

# **Voyager 1602g**

Wireless Area-Imaging Pocket Scanner

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## **User's Guide**

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## ***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](http://www.hsmcontactsupport.com).

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# Getting Started

## About This Manual

This User's Guide provides installation and programming instructions for the Voyager 1602g scanners. Product specifications, dimensions, warranty, and customer support information are also included.

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

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

## Unpacking Your Device

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

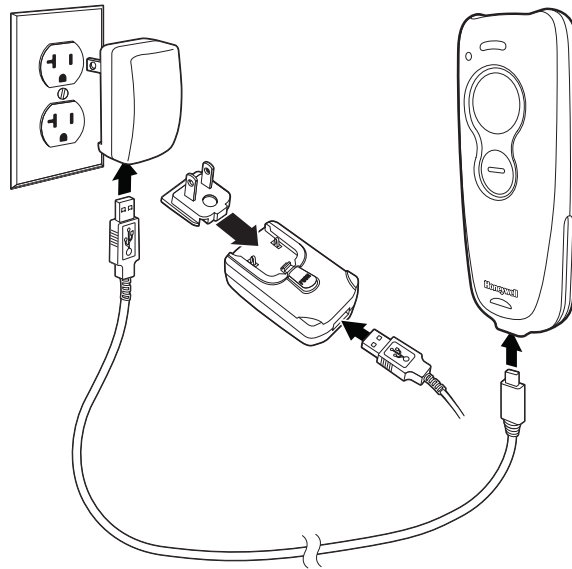
- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

## Charging the Scanner Battery

The scanner's battery must be fully charged before the first use. It can be charged using a power supply or by connecting the USB cable to a computer. Refer to [About the Battery](#) on page 3-5 for further battery information.

### Charging with a Power Supply

Connect the mini-USB connector to the scanner. Assemble the wall plug. Attach the plug to the USB connector, then plug into an electrical outlet, as shown below.

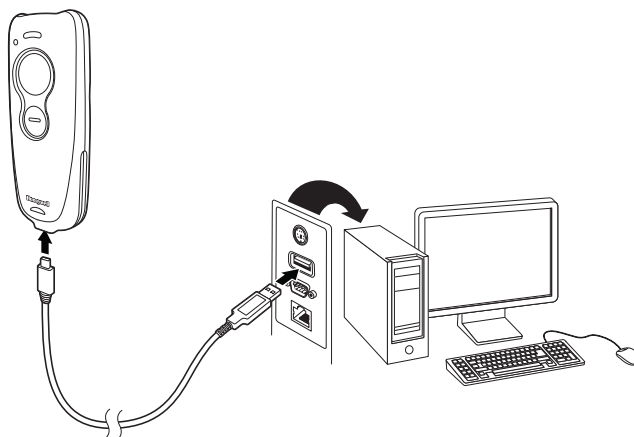


---

## Charging with a PC

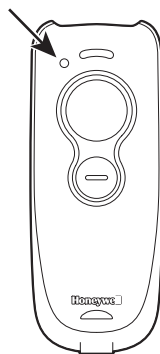
Charging your scanner battery through the USB port of a computer will take longer than charging with an electrical outlet. Connect the mini-USB connector to the scanner and the USB connector to the computer, as shown below.

*Note: The mini-USB connector is only used for charging the scanner. If using a scanner in corded mode, it can also be used to configure the device via EZConfig (see page 9-3 for further information).*



## Battery Charge Indicator

When the battery is charging, the small LED at the top left of the scanner flashes orange. When the battery is fully charged, this LED is solid green. Refer to [Scan LED Sequences and Meaning](#) (page 3-6) and [Low Battery Indicator](#) (page 3-6) for the complete list of LED indications.



To use your scanner with a Honeywell Access Point (AP01-XXXBT), refer to [Host ACK Responses](#), page 3-22 or [Linking the Scanner to an Access Point](#), page 3-13.

## Pairing the Scanner with Bluetooth Devices

The scanner can be paired with Bluetooth devices such as personal computers, laptops, and tablets.

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



PAPBTH.

**Bluetooth HID Keyboard  
Connect**



PAPJKB.

**Bluetooth HID Japanese  
Keyboard Connect**

2. Set your personal computer, laptop, or tablet so it searches for other Bluetooth devices. (Refer to your device's User's Guide for pairing instructions.)
3. Once your personal computer, laptop, or tablet has located the scanner, select the scanner name. Some personal computers, laptops, or tablets will automatically pair with the scanner. If your device automatically pairs with the scanner, it displays a successful pairing message and you do not need to continue to the next step.
4. If your personal computer, laptop, or tablet does not automatically pair with the scanner, a PIN is displayed. This PIN must be scanned within 60 seconds. 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**



K0K

0



K1K

1



K2K

2



K3K

3



K4K

4



K5K

5

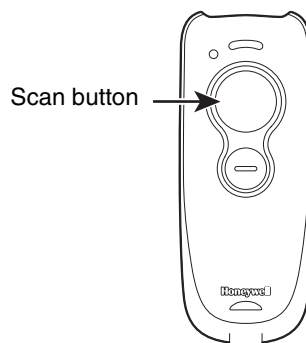


Your personal computer, laptop, or tablet should now be paired with the scanner.

Once the scanner battery is charged and you have paired it, you may begin scanning bar codes. Verify the scanner operation by scanning a bar code from the [Sample Symbols](#) in the back of this manual.

## ***Reading Techniques***

The Voyager 1602g has a large scan button just forward of a smaller, programmable button. (See [Programmable Button](#) on page 4-1 for further information about the programmable button.)





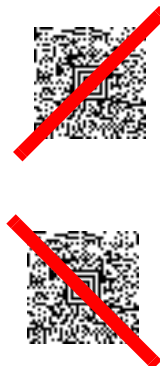
---

Press the scan button to project an aiming beam. This beam should be centered over the bar code, but it can be positioned in any direction for a good read.

**Linear bar codes  
with aiming beam**



**2D Matrix symbol  
with aiming beam**



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

## ***Menu Bar Code Security Settings***

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

## ***Setting 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 back cover, then a **Save** code, that entire sequence will be saved to your custom defaults. When you have entered all the commands you want to save for your custom defaults, scan the **Save Custom Defaults** bar code.



MNUCDP.  
**Set Custom Defaults**



MNUCDS.  
**Save Custom Defaults**

*Note: The Custom Defaults settings apply to all workgroups. Scanning the **Save Defaults** bar code also causes both the scanner and the host to perform a reset and become unlinked. You must relink (pair) the scanner to the host. See [Wireless System Operation](#) beginning on page 3-1 for additional information.*

---

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

## ***Resetting the Custom Defaults***

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



DEFAULT.

**Activate Custom Defaults**

*Note: The Custom Defaults settings apply to all workgroups. Scanning the **Save Defaults** bar code also causes both the scanner and the host to perform a reset and become unlinked. You must relink (pair) the scanner to the host. See [Wireless System Operation](#) beginning on page 3-1 for additional information.*

## Programming the Interface

### Introduction

This chapter describes how to program your scanner for different keyboards and settings, and for an interface when using an Access Point (see [Programming an Interface for an Access Point](#), beginning on page 2-12). The VG1602g is primarily designed as a cordless scanner. However, if you are using the VG1602g as a corded scanner, see [Programming the VG1602 Corded Interface](#) beginning on page 2-23.

### Keyboard Country Layout

If your interface is USB Keyboard or Keyboard Wedge through an Access Point, or a Bluetooth Keyboard, your keyboard layout default is a US keyboard. To change this layout, refer to the chart below for your keyboard country. Scan the appropriate bar code below to change the layout.

By default, national character replacements are used for the following characters: # \$ @ [ \ ] ^ ' { | } ~ See [ISO 2022/ISO 646 Character Replacements](#) on page A-7 to view the character replacements for each country.

#### Keyboard Countries



KBDCTY0.

\* United States



KBDCTY35.

Albania



KBDCTY81.

Azeri (Cyrillic)



KBDCTY80.

Azeri (Latin)



KBDCTY82.

Belarus



KBDCTY1.

Belgium



KBDCTY33.

Bosnia



KBDCTY16.

Brazil

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## ***Keyboard Countries (Continued)***



KBDCTY59.  
**Brazil (MS)**



KBDCTY53.  
**Bulgaria (Latin)**



KBDCTY18.  
**Canada (French)**



KBDCTY32.  
**Croatia**



KBDCTY40.  
**Czech (Programmers)**



KBDCTY38.  
**Czech (QWERTZ)**



KBDCTY52.  
**Bulgaria (Cyrillic)**



KBDCTY54.  
**Canada (French legacy)**



KBDCTY55.  
**Canada (Multilingual)**



KBDCTY15.  
**Czech**



KBDCTY39.  
**Czech (QWERTY)**

---

## ***Keyboard Countries (Continued)***



KBDCTY8.  
**Denmark**



KBDCTY11.  
**Dutch (Netherlands)**



KBDCTY41.  
**Estonia**



KBDCTY83.  
**Faroese**



KBDCTY2.  
**Finland**



KBDCTY3.  
**France**



KBDCTY84.  
**Gaelic**



KBDCTY4.  
**Germany**



KBDCTY17.  
**Greek**



KBDCTY64.  
**Greek (220 Latin)**



KBDCTY61.  
**Greek (220)**

---

## ***Keyboard Countries (Continued)***



KBDCTY65.  
**Greek (319 Latin)**



KBDCTY63.  
**Greek (Latin)**



KBDCTY60.  
**Greek (Polytonic)**



KBDCTY50.  
**Hungarian (101 key)**



KBDCTY75.  
**Iceland**



KBDCTY56.  
**Italian (142)**



KBDCTY62.  
**Greek (319)**



KBDCTY66.  
**Greek (MS)**



KBDCTY12.  
**Hebrew**



KBDCTY19.  
**Hungary**



KBDCTY73.  
**Irish**

---

## ***Keyboard Countries (Continued)***



KBDCTY28.  
Japan ASCII



KBDCTY79.  
Kyrgyz (Cyrillic)



KBDCTY42.  
Latvia



KBDCTY44.  
Lithuania



KBDCTY34.  
Macedonia



KBDCTY5.  
Italy



KBDCTY78.  
Kazakh



KBDCTY14.  
Latin America



KBDCTY43.  
Latvia (QWERTY)



KBDCTY45.  
Lithuania (IBM)



KBDCTY74.  
Malta

---

## ***Keyboard Countries (Continued)***



KBDCTY86.  
**Mongolian (Cyrillic)**



KBDCTY9.  
**Norway**



KBDCTY20.  
**Poland**



KBDCTY57.  
**Polish (214)**



KBDCTY58.  
**Polish (Programmers)**



KBDCTY13.  
**Portugal**



KBDCTY25.  
**Romania**



KBDCTY26.  
**Russia**



KBDCTY67.  
**Russian (MS)**



KBDCTY68.  
**Russian (Typewriter)**



KBDCTY21.  
**SCS**



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## ***Keyboard Countries (Continued)***



KBDCTY36.  
**Serbia (Latin)**



KBDCTY49.  
**Slovakia (QWERTY)**



KBDCTY31.  
**Slovenia**



KBDCTY51.  
**Spanish variation**



KBDCTY29.  
**Switzerland (French)**



KBDCTY37.  
**Serbia (Cyrillic)**



KBDCTY22.  
**Slovakia**



KBDCTY48.  
**Slovakia (QWERTZ)**



KBDCTY10.  
**Spain**



KBDCTY23.  
**Sweden**



KBDCTY6.  
**Switzerland (German)**

---

## Keyboard Countries (Continued)



KBDCTY85.  
Tatar



KBDCTY24.  
Turkey Q



KBDCTY7.  
United Kingdom



KBDCTY88.  
United States (Dvorak left)



KBDCTY30.  
United States (International)



KBDCTY27.  
Turkey F



KBDCTY76.  
Ukrainian



KBDCTY87.  
United States (Dvorak)



KBDCTY89.  
United States (Dvorak right)



KBDCTY77.  
Uzbek (Cyrillic)

## Keyboard Style

This programs keyboard styles, such as Caps Lock and Shift Lock. If you have used [Keyboard Conversion](#) settings, they will override any of the following Keyboard Style settings. *Default = Regular.*

---

**Regular** is used when you normally have the Caps Lock key off.



KBDSTY0.

\* Regular

**Caps Lock** is used when you normally have the Caps Lock key on.



KBDSTY1.

Caps Lock

**Shift Lock** is used when you normally have the Shift Lock key on (not common to U.S. keyboards).



KBDSTY2.

Shift Lock

**Automatic Caps Lock** is used if you change the Caps Lock key on and off. The software tracks and reflects if you have Caps Lock on or off. This selection can only be used with systems that have an LED that notes the Caps Lock status (AT keyboards).



KBDSTY6.

Automatic Caps Lock

**Autocaps via NumLock** bar code should be scanned in countries (e.g., Germany, France) where the Caps Lock key cannot be used to toggle Caps Lock. The NumLock option works similarly to the regular Autocaps, but uses the NumLock key to retrieve the current state of the Caps Lock.



KBDSTY7.

Autocaps via NumLock

**Emulate External Keyboard** should be scanned if you do not have an external keyboard (IBM AT or equivalent).



KBDSTY5.

Emulate External Keyboard

*Note: After scanning the Emulate External Keyboard bar code, you must power cycle the host system.*

## **Keyboard Conversion**

Alphabetic keyboard characters can be forced to be all upper case or all lowercase. So if you have the following bar code: "abc569GK," you can make the output "ABC569GK" by scanning **Convert All Characters to Upper Case**, or to "abc569gk" by scanning **Convert All Characters to Lower Case**.

These settings override [Keyboard Style](#) selections.

*Note: If your interface is a keyboard wedge, first scan the menu code for [Automatic Caps Lock](#) (page 2-9). Otherwise, your output may not be as expected.*

---

*Default = Keyboard Conversion Off.*



KBDENV0.

**\* Keyboard Conversion Off**



KBDENV1.

**Convert All Characters  
to Upper Case**



KBDENV2.

