to -75X:



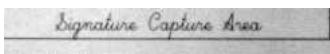
Y - Vertical Bar Code Offset

The vertical bar code offset allows you to offset the vertical center of the signature capture area. Negative numbers indicate that the signature capture is above the bar code, and positive numbers indicate that the area is below the bar code. Measurements are in multiples of the minimum bar width

Vertical Offset set to -7Y:



Vertical Offset set to 65Y:



RF Default Imaging Device

The 8680i supports imaging command processing (IMGSHP, IMGSNP, IMGBOX) so that EZConfig-Scanning (see page 177) and other applications are able to perform imaging functions as if they were communicating directly with the 8680i. To accomplish this, the 8680i uses a menu command called RF_DID (RF Default Imaging Device). RF_DID is the name of the 8680i (BT_NAM) that is to receive imaging commands. The default for RF_DID is "*" indicating that imaging commands are to be sent to all associated 8680is. Change this setting to RF_DIDdevice_name to ensure that they are sent to a particular 8680i. Refer to [Scanner Report](#) on page 27 to generate a report containing the port, 8680i name, and address for each 8680i. Refer to [Device Name](#) on page 37 set a unique name for each 8680i.

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 221 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 is 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 the 8680i.



REVINF.

Show Software Revision

Test Menu

When you scan the **Test Menu On** code, then scan a programming code in this manual, the 8680i displays the content of a programming code. The programming function still occurs, but in addition, the content of that programming code is output to the terminal.

Note: This feature should not be used during normal 8680i operation.



TSTMNU1.
On



TSTMNU0.
* Off

TotalFreedom

TotalFreedom is an open system architecture that makes it possible for you create applications that reside on your 8680i. Decoding apps and Data Formatting apps can be created using TotalFreedom. For further information about TotalFreedom, go to our website at www.honeywellaidc.com.

Application Plug-Ins (Apps)

Any apps that you are using can be turned off or on by scanning the following bar codes. Apps are stored in groups: Decoding and Formatting. You can enable and disable these groups of apps by scanning that group's **On** or **Off** bar code below. You can also scan the **List Apps** bar code to output a list of all your apps.



PLGDCE1.
* Decoding Apps On



PLGDCE0.
Decoding Apps Off



PLGFOE1.
* Formatting Apps On



PLGFOE0.
Formatting Apps Off



PLGINF.
List Apps

Note: You must reset your device in order for the apps setting to take effect.

EZConfig-Scanning Introduction

EZConfig-Scanning provides a wide range of PC-based programming functions that can be performed on the 8680i connected to your PC. EZConfig-Scanning allows you to download upgrades to the 8680i's firmware, change programmed parameters, and create and print programming bar codes. Using EZConfig-Scanning, you can even save/open the programming parameters for the 8680i. This saved file can be e-mailed or, if required, you can create a single bar code that contains all the customized programming parameters and mail or fax that bar code to any location. Users in other locations can scan the bar code to load in the customized programming. See [Configure the 8680i with EZConfig for Scanning](#) to set up EZConfig-Scanning on your device.

Reset the Factory Defaults



Caution: *This selection erases all your settings and resets the 8680i to the original factory defaults. It also disables all plugins.*

If you aren't sure what programming options are in your 8680i, or you've changed some options and want to restore the 8680i to factory default settings, first scan the **Remove Custom Defaults** bar code, then scan **Activate Defaults**. This resets the 8680i to the factory default settings.



DEFOVR.

Remove Custom Defaults



DEFAULT.

Activate Defaults

Note: *The 8680i resets and becomes unlinked from the host after using the Defaults commands. See [Auto Reconnect Mode](#) on page 24 to relink the 8680i.*

The [Menu Commands](#), beginning on page 183 list the factory default settings for each of the commands (indicated by an asterisk (*) on the programming pages).

SERIAL PROGRAMMING COMMANDS

The serial programming commands can be used in place of the programming bar codes. Both the serial commands and the programming bar codes program the 8680i. For complete descriptions and examples of each serial programming command, refer to the corresponding programming bar code in this manual.

The following commands can be sent via a PC COM port using terminal emulation software.

Conventions

The following conventions are used for menu and query command descriptions:

<i>parameter</i>	A label representing the actual value you should send as part of a command.
[<i>option</i>]	An optional part of a command.
{Data}	Alternatives in a command.
bold	Names of menus, menu commands, buttons, dialog boxes, and windows that appear on the screen.

Menu Command Syntax

Menu commands have the following syntax (spaces have been used for clarity only): *Prefix Tag SubTag {Data} [, SubTag {Data}] [; Tag SubTag {Data}] [...]* Storage

Prefix	Three ASCII characters: SYN M CR (ASCII 22,77,13).
Tag	A 3 character case-insensitive field that identifies the desired menu command group.
SubTag	A 3 character case-insensitive field that identifies the desired menu command within the tag group.
Data	The new value for a menu setting, identified by the Tag and SubTag.

Storage A single character that specifies the storage table to which the command is applied. An exclamation point (!) performs the command's operation on the device's volatile menu configuration table. A period (.) performs the command's operation on the device's non-volatile menu configuration table. Use the non-volatile table only for semi-permanent changes you want saved through a power cycle.

Query Commands

Several special characters can be used to query the device about its settings.

- ^ What is the default value for the setting(s).
- ? What is the device's current value for the setting(s).
- * What is the range of possible values for the setting(s). (The device's response uses a dash (-) to indicate a continuous range of values. A pipe (|) separates items in a list of non-continuous values.)

Tag Field Usage

When a query is used in place of a Tag field, the query applies to the *entire* set of commands available for the particular storage table indicated by the Storage field of the command. In this case, the SubTag and Data fields should not be used because they are ignored by the device.

SubTag Field Usage

When a query is used in place of a SubTag field, the query applies only to the subset of commands available that match the Tag field. In this case, the Data field should not be used because it is ignored by the device.

Data Field Usage

When a query is used in place of the Data field, the query applies only to the specific command identified by the Tag and SubTag fields.

Concatenation of Multiple Commands

Multiple commands can be issued within one Prefix/Storage sequence. Only the Tag, SubTag, and Data fields must be repeated for each command in the sequence. If additional commands are to be applied to the same Tag, then the new command sequence is separated with a comma (,) and only the SubTag and Data fields of the additional command are issued. If the additional command requires a different Tag field, the command is separated from previous commands by a semicolon (;).

Responses

The device responds to serial commands with one of three responses:

ACK	Indicates a good command which has been processed.
ENQ	Indicates an invalid Tag or SubTag command.
NAK	Indicates the command was good, but the Data field entry was out of the allowable range for this Tag and SubTag combination, e.g., an entry for a minimum message length of 100 when the field will only accept 2 characters.

When responding, the device echoes back the command sequence with the status character inserted directly before each of the punctuation marks (the period, exclamation point, comma, or semicolon) in the command.

Examples of Query Commands

In the following examples, a bracketed notation [] depicts a non-displayable response.

Example: What is the range of possible values for Codabar Coding Enable?

Enter: **cbrena*.**

Response: **CBRENA0-1[ACK]**

This response indicates that Codabar Coding Enable (CBRENA) has a range of values from 0 to 1 (off and on).

Example: What is the default value for Codabar Coding Enable?

Enter: **cbrena^.**

Response: **CBRENA1[ACK]**

This response indicates that the default setting for Codabar Coding Enable (CBRENA) is 1, or on.

Example: What is the device's current setting for Codabar Coding Enable?

Enter: **cbrena?.**

Response: **CBRENA1[ACK]**

This response indicates that the device's Codabar Coding Enable (CBRENA) is set to 1, or on.

Example: What are the device's settings for all Codabar selections?

Enter: **cbr?.**

Response: **CBRENA1[ACK],
SSX0[ACK],
CK20[ACK],
CCT1[ACK],**

**MIN2[ACK],
MAX60[ACK],
DFT[ACK].**

This response indicates that the device's Codabar Coding Enable (CBRENA) is set to 1, or on;
the Start/Stop Character (SSX) is set to 0, or Don't Transmit;
the Check Character (CK2) is set to 0, or Not Required;
concatenation (CCT) is set to 1, or Enabled;
the Minimum Message Length (MIN) is set to 2 characters;
the Maximum Message Length (MAX) is set to 60 characters;
and the Default setting (DFT) has no value.

Trigger Commands

You can activate and deactivate the 8680i with serial trigger commands. First, the 8680i must be put in Manual Trigger Mode by scanning a Manual Trigger Mode bar code ([page 46](#)), or by sending a serial menu command for triggering ([page 47](#)). Once the 8680i is in serial trigger mode, the trigger is activated and deactivated by sending the following commands:

Activate: **SYN T CR**

Deactivate: **SYN U CR**

The 8680i scans until a bar code has been read, until the deactivate command is sent, or until the serial time-out has been reached (see "Read Time-Out" on [page 3-47](#) for a description, and the serial command on [page 186](#)).

Reset the Custom Defaults

If you want the custom default settings restored to your 8680i, scan the **Activate Custom Defaults** bar code below. This resets the 8680i to the custom default settings. If there are no custom defaults, it resets the 8680i to the factory default settings. Any settings that have not been specified through the custom defaults are defaulted to the factory default settings.



DEFAULT.

Activate Custom Defaults

Note: *This bar code also causes both the 8680i and the host to perform a reset and become unlinked.*

The charts on the following pages list the factory default settings for each of the commands (indicated by an asterisk (*) on the programming pages).