**Convert All Characters  
to Lower Case**

## ***Control Character Output***

This selection sends a text string instead of a control character. For example, when the control character for a carriage return is expected, the output would display [CR] instead of the ASCII code of 0D. Refer to [ASCII Conversion Chart \(Code Page 1252\)](#) on page A-3. Only codes 00 through 1F are converted (the first column of the chart). *Default = Off.*

*Note: Control + X (Control + ASCII) Mode overrides this mode.*



KBDNPE1.

**Control Character Output On**



KBDNPE0.

**\* Control Character Output Off**

## ***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 [Keyboard Function Relationships](#), page 8-1 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**



KBDCAS1.

DOS Mode Control + X Mode On



KBDCAS0.

\* Control + X Mode Off



KBDCAS3.

Windows Mode Prefix/Suffix Off

**Turbo Mode:** The scanner sends characters to a terminal faster. If the terminal drops characters, do not use Turbo Mode.

*Default = Off.*



KBDTMD1.

Turbo Mode On



KBDTMD0.

\* Turbo Mode Off

**Numeric Keypad Mode:** Sends numeric characters as if entered from a numeric keypad. *Default = Off.*



KBDNPS1.

Numeric Keypad Mode On



KBDNPS0.

\* Numeric Keypad Mode Off

**Automatic Direct Connect Mode:** This selection can be used if you have an IBM AT style terminal and the system is dropping characters. *Default = Off.*



KBDADC1.

Automatic Direct Connect Mode  
On



KBDADC0.

\* Automatic Direct Connect  
Mode Off

---

## Programming an Interface for an Access Point

If you are using a Honeywell Access Point (AP01-XXXBT) to communicate with the VG1602, you can use the following bar codes to program the Access Point interface. These bar codes set the Access Point for commonly used interfaces.

### Keyboard Wedge

If you want your system programmed for an IBM PC AT and compatibles keyboard wedge interface with a USA keyboard, scan the bar code below, then power cycle the host. Keyboard wedge is the default interface. This interface is only appropriate for an Access Point.

*Note:* The following bar code also programs a carriage return (CR) suffix.



### Laptop Direct Connect

For most laptops, scanning the **Laptop Direct Connect** bar code allows operation of the scanner in parallel with the integral keyboard. The following **Laptop Direct Connect** bar code also programs a carriage return (CR) suffix and turns on Emulate External Keyboard ([page 2-9](#)). Power cycle the host after scanning this bar code. This interface is only appropriate for an Access Point.



### RS232 Serial Port

The **RS232 Interface** bar code is used when connecting to the serial port of a PC or terminal. The following **RS232 Interface** bar code also programs a carriage return (CR) and a line feed (LF) suffix, baud rate, and data format as indicated below. It also changes the trigger mode to manual. This interface is only appropriate for an Access Point.

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



## RS485

Scan one of the following “Plug and Play” codes to program the scanner for an IBM POS terminal interface. This interface is only appropriate for an Access Point.

*Note: After scanning one of these codes, you must power cycle the cash register.*



PAPP5B.

**IBM Port 5B Interface**



PAPP17.

**IBM Port 17 Interface**



PAP9B1.

**IBM Port 9B  
HHBCR-1 Interface**



PAP9B2.

**IBM Port 9B  
HHBCR-2 Interface**

Each bar code above also programs the following suffixes for each symbology:

Symbology	Suffix	Symbology	Suffix
EAN 8	0C	Code 39	00 0A 0B
EAN 13	16	Interleaved 2 of 5	00 0D 0B
UPC A	0D	Code 128 *	00 0A 0B
UPC E	0A	Code 128 **	00 18 0B
		MaxiCode	00 2F 0B

\* Suffixes programmed for Code 128 with IBM 4683 Port 5B, IBM 4683 Port 9B HHBCR-1, and IBM 4683 Port 17 Interfaces

\*\* Suffixes programmed for Code 128 with IBM 4683 Port 9 HHBCR-2 Interface

### RS485 Packet Mode

The following selection allows you to break up large bar code data into smaller packets on an IBM POS terminal. To break up large bar codes into small packets, scan the **Packet Mode On** bar code below. Scan the **Packet Mode Off** bar code if you want large bar code data to be sent to the host in a single chunk. *Default = Packet Mode Off.*



RTLPDF0.

**\* Packet Mode Off**



RTLPDF1.

**Packet Mode On**

### RS485 Packet Length

If you are using Packet mode, you can specify the size of the data “packet” that is sent to the host. Scan the **Packet Length** bar code, then then the packet size (from 20 - 256) from the [Programming Chart](#) inside the back cover of this manual, then **Save**. *Default = 40.*



RTLMP5.

**Packet Length**

### USB IBM SurePos

Scan one of the following “Plug and Play” codes to program the scanner for an IBM SurePos (USB handheld scanner) or IBM SurePos (USB tabletop scanner) interface. This interface is only appropriate for an Access Point.

*Note: After scanning one of these codes, you must power cycle the cash register.*



PAPSPH.

**USB IBM SurePos  
(USB Handheld Scanner)  
Interface**



PAPSPT.

**USB IBM SurePos  
(USB Tabletop Scanner)  
Interface**

Each bar code above also programs the following suffixes for each symbology:

Symbology	Suffix	Symbology	Suffix
EAN 8	0C	Code 39	00 0A 0B
EAN 13	16	Interleaved 2 of 5	00 0D 0B
UPC A	0D	Code 128	00 18 0B
UPC E	0A	Code 39	00 0A 0B

### USB PC or Macintosh Keyboard

Scan one of the following codes to program the scanner for USB PC Keyboard or USB Macintosh Keyboard, then power cycle the host. Scanning these codes also adds a CR suffix. This interface is only appropriate for an Access Point.



PAP124.

**USB Keyboard (PC)**



PAP125.

**USB Keyboard (Mac)**



TRMUSB134.

**USB Japanese Keyboard (PC)**



---

## USB HID

Scan the following code to program the scanner for USB HID bar code scanners, then power cycle the host. This interface is only appropriate for an Access Point.



PAP131.

USB HID Bar Code Scanner

## USB Serial

This interface is only appropriate for an Access Point. Scan the following code to program the scanner to emulate a regular RS232-based COM Port, then power cycle the host. If you are using a Microsoft® Windows® PC, you will need to download a driver from the Honeywell website ([www.honeywellaidc.com](http://www.honeywellaidc.com)). The driver will use the next available COM Port number. Apple® Macintosh computers recognize the scanner as a USB CDC class device and automatically use a class driver.



TRMUSB130.

USB Serial

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

## CTS/RTS Emulation



USBCTS1.

CTS/RTS Emulation On



USBCTS0.

\* CTS/RTS Emulation Off

## ACK/NAK Mode



USBACK1.

ACK/NAK Mode On



USBACK0.

\* ACK/NAK Mode Off

## Remote MasterMind™ for USB

When using a USB interface, you may wish to configure your scanner to communicate with Remote MasterMind Scanner Management Software (ReM). Scan the **ReM On** bar code to communicate with ReM. To disable this capability, scan **ReM Off**. This interface is only appropriate for an Access Point.



REMIFC0.

ReM Off



REMIFC1.  
ReM On

### ***Gilbarco® Terminal Default Settings***

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for a Gilbarco terminal, then power cycle the host. This bar code sets the baud rate to 2400 bps and the data format to 7 data bits, even parity, 2 stop bits. It also adds a carriage return (CR) suffix and programs the following prefixes for each symbology:

Symbology	Prefix
UPC-A	A
UPC-E	E0
EAN-8	FF
EAN-13	F



PAPGLB.  
Gilbarco Settings

### ***Honeywell Bioptic Aux Port Configuration***

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for a Honeywell bioptic scanner auxiliary port configuration, then power cycle the host. This bar code sets the baud rate to 38400 bps and the data format to 8 data bits, no parity, 1 stop bit.



PAPBIO.  
Honeywell Bioptic Settings

### ***Datalogic™ Magellan® Aux Port Configuration***

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for a Datalogic Magellan auxiliary port configuration, then power cycle the host. This bar code sets the baud rate to 9600 bps and the data format to 8 data bits, no parity, 1 stop bit.



PAPMAG.  
Datalogic Magellan Settings

## ***NCR Bioptic Aux Port Configuration***

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for an NCR bioptic scanner auxiliary port configuration, then power cycle the host. The following prefixes are programmed for each symbology:

Symbology	Prefix	Symbology	Prefix
UPC-A	A	Interleaved 2 of 5	b
UPC-E	E0	Code 128	f
		Code 32	a
		Pharmaceutical (PARAF)	
EAN-8	FF	Code 39	a
EAN-13	F		



PAPNCR.  
NCR Bioptic Settings

## ***Wincor Nixdorf Terminal Default Settings***

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for a Wincor Nixdorf terminal, then power cycle the host. This bar code sets the baud rate to 9600 bps and the data format to 8 data bits, no parity, 1 stop bit.



PAPWNX.  
Wincor Nixdorf Terminal Settings

## ***Wincor Nixdorf Beetle™ Terminal Default Settings***

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for a Wincor Nixdorf Beetle terminal, then power cycle the host. The following prefixes are programmed for each symbology:

Symbology	Prefix	Symbology	Prefix
Aztec Code	V	Interleaved 2 of 5	I
Codabar	N	MaxiCode	T
Code 93	L	MicroPDF417	S
Code 128	K	PDF417	Q
Data Matrix	R	QR Code	U
EAN-8	B	Straight 2 of 5 IATA	H
EAN-13	A	UPC-A	A0
GS1 DataBar	E	UPC-E	C
GS1-128	P	All other bar codes	M



PAPBTL.  
Wincor Nixdorf Beetle Settings

---

## **Wincor Nixdorf RS232 Mode A**

This interface is only appropriate for an Access Point. Scan the following Plug and Play code to program the scanner for a Wincor Nixdorf RS232 Mode A terminal, then power cycle the host. This bar code sets the baud rate to 9600 bps and the data format to 8 data bits, odd parity, 1 stop bit. The following prefixes are programmed for each symbology:



PAPWMA.  
**Wincor Nixdorf RS232 Mode A  
Settings**

### **RS232 Modifiers**

The following RS232 settings should only be used when connecting through an Access Point.

#### **RS232 Baud Rate**

Baud Rate sends the data from the scanner to the terminal at the specified rate. The host terminal must be set for the same baud rate as the scanner. *Default = 115,200.*



232BAD0.  
**300**



232BAD1.  
**600**



232BAD2.  
**1200**



232BAD3.  
**2400**



232BAD4.  
**4800**



232BAD5.  
**9600**



232BAD6.  
**19200**



### ***RS232 Word Length: Data Bits, Stop Bits, and Parity***

**Data Bits** sets the word length at 7 or 8 bits of data per character. If an application requires only ASCII Hex characters 0 through 7F decimal (text, digits, and punctuation), select 7 data bits. For applications that require use of the full ASCII set, select 8 data bits per character. *Default = 8.*

**Stop Bits** sets the stop bits at 1 or 2. *Default = 1.*

**Parity** provides a means of checking character bit patterns for validity.  
*Default = None.*





232WRD8.  
8 Data, 1 Stop, Parity Odd



232WRD2.  
\* 8 Data, 1 Stop, Parity None



232WRD14.  
8 Data, 1 Stop, Parity Mark

### **RS232 Receiver Time-Out**

The unit stays awake to receive data until the RS232 Receiver Time-Out expires. A scan button push or serial trigger command resets the time-out. When an RS232 receiver is sleeping, a character may be sent to wake up the receiver and reset the time-out. A transaction on the CTS line will also wake up the receiver. The receiver takes 300 milliseconds to completely come up. Change the RS232 receiver time-out by scanning the bar code below, then scanning **Save**. The range is 0 to 300 seconds. *Default = 0 seconds (no time-out - always on).*



232LPT.  
RS232 Receiver Time-Out

### **RS232 Handshaking**

RS232 Handshaking allows control of data transmission from the scanner using software commands from the host device. When RTS/CTS is turned **Off**, no data flow control is used.

**Flow Control, No Timeout:** The scanner asserts RTS when it has data to send, and will wait indefinitely for CTS to be asserted by the host.

**Two-Direction Flow Control:** The scanner asserts RTS when it is OK for the host to transmit. The host asserts CTS when it is OK for the device to transmit.

**Flow Control with Timeout:** The scanner asserts RTS when it has data to send and waits for a delay (see [RS232 Timeout](#) on page 2-21) for CTS to be asserted by the host. If the delay time expires and CTS is not asserted, the device transmit buffer is cleared and scanning may resume. *Default = RTS/CTS Off.*



232CTS1.  
Flow Control, No Timeout



232CTS2.  
Two-Direction Flow Control



232CTS3.  
Flow Control with Timeout



232CTS0.  
\* RTS/CTS Off

### **RS232 Timeout**

When using Flow Control with Timeout, you must program the length of the delay you want to wait for CTS from the host. Set the length (in milliseconds) for a timeout by scanning the bar code below, then setting the timeout (from 1-5100 milliseconds) by scanning digits from the inside back cover, then scanning **Save**.



232DEL.  
RS232 Timeout

### **XON/XOFF**

Standard ASCII control characters can be used to tell the scanner to start sending data (**XON/XOFF On**) or to stop sending data (**XON/XOFF Off**). When the host sends the XOFF character (DC3, hex 13) to the scanner, data transmission stops. To resume transmission, the host sends the XON character (DC1, hex 11). Data transmission continues where it left off when XOFF was sent. *Default = XON/XOFF Off.*



232XON1.  
XON/XOFF On



232XON0.  
\* XON/XOFF Off

### **ACK/NAK**

After transmitting data, the scanner waits for an ACK character (hex 06) or a NAK character (hex 15) response from the host. If ACK is received, the communications cycle is completed and the scanner looks for more bar codes. If NAK is received, the last set of bar code data is retransmitted and the scanner waits for ACK/NAK again. Turn on the ACK/NAK protocol by scanning the **ACK/NAK On** bar code below. To turn off the protocol, scan **ACK/NAK Off**. *Default = ACK/NAK Off.*



232ACK1.  
ACK/NAK On



232ACK0.  
\* ACK/NAK Off

---

## Scanner to Bioptic Communication

The following Scanner to Bioptic Communication settings should only be used when connecting through an Access Point. They are used to set up communication between Honeywell scanners and bioptic scanners.

*Note: The scanner's baud rate must be set to 38400 and the RS232 timeout must be set to 3000 in order to communicate with a bioptic scanner. See "RS232 Modifiers" on page 2-18, and [RS232 Timeout](#) on page 2-21 for further information.*

### Scanner-Biopic Packet Mode

**Packet Mode On** must be scanned to set the scanner's format so it is compatible with a bioptic scanner. *Default = Packet Mode Off.*



232PKT0.

\* Packet Mode Off



232PKT2.

Packet Mode On

### Scanner-Biopic ACK/NAK Mode

**Biopic ACK/NAK On** must be scanned so the scanner will wait for an ACK or NAK from a bioptic scanner after each packet is sent. The Scanner-Biopic ACK/NAK Timeout (below) controls how long the scanner will wait for a response. *Default = Biopic ACK/NAK Off.*



232NAK0.

\* Biopic ACK/NAK Off



232NAK1.

Biopic ACK/NAK On

### Scanner-Biopic ACK/NAK Timeout

This allows you to set the length (in milliseconds) for a timeout for a biopic scanner's ACK/NAK response. Scan the bar code below, then set the timeout (from 1-30,000 milliseconds) by scanning digits from the inside back cover, then scanning **Save**. *Default = 5100.*



232DLK.

ACK/NAK Timeout



---

## Programming the VG1602 Corded Interface

You may convert a VG1602 scanner to a corded scanner using a USB interface cable. Use the following bar codes to program the VG1602g as a corded scanner.

### Setting the VG1602 Corded Interface

Scan one of the following codes to set the scanner's communication as either Bluetooth, for a cordless scanner, to USB, for a corded scanner. *Default = Bluetooth Communication (Cordless Scanner).*

*Note: Once the communication is set to USB (Corded Scanner), the VG1602g can only communicate with the host via a USB interface cable.*



BTUENA1.

USB Communication  
(Corded Scanner)



BTUENA0.

\* Bluetooth Communication  
(Cordless Scanner)

### Corded USB PC or Macintosh Keyboard

Scan one of the following codes to program the corded scanner for a USB Keyboard, either PC or Macintosh, then power cycle the host.



BTUMID124.

Corded USB Keyboard (PC)



BTUMID125.

Corded USB Keyboard (Mac)

### Corded USB HID POS

Scan the following code to program the corded scanner for USB HID POS interface, then power cycle the host.



BTUMID131.

Corded USB HID POS Interface

---

## ***Corded USB Serial***

Scan the following code to program the corded scanner to emulate a regular RS232-based COM Port, then power cycle the host. If you are using a Microsoft® Windows® PC, you will need to download a driver from the Honeywell website ([www.honeywellaidc.com](http://www.honeywellaidc.com)). The driver will use the next available COM Port number. Apple® Macintosh computers recognize the scanner as a USB CDC class device and automatically use a class driver.



BTUMID130.

**Corded USB Serial**

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

## ***Corded CTS/RTS Emulation***



BTUCTS1.

**Corded CTS/RTS Emulation On**



BTUCTS0.

**\* Corded CTS/RTS Emulation  
Off**

## ***Corded ACK/NAK Mode***



BTUACK1.

**Corded ACK/NAK Mode On**



BTUACK0.

**\* Corded ACK/NAK Mode Off**

## Wireless System Operation

The VG1602g scanner can be used with Bluetooth devices such as personal computers, laptops, PDAs, and Honeywell mobility systems devices.

### Bluetooth Settings

Refer to [Pairing the Scanner with Bluetooth Devices](#), beginning on page 1-2, to link your scanner to a host via Bluetooth. The following settings allow you to refine your Bluetooth connection.

#### Bluetooth HID Keyboard Disconnect

If your scanner has been connected directly to an iPad, smart phone, or laptop, you must disconnect it in order to communicate with a new host. Scan the **Bluetooth HID Keyboard Disconnect** bar code to unlink the scanner from the currently linked host. Following the appropriate linking or pairing procedure to link the scanner to the new host.



PAPSPP.

**Bluetooth HID Keyboard Disconnect**

#### Bluetooth Serial Port - PCs/Laptops

Scanning the **Non-Base BT Connection** bar code below unlinks your scanner and puts it into a discoverable state. Once the scanner searches for and connects with a Bluetooth host, the scanner stores the connection to the host device address and switches virtual COM ports. This allows the scanner to automatically relink to the host if the connection is lost.



BT\_TRM0;BT\_DNG5.

**Non-Base BT Connection**

#### PDAs/Mobility Systems Devices

You may also use the scanner with a PDA or a Honeywell Mobility Systems device. Scan the bar code below and follow the instructions supplied with your Bluetooth device to locate and pair with the scanner.



BT\_TRM0;BT\_DNG1.

**BT Connection - PDA/Mobility Systems Device**

#### Changing the Scanner's Bluetooth PIN Code

Some devices require a PIN code as part of the Bluetooth security features. Your scanner's default PIN is 1234, which you may need to enter the first time you connect to your host. The PIN code must be between 1 and 16 characters. To change the PIN for your scanner, scan the bar code below and then scan the appropriate numeric bar codes from the [Programming Chart](#) inside the back cover of this manual. Scan **Save** to save your selection.



BT\_PIN.

**Bluetooth PIN**

---

## Minimizing Bluetooth/ISM Band Network Activity

The settings described below can help you customize the relinking behavior of the wireless area-imaging 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 scanner automatically begins the relink process when a loss of connection is detected. When the **Auto Reconnect On** bar code is scanned, the scanner 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
Scanner out of range	Relink occurs automatically. If maximum number of link attempts is unsuccessful, then the scanner must be relinked by either pressing the scan button or relinking the scanner to the host. See <a href="#">Pairing the Scanner with Bluetooth Devices</a> on page 1-2. Also see <a href="#">Maximum Link Attempts</a> on page 3-2.	The scanner is relinked by pressing the scan button or relinking to the host.
Host reset (firmware upgrade or power cycle)	Scanner behaves as if out of range.	No attempt to relink made while host is powered off. Scan button must be pressed to initiate relinking.
Scanner power down due to Power Time-Out Timer setting (see <a href="#">page 3-9</a> )	Scan button must be pressed.	
Scanner reset due to firmware upgrade	Relink occurs automatically.	
Scanner reset due to battery change	Relink occurs automatically.	

### Maximum Link Attempts

The Maximum Link Attempts setting controls the number of times the scanner tries to form a connection with a host. During the connection setup process, the scanner 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 scanner will not attempt to reconnect to a host. Pressing the scan button, scanning a host linking bar code, or pairing the scanner with a host resets the attempt count and the scanner will again try to link.

---

Scan the **Maximum Link Attempts** bar code, then scan the number of attempts for the setting (from 0-100) from the inside back cover. Scan **Save** to save the setting. *Default = 0.*



BT\_MLA.  
**Maximum Link Attempts**

*Note: When Auto Reconnect Mode is On, setting Maximum Link Attempts to zero will cause the scanner to try to link until the Power Time-Out Timer setting (see [page 3-9](#)) expires. When Auto Reconnect Mode is Off, setting Maximum Link Attempts to zero will cause the scanner to only attempt linking one time after a scan button press.*

### **Relink Time-Out**

Relink Time-Out controls the idle time between relink attempts. An attempt to link a scanner to a host typically lasts up to 5 seconds. This is the time when the scanner 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 scanners 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 inside back cover. Scan **Save** to save the setting. *Default = 3 seconds.*



BT\_RLT.  
**Relink Time-Out**

### **Bluetooth/ISM Network Activity Examples**

*Note: See [Batch Mode](#) on page 3-16 for information about using Batch Mode.*

#### **Default values**

When the scanner goes out of range, the scanner 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 scanner powers off and batch mode data is lost.

#### **Maximum Link Attempts set to 15**

##### **Other values at default setting**

When the scanner 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 scanner stops trying to connect to the host, but retains any bar codes that may have been saved in batch mode. After one hour, the scanner powers off and batch mode data is lost.

#### **Auto Reconnect Mode set to 0**

##### **Maximum Link Attempts set to 15**

##### **Other values at default setting**

When the scanner goes out of range, no action is taken to relink. When the scan button 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 ( $8 \times 15 = 120$ ), or about 2 minutes, the scanner stops trying to connect to the host, but retains any bar codes that may have been saved in batch mode. After one hour, the scanner powers off and batch mode data is lost. Refer to [Auto Reconnect Mode](#), page 3-2, 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 3-9.*

---

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

## ***Communication Between the Scanner and the Host***

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

When using an Access Point, the host also acknowledges when it has received the data. The wireless scanner recognizes data acknowledgment (ACK) from the host. If an Access Point cannot determine that the data has been properly sent to the host, the scanner issues an error tone. You must then check to see if the scanned data was received by the host.

## ***Programming the Scanner and Host***

When using the scanner and host together as a system, menu parameters and configuration settings are stored in the host. If the scanner is not linked to a host, configuration settings are stored in the scanner.

## ***RF (Radio Frequency) Module Operation***

The wireless system uses a two-way Bluetooth® radio utilizing adaptive frequency hopping (AFH) to transmit and receive data between the scanner 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 scanner and host, depending on the environment, is 33 feet (10m). See [Flexible Power Management](#), page 3-10, for information about controlling this range.

## ***System Conditions***

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

### ***Scanner Is Out of Range***

The wireless scanner is in communication with its host, even when it is not transmitting bar code data. Whenever the scanner can't communicate with the host for a few seconds, it is out of range. If the scanner is out of range and you scan a bar code, the scanner issues an error tone indicating that there was no communication with the host. Refer to [Out-of-Range Alarm](#), page 3-8 and [Auto Reconnect Mode](#), page 3-2.

### ***Scanner Is Moved Back Into Range***

The scanner relinks if the scanner or the host have been reset, or the scanner comes back into range. If the scanner 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 3-8 and [Auto Reconnect Mode](#), page 3-2 for further information.

### ***Out of Range and Back into Range with Batch Mode On***

*Note: Batch Mode can only be used with an Access Point. See [Batch Mode](#), beginning on page 3-16, for further information.*

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

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

---

## About the Battery



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

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

### Charging Information

The battery is designed to charge while the scanner is plugged into a wall outlet or into a host via the USB cable. Refer to [Low Battery Indicator](#), page 3-6, for an interpretation of the Charge Status indicators.

Plug the scanner in a Listed Limited Power Source (LPS) or Class 2 type power supply with output rated 5 to 5.2Vdc, 1A.

*Note: If you are powering the scanner through the USB interface cable instead of using an external power supply, the current available for charging is reduced and charge times are increased.*

### Battery Recommendations

- The battery is a lithium ion cell and can be used without a full charge, and can also be charged without fully discharging, without impacting the battery life. There is no need to perform any charge/discharge conditioning on this type of battery.
- Replace a defective battery immediately since it could damage the scanner.
- 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 -ix for additional information.



#### Caution:

Use only Honeywell Li-ion battery packs, part number 3H21-00000112, or 163480-0001, rated 3.7 Vdc, 2.77Whr in this device. Use of any non-Honeywell battery may result in damage not covered by the warranty.

### Safety Precautions for Lithium Batteries

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



#### Caution:

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

### Proper Disposal of the Battery



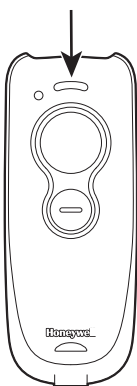
When the battery has reached the end of its useful life, the battery should be disposed of by a qualified recycler or hazardous materials handler. Do not incinerate the battery or dispose of the battery with general waste materials. You may send the scanner's battery to us. (postage paid). The shipper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

### Beeper and LED Sequences and Meaning

The scanner contains 2 LEDs on the top of the unit that indicate linking status, decoding state, and battery condition. There are audible indicators as well: 1 razz or error tone = error; 2 beeps = menu change; 1 beep = all other successes.

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

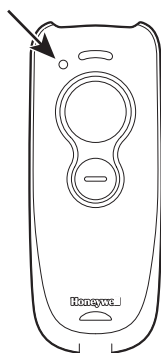
### Scan LED Sequences and Meaning



LED Indication	Beeper Indication	Cause
<b>Normal Operation</b>		
Red flash	None	Battery low
Green flash	1 beep	Successful scan
Red, blinking	Razz or error tone	Failed communication
Blue, off	None	Bluetooth connection has not been established
Blue flash	None	Scanner is attempting to pair with Bluetooth device
Blue, on	1 beep	Successful Bluetooth pairing
<b>Menu Operation</b>		
Green flash	2 beeps	Successful menu change
Red, blinking	Razz or error tone	Unsuccessful menu change

### Low Battery Indicator

Battery LED



If your battery is low, the battery LED double flashes orange and the scanner double chirps. The programmable button can also be set to display the battery charge level. See [Battery Charge Status](#) on page 4-2.

### Reset Scanner

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



### Scanner Report

Scan the bar code below to generate a report for the connected scanners. The report indicates the port, work group, scanner name, and address. To assign a name to your scanner, refer to [Menu Command Syntax](#), page 10-1.





---

## Scanner Address

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



## Linked Modes

Locked Link Mode and Open Link Mode are the link modes that accommodate different applications. Scan the appropriate bar codes included in the Open Link and Locked Link Mode explanations that follow to switch from one mode to another. *Default = Open Link Mode.*

### Locked Link Mode - Single Scanner

When you scan the bar code below, only the linked scanner can connect to the host and other scanners are blocked from being linked to that host.



To use a different scanner, you need to unlink the original scanner by scanning the **Unlink Scanner** bar code. (See [Unlinking the Scanner](#), below.)

### Open Link Mode - Single Scanner

When in Open Link - Single Scanner Mode, each time a scanner is paired with a host, the scanner becomes linked to the host and the old scanner is unlinked.



### Unlinking the Scanner

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



---

## Override Locked Scanner

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



BT\_RPL1.