Menu Commands

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Get Started			
Pair the 8680i with Bluetooth Devices			
Pair with a PC or Laptop Bluetooth Serial Port	Host Reconnect Mode	PAPSPP;BT_DNG1	12
	Scanner Reconnect Mode	BT_TRM0,DNG5	12
	* Bluetooth HID Keyboard Connect	PAPBTH	13
	Bluetooth HID Japanese Keyboard Connect	PAPJKB	13
Tap and Pair	*NFC Off	BT_NFC0	14
	NFC On	BT_NFC1	14
Pair with Bluetooth Low Energy (BLE) Devices	HID BLE Connect	PAPLEH	13
	Serial BLE Connect	PAPBLE	13
Pair with an Android, Apple or Windows Mobile Device	Bluetooth HID Keyboard Connect	PAPBTH	14
Enter a Bluetooth PIN	Bluetooth PIN Code	BT_PIN#	15
Link to a Communication and Charge Base or Access Point	CCB/AP Connect	BT_TRM0;BT_EHMO;WIDSCN0	17
	CCB/AP Disconnect	BT_EHM1,DNG1;WIDSCN1	17
Pair with a Vocollect Device	Scanner Reconnect Mode	BT_TRM0,DNG5	18
	CR/LR Suffix	SUFBK2990D0A	18
Disconnect from the Host	Bluetooth Disconnect	BT_DNG4,ADR	19
Unpair When Charging	*Off	BT_DSC0	19
	Unpair When Charging	BT_DSC2	19
Configure the 8680i with EZConfig for Scanning	Bluetooth Connect - EZCS	PAPSPP;BT_DNG1	19
Set Custom Defaults	Set Custom Defaults	MNUCDP	21
	Save Custom Defaults	MNUCDS	21
Reset Custom Defaults	Activate Custom Defaults	DEFAULT	22
Wireless System Operation			
Change a Bluetooth PIN Code	Bluetooth PIN Code	BT_PIN#	23
Auto Reconnect Mode	*Auto Reconnect On	BT_ACM1	24
	Auto Reconnect Off	BT_ACM0	24
Maximum Link Attempts	Maximum Link Attempts	BT_MLA	25
Relink Time-Out	Relink Time-Out	BT_RLT	25
Reset Scanner	Reset Scanner	RESET_	27
Scanner Report	Scanner Report	RPTSCN	27
Scanner Address	Scanner Address	BT_LDA	27

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Linked Modes	Unlink Scanner	BT_RMV	28
	Override Locked Scanner	BT_RPL1	28
Out-of-Range Alarm	Scanner Alarm Duration (Range 1 - 3000 sec (*0))	BT_ORD	28
Alarm Sound Type	Scanner Alarm Type	BT_ORW	29
Scanner Power Time-Out Timer	Timer (0-7200 seconds)	BT_LPT0	30
	200 Seconds	BT_LPT200	30
	400 Seconds	BT_LPT400	30
	900 Seconds	BT_LPT900	30
	3600 Seconds	BT_LPT3600	30
	7200 Seconds	BT_LPT7200	30
Flexible Power Management	*Full Power	BT_TXP100	31
	Medium Power	BT_TXP35	31
	Medium Low Power	BT_TXP5	31
	Low Power	BT_TXP1	31
Batch Mode	Automatic Batch Mode	BATENA1	32
	*Batch Mode Off	BATENA0	32
	Inventory Batch Mode	BATENA2	32
	Persistent Batch Mode	BATENA3	32
Batch Mode Beep	Off	BATBEPO	32
	*On	BATBEP1	32
Batch Mode Storage	*Flash Storage	BATNVS1	33
	RAM Storage	BATNVS0	33
Batch Mode Quantity	*Off	BATQTY0	33
	On	BATQTY1	33
Quantity Codes	0	BATNUM0	34
	*1	BATNUM1	34
	2	BATNUM2	34
	3	BATNUM3	34
	4	BATNUM4	34
	5	BATNUM5	34
	6	BATNUM6	34
	7	BATNUM7	35
	8	BATNUM8	35
Batch Mode Output Order	*FIFO	BATLIFO	35
	LIFO	BATLIF1	35
Total Records	Total Records	BATNRC	35

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Delete Last Code	Delete Last Code	BATUND	35
Clear All Codes	Clear All Codes	BATCLR	36
Transmit Records to Host	Transmit Inventory Records	BAT_TX	36
Batch Mode Transmit Delay	*Off	BATDLY0	36
	Short (ms)	BATDLY250	36
	Medium (ms)	BATDLY500	36
	Long (ms)	BATDLY1000	36
Scanner Name	Name 1-7	BT_NAM#####	37
	Reset	RESET_	38
	Scanner Name	BT_NAM	38
Host Command Acknowledgment	Host ACK On	HSTACK1	39
	*Host ACK Off	HSTACK0	39
	Host ACK Timeout	HSTATO##	40
Input/Output Selections			
Power Up Beeper	Power Up Beeper Off - Scanner	BEPWRO	41
	*Power Up Beeper On - Scanner	BEPWR1	41
Beep on BEL Character	Beep on BEL On	BELBEP1	41
	*Beep on BEL Off	BELBEP0	41
Trigger Click	On	BEPTRG1	42
	*Off	BEPTRG0	42
Beeper - Good Read	Off	BEPBEP0	42
	*On	BEPBEP1	42
Beeper Volume - Good Read	Off	BEPLVL0	42
	*Low	BEPLVL1	42
	Medium	BEPLVL2	42
	*High	BEPLVL3	43
Beeper Pitch - Good Read (Frequency)	Low (1600) (min 400Hz)	BEPFQ11600	43
	*Medium (2700 Hz)	BEPFQ12700	43
	High (4200) (max 9000Hz)	BEPFQ14200	43
Vibrate - Good Read	Vibrate - Good Read Off	TFBGRD0	43
	*Vibrate - Good Read On	TFBGRD1	43
	Vibrate Duration	TFBDUR####	44
Beeper Pitch - Error	*Razz (250) (min 200Hz)	BEPFQ2800	44
	Medium (3250)	BEPFQ23250	44
	High (4200) (max 9000Hz)	BEPFQ24200	44
Beeper Duration - Good Read	*Normal Beep	BEPBIP0	44
	Short Beep	BEPBIP1	44

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
LED - Good Read	Off	BEPLED0	45
	*On	BEPLED1	45
Number of Beeps - Good Read	*1	BEPRPT1	45
	Range 1 - 9	BEPRPT#	45
Number of Beeps - Error	*1	BEPERR3	45
	Range 1 - 9	BEPERR#	45
Good Read Delay	*No Delay	DLYGRD0	46
	Short Delay (500 ms)	DLYGRD500	46
	Medium Delay (1000 ms)	DLYGRD1000	46
	Long Delay (1500 ms)	DLYGRD1500	46
User-Specified Good Read Delay	Range 0 - 30,000 ms	DLYGRD#####	46
Manual Trigger Modes	*Manual Trigger - Normal	PAPHHF	46
	Manual Trigger - Enhanced	PAPHHS	47
Serial Trigger Mode	Read Time-Out (0 - 300,000 ms) *30,000	TRGSTO####	47
Object Detection Mode	Short Range	TRGMOT9;AOSRNG1	47
	Mid Range	TRGMOT9;AOSRNG2	47
	*Long Range	TRGMOT9;AOSRNG3	47
Object Detection Deactivation	*Off	AOSTIM0	48
	Quick Press	AOSTIM10	48
	2 Second Press	AOSTIM2000	48
Object Detection Trigger Hold	*Off	TRGHT00	48
	1 Second Hold	TRGHT01000	48
Poor Quality Codes	Poor Quality 1D Reading On	DECLDI1	49
	*Poor Quality 1D Reading Off	DECLDI0	49
	Poor Quality PDF Reading On	PDFXPR1	49
	*Poor Quality PDF Reading Off	PDFXPRO	49
Illumination Lights	*Lights On	SCNLED1	50
	Lights Off	SCNLED0	50
Aimer Delay	200 milliseconds	SCNDLY200	50
	400 milliseconds	SCNDLY400	50
	*Off (no delay)	SCNDLY0	50
	User-Specified Aimer Delay Range 0 - 4,000 ms	SCNDLY####	50
Aimer Mode	Off	SCNAIM0	51
	*Interlaced	SCNAIM2	51
Centering	Single Code Centering	DECWIN1;DECTOP49;DECBO T51;DECRGT51;DECLFT49.	51