**Override Locked Scanner  
(Single Scanner)**

## Out-of-Range Alarm

If your scanner is out range of the host, an alarm sounds from the scanner. The alarm stops when the scanner is moved closer to the host, when the host links to another scanner, 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 on the [Programming Chart](#) inside the back cover, then scanning **Save**. *Default = 0 sec (no alarm).*



BT\_ORD.

**Scanner Alarm Duration**

*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 communicated 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](#) inside the back cover of this manual. *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 Idle Alarm

When the scanner is idle for over 1 hour, you can set it to beep every minute until the trigger is pressed. *Default = Scanner Idle Alarm Off.*



BT\_LOS1.

Scanner Idle Alarm On



BT\_LOS0.

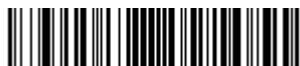
\* Scanner Idle Alarm Off

## Scanner Power Time-Out Timer

When there is no activity within a specified time period, the scanner enters low power mode. Scan the appropriate scanner 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 scan button presses during the timer interval, the scanner goes into power down mode. Whenever the scan button is pressed, the timer is reset. The scanner will 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.

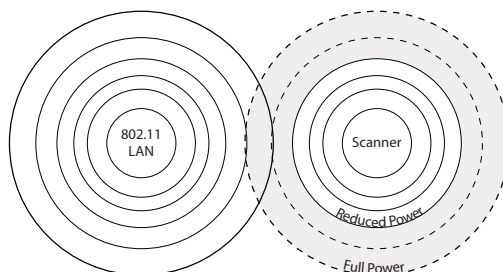
7200 seconds

---

*Note: When the scanner is in power down mode, press the scan button to power the unit back up. There will be a set of power up beeps and a delay of up to a few seconds for the radio to join. The scanner will then be ready to use.*

## **Flexible Power Management**

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



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



BT\_TXP100.  
\* Full Power



BT\_TXP35.  
Medium Power



BT\_TXP5.  
Medium Low Power



BT\_TXP1.  
Low Power

## **Multiple Scanner Operation**

*Note: Multiple Scanner Operation Mode allows you to link up to 7 scanners to one Access Point. You cannot join an 8th scanner until you unlink one of the 7 scanners or take a scanner out of range.*

To put the scanner in multiple scanner mode, scan the bar code below. Once you scan this bar code, the scanner is unlinked from the current host and must be paired with a host to relink.



BASCON2,DNG3.  
Multiple Scanner Operation

## **Scanner Name**

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

---

The default name is in the format “ScannerName\_Model\_SN\_XXXXXXXXXX” If you have more than one scanner linked to a host and they all have the same name, the first scanner linked to the host receives commands. When renaming a series of scanners with identical names, unlink all except one of the scanners from the host.

Perform the rename operation using either the bar codes on [page 3-11](#), or by sending the serial command **:ScannerName:BT\_NAMNewName**. where *ScannerName* is the current name of the scanner, and *NewName* is the new name for the scanner. If you wish to change the names of additional scanners, link them one at a time and repeat the **:ScannerName:BT\_NAMNewName**. command for each scanner.

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



BT\_NAM0001.  
0001



BT\_NAM0002.  
0002



BT\_NAM0003.  
0003



BT\_NAM0004.  
0004



BT\_NAM0005.  
0005



BT\_NAM0006.  
0006



BT\_NAM0007.  
0007



RESET\_  
Reset

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



BT\_NAM.  
Scanner Name

---

## Application Work Groups

*Note: Application Work Groups can only be used with an Access Point.*

Your wireless system can have up to 7 scanners linked to one host. You can also have up to 7 work groups. If you want to have all of the scanners' settings programmed alike, you don't need to use more than one work group. If you want each scanner to have unique settings (e.g., beeper volume, prefix/suffix, data formatter), then you may program each scanner to its own unique work group and may program each scanner independently. For example, you might want to have multiple work groups in a retail/warehouse application where you need to have different data appended to bar codes used in the warehouse area versus the retail area. You could assign all the scanners in the retail area to one work group and those in the warehouse to another. Consequently, any desired changes to either the retail or warehouse area would apply to all scanners in that particular work group. Honeywell's online configuration tool, EZConfig-Scanning ([page 9-2](#)), makes it easy for you to program your system for use with multiple scanners and multiple work groups.

The scanner keeps a copy of the menu settings it is using. Whenever the scanner is connected or reconnected to a host, the scanner is updated with the latest settings from the host for its work group. The scanner also receives menu setting changes processed by the host. If a scanner is removed from a host and linked to another host, it will be updated with the new host settings for whatever work group to which that the scanner was previously assigned. For example, if the scanner was in work group 1 linked to the first host, it will be placed in work group 1 in the second host with the associated settings.

### Application Work Group Selection

This programming selection allows you to assign a scanner to a work group by scanning the bar code below. You may then program the settings (e.g., beeper volume, prefix/suffix, data formatter) that your application requires. *Default = Group 0.*



GRPSEL0.

\* Group 0



GRPSEL1.

Group 1



GRPSEL2.

Group 2



GRPSEL3.

Group 3



GRPSEL4.

Group 4



GRPSEL5.

Group 5



GRPSEL6.

Group 6

---

## Resetting the Factory Defaults: All Application Work Groups

The following bar code defaults all of the work groups to the factory default settings.



To see what the factory default settings are, refer to the table of [Menu Commands](#), beginning on page 10-4. The standard product default settings for each of the commands are indicated by an asterisk (\*).

*Note: Scanning this bar code also causes both the scanner and the host to perform a reset and become unlinked. You must relink (pair) the scanner to the host. Refer to [Bluetooth Settings](#), page 3-1 for additional information. If your scanner is in multiple scanner mode, you will hear up to 30 seconds of beeping while all scanners are relinked to the host and the settings are changed.*

## Resetting the Custom Defaults: All Application Work Groups

If you want the custom default settings restored to all of the work groups, scan the **Custom Product Default Settings** bar code below. (If there are no custom defaults, it will reset the work groups to the factory defaults.) See [Setting Custom Defaults](#) on page 1-5 for further information about custom defaults.



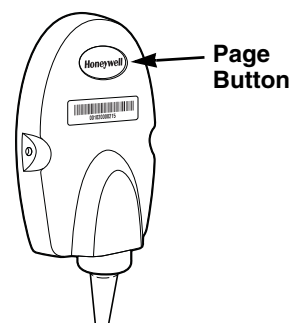
*Note: Scanning this bar code also causes both the scanner and the host to perform a reset and become unlinked. You must relink (pair) the scanner to the host. See [Bluetooth Settings](#), page 3-1 for additional information. If your scanner is in multiple scanner mode, you will hear up to 30 seconds of beeping while all scanners are relinked to the host and the settings are changed.*

## Access Point Operations

The Voyager 1602g can pair with a Honeywell Access Point (AP01-010BT or AP01-100BT), which provides 2-way communication between the scanner and host.

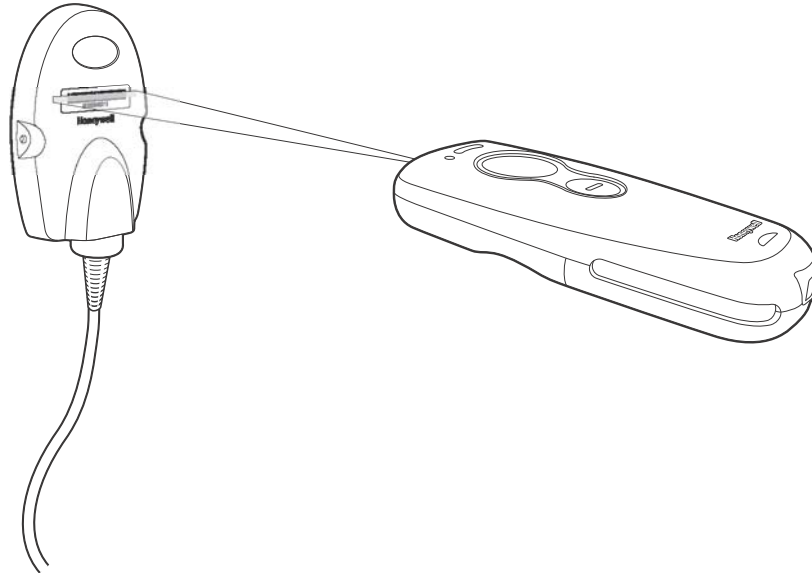
### Linking the Scanner to an Access Point

Turn on the host computer (laptop/desktop). Plug the interface cable into the Access Point first and then into the appropriate port on the computer. The Page button lights up when the connection to the host is made.



---

Scan the linking bar code on the top of the Access Point to establish a connection between the Access Point and the scanner. The scanner emits a short beep and flashes the green LED to confirm a connection with the Access Point. The Access Point's Page button remains blue.



If the Access Point sounds 5 error tones followed by 3 beeps, it indicates that you are attempting to link to the incorrect model Access Point. The Voyager 1602g scanner can only link to an Access Point model AP01-010BT or AP01-100BT.

### ***Disconnect from Host and Connect to an Access Point***

If your scanner has been connected directly to an iPad, smart phone, or laptop, you must disconnect it in order to communicate with an Access Point. Scan the **Bluetooth HID Keyboard Disconnect** bar code to unlink the scanner from the currently linked host. Scan the linking bar code on the Access Point to relink the scanner.



PAPSPP.

**Bluetooth HID Keyboard Disconnect**

### ***Replacing a Linked Scanner***

If you need to replace a broken or lost scanner that is linked to an Access Point, scan the **Override Locked Scanner** bar code below with a new scanner and scan the Access Point linking bar code. The locked link will be overridden; the broken or lost scanner's link with the Access Point will be removed, and the new scanner will be linked.



BT\_RPL1.

**Override Locked Scanner  
(Single Scanner)**



---

## Access Point LED Sequences and Meaning

The Access Point has a blue LED on the top of the unit that indicates its power up and communication condition.

Blue LED - Host Communication	
Blue LED	Communication Condition
Off	USB suspend
On continuously	Power on, system idle
Short blinks in multiple pulses. Occurs while transferring data to/ from the host.	Receiving data

## Access Point Address

Scan the bar code below to determine the address of the Access Point you are using.



:::BASLDA.  
Base Address

## Paging

### Paging Mode

By default, the paging button on the Access Point pages the scanners associated with that Access Point. If you want the paging button on your Access Point to be disabled, scan the **Paging Mode Off** bar code, below. When Paging Mode is off, the Access Point will no longer page scanners when the button is pressed. The blue LED on the Access Point will remain lit to indicate that Paging Mode is off. (This light will go out when the button is pressed, then back on when it's released.)

*Default = Paging Mode On.*



BEPPGE1.  
\* Paging Mode On



BEPPGE0.  
Paging Mode Off

### Paging Pitch

When you press the Page button on the Access Point, the scanners associated with that Access Point will begin beeping. You can set the pitch of the paging beep for each scanner by scanning one of the following bar codes. *Default = Low.*



BEPPFQ1000.  
\* Low (1000 Hz)



BEPPFQ3250.  
Medium (3250 Hz)



BEPPFQ4200.  
High (4200 Hz)

## Batch Mode

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

*Note: Batch Mode is only supported by the Honeywell Access Point (AP01-XXXBT). Batch mode has limitations when using multiple scanners to one Access Point. When a wireless system is being used in "multiple link mode," where up to 7 scanners are connected to one Access Point, some accumulated or batched scans could be lost if scanners are constantly moved in and out of range.*

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

**Inventory Batch Mode** stores bar code data, whether or not you are in range of the Access Point. To transmit the stored data to the Access Point, scan [Transmit Inventory Records](#) (page 3-20). 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 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 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 3-20).

*Default = Batch Mode Off.*



BATENA0.  
\* Batch Mode Off



BATENA1.  
Automatic Batch Mode



BATENA2.  
Inventory Batch Mode



BATENA3.  
Persistent Batch Mode

---

## Batch Mode Beep

When scanning in [Inventory Batch Mode](#) (page 3-16), 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.*



BATBEP0.

Batch Mode Beep Off



BATBEP1.

\* 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 Access Point, even if it reaches a power down timeout. However, if the scanner runs out of battery power, it will power down and the data will be lost.

*Default = Flash Storage.*



BATNVS1.

\* Flash Storage



BATNVS0.

RAM 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 3-19](#)), 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 Formatting](#) beginning on page 6-1.*

*Default = Batch Mode Quantity Off.*



BATQTY0.

\* Batch Mode Quantity Off



BATQTY1.

Batch Mode Quantity On

## Entering Quantities

Quantity Codes ([page 3-19](#)) 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 5th digit is scanned, the 1st digit scanned is discarded and the 2nd, 3rd and 4th 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



BATNUM2.

2



BATNUM1.

1



BATNUM3.

3



BATNUM4.

4



BATNUM6.

6



BATNUM8.

8



BATNUM5.

5



BATNUM7.

7



BATNUM9.

9

### ***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.*



BATLIFO.

\* Batch Mode FIFO



BATLIF1.

Batch Mode LIFO

### ***Total Records***

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



BATNRC.

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**.



## Transmit Records to Host

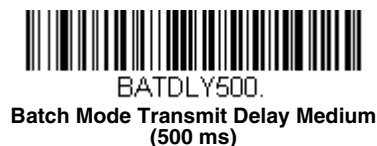
If you are operating in Inventory Batch Mode (see [Inventory Batch Mode](#) on page 3-16), you must scan the following bar code to transmit all the stored data to the host system.



## 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 -ix](#)) for additional information.*



---

## Host Acknowledgment

Some applications require that the host 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 scanner must be paired with a Honeywell Access Point (AP01-010BT or AP01-100BT).
- The wireless 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 3-22](#)).
- 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.

Escape commands are addressed to the scanner via Application Work Groups. Once a command is sent, all scanners in a group respond to that command. Because of this, **it is recommended that each scanner is assigned to its own group in Host ACK mode.**

The commands to which the scanner responds are listed on [page 3-22](#). 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.