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Custom Centering	Centering On	DECWIN1	52
	*Centering Off	DECWIN0	52
	Left of Centering Window (*40%)	DECLFT###	53
	Right of Centering Window (*60%)	DECRGT###	53
	Top of Centering Window (*40%)	DECTOP###	52
	Bottom of Centering Window (*60%)	DECBOT###	52
ALT Mode	*Off	KBDALTO	53
	4 Characters	KBDALT7	53
Keyboard Modifiers	*Control + X Off	KBDCAS0	54
	DOS Mode Control + X	KBDCAS1	54
	Windows Mode Control + X	KBDCAS2	54
	Windows Mode Prefix/Suffix Off	KBDCAS3	54
Preferred Symbology	On	PRFENA1	54
	*Off	PRFENA0	55
	High Priority Symbology	PRFCOD##	55
	Low Priority Symbology	PRFBLK##	55
	Preferred Symbology Timeout (*500) Range 100-3000	PRFPTO####	55
	Preferred Symbology Default	PRFDFT	56
Output Sequence Editor	Enter Sequence	SEQBLK	60
Partial Sequence	*Discard Partial Sequence	SEQTTS0	62
	Default Sequence	SEQDFT	62
Require Output Sequence	Required	SEQ_EN2	62
	On/Not Required	SEQ_EN1	62
	*Off	SEQ_EN0	62
Good Read Tone - Output Sequences	Good Read Beep - Each Code in Sequence	BEPSIN0	63
	*Good Read Click - Each Code in Sequence	BEPSIN1	63
	Good Read Beep - Partial Sequence Output	BEPISE0	63
	*Error Tone - Partial Sequence Output	BEPISE1	63
Multiple Symbols	On	SHOTGN1	63
	*Off	SHOTGN0	63
No Read	On	SHWNRD1	64
	*Off	SHWNRD0	64

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Video Reverse	Video Reverse Only	VIDREV1	64
	Video Reverse and Standard Bar Codes	VIDREV2	64
	*Video Reverse Off	VIDREV0	65
Working Orientation	*Upright	ROTATN0	65
	Vertical, Bottom to Top (Rotate CCW 90°)	ROTATN1	65
	Upside Down	ROTATN2	65
	Vertical, Top to Bottom (Rotate CW 90°)	ROTATN3	65
Prefix/Suffix Selections			
Add CR Suffix to All Symbologies		VSUFCR	69
Prefix	Add Prefix	PREBK2##	69
	Clear One Prefix	PRECL2	69
	Clear All Prefixes	PRECA2	69
Suffix	Add Suffix	SUFBK2##	70
	Clear One Suffix	SUFCL2	70
	Clear All Suffixes	SUFCA2	70
Function Code Transmit	*Enable	RMVFNC0	70
	Disable	RMVFNC1	70
Intercharacter Delay	Range 0 - 1000 (5ms increments)	DLYCHR##	71
User Specified Intercharacter Delay	Delay Length 0 - 1000 (5ms increments)	DLYCRX##	71
	Character to Trigger Delay	DLY_XX##	71
Interfunction Delay	Range 0 - 1000 (5ms increments)	DLYFNC##	72
Intermessage Delay	Range 0 - 1000 (5ms increments)	DLYMSG##	72
Data Formatter Selections			
Data Format Editor	*Default Data Format (None)	DFMDF3	74
	Show Data Format	DFMBK3?	74
	Enter Data Format	DFMBK3##	75
	Clear One Data Format	DFMCL3	75
	Clear All Data Formats	DFMCA3	75
Data Formatter	Data Formatter Off	DFM_EN0	89
	*Data Formatter On, Not Required, Keep Prefix/Suffix	DFM_EN1	90

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
	Data Format Required, Keep Prefix/Suffix	DFM_EN2	90
	Data Formatter On, Not Required, Drop Prefix/Suffix	DFM_EN3	90
	Data Format Required, Drop Prefix/Suffix	DFM_EN4	90
Data Format Non-Match Error Tone	*Data Format Non-Match Error Tone On	DFMDEC0	91
	Data Format Non-Match Error Tone Off	DFMDEC1	91
Primary/Alternate Data Formats	Primary Data Format	ALTFNMO	91
	Data Format 1	ALTFNM1	91
	Data Format 2	ALTFNM2	91
	Data Format 3	ALTFNM3	91
Single Scan Data Format Change	Single Scan-Primary Data Format	VSAF_0	92
	Single Scan-Data Format 1	VSAF_1	92
	Single Scan-Data Format 2	VSAF_2	92
	Single Scan-Data Format 3	VSAF_3	92
Symbologies			
All Symbologies	All Symbologies Off	ALLENA0	94
Codabar	Default All Codabar Settings	CBRDFT	94
	Off	CBRENA0	94
	*On	CBRENA1	94
Codabar Start/Stop Char.	*Don't Transmit	CBRSSX0	95
	Transmit	CBRSSX1	95
Codabar Check Char.	*No Check Char.	CBRCK20	95
	Validate, But Don't Transmit	CBRCK21	95
	Validate, and Transmit	CBRCK22	95
Codabar Concatenation	*Off	CBRCCT0	96
	On	CBRCCT1	96
	Require	CBRCCT2	96
Codabar Redundancy	Range (0 - 10) *0	CBRVOT##	96
Codabar Message Length	Minimum (2 - 60) *4	CBRMIN##	97
	Maximum (2 - 60) *60	CBRMAX##	97

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Code 39	Default All Code 39 Settings	C39DFT	97
	Off	C39ENAO	97
	*On	C39ENA1	97
Code 39 Start/Stop Char.	*Don't Transmit	C39SSX0	97
	Transmit	C39SSX1	97
Code 39 Check Char.	*No Check Char.	C39CK20	98
	Validate, But Don't Transmit	C39CK21	98
	Validate, and Transmit	C39CK22	98
Code 39 Redundancy	Range (0 - 10) *0	C39VOT##	98
Code 39 Message Length	Minimum (0 - 48) *0	C39MIN##	99
	Maximum (0 - 48) *48	C39MAX##	99
Code 39 Append	*Off	C39APPO	99
	On	C39APP1	99
Code 32 Pharmaceutical (PARAF)	*Off	C39B320	99
	On	C39B321	99
Code 39 Full ASCII	*Off	C39ASCO	100
	On	C39ASC1	100
	Code 39 Code Page	C39DCP	100
Interleaved 2 of 5	Default All Interleaved 2 of 5 Settings	I25DFT	101
	Off	I25ENAO	101
	*On	I25ENA1	101
Interleaved 2 of 5 Check Digit	*No Check Char.	I25CK20	101
	Validate, But Don't Transmit	I25CK21	101
	Validate, and Transmit	I25CK22	101
Interleaved 2 of 5 Message Length	Minimum (2 - 80) *4	I25MIN##	102
	Maximum (2 - 80) *80	I25MAX##	102
	*FEBRABAN Decode Off	I25PAY0	102
	FEBRABAN Decode On	I25PAY1	102
NEC 2 of 5	Default All NEC 2 of 5 Settings	N25DFT	102
	Off	N25ENAO	102
	*On	N25ENA1	102

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
NEC 2 of 5 Check Digit	*No Check Char.	N25CK20	103
	Validate, But Don't Transmit	N25CK21	103
	Validate, and Transmit	N25CK22	103
NEC 2 of 5 Message Length	Minimum (2 - 80) *4	N25MIN##	103
	Maximum (2 - 80) *80	N25MAX##	103
Code 93	Default All Code 93 Settings	C93DFT	104
	Off	C93ENAO	104
	*On	C93ENA1	104
Code 93 Message Length	Minimum (0 - 80) *0	C93MIN##	104
	Maximum (0 - 80) *80	C93MAX##	104
Code 93 Append	On	C93APP1	104
	*Off	C93APP0	104
Code 93 Code Page	Code 93 Code Page	C93DCP	105
Straight 2 of 5 Industrial	Default All Straight 2 of 5 Industrial Settings	R25DFT	105
	*Off	R25ENAO	105
	On	R25ENA1	105
Straight 2 of 5 Industrial Message Length	Minimum (1 - 48) *4	R25MIN##	106
	Maximum (1 - 48) *48	R25MAX##	106
Straight 2 of 5 IATA	Default All Straight 2 of 5 IATA Settings	A25DFT	106
Straight 2 of 5 IATA	*Off	A25ENAO	106
	On	A25ENA1	106
Straight 2 of 5 IATA Redundancy	Range (0 - 10) *0	A25VOT##	106
Straight 2 of 5 IATA Message Length	Minimum (1 - 48) *4	A25MIN##	107
	Maximum (1 - 48) *48	A25MAX##	107
Matrix 2 of 5	Default All Matrix 2 of 5 Settings	X25DFT	107
	*Off	X25ENAO	107
	On	X25ENA1	107
Matrix 2 of 5 Message Length	Minimum (1 - 80) *4	X25MIN##	108
	Maximum (1 - 80) *80	X25MAX##	108
Code 11	Default All Code 11 Settings	C11DFT	108
	*Off	C11ENAO	108
	On	C11ENA1	108

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Code 11 Check Digits Required	1 Check Digit	C11CK20	108
	*2 Check Digits	C11CK21	108
Code 11 Message Length	Minimum (1 - 80) *4	C11MIN##	109
	Maximum (1 - 80) *80	C11MAX##	109
Code 128	Default All Code 128 Settings	128DFT	109
	Off	128ENAO	109
	*On	128ENA1	109
ISBT Concatenation	*Off	ISBENAO	109
	On	ISBENA1	109
Code 128 Message Length	Minimum (0 - 80) *0	128MIN##	110
	Maximum (0 - 80) *80	128MAX##	110
Code 128 Append	*On	128APP1	110
	Off	128APPO	110
Code 128 Code Page	Code 128 Code Page (*2)	128DCP##	111
GS1-128	Default All GS1-128 Settings	GS1DFT	111
	*On	GS1ENA1	111
	Off	GS1ENAO	111
GS1-128 Message Length	Minimum (1 - 80) *1	GS1MIN##	112
	Maximum (0 - 80) *80	GS1MAX##	112
Telepen	Default All Telepen Settings	TELDFT	112
	*Off	TELENAO	112
	On	TELENA1	112
Telepen Output	*AIM Telepen Output	TELOLD0	112
	Original Telepen Output	TELOLD1	112
Telepen Message Length	Minimum (1 - 60) *1	TELMIN##	113
	Maximum (1 - 60) *60	TELMAX##	113
UPC-A	Default All UPC-A Settings	UPBDFT	113
	Off	UPBENAO	113
	*On	UPBENA1	113
UPC-A Check Digit	Off	UPACKX0	114
	*On	UPACKX1	114
UPC-A Number System	Off	UPANSX0	114
	*On	UPANSX1	114
UPC-A 2 Digit Addenda	*Off	UPAAD20	114
	On	UPAAD21	114

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
UPC-A 5 Digit Addenda	*Off	UPAAD50	114
	On	UPAAD51	114
UPC-A Addenda Required	*Not Required	UPAARQ0	115
	Required	UPAARQ1	115
UPC-A Addenda Separator	Off	UPAADS0	115
	*On	UPAADS1	115
UPC-A/EAN-13 with Extended Coupon Code	*Off	CPNENA0	116
	Allow Concatenation	CPNENA1	116
	Require Concatenation	CPNENA2	116
Coupon GS1 DataBar Output	GS1 Output Off	CPNGS10	117
	GS1 Output On	CPNGS11	117
UPC-E0	Default All UPC-E Settings	UPEDFT	117
	Off	UPEEN00	117
	*On	UPEEN01	117
UPC-E0 Expand	*Off	UPEEXP0	117
	On	UPEEXP1	117
UPC-E0 Addenda Required	Required	UPEARQ1	118
	*Not Required	UPEARQ0	118
UPC-E0 Addenda Separator	*On	UPEADS1	118
	Off	UPEADS0	118
UPC-E0 Check Digit	Off	UPECKX0	119
	*On	UPECKX1	119
UPC-E0 Leading Zero	Off	UPENSX0	119
	*On	UPENSX1	119
UPC-E0 Addenda	2 Digit Addenda On	UPEAD21	119
	*2 Digit Addenda Off	UPEAD20	119
	5 Digit Addenda On	UPEAD51	119
	*5 Digit Addenda Off	UPEAD50	119
UPC-E1	*Off	UPEEN10	120
	On	UPEEN11	120
EAN/JAN-13	Default All EAN/JAN Settings	E13DFT	120
	Off	E13ENA0	120
	*On	E13ENA1	120
Convert UPC-A to EAN-13	UPC-A Converted to EAN-13	UPAENA0	120
	Do not Convert UPC-A	UPAENA1	120

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
EAN/JAN-13 Check Digit	Off	E13CKX0	121
	*On	E13CKX1	121
EAN/JAN-13 2 Digit Addenda	2 Digit Addenda On	E13AD21	121
	*2 Digit Addenda Off	E13AD20	121
	5 Digit Addenda On	E13AD51	121
	*5 Digit Addenda Off	E13AD50	121
EAN/JAN-13 Addenda Required	*Not Required	E13ARQ0	121
	Required	E13ARQ1	121
EAN-13 Beginning with 290 Addenda Required	* Don't Require 5 Digit Addenda	ARQ2900	122
	Require 5 Digit Addenda	ARQ2901	122
EAN-13 Beginning with 378/379 Addenda Required	* Don't Require Addenda	ARQ3780	122
	Require 2 Digit Addenda	ARQ3781	122
	Require 5 Digit Addenda	ARQ3782	122
	Require 2 or 5 Digit Addenda	ARQ3783	122
EAN-13 Beginning with 414/419 Addenda Required	* Don't Require Addenda	ARQ4140	123
	Require 2 Digit Addenda	ARQ4141	123
	Require 5 Digit Addenda	ARQ4142	123
	Require 2 or 5 Digit Addenda	ARQ4143	123
EAN-13 Beginning with 434/439 Addenda Required	* Don't Require Addenda	ARQ4340	124
	Require 2 Digit Addenda	ARQ4341	124
	Require 5 Digit Addenda	ARQ4342	124
	Require 2 or 5 Digit Addenda	ARQ4343	124
EAN-13 Beginning with 977 Addenda Required	* Don't Require 2 Digit Addenda	ARQ9770	124
	Require 2 Digit Addenda	ARQ9771	124
EAN-13 Beginning with 978 Addenda Required	* Don't Require 5 Digit Addenda	ARQ9780	125
	Require 5 Digit Addenda	ARQ9781	125
EAN-13 Beginning with 979 Addenda Required	* Don't Require 5 Digit Addenda	ARQ9790	125
	Require 5 Digit Addenda	ARQ9791	125
Addenda Timeout	Addenda Timeout	DLYADD###	126
EAN/JAN-13 Addenda Separator	Off	E13ADS0	126
	*On	E13ADS1	126
ISBN Translate	*Off	E13ISB0	127
	On	E13ISB1	127
EAN/JAN-8	Default All EAN/ JAN 8 Settings	EA8DFT	127
	Off	EA8ENAO	127
	*On	EA8ENA1	127

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
EAN/JAN-8 Check Digit	Off	EA8CKX0	127
	*On	EA8CKX1	127
EAN/JAN-8 Addenda	*2 Digit Addenda Off	EA8AD20	128
	2 Digit Addenda On	EA8AD21	128
	*5 Digit Addenda Off	EA8AD50	128
	5 Digit Addenda On	EA8AD51	128
EAN/JAN-8 Addenda Required	*Not Required	EA8ARQ0	128
	Required	EA8ARQ1	128
EAN/JAN-8 Addenda Separator	Off	EA8ADS0	129
	*On	EA8ADS1	129
MSI	Default All MSI Settings	MSIDFT	129
	*Off	MSIENAO	129
	On	MSIENA1	129
MSI Check Character	*Validate Type 10, but Don't Transmit	MSICHK0	130
	Validate Type 10 and Transmit	MSICHK1	130
	Validate 2 Type 10 Chars, but Don't Transmit	MSICHK2	130
	Validate 2 Type 10 Chars and Transmit	MSICHK3	130
	Validate Type 11 then Type 10 Char, but Don't Transmit	MSICHK4	130
	Validate Type 11 then Type 10 Char and Transmit	MSICHK5	130
	Disable MSI Check Characters	MSICHK6	130
MSI Message Length	Minimum (4 - 48) *4	MSIMIN##	131
	Maximum (4 - 48) *48	MSIMAX##	131
GS1 DataBar Omnidirectional	Default All GS1 DataBar Omnidirectional Settings	RSSDFT	131
	Off	RSSENAO	131
	*On	RSSENA1	131
GS1 DataBar Limited	Default All GS1 DataBar Limited Settings	RSLDFT	132
	Off	RSLENAO	132
	*On	RSLENA1	132
GS1 DataBar Expanded	Default All GS1 DataBar Expanded Settings	RSEDFT	132
	Off	RSEENAO	132
	*On	RSEENA1	132

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
GS1 DataBar Expanded Msg. Length	Minimum (4 - 74) *4	RSEMIN##	132
	Maximum (4 - 74) *74	RSEMAX##	132
Trioptic Code	*Off	TRIENA0	133
	On	TRIENA1	133
Codablock A	Default All Codablock A Settings	CBADFT	133
	*Off	CBAENA0	133
	On	CBAENA1	133
Codablock A Msg. Length	Minimum (1 - 600) *1	CBAMIN###	134
	Maximum (1 - 600) *600	CBAMAX###	134
Codablock F	Default All Codablock F Settings	CBFDFT	134
	*Off	CBFENA0	134
	On	CBFENA1	134
Codablock F Msg. Length	Minimum (1 - 2048) *1	CBFMIN####	134
	Maximum (1 - 2048) *2048	CBFMAX####	134
Label Code	On	LBLENA1	135
	* Off	LBLENA0	135
PDF417	Default All PDF417 Settings	PDFDFT	135
	*On	PDFENA1	135
	Off	PDFENA0	135
PDF417 Msg. Length	Minimum (1-2750) *1	PDFMIN####	135
	Maximum (1-2750) *2750	PDFMAX####	135
MacroPDF417	*On	PDFMAC1	136
	Off	PDFMAC0	136
MicroPDF417	Default All Micro PDF417 Settings	MPDDFT	136
	On	MPDENA1	136
	*Off	MPDENA0	136
MicroPDF417 Msg. Length	Minimum (1-366) *1	MPDMIN###	137
	Maximum (1-366) *366	MPDMAX###	137
GS1 Composite Codes	On	COMENA1	137
	*Off	COMENA0	137
UPC/EAN Version	On	COMUPC1	137
	*Off	COMUPC0	137
GS1 Composite Codes Msg. Length	Minimum (1-2435) *1	COMMIN####	138
	Maximum (1-2435) *2435	COMMAX####	138