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

The above example will make a scanner that is in application work group zero 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 to the host for an on-file product

[ESC]8,[ESC]8, is sent to the host 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 host. 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 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 Responses***

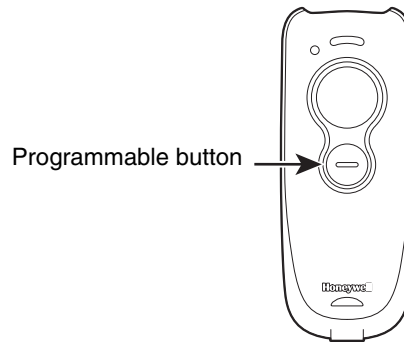
Command	Action
[ESC] a,	Double beeps to indicate a successful menu change was made.
[ESC] b,	Razz or error tone to indicate a menu change was unsuccessful.
[ESC] 1,	The green LED illuminates for 135 milliseconds followed by a pause.
[ESC] 2,	The green LED illuminates for 2 seconds followed by a pause.
[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.



## Input/Output Settings

### Programmable Button

The second, smaller button on the scanner can be programmed so that pressing the button displays a virtual keyboard on the host, displays the battery charge status, puts the scanner into flashlight mode, or pairs and unpairs the Bluetooth connection between the scanner and the host. You may program one of these selections to occur after a short button press, and another selection to occur after a long button press. The scanner emits a short beep to let you know when the button has been held down long enough.



### Virtual Keyboard

Once your scanner has been connected directly to an Apple® iPad, smart phone, or laptop, you can toggle the virtual keyboard on the host with either a short or a long press of the programmable button.

*Note: This feature is only supported with Apple devices.*



BTNSEC1.

Virtual Keyboard On -  
Short Press



BTNSCL1.

Virtual Keyboard On -  
Long Press

## Battery Charge Status

If you want the battery indicator LED to flash in a pattern that indicates the battery charge level, scan one of the following bar codes.



**BTNSEC2.**

**Battery Charge Status On -  
Short Press**

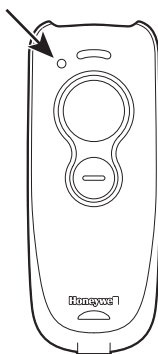


**BTNSCL2.**

**Battery Charge Status On -  
Long Press**

The battery LED flashes in the following patterns after a short or long press of the programmable button:

Battery LED



LED Indicator	Battery Charge Status
Orange flash	Battery is charging
Orange, blink once	Battery is 25–49%
Orange, blink twice	Battery is 50–74%
Orange, blink three times	Battery is 75–99%
Green, on	Battery is fully charged
Red, on	Low battery 0-24%
Red blink	Charging error

## Flashlight Mode

If you want the scanner to act as a flashlight, scan one of the bar codes below. Pressing the programmable button (short or long press) turns the flashlight on. Pressing the scan button turns it back off.



**BTNSEC3.**

**Flashlight Mode On -  
Short Press**



**BTNSCL3.**

**Flashlight Mode On -  
Long Press**

## Bluetooth Pair/Unpair

The programmable button can be used to toggle between pairing and unpairing from the host. Scan one of the following bar codes to set the Bluetooth Pair/Unpair with a short or long press of the programmable button:



BTNSEC4.

Bluetooth Pair/Unpair On -  
Short Press

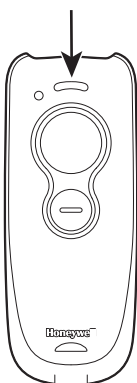


BTNSCL4.

Bluetooth Pair/Unpair On -  
Long Press

The scan LED flashes in the following pattern after a short or long press of the programmable button

Scan LED



LED Indicator	Beeper Indicator	Bluetooth Status
Blue, off	None	Bluetooth connection has not been established
Blue flash	None	Scanner is attempting to pair with Bluetooth device
Blue, on	1 beep	Successful Bluetooth pairing

## Disable Programmable Button

To disable the programmable button, scan one or both of the bar codes below. *Default = Disable Short and Long Press.*



BTNSEC0.

\* Disable Short Press



BTNSCL0.

\* Disable Long Press

---

## Power Up Beeper

The scanner can be programmed to beep when it's powered up. Scan the **Off** bar code(s) if you don't want a power up beep. *Default = Power Up Beeper On.*



BEPPWR0.

Power Up Beeper Off



BEPPWR1.

\* Power Up Beeper On

## Beep on BEL Character

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



BELBEP0.

\*Beep on BEL Off



BELBEP1.

Beep on BEL On

## Trigger Click

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



BEPTRG0.

\*Trigger Click Off



BEPTRG1.

Trigger Click On

---

## Good Read and Error Indicators

### Beeper – Good Read

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



BEPBEP0.

Beeper - Good Read Off



BEPBEP1.

\* Beeper - Good Read On

### Beeper Volume – Good Read

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



BEPLVL1.

Low



BEPLVL2.

Medium



BEPLVL3.

\* High



BEPLVL0.

Off

### Beeper Pitch – Good Read

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



BEPFQ11600.

Low (1600 Hz)



BEPFQ12700.

\* Medium (2700 Hz)



BEPFQ14200.  
High (4200 Hz)

### ***Beeper Pitch – Error***

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



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 scanner emits on a good read. *Default = Normal.*



BEPBIP0.  
\* Normal Beep



BEPBIP1.  
Short Beep

### ***LED – Good Read***

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



BEPRPT.

**Number of Good Read Beeps/LED Flashes**

### **Number of Beeps – Error**

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



BEPERR.

**Number of Error Beeps/LED Flashes**

### **Good Read Delay**

This sets the minimum amount of time before the scanner 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 from the inside back cover, then scanning **Save**.



DLYGRD.

**User-Specified Good Read Delay**

---

## Manual Trigger Modes

When in manual trigger mode, the scanner scans until a bar code is read or until the scan button 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 will give 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.*



\* Manual Trigger - Normal



Manual Trigger - Enhanced

## Serial Trigger Mode

You can activate the scanner either by pressing the scan button, or using a serial trigger command (see [Trigger Commands](#) on page 10-3). When in serial mode, the scanner scans until a bar code has been read or until the deactivate command is sent. The scanner 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 scan button when using serial commands to trigger the scanner. Once the scanner has timed out, you can activate the scanner either by pressing the scan button or using a serial trigger command. After scanning the **Read Time-Out** bar code, set the time-out duration (from 0-300,000 milliseconds) by scanning digits on the [Programming Chart](#) inside the back cover, then scanning **Save**. *Default = 30,000 ms.*



Read Time-Out

## Poor Quality Codes

### Poor Quality 1D Codes

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



Poor Quality 1D Reading On



\* Poor Quality 1D Reading Off



---

## Poor Quality PDF Codes

This setting improves the scanner's ability to read damaged or badly printed PDF codes by combining information from multiple images. When **Poor Quality PDF On** is scanned, poor quality PDF code reading is improved, but the scanner's snap-  
piness 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

## CodeGate®

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



AOSCGD0.

\* CodeGate Off  
Out-of-Stand



AOSCGD1.

CodeGate On  
Out-of-Stand

## Mobile Phone Read Mode

When this mode is selected, your scanner is optimized to read bar codes from mobile phone or other LED displays. However,  
the speed of scanning printed bar codes may be slightly lower when this mode is enabled.



PAPHHC.

Hand Held Scanning - Mobile  
Phone

*Note: To turn off Mobil Phone Read Mode, scan a Manual or Serial Trigger Mode bar code (see page 4-8).*

---

## Character Activation Mode

You may use a character sent from the host to trigger the scanner to begin scanning. When the activation character is received, the scanner continues scanning until either the [Character Activation Timeout](#) (page 4-11), the deactivation character is received (see [Deactivation Character](#) on page 4-11), or a bar code is transmitted. Scan the following **On** bar code to use character activation, then use Activation Character (following) to select the character you will send from the host to start scanning. *Default = Off.*



HSTCEND.

\* Off



HSTCEN1.

On

### Activation Character

This sets the character used to trigger scanning when using Character Activation Mode. On the [ASCII Conversion Chart \(Code Page 1252\)](#), page A-3, find the hex value that represents the character you want to use to trigger scanning. Scan the following bar code, then use the [Programming Chart](#) to read the alphanumeric combination that represents that ASCII character. Scan **Save** to finish. *Default = 12 [DC2].*



HSTACH.

Activation Character

### End Character Activation After Good Read

After a bar code is successfully detected and read from the scanner, the illumination can be programmed either to remain on and scanning, or to turn off. When **End Character Activation After Good Read** is enabled, the illumination turns off and stops scanning after a good read. If you scan **Do Not End Character Activation After Good Read**, the illumination remains on after a good read. *Default = Do Not End Character Activation After Good Read.*



HSTCGD0.

\* Do Not End Character  
Activation After Good Read



HSTCGD1.

End Character Activation After  
Good Read

---

## Character Activation Timeout

You can set a timeout for the length of time the illumination remains on and attempting to decode bar codes when using Character Activation Mode. Set the length (in milliseconds) for a timeout by scanning the following bar code, then setting the timeout (from 1-300,000 milliseconds) by scanning digits from the [Programming Chart](#) inside the back cover of this manual, then scanning **Save**. *Default = 30,000 ms.*



HSTCDT.

Character Activation Timeout

## Character Deactivation Mode

If you have sent a character from the host to trigger the scanner to begin scanning, you can also send a deactivation character to stop scanning. Scan the following **On** bar code to use character deactivation, then use Deactivation Character (following) to select the character you will send from the host to terminate scanning. *Default = Off.*



HSTDEN0.

\* Off



HSTDEN1.

On

## Deactivation Character

This sets the character used to terminate scanning when using Character Deactivation Mode. On the [ASCII Conversion Chart \(Code Page 1252\)](#), page A-3, find the hex value that represents the character you want to use to terminate scanning. Scan the following bar code, then use the [Programming Chart](#) inside the back cover of this manual to read the alphanumeric combination that represents that ASCII character. Scan **Save** to finish. *Default = 14 [DC4].*



HSTDCH.

Deactivation Character

## 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 4-12).*



SCNLED1.

\* Lights On



SCNLED0.

Lights Off

---

## Aimer Delay

The aimer delay allows a delay time for the operator to aim the scanner before the bar code is read. Use these codes to set the time between when the button is pressed and when the bar code is read. During the delay time, the aiming light will appear, 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 by scanning digits (0 - 4,000 ms) from the [Programming Chart](#) inside the back cover of this manual, then scan **Save**.



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.*



SCNAIM0.  
Off



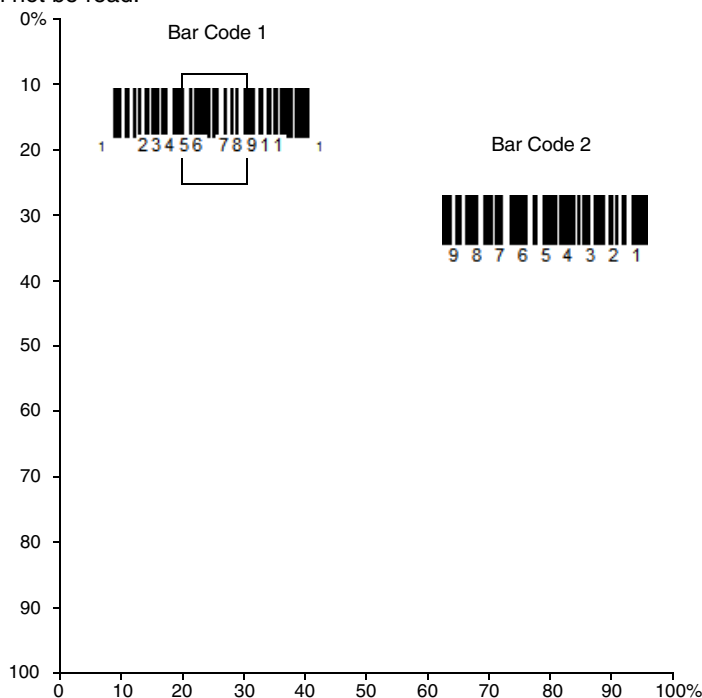
SCNAIM2.  
\* Interlaced

## Centering

Use Centering to narrow the scanner's field of view to make sure that when the scanner is hand-held, it reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, centering will insure that only the desired codes are read. (Centering can be used in conjunction with [Aimer Delay](#), page 4-12, for the most error-free operation in applications where multiple codes are spaced closely together. Using the Aimer Delay and Centering features, the scanner can emulate the operation of older systems, such as linear laser bar code scanners.)

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

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



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

Scan **Centering On**, then scan one of the following bar codes to change the top, bottom, left, or right of the centering window. Then scan the percent you want to shift the centering window using digits on the inside back cover of this manual. Scan **Save**.  
*Default Centering = 40% for Top and Left, 60% for Bottom and Right.*





## Preferred Symbolology

The scanner 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 scanner 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 Symbolology to specify that the PDF417 symbol be read instead of the Code 39.

Preferred Symbolology classifies each symbology as **high priority**, **low priority**, or as an **unspecified type**. When a low priority symbology is presented, the scanner ignores it for a set period of time (see [Preferred Symbolology Time-out](#) on page 4-15) 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 scanner will read any bar code in its view (low priority or unspecified). If there is no bar code in the scanner'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 Symbolology. *Default = Preferred Symbolology Off.*



## High Priority Symbolology

To specify the high priority symbology, scan the High Priority Symbolology bar code below. On the [Symbology Charts](#) on page A-1, find the symbology you want to set as high priority. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart (inside back cover). Scan **Save** to save your selection. *Default = None*



## Low Priority Symbolology

To specify the low priority symbology, scan the Low Priority Symbolology bar code below. On the [Symbology Charts](#) on page A-1, 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 (inside back cover).

---

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.*



PRFBLK.

Low Priority Symbology

### ***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 scanner will search 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 from the inside back cover, then scanning **Save**. *Default = 500 ms.*



PRFPTO.

Preferred Symbology Time-out

### ***Preferred Symbology Default***

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



PRFDFT.

Preferred Symbology Default

## ***Output Sequence Overview***

### ***Output Sequence Editor***

This programming selection allows you to program the scanner 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. Reading the **Default Sequence** symbol programs the scanner to the Universal values, shown below. These are the defaults. Be **certain** you want to delete or clear all formats before you read the **Default Sequence** symbol.