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
GS1 Emulation	GS1-128 Emulation	EANEMU1	138
	GS1 DataBar Emulation	EANEMU2	137
	GS1 Code Expansion Off	EANEMU3	139
	EAN8 to EAN13 Conversion	EANEMU4	139
	*GS1 Emulation Off	EANEMU0	139
TCIF Linked Code 39	On	T39ENA1	139
	*Off	T39ENA0	139
QR Code	Default All QR Code Settings	QRCDFT	139
	*On	QRCENA1	139
	Off	QRCENA0	139
QR Code Msg. Length	Minimum (1-7089) *1	QRCMIN####	140
	Maximum (1-7089) *7089	QRCMAX####	140
QR Code Append	*On	QRCAPP1	140
	Off	QRCAPPO	140
QR Code Page	QR Code Page (*3)	QRCDCP##	140
Data Matrix	Default All Data Matrix Settings	IDMDFT	142
	*On	IDMENA1	142
	Off	IDMENA0	142
Low Contrast Data Matrix Enhancements	* Low Contrast Data Matrix Enhancements On	DEPMENA1	142
	Low Contrast Data Matrix Enhancements Off	DPMENA0	142
Data Matrix Msg. Length	Minimum (1-3116) *1	IDMMIN####	143
	Maximum (1-3116) *3116	IDMMAX####	143
Data Matrix Code Page	Data Matrix Code Page (*51)	IDMDCP##	143
MaxiCode	Default All MaxiCode Settings	MAXDFT	144
	*On	MAXENA1	144
	Off	MAXENA0	144
MaxiCode Msg. Length	Minimum (1-150) *1	MAXMIN###	144
	Maximum (1-150) *150	MAXMAX###	144
Aztec Code	Default All Aztec Code Settings	AZTDFT	145
	*On	AZTENA1	145
	Off	AZTENA0	145
Aztec Code Msg. Length	Minimum (1-3832) *1	AZTMIN####	145
	Maximum (1-3832) *3832	AZTMAX####	145
Aztec Append	*On	AZTAPP1	145
	Off	AZTAPPO	145
Aztec Code Page	Aztec Code Page (*51)	AZTDCP##	146

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Chinese Sensible (Han Xin) Code	Default All Han Xin Code Settings	HX_DFT	146
	On	HX_ENA1	146
	*Off	HX_ENA0	146
Chinese Sensible (Han Xin) Code Msg. Length	Minimum (1-7833) *1	HX_MIN####	147
	Maximum (1-7833) *7833	HX_MAX####	147
Postal Codes - 2D			
2D Postal Codes	Off	POSTAL0	147
Single 2D Postal Codes	Australian Post On	POSTAL1	147
	British Post On	POSTAL7	147
	Canadian Post On	POSTAL30	147
	*Intelligent Mail Bar Code On	POSTAL10	147
	Japanese Post On	POSTAL3	148
	KIX Post On	POSTAL4	148
	Planet Code On	POSTAL5	148
	Postal-4i On	POSTAL9	148
	Postnet On	POSTAL6	148
	Postnet with B and B' Fields On	POSTAL11	148
InfoMail On	POSTAL2	148	
Combination 2D Postal Codes	InfoMail and British Post On	POSTAL8	148
	Intelligent Mail Bar Code and Postnet with B and B' Fields On	POSTAL20	148
	Postnet and Postal-4i On	POSTAL14	149
	Postnet and Intelligent Mail Bar Code On	POSTAL16	149
	Postal-4i and Intelligent Mail Bar Code On	POSTAL17	149
	Postal-4i and Postnet with B and B' Fields On	POSTAL19	149
	Planet and Postnet On	POSTAL12	149
	Planet and Postnet with B and B' Fields On	POSTAL18	149
	Planet and Postal-4i On	POSTAL13	149
	Planet and Intelligent Mail Bar Code On	POSTAL15	149
	Planet, Postnet, and Postal-4i On	POSTAL21	149
	Planet, Postnet, and Intelligent Mail Bar Code On	POSTAL22	149
	Planet, Postal-4i, and Intelligent Mail Bar Code On	POSTAL23	150

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Combination 2D Postal Codes (continued)	Postnet, Postal-4i, and Intelligent Mail Bar Code On	POSTAL24	150
	Planet, Postal-4i, and Postnet with B and B' Fields On	POSTAL25	150
	Planet, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL26	150
	Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL27	150
	Planet, Postal-4i, Intelligent Mail Bar Code, and Postnet On	POSTAL28	150
	Planet, Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL29	150
Planet Code Check Digit	Transmit	PLNCKX1	150
	*Don't Transmit	PLNCKX0	151
Postnet Check Digit	Transmit	NETCKX1	151
	*Don't Transmit	NETCKX0	151
Australian Post Interpretation	Bar Output	AUSINT0	151
	Numeric N Table	AUSINT1	151
	Alphanumeric C Table	AUSINT2	151
	Combination N and C Tables	AUSINT3	152
Postal Codes - Linear			
China Post (Hong Kong 2 of 5)	Default All China Post (Hong Kong 2 of 5) Settings	CPCDFT	152
	*Off	CPCENA0	152
	On	CPCENA1	152
China Post (Hong Kong 2 of 5) Msg. Length	Minimum (2 - 80) *4	CPCMIN##	152
	Maximum (2 - 80) *80	CPCMAX##	152
Korea Post	Default All Korea Post Settings	KPCDFT	153
	*Off	KPCENA0	153
	On	KPCENA1	153
Korea Post Msg. Length	Minimum (2 - 80) *4	KPCMIN##	153
	Maximum (2 - 80) *48	KPCMAX##	153
Korea Post Check Digit	Transmit Check Digit	KPCCHK1	153
	*Don't Transmit Check Digit	KPCCHK0	153
Imaging Default Commands			
Image Snap	Default all Imaging Commands	IMGDFT	155
	Imaging Style - Decoding	SNPSTY0	156

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
	*Imaging Style - Photo	SNPSTY1	156
	Imaging Style - Manual	SNPSTY2	156
	Beeper On	SNPBEP1	156
	*Beeper Off	SNPBEP0	156
	*Wait for Trigger Off	SNPTRG0	157
	Wait for Trigger On	SNPTRG1	157
	*LED State - Off	SNPLED0	157
	LED State - On	SNPLED1	157
	Exposure (1-7874 microseconds)	SNPEXP	157
	*Gain - None	SNPGAN1	158
	Gain - Medium	SNPGAN2	158
	Gain - Heavy	SNPGAN4	158
	Gain - Maximum	SNPGAN8	158
	Target White Value (0-255) *125	SNPWHT###	158
	Delta for Acceptance (0-255) *25	SNPDEL###	158
	Update Tries (0-10) *6	SNPTRY##	159
	Target Set Point Percentage (1- 99) *50	SNPPCT##	159
Image Ship	*Infinity Filter - Off	IMGINFO	160
	Infinity Filter - On	IMGINF1	160
	*Compensation Off	IMGCOR0	160
	Compensation On	IMGCOR1	160
	*Pixel Depth - 8 bits/pixel (grayscale)	IMGBPP8	160
	Pixel Depth - 1 bit/pixel (B&W)	IMGBPP1	160
	*Don't Sharpen Edges	IMGEDG0	161
	Sharpen Edges (0-23)	IMGEDG##	161
	*File Format - JPEG	IMGFMT6	162
	File Format - KIM	IMGFMT0	162
	File Format - TIFF binary	IMGFMT1	162
	File Format - TIFF binary group 4, compressed	IMGFMT2	162
	File Format - TIFF grayscale	IMGFMT3	162
	File Format - Uncompressed binary	IMGFMT4	162
	File Format - Uncompressed grayscale	IMGFMT5	162
	File Format - BMP	IMGFMT8	162

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
	*Histogram Stretch Off	IMGHIS0	162
	Histogram Stretch On	IMGHIS1	162
	*Noise Reduction Off	IMGFSP0	163
	Noise Reduction On	IMGFSP1	163
	Invert Image around X axis	IMGNVX1	163
	Invert Image around Y axis	IMGNVY1	163
	Rotate Image none	IMGROTO	164
	Rotate Image 90° right	IMGROT1	164
	Rotate Image 180° right	IMGROT2	164
	Rotate Image 90° left	IMGROT3	164
	JPEG Image Quality (0-100) *50	IMGJQF###	164
	*Gamma Correction Off	IMGGAM0	165
	Gamma Correction On (0-1000)	IMGGAM###	165
	Image Crop - Left (0-843) *0	IMGWNL###	165
	Image Crop - Right (0-843) *843	IMGWNR###	165
	Image Crop - Top (0-639) *0	IMGWNT###	165
	Image Crop - Bottom (0-639) *639	IMGWNB###	166
	Image Crop - Margin (1-238) *0	IMGMAR###	166
	Protocol - None (raw)	IMGXFR0	166
	Protocol - None (default USB)	IMGXFR2	166
	Protocol - Hmodem Compressed	IMGXFR3	166
	Protocol - Hmodem	IMGXFR4	166
	Ship Every Pixel	IMGSUB1	167
Image Ship (continued)	Ship Every 2nd Pixel	IMGSUB2	167
	Ship Every 3rd Pixel	IMGSUB3	167
	*Document Image Filter Off	IMGUSH0	167
	Document Image Filter On (0-255)	IMGUSH###	167
	*Don't Ship Histogram	IMGHST0	168
	Ship Histogram	IMGHST1	168
Image Size Compatibility	Force VGA Resolution	IMGVGA1	168
	*Native Resolution	IMGVGA0	169
Intelligent Signature Capture	Optimize On	DECBND1	169
	*Optimize Off	DECBND0	169
Utilities			
Add Code I.D. Prefix to All Symbologies (Temporary)		PRECA2,BK2995C80!	175
Show Software Revision		REVINF	175

Selection	Setting * Indicates default	Serial Command # Indicates a numeric entry	Page
Test Menu	On	TSTMNU1	176
	*Off	TSTMNU0	176
Application Plug-Ins (Apps)	*Decoding Apps On	PLGDCE1	176
	Decoding Apps Off	PLGDCE0	176
	*Formatting Apps On	PLGFOE1	176
	Formatting Apps Off	PLGFOE0	176
	List Apps	PLGINF	176
Reset the Factory Defaults	Remove Custom Defaults	DEFOVR	177
	Activate Defaults	DEFALT	177

ADVANCED APPLICATION PROGRAMMING

The following commands are used when coding user interface commands for the 8680i directly into an application.