*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 (inside back cover) to read these options. You must hold the scan button while reading each bar code in the sequence.*

### ***To Add an Output Sequence***

1. Scan the **Enter Sequence** symbol (see [Require Output Sequence](#), page 4-17).
2. **Code I.D.**  
On the [Symbology Charts](#) on page A-1, 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 (inside back cover).
3. **Length**  
Specify what length (up to 9999 characters) of data output will be acceptable for this symbology. Scan the four digit data length from the Programming Chart. (Note: 50 characters is entered as 0050. 9999 is a universal number, indicating all lengths.) 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 A-3, find the Hex value that represents the character(s) you want to match. Use the Programming Chart 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

- **Discard**  
This exits without saving any Output Sequence changes.

### Output Sequence Example

In this example, you are scanning Code 93, Code 128, and Code 39 bar codes, but you want the scanner to output Code 39 1st, Code 128 2nd, and Code 93 3rd, as shown below.

*Note: Code 93 must be enabled to use this example.*



A - Code 39



B - Code 128



C - Code 93

You would set up the sequence editor with the following command line:

SEQBLK62999941FF6A999942FF69999943FF

The breakdown of the command line is shown below:

SEQBLKsequence editor start command

62      code identifier for **Code 39**  
9999    code length that must match for Code 39, 9999 = all lengths  
41      start character match for Code 39, 41h = "A"  
FF      termination string for first code  
6A      code identifier for **Code 128**  
9999    code length that must match for Code 128, 9999 = all lengths  
42      start character match for Code 128, 42h = "B"  
FF      termination string for second code  
69      code identifier for **Code 93**  
9999    code length that must match for Code 93, 9999 = all lengths  
43      start character match for Code 93, 43h = "C"  
FF      termination string for third code

To program the previous example using specific lengths, you would have to count any programmed prefixes, suffixes, or formatted characters as part of the length. If you use the example on [page 4-16](#), but assume a <CR> suffix and specific code lengths, you would use the following command line:

SEQBLK62001241FF6A001342FF69001243FF

The breakdown of the command line is shown below:

SEQBLKsequence editor start command

62      code identifier for **Code 39**  
0012    A - Code 39 sample length (11) plus CR suffix (1) = 12



---

41 start character match for Code 39, 41h = "A"  
FF termination string for first code  
6A code identifier for **Code 128**  
0013 B - Code 128 sample length (12) plus CR suffix (1) = 13  
42 start character match for Code 128, 42h = "B"  
FF termination string for second code  
69 code identifier for **Code 93**  
0012 C - Code 93 sample length (11) plus CR suffix (1) = 12  
43 start character match for Code 93, 43h = "C"  
FF termination string for third code

### ***Output Sequence Editor***



SEQBLK.  
Enter Sequence



SEQDFT.  
Default 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."

Scan **Discard Partial Sequence** to discard partial sequences when the output sequence operation is terminated before completion. Scan **Transmit Partial Sequence** to transmit partial sequences. (Any fields in the sequence where no data match occurred will be skipped in the output.)



SEQTTS1.  
Transmit Partial Sequence



SEQTTS0.  
\* Discard Partial Sequence

### ***Require Output Sequence***

When an output sequence is **Required**, all output data must conform to an edited sequence or the scanner will not transmit the output data to the host device. When it's **On/Not Required**, the scanner will attempt to get the output data to conform to an edited sequence but, if it cannot, the scanner transmits all output data to the host device as is.

---

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

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



SEQ\_EN2.  
Required



SEQ\_EN1.  
On/Not Required



SEQ\_EN0.  
\*Off

## Multiple Symbols

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



SHOTGN1.  
On



SHOTGND.  
\* Off

## No Read

With No Read turned **On**, the scanner notifies you if a code cannot be read. If using an EZConfig-Scanning Tool Scan Data Window (see page 9-3), an "NR" appears when a code cannot be read. If No Read is turned **Off**, the "NR" will not appear. *Default = Off.*



SHWNRD1.  
On



SHWNRD0.  
\* Off

If you want a different notation than "NR," for example, "Error," or "Bad Code," you can edit the output message (see [Data Formatting](#) beginning on page 6-1). The hex code for the No Read symbol is 9C.

---

## Video Reverse

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

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

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



VIDREV1.  
Video Reverse Only



VIDREV2  
Video Reverse and Standard Bar Codes

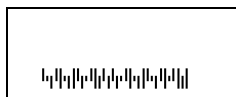


\* Video Reverse Off

## Working Orientation

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

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

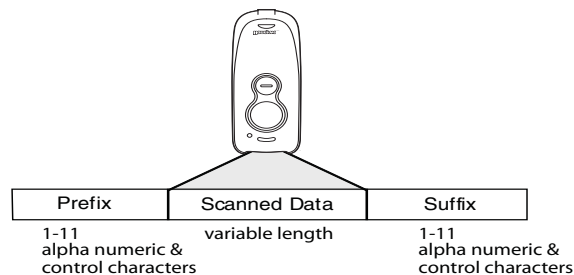


ROTATN3.  
Vertical, Top to Bottom

## 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 A-3, plus Code I.D. and AIM I.D.
- You can string together several entries for several symbologies at one time.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.
- When setting up for specific symbologies (as opposed to all symbologies), the specific symbology ID value counts as an added prefix or suffix character.
- The maximum size of a prefix or suffix configuration is 200 characters, which includes header information.

## To Add a Prefix or Suffix:

**Step 1.** Scan the **Add Prefix** or **Add Suffix** symbol ([page 5-2](#)).

**Step 2.** Determine the 2 digit Hex value from the Symbology Chart (included in the [Symbology Charts](#), beginning on page A-1) for the symbology to which you want to apply the prefix or suffix. For example, for Code 128, Code ID is “j” and Hex ID is “6A”.

**Step 3.** Scan the 2 hex digits from the [Programming Chart](#) inside the back cover of this manual or scan **9, 9** for all symbologies.

**Step 4.** Determine the hex value from the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3, for the prefix or suffix you wish to enter.

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

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

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

*To add a backslash (\), you must scan 5C twice – once to create the leading backslash and then to create the backslash itself.*

**Step 5.** Scan the 2 digit hex value from the [Programming Chart](#) inside the back cover of this manual.

**Step 6.** Repeat Steps 4 and 5 for every prefix or suffix character.

**Step 7.** Scan **Save** to exit and save, or scan **Discard** to exit without saving.

Repeat Steps 1-6 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](#) inside the back cover of this manual to apply this suffix to all symbologies.

**Step 3.** Scan **0, 9** from the [Programming Chart](#) inside the back cover of this manual. This corresponds with the hex value for a horizontal tab, shown in the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3.

Scan **Save**, or scan **Discard** to exit without saving.

### ***To 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 A-1) 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](#) inside the back cover of this manual or scan **9, 9** for all symbologies.

Your change is automatically saved.

### ***To 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



PRECA2.  
Clear All Prefixes



PRECL2.  
Clear One Prefix

### ***Suffix Selections***



SUFBK2.  
Add Suffix



## Function Code Transmit

When this selection is enabled and function codes are contained within the scanned data, the scanner transmits the function code to the terminal. Charts of these function codes are provided in [Supported Interface Keys](#) starting on [page 8-2](#). When the scanner is in keyboard wedge mode, the scan code is converted to a key code before it is transmitted. *Default = Enable*.

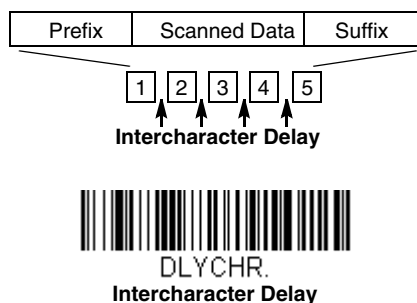


## Intercharacter, Interfunction, and Intermessage Delays

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

### Intercharacter Delay

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



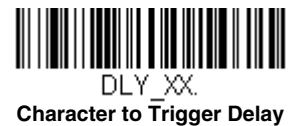
To remove this delay, scan the **Intercharacter Delay** bar code, then set the number of delays to 0. Scan the **Save** bar code using the [Programming Chart](#) inside the back cover of this manual.

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

### User Specified Intercharacter Delay

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

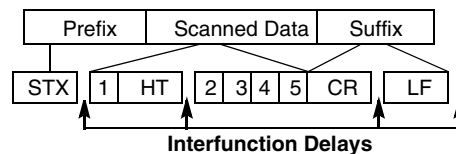
Next, scan the **Character to Trigger Delay** bar code, then the 2-digit hex value for a printable character to trigger the delay (see [Lower ASCII Reference Table](#) on page A-4).



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

### Interfunction Delay

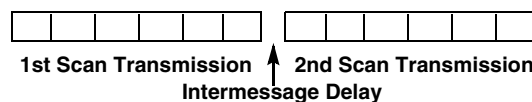
An interfunction delay of up to 5000 milliseconds (in 5ms increments) may be placed between the transmission of each control character in the message string. Scan the **Interfunction Delay** bar code below, then scan the number of 5ms delays, and the **Save** bar code using the [Programming Chart](#)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



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

### Intermessage Delay

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



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



## Data Formatting

### Data Format Editor Introduction

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

Normally, when you scan a bar code, it is output automatically. However, when you create a format, you must use a "send" command (see [Send Commands](#) on page 6-3) within the format program to output data.

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

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

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

If 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.



### Add a Data Format

**Step 1.** Scan the **Enter Data Format** symbol ([page 6-2](#)).

**Step 2.** Select **Primary/Alternate Format**

Determine if this will be your primary data format, or one of 3 alternate formats. This allows you to save a total of 4 different data formats. To program your primary format, scan **0** using the [Programming Chart](#) inside the back cover of this manual. 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 6-10 for further information.)

**Step 3. Terminal Type**

Refer to [Terminal ID Table](#) (page 6-3) and locate the Terminal ID number for your PC. Scan three numeric bar codes on the inside back cover to program the scanner for your terminal ID (you must enter 3 digits). For example, scan **0 0 3** for an AT wedge.

*Note: 099 indicates all terminal types.*

**Step 4. Code I.D.**

In the [Symbology Charts](#), beginning on page A-1, 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](#) inside the back cover of this manual.

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

*Note: 99 indicates all symbologies.*

---

### Step 5. Length

Specify what length (up to 9999 characters) of data will be acceptable for this symbology. Scan the four digit data length from the [Programming Chart](#) inside the back cover of this manual. For example, 50 characters is entered as 0050.

*Note: 9999 indicates all lengths.*

### Step 6. Editor Commands

Refer to [Data Format Editor Commands](#) (page 6-3). Scan the symbols that represent the command you want to enter.

**Step 7.** Scan **Save** to save your data format, or **Discard** to exit without saving your changes.



DFMBK3.

Enter Data Format



MNUSAV.

Save



MNUABT.

Discard

## 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](#) inside the back cover of this manual. 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 A-1), and the bar code data length for the specific data format that you want to delete. All other formats remain unaffected.

### Clear all Data Formats

This clears all data formats.

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

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



DFMCL3.

Clear One Data Format



DFMCA3.

Clear All Data Formats



MNUSAV.

Save



MNUABT.

Discard

---

## 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 A-3 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 A-3 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 A-3 for decimal, hex and character codes.

**F3 Example: Send all characters up to a particular character**



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

Command string: **F3440D**

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

44 is the hex value for a 'D'

0D is the hex value for a CR

The data is output as:

**1234567890ABC**  
**<CR>**

### ***Send all but the last characters***

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

### ***Insert a character multiple times***

- F4 Send "xx" character "nn" times in the output message, leaving the cursor in the current position. *Syntax = F4xxnn* where xx stands for the insert character's hex value for its ASCII code, and nn is the numeric value (00-99) for the number of times it should be sent. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

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



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

Command string: **E908F40902**

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

08 is the number of characters at the end to ignore

F4 is the "Insert a character multiple times" command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

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

---

## **Move Commands**

### ***Move the cursor forward a number of characters***

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

**F5 Example: Move the cursor forward and send the data**



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

Command string: **F503F10D**

F5 is the “Move the cursor forward a number of characters” command

03 is the number of characters to move the cursor

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

**4567890ABCDEFGHIJ**

**<CR>**

### ***Move the cursor backward a number of characters***

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

### ***Move the cursor to the beginning***

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

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



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

Command string: **FE31F7F2060D**

FE is the “Compare characters” command

31 is the hex value for 1

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

F2 is the “Send a number of characters” command

06 is the number of characters to send

0D is the hex value for a CR

The data is output as:

**123456**

**<CR>**

### ***Move the cursor to the end***

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

---

## Search Commands

### Search forward for a character

- F8 Search the input message forward for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character. *Syntax = F8xx* where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 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 A-3 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 A-3 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 A-3 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 = E4nnxx<sub>1</sub>xx<sub>2</sub>yy<sub>1</sub>yy<sub>2</sub>...zz<sub>1</sub>zz<sub>2</sub>* where nn is the total count of the number of characters in the list (characters to be replaced plus replacement characters); xx<sub>1</sub> defines characters to be replaced and xx<sub>2</sub> defines replacement characters, continuing through zz<sub>1</sub> and zz<sub>2</sub>.

#### 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 A-3 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**  
**<CR>**



---

### ***Insert a delay***

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

## **Data Formatter**

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



DFM\_END.  
**Data Formatter Off**

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

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

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted.

### **Data 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\_EN2.  
**Data Format Required,  
Keep Prefix/Suffix**



DFM\_EN3.  
**Data Formatter On,  
Not Required,  
Drop 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 scanner 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 will sound. 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.*



DFMDECO.

\* 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.



ALTFNMO.

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 button 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\_2.  
**Single Scan-Data Format 2**



VSAF\_1.  
**Single Scan-Data Format 1**



VSAF\_3.  
**Single Scan-Data Format 3**

---

## Symbologies

This programming section contains the following menu selections. Refer to [Chapter 10](#) for settings and defaults.

- [All Symbologies](#)
- [Aztec Code](#)
- [China Post \(Hong Kong 2 of 5\)](#)
- [Chinese Sensible \(Han Xin\) Code](#)
- [Codabar](#)
- [Codablock A](#)
- [Codablock F](#)
- [Code 11](#)
- [Code 128](#)
- [Code 32 Pharmaceutical \(PARAF\)](#)
- [Code 39](#)
- [Code 93](#)
- [Data Matrix](#)
- [EAN/JAN-13](#)
- [EAN/JAN-8](#)
- [GS1 Composite Codes](#)
- [GS1 DataBar Expanded](#)
- [GS1 DataBar Limited](#)
- [GS1 DataBar Omnidirectional](#)
- [GS1 Emulation](#)
- [GS1-128](#)
- [Interleaved 2 of 5](#)
- [Korea Post](#)
- [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

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



ALLEN A1.  
All Symbologies On



ALLEN A0.  
All Symbologies Off

*Note: Scanner performance may be degraded after scanning **All Symbologies On**. Only scan **All Symbologies On** when needed.*

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

### Message Length Description

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

---

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

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

For a value other than the minimum and maximum message length defaults, scan the bar codes included in the explanation of the symbology, then scan the digit value of the message length and **Save** bar codes on the [Programming Chart](#) inside the back cover of this manual. 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 scanner to read only Codabar bar codes with Modulo 16 check characters. *Default = No Check Character.*

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

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

---

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



CBRCK20.  
\* No Check Character



CBRCK21.  
Validate Modulo 16, but  
Don't Transmit



CBRCK22.  
Validate Modulo 16  
and Transmit

### **Codabar Concatenation**

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



A 1 2 3 4 D D 5 6 7 8 A

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



CBRCCT1.  
On



CBRCCT0.  
\* Off



CBRCCT2.  
Require

### **Codabar Message Length**

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 2-60. Minimum Default = 4, Maximum Default = 60.



CBRMIN.  
Minimum Message Length



## Code 39

< Default All Code 39 Settings >



### Code 39 On/Off



### Code 39 Start/Stop Characters

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



### Code 39 Check Character

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

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

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







C39CK22.

Validate and Transmit



C39CK21.

Validate, but Don't Transmit

## Code 39 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 0-48. Minimum Default = 0, Maximum Default = 48.



C39MIN.

Minimum Message Length



C39MAX.

Maximum Message Length

## Code 39 Append

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



C39APP1.

On



C39APP0.

\* 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 7-32](#)) must be turned off while scanning Code 32 Pharmaceutical codes.*



C39B321.

On



C39B320.

\* Off

## Full ASCII

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

NUL %U	DLE \$P	SP SPACE	0 0	@ %V	P P	' %W	p +P
SOH \$A	DC1 \$Q	! /A	1 1	A A	Q Q	a +A	q +Q
STX \$B	DC2 \$R	" /B	2 2	B B	R R	b +B	r +R
ETX \$C	DC3 \$S	# /C	3 3	C C	S S	c +C	s +S
EOT \$D	DC4 \$T	\$ /D	4 4	D D	T T	d +D	t +T
ENQ \$E	NAK \$U	% /E	5 5	E E	U U	e +E	u +U
ACK \$F	SYN \$V	& /F	6 6	F F	V V	f +F	v +V
BEL \$G	ETB \$W	' /G	7 7	G G	W W	g +G	w +W
BS \$H	CAN \$X	( /H	8 8	H H	X X	h +H	x +X
HT \$I	EM \$Y	) /I	9 9	I I	Y Y	i +I	y +Y
LF \$J	SUB \$Z	* /J	: /Z	J J	Z Z	j +J	z +Z
VT \$K	ESC %A	+ /K	; %F	K K	[ %K	k +K	{ %P
FF \$L	FS %B	, /L	< %G	L L	\ %L	l +L	%Q
CR \$M	GS %C	- -	= %H	M M	] %M	m +M	} %R
SO \$N	RS %D	. .	> %I	N N	^ %N	n +N	~ %S
SI \$O	US %E	/ /O	? %J	O O	_ %O	o +O	DEL %T

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

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



C39ASCII.  
Full ASCII On



C39ASCII.  
\* Full ASCII Off

## Code 39 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and scan the value and the **Save** bar code from the [Programming Chart](#) on the inside the back cover of this manual. The data characters should then appear properly.



C39DCP.  
Code 39 Code Page

---

## 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 scanner reads and transmits bar code data with or without a check digit.

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

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



### Interleaved 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.





## 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 scanner reads and transmits bar code data with or without a check digit.

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

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



---

### ***NEC 2 of 5 Message Length***

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) 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 >*



C93DFT.

### ***Code 93 On/Off***



C93ENA1.

**\* On**



C93ENA0.

**Off**

### ***Code 93 Message Length***

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.



C93MIN.

**Minimum Message Length**



C93MAX.

**Maximum Message Length**

---

## Code 93 Append

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



## Code 93 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and scan the value and the **Save** bar code from the [Programming Chart](#) on the inside the back cover of this manual. The data characters should then appear properly.



---

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

*<Default All Straight 2 of 5 Industrial Settings>*



R25DFT.

## ***Straight 2 of 5 Industrial On/Off***



R25ENA1.

On



R25ENA0.

\* Off

## ***Straight 2 of 5 Industrial Message Length***

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) 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 Message Length***

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) 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 7-1) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.



X25MIN.

Minimum Message Length



X25MAX.

Maximum Message Length

---

## 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 7-1) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.



---

## Code 128

<Default All Code 128 Settings>



### Code 128 On/Off



### ISBT 128 Concatenation

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



### Code 128 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.



---

## Code 128 Append

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



128APP1.

\* On



128APP0.

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 A-7), and scan the value and the **Save** bar code from the [Programming Chart](#) on the inside the back cover of this manual. The data characters should then appear properly.



128DCP.

Code 128 Code Page

---

## 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 7-1) 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 scanner 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 scanner 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.*



### Telepen Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 1-60. Minimum Default = 1, Maximum Default = 60.



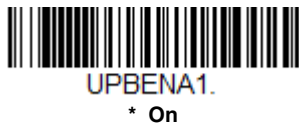
---

## UPC-A

<Default All UPC-A Settings>



### UPC-A On/Off



*Note:* To convert UPC-A bar codes to EAN-13, see [Convert UPC-A to EAN-13](#) on page 7-24.

### UPC-A Check Digit

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



### UPC-A Number System

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



---

## UPC-A Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-A data.

*Default = Off for both 2 Digit Addenda 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 scanner will only read UPC-A bar codes that have addenda. You must then turn on a 2 or 5 digit addenda listed on [page 7-20](#). *Default = Not Required.*



UPAARQ1.  
Required



UPAARQ0.  
\* Not Required

## UPC-A Addenda Separator

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



UPAADS1.  
\* On



UPAADS0.  
Off



---

## UPC-A/EAN-13 with Extended Coupon Code

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

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

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



CPNENA0.

\* Off



CPNENA1.

Allow Concatenation



CPNENA2.

Require Concatenation

## Coupon GS1 DataBar Output

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



CPNGS10.

\* GS1 Output Off



CPNGS11.

GS1 Output On

---

## UPC-E0

<Default All UPC-E Settings>



### 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 7-24). *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 scanner will only read UPC-E bar codes that have addenda. *Default = Not Required.*



---

### **UPC-E0 Addenda Separator**

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



UPEADS1.

\* On



UPEADS0.

Off

### **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 7-22). If you need to read codes that lead with the 1 number system, use the **UPC-E1 On** selection. *Default = Off.*



UPEEN11.  
UPC-E1 On



UPEEN10.  
\* UPC-E1 Off

## EAN/JAN-13

<Default All EAN/JAN Settings>



E13DFT.

### EAN/JAN-13 On/Off



E13ENA1.  
\* On



E13ENA0.  
Off

### Convert UPC-A to EAN-13

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



UPAENA0.  
UPC-A Converted to EAN-13



UPAENA1.

**\* Do not Convert UPC-A**

### ***EAN/JAN-13 Check Digit***

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

*Default = On.*



E13CKX1.

**\* On**



E13CKX0.

**Off**

### ***EAN/JAN-13 Addenda***

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



E13AD21.

**2 Digit Addenda On**



E13AD20.

**\* 2 Digit Addenda Off**



E13AD51.

**5 Digit Addenda On**



E13AD50.

**\* 5 Digit Addenda Off**

### ***EAN/JAN-13 Addenda Required***

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



E13ARQ1.

**Required**



E13ARQ0.

\* Not Required

### ***EAN/JAN-13 Addenda Separator***

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



E13ADS1.

\* On



E13ADS0.

Off

*Note: If you want to enable or disable EAN13 with Extended Coupon Code, refer to [UPC-A/EAN-13 with Extended Coupon Code](#) (page 7-21).*

### ***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>*



### **EAN/JAN-8 On/Off**



### **EAN/JAN-8 Check Digit**

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



### **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.*





EA8AD50.  
\* 5 Digit Addenda Off

### ***EAN/JAN-8 Addenda Required***

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



EA8ARQ1.  
**Required**



EA8ARQ0.  
\* **Not Required**

### ***EAN/JAN-8 Addenda Separator***

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



EA8ADS1.  
\* **On**



EA8ADS0.  
**Off**



---

## MSI

<Default All MSI Settings>



### MSI On/Off



### MSI Check Character

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

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

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



\* Validate Type 10, but Don't Transmit



Validate Type 10 and Transmit



Validate 2 Type 10 Characters,  
but Don't Transmit



Validate 2 Type 10 Characters  
and Transmit



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



MSICLK6.

**Disable MSI Check Characters**



MSICLK5.

**Validate Type 11 then  
Type 10 Character and Transmit**

### ***MSI Message Length***

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) 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 >*



### **GS1 DataBar Omnidirectional On/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 7-1) 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 7-5](#)), 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**



### **Codablock A Message Length**

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 1-600. Minimum Default = 1, Maximum Default = 600.



**Minimum Message Length**



**Maximum Message Length**

---

## Codablock F

<Default All Codablock F Settings>



### Codablock F On/Off



### Codablock F Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 1-2048. Minimum Default = 1, Maximum Default = 2048.



## 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 7-1) 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 7-1) 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 7-21) for further information.*

## GS1 Composite Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 1-2435. Minimum Default = 1, Maximum Default = 2435.



## GS1 Emulation

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

If **GS1-128 Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-128 AIM ID, Jc1 (see [Symbology Charts](#) on page A-1).

If **GS1 DataBar Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-DataBar AIM ID, Jem (see [Symbology Charts](#) on page A-1).

If **GS1 Code Expansion Off** is scanned, retail code expansion is disabled, and UPC-E expansion is controlled by the [UPC-E0 Expand](#) (page 7-22) setting. If the AIM ID is enabled, the value will be the GS1-128 AIM ID, Jc1 (see [Symbology Charts](#) on page A-1).

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

*Default = 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.*



### ***QR Code***

*< Default All QR Code Settings >*



#### ***QR Code On/Off***

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



---

## QR Code Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 1-7089. Minimum Default = 1, Maximum Default = 7089.



QRCMIN.

Minimum Message Length



QRCMAX.

Maximum Message Length

## QR Code Append

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



QRCAPP1.

\* On



QRCAPP0.

Off

## QR Code Page

QR Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and scan the value and the **Save** bar code from the [Programming Chart](#) on the inside the back cover of this manual. The data characters should then appear properly.



QRCDP.

QR Code Page

---

## Data Matrix

< Default All Data Matrix Settings >



### Data Matrix On/Off



### Data Matrix Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 7-1) for additional information. Minimum and Maximum lengths = 1-3116. Minimum Default = 1, Maximum Default = 3116.



### Data Matrix Append

This function allows the scanner to append the data from several Data Matrix bar codes together before transmitting them to the host computer. When the scanner encounters an Data Matrix bar code with the append trigger character(s), it buffers the number of Data Matrix 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.*



### 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 A-7), and scan the value and the **Save** bar code from the [Programming Chart](#) on the inside the back cover of this manual. 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 7-1) 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 7-1) for additional information. Minimum and Maximum lengths = 1-3832. Minimum Default = 1, Maximum Default = 3832.



### Aztec Append

This function allows the scanner to append the data from several Aztec bar codes together before transmitting them to the host computer. When the scanner encounters an Aztec bar code with the append trigger character(s), it buffers the number of Aztec bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. *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 A-7), and scan the value and the **Save** bar code from the [Programming Chart](#) on the inside the back cover of this manual. 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 7-1) 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 = 2D Postal Codes Off.*



POSTAL0.

\* 2D Postal Codes Off

### Single 2D Postal Codes:



POSTAL1.

Australian Post On



POSTAL7.

British Post On



POSTAL30.

Canadian Post On



POSTAL10.

Intelligent Mail Bar Code On



POSTAL3.

Japanese Post On



POSTAL4.

KIX Post On



POSTAL5.

Planet Code On

Also see [Planet Code Check Digit](#), page 7-47.



POSTAL9.

Postal-4i On





POSTAL6.  
Postnet On

Also see [Postnet Check Digit](#), page 7-47.



POSTAL11.  
Postnet with B and B' Fields On



POSTAL2.  
InfoMail On

### ***Combination 2D Postal Codes:***



POSTAL8.  
InfoMail and British  
Post On



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



POSTAL14.  
Postnet and  
Postal-4i On



POSTAL16.  
Postnet and  
Intelligent Mail Bar Code On



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



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



POSTAL12.  
Planet Code and  
Postnet On



POSTAL13.  
Planet Code and  
Postal-4i On



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



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



POSTAL15.  
Planet Code and  
Intelligent Mail Bar Code On



POSTAL22.  
Planet Code,  
Postnet, and  
Intelligent Mail Bar Code On



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



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



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



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

### ***Planet Code Check Digit***

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



PLNCKX1.  
Transmit Check Digit



PLNCKXD.  
\* Don't Transmit Check Digit

### ***Postnet Check Digit***

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



NETCKX1.  
Transmit Check Digit



NETCKXD.  
\* Don't Transmit Check Digit

### ***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.



AUSINT0.

\* Bar Output



AUSINT1.

Numeric N Table



AUSINT2.

Alphanumeric C Table



AUSINT3.

Combination C and 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>*



CPCDFT.

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



CPCENA1.

On



CPCENAD.