Note: *The 8680i Software Development Kit can also be used to program the 8680i UI. See the 8680i Software Development Kit User Guide at www.honeywellaidc.com.*

Beeper and LED Sequences

BEPEHA

This command causes one of the following beeper and LED sequences to be executed, based on a required character parameter, for example, **BEPEHA1**. See [Good Read and Error Indicators](#) on page 42 for further information.

- 1 Execute an LED sequence of 130 milliseconds of good read LED illumination followed by 70 milliseconds of no illumination.
- 2 Execute an LED sequence of 1500 milliseconds of good read LED illumination followed by 500 milliseconds of no illumination.
- 3 Execute an LED sequence of 4500 milliseconds of good read LED illumination followed by 500 milliseconds of no illumination.
- 4 Execute a beep sequence (no LED) of 160 milliseconds at 1600 Hz.
- 5 Execute a beep sequence (no LED) of 160 milliseconds at 3250 Hz.
- 6 Execute a beep sequence (no LED) of 160 milliseconds at 4200 Hz.
- 7 Execute a good read beep sequence.
- 8 Execute an error beep sequence. When using host acknowledgment, BEPEHA8 also indicates an erroneous host acknowledgment (see [Host Acknowledgment](#) on page 38).
 - a Execute a menu good beep sequence.
 - b Execute a menu error beep sequence.

Sample

```
char cBeepMenuString[] = "\x16M\x0DBEPEHA1.>";  
SynMenuCmdSync(cBeepMenuString);
```

BEPEXE

This causes a standard beep sequence or an error beep sequence to be executed. BEPEXE requires a numeric parameter, where values of 1, 2 and 3 cause the standard beep sequence and 4 causes the error beep sequence to be executed.

Sample

```
char cBeepMenuString[] = "\x16M\x0DBEPEXE1.>";  
SynMenuCmdSync(cBeepMenuString);
```

Text Settings

GUITXT

This command sends left-justified text to the display. The text is in UTF-8 format. If the text is too long, it is truncated.

Byte	Value	Notes
0	0 or 1	The line where the text is placed.
1 ... n	UTF-8	The text to display.

Sample

This string sends “Hi” to the first line (binary 0):

```
GUITXT004869
```

This data is a binary byte 0, followed by the two ASCII characters:

Byte	Value
0	0x00 (line 0)
1	0x48 (H)
2	0x69 (i)

The hex string encoding is:

Byte	Value
0	0x32 (0)
1	0x32 (0)
2	0x34 (4)
3	0x38 (8)

Byte	Value
4	0x36 (6)
5	0x39 (9)

Text Size Line 1

GUIFSU

This command controls the size of the text on the display for line 1.

Byte	Value
0	Small
1	Medium (default)
2	Large

Sample

```
char cFntMenuString[] = "\x16M\x0DGUIFSU1.";
SynMenuCmdSync(cFntMenuString);
```

Text Size Line 2

GUIFSD

This command controls the size of the text on the display for line 2.

Byte	Value
0	Small
1	Medium (default)
2	Large

Sample

```
char cFntMenuString[] = "\x16M\x0DGUIFSD2.";
SynMenuCmdSync(cFntMenuString);
```

Single Line Display or Large Font

Set [GUIFSD](#) to 10 and use [GUITXT00xxxx](#) to write text to display line 1.

Text Color - Foreground Line 1

GUITCU

This command uses a hex string to set the foreground color of the display text for line 1.

Byte	Value
0	Red
1	Green
2	Blue

Valid values are 00-FF. Default = FFFFFFFF (white).

Sample

```
char cClrMenuString[] = "\x16M\x0DGUITCUFFFFFF.>";  
SynMenuCmdSync(cClrMenuString);
```

Text Color - Foreground Line 2

GUITCD

This command uses a hex string to set the foreground color of the display text for line 2.

Byte	Value
0	Red
1	Green
2	Blue

Valid values are 00-FF. Default = FFFFFFFF (white).

Sample

```
char cClrMenuString[] = "\x16M\x0DGUITCDFFFFFF.>";  
SynMenuCmdSync(cClrMenuString);
```

Text Color - Background

GUITBC

This command uses a hex string to set the background color of the display text.

Byte	Value
0	Red

Byte	Value
1	Green
2	Blue

Valid values are 00-FF. Default = 000000 (black).

Sample

```
char cT_ClrMenuString[] = "\x16M\x0DGUITBC000000.";
SynMenuCmdSync(cT_ClrMenuString);
```

Screen Display Settings

Backlight Level

GUIBAK

This command uses a numeric entry to set the display's backlight level, from dimmer to brighter.

Valid values are 0-100. Default = 85.

Sample

```
char cGuiControlString[] = "\x16M\x0DGUIBAK50.";
SynMenuCmdSync(cGuiControlString);
```

Scan Time

GUISCT

This sets how many seconds a good or bad scan remains on the display.

Valid values are 0-30. Default = 30.

Sample

```
char cGuiControlString[] = "\x16M\x0DGUISCT4.";
SynMenuCmdSync(cGuiControlString);
```

Display Time

DISTIM

This sets how many seconds the display remains on after receiving a message. Valid values are 0-30. Default = 3.

Sample

```
char cDisplayTimeString[] = "\x16M\x0DDISTIM3.";
SynMenuCmdSync(cDisplayTimeString);
```

Button Notifications

GUIBNE

This command turns the button notifications on or off by enabling or disabling them. If the button is detected, a <SYN>FE message is sent to the host.

When button detection is enabled/on, a button press causes the GUIBTN message to be sent to the host. GUIBTN_x, where x = 1 (left button), x = 2 (right button), or x = 3 (both buttons).

Value	Function
0	Disable/Off
1	Enable/On

Default = 0 (Disable/Off).

Sample

```
char cGuiControlString[] = "\x16M\x0DGUIBNE1.";
SynMenuCmdSync(cGuiControlString);
```

Language Setting

GUICTY

This sets the display language characters.

Value	Function
0	English
1	Cyrillic

Default = 0 (English).

Sample

```
char cGuiControlString[] = "\\x16M\\x0DGUICTY1.";
SynMenuCmdSync(cGuiControlString);
```

Icon Bar

GUIICN

This command turns the icon bar on or off by enabling or disabling it.

Value	Function
0	Disable/Off
1	Enable/On

Default = 0 (Disable/Off).

Sample

```
char cGuiControlString[] = "\\x16M\\x0DGUIICN0.";
SynMenuCmdSync(cGuiControlString);
```


8680i Wearable Mini Mobile Computer

Parameter	Specification
Mechanical	
With BAT-SCN03 standard capacity battery:	
Height	1.2 inches (31.3mm)
Length	3.2 inches (81mm)
Width	2.2 inches (56mm)
Weight	5.3 ounces (151g)
With BAT-SCN02 high capacity battery:	
Height	1.4 inches (35mm)
Length	3.2 inches (81mm)
Width	2.2 inches (56mm)
Weight	5.9 ounces (168g)
Electrical	
Illumination	White LED (exempt risk group)
Aiming	650nm high visibility red laser (Class 2)
BAT-SCN03 standard capacity battery:	
	Lithium ion 3.7v 1150mAh
Expected Number of Scans	3000
Expected Hours of Operation	8 hours
Expected Charge Time	4 hours
BAT-SCN02 high capacity battery	
	Lithium ion 3.8v 2160mAh
Expected Number of Scans	8000
Expected Hours of Operation	10 hours
Expected Charge Time	4 hours

Parameter	Specification
Radio	
Bluetooth Radio	
Frequency	2.4 to 2.5 GHz (ISM Band) Frequency Hopping
Specification	v.4.2 (BDR, EDR, LE) Class 1
Range	328 ft. (100m) line of sight
Data Rate	Up to 1 Mbps
WiFi Radio	
Frequency	2.4 to 2.5 GHz and 5.1 to 5.85 GHz (ISM Bands)
Specification	802.11a/b/g/n/ac
Data Rate	802.11b: up to 11 Mbps
	802.11a/g: up to 54 Mbps
	802.11n: up to 135 Mbps
	802.11ac: up to 780 Mbps
Environmental	
Operating Temperature	-4° F to 122° F (-20° C to +50° C)
Storage Temperature	-4° F to 140° F (-20°C to +60°C)
Humidity	Up to 95%, non-condensing
Drop	Operational after 30 drops from 5 feet (1.5m) to concrete
Environmental Sealing	IP54
Vibration	Withstands 10G peak from 10 to 500 Hz
ESD	20kV air, 10kV contact
Tumble	Operational after 2000 tumbles from 19.7 inches (.05 m)
Image	
Image Size	844 x 640 pixels
Scan Performance	
Pitch, Skew	±45°, ±60°
Symbol Contrast	20%
Motion Tolerance:	up to 230 inches (584cm) per second in total darkness for 100% UPC at 4 inch (10cm) distance
Depth of Field	
Typical Performance	
100% UPC	44 - 552mm (1.7 - 21.7 in.)
10 mil Code 39	65 - 544mm (2.6 - 21.4 in.)
20 mil Code 39	49 - 812mm (1.9 - 32 in.)
10 mil Data Matrix	113 - 275mm (4.5 - 10.8 in.)
6.7 mil PDF417	120 - 225mm (4.7 - 8.9 in.)
Guaranteed Performance	
100% UPC	48 - 516mm (1.9 - 20.3 in.)

Parameter	Specification
10 mil Code 39	73 - 473mm (2.9 - 18.6 in.)
20 mil Code 39	54 - 593mm (2.1 - 23.3 in.)
10 mil Data Matrix	120- 261mm (4.7 - 10.3 in.)
6.7 mil PDF417	129 - 220mm (5.1 - 8.7 in.)

MB4-SCN02 Charge Base Product Specifications

Parameter	Specification
Mechanical	
Height	1.97 inches (50mm)
Length	5.8 inches (147mm)
Width	5.3 inches (134mm)
Weight	16.6 oz (0.47kg)
Electrical	
Voltage	5.2 volts
Current Draw	1A output for each port
Charge Time	4 hours at room temperature of 46°F to 91°F (8°C to 33°C) 8 hours at a temperatures lower than 46°F (8°C) or higher than 91°F (33°C)
Environmental	
Operating Temperature	32° F to +122° F (0° C to +50° C)
Storage Temperature	-4° F to +140° F (-20° C to +60° C)
Humidity	Up to 95% non-condensing
Mechanical Drop	Operational after 6 drops from 2.9 feet (0.9 m) to concrete
Vibration	2G Peak from 2Hz to 200Hz
ESD Sensitivity	Up to 15kV direct air Up to 8 kV contact and indirect

MB4-BAT-SCN02 Charge Base Product Specifications

Parameter	Specification
Mechanical	
Height	2.68 inches (68mm)
Length	5.8 inches (147mm)
Width	5.3 inches (134mm)
Weight	17.6 oz (0.5kg)

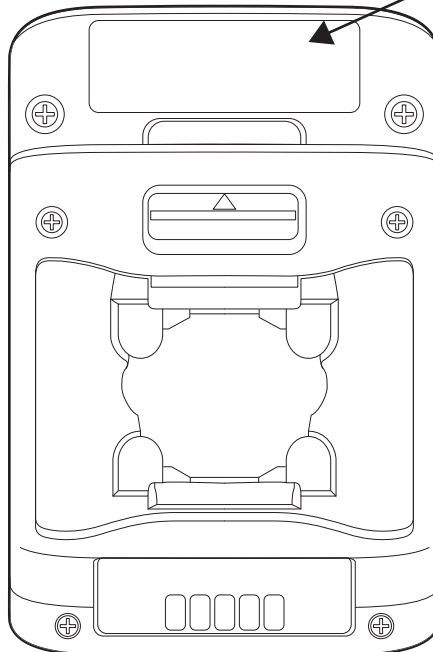
Parameter (Continued)	Specification
Electrical	
Voltage	4.2 volts (BAT-SCN03 standard capacity battery) 4.35 volts (BAT-SCN02 high capacity battery)
Current Draw	1A output for each port
Charge Time	4 hours at room temperature of 46°F to 91°F (8°C to 33°C) 8 hours at a temperatures lower than 46°F (8°C) or higher than 91°F (33°C)
Environmental	
Operating Temperature	32° F to +122° F (0° C to +50° C)
Storage Temperature	-4° F to +140° F (-20° C to +60° C)
Humidity	Up to 95% non-condensing
Mechanical Drop	Operational after 6 drops from 2.9 feet (0.9 m) to concrete
Vibration	2G Peak from 2Hz to 200Hz
ESD Sensitivity	Up to 15kV direct air Up to 8 kV contact and indirect

Required Safety Labels

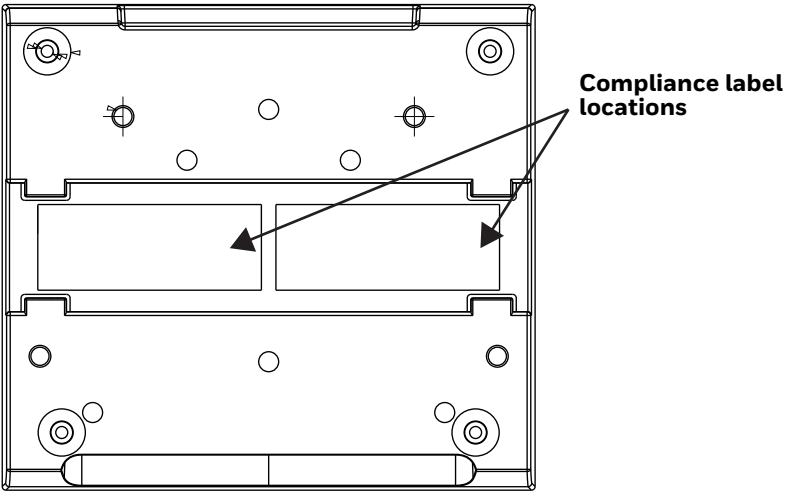
8680i Wearable Mini Mobile Computer



Compliance and laser label location



MB4-SCN02 and MB4-BAT-SCN02 Charge Bases



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 iii).

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 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 or display. Abrasive wipes may scratch the window or display. Never use solvents (e.g., acetone) on the housing, window, or display. Solvents may damage the finish, window, or display.

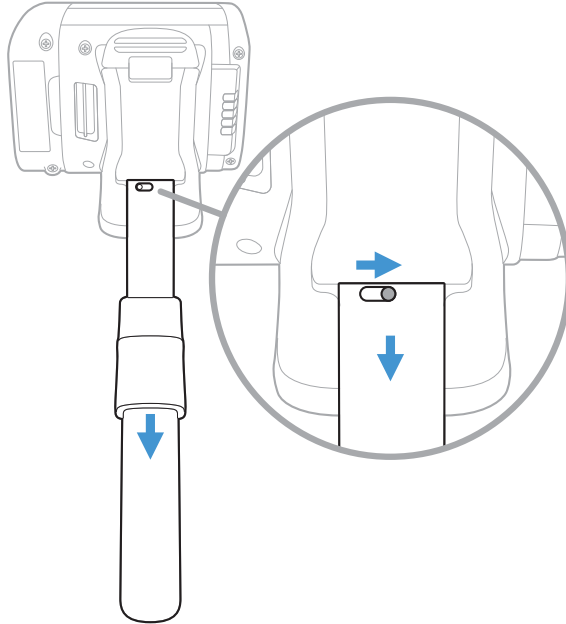
Clean the Window or Display

Reading performance may degrade if the scanner's window or display is not clean. If the window or display is visibly dirty, or if the scanner isn't operating well, clean it 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.

Replace the Finger Strap

Replace the finger strap when it becomes old or worn.

1. Open the length of the old finger strap so it is only attached to one side of the device. Slide the silver spring bar to detach the finger strap from the device.



2. Slide and hold the silver spring bar on the new finger strap and slide it into place.
3. Release the spring bar.

Troubleshooting

Note: Make sure your battery is charged.

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 host 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 67 for further information.

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

- Scan the sample bar codes from [Sample Symbols](#), beginning on page 233. 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 6](#)).
- If the scanner still can't read the sample bar codes, scan [All Symbologies](#) on page 94.

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 67 and [Data Format](#) beginning on page 73 for information about using Code ID and AIM ID.

Linear Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Codabar	JFm	0-1	a	61
Code 11	JH3		h	68
Code 128	JCm	0, 1, 2, 4	j	6A
Code 32 Pharmaceutical (PARAF)	JX0		<	3C
Code 39 (supports Full ASCII mode)	JAm	0, 1, 3, 4, 5, 7	b	62
TCIF Linked Code 39 (TLC39)	JL2		T	54
Code 93 and 93i	JGm	0-9, A-Z, a-m	i	69
EAN	JEm	0, 1, 3, 4	d	64
EAN-13 (including Bookland EAN)	JE0		d	64
EAN-13 with Add-On	JE3		d	64
EAN-13 with Extended Coupon Code	JE3		d	64
EAN-8	JE4		D	44

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
EAN-8 with Add-On	JE3		D	44
GS1				
GS1 DataBar	jem	0	y	79
GS1 DataBar Limited	jem		{	7B
GS1 DataBar Expanded	jem		}	7D
GS1-128	JC1		l	49
2 of 5				
China Post (Hong Kong 2 of 5)	JX0		Q	51
Interleaved 2 of 5	Jlm	0, 1, 3	e	65
Matrix 2 of 5	JX0		m	6D
NEC 2 of 5	JX0		Y	59
Straight 2 of 5 IATA	JRm	0, 1, 3	f	66
Straight 2 of 5 Industrial	JS0		f	66
MSI	JMm	0, 1	g	67
Telepen	JBm		t	74
UPC		0, 1, 2, 3, 8, 9, A, B, C		
UPC-A	JE0		c	63
UPC-A with Add-On	JE3		c	63
UPC-A with Extended Coupon Code	JE3		c	63
UPC-E	JE0		E	45
UPC-E with Add-On	JE3		E	45
UPC-E1	JX0		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	zjm	0-9, A-C	z	7A
Chinese Sensible Code (Han Xin Code)	JX0		H	48

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
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
Dot Code	]J0		.	2E
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	<i>(Apple Make)</i>	CTRL+ H	History
9	09	HT	Tab	CTRL+ I	Italic
10	0A	LF	<i>(Apple Break)</i>	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	△	NP Enter		?

Lower ASCII Reference Table

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

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

Extended ASCII Characters					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
128	80	€	Ç	up arrow ↑	0x48
129	81		ü	down arrow ↓	0x50
130	82	,	é	right arrow →	0x4B
131	83	f	â	left arrow ←	0x4D
132	84	„	ä	Insert	0x52
133	85	…	à	Delete	0x53
134	86	†	á	Home	0x47
135	87	‡	ç	End	0x4F
136	88	^	ê	Page Up	0x49
137	89	‰	ë	Page Down	0x51
138	8A	Š	è	Right ALT	0x38
139	8B	<	ï	Right CTRL	0x1D

Extended ASCII Characters (Continued)

DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
140	8C	Œ	î	Reserved	n/a
141	8D		ï	Reserved	n/a
142	8E	Ž	Ā	Numeric Keypad Enter	0x1C
143	8F		Ă	Numeric Keypad /	0x35
144	90		É	F1	0x3B
145	91	‘	æ	F2	0x3C
146	92	’	Æ	F3	0x3D
147	93	“	ô	F4	0x3E
148	94	”	ö	F5	0x3F
149	95	•	ò	F6	0x40
150	96	–	û	F7	0x41
151	97	—	ù	F8	0x42
152	98	˜	ÿ	F9	0x43
153	99	™	Ö	F10	0x44
154	9A	š	Ü	F11	0x57
155	9B	›	ç	F12	0x58
156	9C	œ	£	Numeric Keypad +	0x4E
157	9D		¥	Numeric Keypad -	0x4A
158	9E	ž	Ps	Numeric Keypad *	0x37
159	9F	ÿ	f	Caps Lock	0x3A
160	A0		á	Num Lock	0x45
161	A1	ı	í	Left Alt	0x38
162	A2	ç	ó	Left Ctrl	0x1D
163	A3	£	ú	Left Shift	0x2A
164	A4	¤	ñ	Right Shift	0x36
165	A5	¥	Ñ	Print Screen	n/a
166	A6	ı	ª	Tab	0x0F
167	A7	§	º	Shift Tab	0x8F
168	A8	¨	¿	Enter	0x1C
169	A9	©	ƒ	Esc	0x01
170	AA	ª	¬	Alt Make	0x36
171	AB	«	½	Alt Break	0xB6
172	AC	¬	¼	Control Make	0x1D
173	AD		ı	Control Break	0x9D
174	AE	®	«	Alt Sequence with 1 Character	0x36
175	AF	™	»	Ctrl Sequence with 1 Character	0x1D
176	B0	°	␣		
177	B1	±	␣		
178	B2	²	␣		
179	B3	³	␣		
180	B4	´	␣		
181	B5	µ	␣		
182	B6	¶	␣		
183	B7	·	␣		
184	B8	¸	␣		
185	B9	¹	␣		
186	BA	º	␣		
187	BB	»	␣		
188	BC	¼	␣		
189	BD	½	␣		
190	BE	¾	␣		
191	BF	¿	␣		
192	C0	À	␣		
193	C1	Á	␣		

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
194	C2	Â	T		
195	C3	Ã	†		
196	C4	Ä	—		
197	C5	Å	í		
198	C6	Æ	‡		
199	C7	Ç	‡		
200	C8	È	‡		
201	C9	É	‡		
202	CA	Ê	‡		
203	CB	Ë	‡		
204	CC	Ì	‡		
205	CD	Í	=		
206	CE	Î	‡		
207	CF	Ï	‡		
208	D0	Ð	‡		
209	D1	Ñ	‡		
210	D2	Ò	‡		
211	D3	Ó	‡		
212	D4	Ô	‡		
213	D5	Õ	F		
214	D6	Ö	‡		
215	D7	×	‡		
216	D8	Ø	‡		
217	D9	Ù	J		
218	DA	Ú	‡		
219	DB	Û	■		
220	DC	Ü	■		
221	DD	Ý	■		
222	DE	Þ	■		
223	DF	ß	■		
224	E0	à	α		
225	E1	á	β		
226	E2	â	Γ		
227	E3	ã	π		
228	E4	ä	Σ		
229	E5	å	σ		
230	E6	æ	μ		
231	E7	ç	τ		
232	E8	è	Φ		
233	E9	é	Θ		
234	EA	ê	Ω		
235	EB	ë	δ		
236	EC	ì	∞		
237	ED	í	φ		
238	EE	î	ε		
239	EF	ï	∩		
240	F0	ð	≡		
241	F1	ñ	±		
242	F2	ò	≥		
243	F3	ó	≤		
244	F4	ô	|		
245	F5	õ]		
246	F6	ö	÷		
247	F7	÷	≈		

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
248	F8	ø	°		
249	F9	ù	·		
250	FA	ú	·		
251	FB	û	√		
252	FC	ü	ñ		
253	FD	ý	²		
254	FE	þ	■		
255	FF	ÿ			

ISO 2022/ISO 646 Character Replacements

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

Code Page Selection Method/ Country	Standard	Keyboard Country	Honeywell Code Page Option
United States (standard ASCII)	ISO/IEC 646-IRV	n/a	1
Automatic National Character Replacement	ISO/IEC 2022	n/a	2 (default)
Binary Code page	n/a	n/a	3
Default "Automatic National Character replacement" selects 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/IEC646-21	4	84
Switzerland	ISO /IEC 646-CH	6	86
Sweden / Finland (extended Annex C)	ISO/IEC 646-11	2	82
Ireland	ISO /IEC 646-207	73	97
Denmark	ISO/IEC 646-08	8	88
Norway	ISO/IEC 646-60	9	94
Italy	ISO/IEC 646-15	5	85
Portugal	ISO/IEC 646-16	13	92

Code Page Selection Method/ Country	Standard	Keyboard Country	Honeywell Code Page Option
Spain	ISO/IEC 646-17	10	90
Spain	ISO/IEC 646-85	51	91

Dec			35	36	64	91	92	93	94	96	123	124	125	126
Hex			23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
US	0	1	#	\$	@	[	\	\]	^	`	{	|	}	~
CA	54	95	#	\$	à	â	ç	ê	î	ô	é	ù	è	û
CA	18	96	#	\$	à	â	ç	ê	É	ô	é	ù	è	û
JP	28	98	#	\$	@	[	¥	]	^	`	{	|	}	-
CN	92	99	#	¥	@	[	\	\]	^	`	{	|	}	-
GB	7	87	£	\$	@	[	\	\]	^	`	{	|	}	~
FR	3	83	£	\$	à	°	ç	§	^	μ	é	ù	è	¨
DE	4	84	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
CH	6	86	ù	\$	à	é	ç	ê	î	ô	ä	ö	ü	û
SE/FI	2	82	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
DK	8	88	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
NO	9	94	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	-
IE	73	97	£	\$	Ó	É	Í	Ú	Á	ó	é	í	ú	á
IT	5	85	£	\$	§	°	ç	é	^	ù	à	ò	è	ì
PT	13	92	#	\$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
ES	10	90	#	\$	§	i	Ñ	¿	^	`	°	ñ	ç	~
ES	51	91	#	\$	·	i	Ñ	Ç	¿	`	´	ñ	ç	¨
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			53			5D	62	67	
3A	3B	3C			3D				3E	3F	38	40	4F	54	59		63	68	6C	

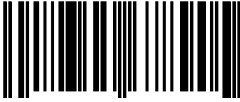
104 Key U.S. Style Keyboard

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			53		5D	62	67	
3A	3B	3C			3D				3E	3F	38	40	4F	54	59		63	68	6C	

105 Key European Style Keyboard

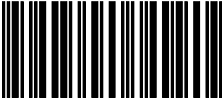
SAMPLE SYMBOLS

UPC-A



0 123456 7890

Interleaved 2 of 5



01234567890

EAN-13



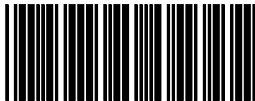
9 780330 290951

Code 128



Code 128

Code 39



BC321

Codabar



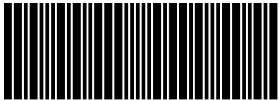
A13579B

Code 93



123456-9\$

Straight 2 of 5 Industrial



123456

Matrix 2 of 5



6543210

RSS-14



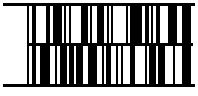
(01) 00123456789012

PDF417



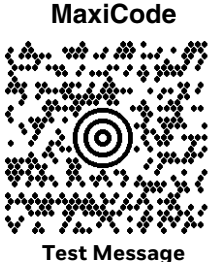
Car Registration

Code 49



1234567890

SAMPLE SYMBOLS (CONTINUED)



PROGRAMMING CHART



K0K
0



K2K
2



K4K
4



K6K
6



K8K
8



K1K
1



K3K
3



K5K
5



K7K
7



K9K
9

PROGRAMMING CHART (CONTINUED)



KAK
A



KBK
B



KCK
C



KDK
D



KEK
E



KFK
F



MNUSAV.
Save



MNUABT.
Discard



RESET_
Reset

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.

Honeywell Scanning & Mobility

9680 Old Bailes Road
Fort Mill, SC 29707

www.honeywellaidc.com