\* 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 7-1) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.



CPCMIN.

Minimum Message Length



## **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 7-1) 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.*



---

## Interface Keys

### Keyboard Function Relationships

The following Keyboard Function Code, Hex/ASCII Value, and Full ASCII “CTRL”+ relationships apply to all terminals that can be used with the scanner. Refer to [page 2-10](#) enable Control + X (Control + ASCII) Mode.

Function Code	HEX/ASCII Value	Full ASCII (CTRL + X Mode)
NUL	00	@
SOH	01	A
STX	02	B
ETX	03	C
EOT	04	D
ENQ	05	E
ACK	06	F
BEL	07	G
BS	08	H
HT	09	I
LF	0A	J
VT	0B	K
FF	0C	L
CR	0D	M
SO	0E	N
SI	0F	O
DLE	10	P
DC1	11	Q
DC2	12	R
DC3	13	S
DC4	14	T
NAK	15	U
SYN	16	V
ETB	17	W
CAN	18	X
EM	19	Y
SUB	1A	Z
ESC	1B	[
FS	1C	\
GS	1D	]
RS	1E	^
US	1F	-

The last five characters in the Full ASCII “CTRL”+ column ( [ \ ] 6 - ), apply to US only. The following chart indicates the equivalents of these five characters for different countries.

Country	Codes				
United States	[	\	]	6	-
Belgium	[	<	]	6	-
Scandinavia	8	<	9	6	-
France	^	8	\$	6	=
Germany		Ã	+	6	-
Italy		\	+	6	-
Switzerland		<	..	6	-
United Kingdom	[	¢	]	6	-

---

Country		Codes			
Denmark	8	\	9	6	-
Norway	8	\	9	6	-
Spain	[	\	]	6	-

### ***Supported Interface Keys***

ASCII	HEX	IBM PC/AT and Compatibles, USB PC Keyboard	Apple Mac/iMac Supported Keys
NUL	00	Reserved	Reserved
SOH	01	Enter (KP)	Enter/Numpad Enter
STX	02	Cap Lock	CAPS
ETX	03	ALT make	ALT make
EOT	04	ALT break	ALT break
ENQ	05	CTRL make	CNTRL make
ACK	06	CTRL break	CNTRL break
BEL	07	CR/Enter	RETURN
BS	08	Reserved	APPLE make
HT	09	Tab	TAB
LF	0A	Reserved	APPLE break
VT	0B	Tab	TAB
FF	0C	Delete	Del
CR	0D	CR/Enter	RETURN
SO	0E	Insert	Ins Help
SI	0F	Escape	ESC
DLE	10	F11	F11
DC1	11	Home	Home
DC2	12	Print	Prnt Scrn
DC3	13	Back Space	BACKSPACE
DC4	14	Back Tab	LSHIFT TAB
NAK	15	F12	F12
SYN	16	F1	F1
ETB	17	F2	F2
CAN	18	F3	F3
EM	19	F4	F4
SUB	1A	F5	F5
ESC	1B	F6	F6
FS	1C	F7	F7
GS	1D	F8	F8
RS	1E	F9	F9
US	1F	F10	F10
DEL	7F		BACKSPACE



### ***To Add a Test Code I.D. Prefix to All Symbolologies***

This selection allows you to turn on transmission of a Code I.D. before the decoded symbology. (See the [Symbology Charts](#), beginning on page A-1) 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 symbolologies. This is a temporary setting that will be removed when the unit is power cycled.



PRECA2,BK2995C80!

**Add Code I.D. Prefix to  
All Symbolologies (Temporary)**

### ***Show Decoder Revision***

Scan the bar code below to output the decoder revision.



REV\_DR.

**Show Decoder Revision**

### ***Show Scan Driver Revision***

Scan the bar code below to output the scan driver revision.



REV\_SD.

**Show Scan Driver Revision**

### ***Show Software Revision***

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



REVINF.

**Show Software Revision**

### ***Show Data Format***

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



DFMBK3?.

**Data Format Settings**

---

## Test Menu

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

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



TSTMNU1.

**On**



TSTMNU0.

**\* Off**

## TotalFreedom

TotalFreedom is an open system architecture that makes it possible for you create applications that reside on your scanner. Decoding apps and Data Formatting apps can be created using TotalFreedom. For further information about TotalFreedom, go to our website at [www.honeywellaidc.com](http://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 a scanner connected to your PC. EZConfig-Scanning allows you to download upgrades to the scanner's firmware, change programmed parameters, and create and print programming bar codes. Using EZConfig-Scanning, you can even save/open the programming parameters for a scanner. 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.

### ***EZConfig-Scanning Operations***

The EZConfig-Scanning software performs the following operations:

#### ***Scan Data***

Scan Data allows you to scan bar codes and display the bar code data in a window. Scan Data lets you send serial commands to the scanner and receive scanner response that can be seen in the Scan Data window. The data displayed in the Scan Data window can either be saved in a file or printed.

#### ***Configure***

Configure displays the programming and configuration data of the scanner. The scanner's programming and configuration data is grouped into different categories. Each category is displayed as a tree item under the "Configure" tree node in the application explorer. When one of these tree nodes is clicked, the right-hand side is loaded with the parameters' form belonging to that particular category. The "Configure" tree option has all the programming and configuration parameters specified for a scanner. You can set or modify these parameters as required. You can later write the modified settings to the scanner, or save them to a dcf file.

### ***Installing EZConfig-Scanning from the Web***

*Note: EZConfig-Scanning requires .NET software. If .NET is not installed on your PC, you will be prompted to install it during the EZConfig-Scanning installation.*

1. Access the Honeywell web site at [www.honeywellaidc.com](http://www.honeywellaidc.com)
2. Click on the **Resources** tab. Select **Software**.
3. Click on the dropdown for **Select Product Number**. Click on your product number.
4. Click on the listing for **EZConfig-Scanning**.
5. When prompted, select **Save File**, and save the files to the **c:\windows\temp** directory.
6. Once you have finished downloading the file, exit the web site.
7. Using Explorer, go to the **c:\windows\temp** file.
8. Double click on the **Setup.exe** file. Follow the screen prompts to install the EZConfig-Scanning program.
9. If you've selected the defaults during installation, you can click on **Start Menu-All Programs-Honeywell-EZConfig-Scanning**.

---

## Resetting the Factory Defaults



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

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



DEFOVR.

**Remove Custom Defaults**



DEFAULT.

**Activate Defaults**

*Note: Scanning the **Activate Defaults** bar code also causes both the scanner and the host to perform a reset and become unlinked. You must relink (pair) the scanner to the host. See [Wireless System Operation](#) beginning on page 3-1 for additional information.*

The [Menu Commands](#), beginning on page 10-4 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 will program the scanner. For complete descriptions and examples of each serial programming command, refer to the corresponding programming bar code in this manual.

The device must be set to an RS232 interface (see [page 2-12](#)). 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:

*parameter* A label representing the actual value you should send as part of a command.

[*option*] 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 [:Name:] Tag SubTag {Data} [, SubTag {Data}] [: Tag SubTag {Data}] [...] Storage*

**Prefix** Three ASCII characters: **SYN M CR** (ASCII 22,77,13).

**:Name:** This command is only used with wireless devices. It is used to specify whether you're communicating with the host or the scanner. To send information to the scanner, use :Voyager: The default factory setting for a scanner is Voyager. This setting is changed by using the BT\_NAM command, which accepts alphanumeric values. If the name is not known, a wildcard (\*) can be used :\*.

**Tag** A 3 character case-insensitive field that identifies the desired menu command group. For example, all RS232 configuration settings are identified with a Tag of **232**.

**SubTag** A 3 character case-insensitive field that identifies the desired menu command within the tag group. For example, the SubTag for the RS232 baud rate is **BAD**.

**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.)

#### :Name: Field Usage (Optional)

This command returns the query information from the scanner.

#### 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 scanner with serial trigger commands. First, the scanner must be put in Manual Trigger Mode by scanning a Manual Trigger Mode bar code ([page 4-8](#)), or by sending a serial menu command for triggering ([page 4-8](#)). Once the scanner 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 scanner 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 4-8 for a description, and the serial command on [page 10-11](#)).

## Resetting the Custom Defaults

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



**Activate Custom Defaults**

*Note: The Custom Defaults settings apply to all workgroups. Scanning the **Activate Custom Defaults** bar code also causes both the scanner and the host to perform a reset and become unlinked. You must relink (pair) the scanner to the host. See [Wireless System Operation](#) beginning on page 3-1 for additional information.*

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 <i>* Indicates default</i>	Serial Command <i># Indicates a numeric entry</i>	Page
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Pairing the Scanner with Bluetooth Devices	Bluetooth HID Keyboard Connect	PAPBTH	1-2
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	Belgium	KBDCTY1	2-1
	Bosnia	KBDCTY33	2-1
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Selection	Setting <i>* Indicates default</i>	Serial Command <i># Indicates a numeric entry</i>	Page
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	Kazakh	KBDCTY78	<a href="#">2-5</a>
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Selection	Setting <i>* Indicates default</i>	Serial Command <i># Indicates a numeric entry</i>	Page
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Interleaved 2 of 5 Message Length	Minimum (2 - 80) *4	I25MIN##	<a href="#">7-7</a>
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UPC-E1	*Off	UPEEN10	<a href="#">7-24</a>
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EAN/JAN-13	Default All EAN/ JAN Settings	E13DFT	<a href="#">7-24</a>
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ISBN Translate	*Off	E13ISB0	<a href="#">7-26</a>
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	Validate 2 Type 10 Chars, but Don't Transmit	MSICLK2	<a href="#">7-29</a>
	Validate 2 Type 10 Chars and Transmit	MSICLK3	<a href="#">7-29</a>
	Validate Type 11 then Type 10 Char, but Don't Transmit	MSICLK4	<a href="#">7-29</a>
	Validate Type 11 then Type 10 Char and Transmit	MSICLK5	<a href="#">7-30</a>
	Disable MSI Check Characters	MSICLK6	<a href="#">7-30</a>
MSI Message Length	Minimum (4 - 48) *4	MSIMIN##	<a href="#">7-30</a>
	Maximum (4 - 48) *48	MSIMAX##	<a href="#">7-30</a>
GS1 DataBar Omnidirectional	Default All GS1 DataBar Omnidirectional Settings	RSSDFT	<a href="#">7-31</a>
	Off	RSENA0	<a href="#">7-31</a>
	*On	RSENA1	<a href="#">7-31</a>
GS1 DataBar Limited	Default All GS1 DataBar Limited Settings	RSLDFT	<a href="#">7-31</a>
	Off	RSLENA0	<a href="#">7-31</a>
	*On	RSLENA1	<a href="#">7-31</a>
GS1 DataBar Expanded	Default All GS1 DataBar Expanded Settings	RSEDFT	<a href="#">7-32</a>
	Off	RSEENA0	<a href="#">7-32</a>
	*On	RSEENA1	<a href="#">7-32</a>
GS1 DataBar Expanded Msg. Length	Minimum (4 - 74) *4	RSEMIN##	<a href="#">7-32</a>
	Maximum (4 - 74) *74	RSEMAX##	<a href="#">7-32</a>
Trioptic Code	*Off	TRIENA0	<a href="#">7-32</a>
	On	TRIENA1	<a href="#">7-32</a>
Codablock A	Default All Codablock A Settings	CBADFT	<a href="#">7-33</a>
	*Off	CBAENA0	<a href="#">7-33</a>
	On	CBAENA1	<a href="#">7-33</a>
Codablock A Msg. Length	Minimum (1 - 600) *1	CBAMIN###	<a href="#">7-33</a>
	Maximum (1 - 600) *600	CBAMAX###	<a href="#">7-33</a>
Codablock F	Default All Codablock F Settings	CBFDFT	<a href="#">7-34</a>
	*Off	CBFENA0	<a href="#">7-34</a>
	On	CBFENA1	<a href="#">7-34</a>
Codablock F Msg. Length	Minimum (1 - 2048) *1	CBFMIN####	<a href="#">7-34</a>
	Maximum (1 - 2048) *2048	CBFMAX####	<a href="#">7-34</a>
Label Code	On	LBLENA1	<a href="#">7-34</a>
	* Off	LBLENA0	<a href="#">7-34</a>

<b>Selection</b>	<b>Setting</b> <i>* Indicates default</i>	<b>Serial Command</b> <i># Indicates a numeric entry</i>	<b>Page</b>
PDF417	Default All PDF417 Settings	PDFDFT	<a href="#">7-35</a>
	*On	PDFENA1	<a href="#">7-35</a>
	Off	PDFENA0	<a href="#">7-35</a>
PDF417 Msg. Length	Minimum (1-2750) *1	PDFMIN####	<a href="#">7-35</a>
	Maximum (1-2750) *2750	PDFMAX####	<a href="#">7-35</a>
MacroPDF417	*On	PDFMAC1	<a href="#">7-36</a>
	Off	PDFMAC0	<a href="#">7-36</a>
MicroPDF417	Default All Micro PDF417 Settings	MPDDFT	<a href="#">7-36</a>
	On	MPDENA1	<a href="#">7-36</a>
	*Off	MPDENA0	<a href="#">7-36</a>
MicroPDF417 Msg. Length	Minimum (1-366) *1	MPDMIN###	<a href="#">7-36</a>
	Maximum (1-366) *366	MPDMAX###	<a href="#">7-36</a>
GS1 Composite Codes	On	COMENA1	<a href="#">7-36</a>
	*Off	COMENA0	<a href="#">7-36</a>
UPC/EAN Version	On	COMUPC1	<a href="#">7-37</a>
	*Off	COMUPC0	<a href="#">7-37</a>
GS1 Composite Codes Msg. Length	Minimum (1-2435) *1	COMMINS###	<a href="#">7-37</a>
	Maximum (1-2435) *2435	COMMINS###	<a href="#">7-37</a>
GS1 Emulation	GS1-128 Emulation	EANEMU1	<a href="#">7-37</a>
	GS1 DataBar Emulation	EANEMU2	<a href="#">7-36</a>
	GS1 Code Expansion Off	EANEMU3	<a href="#">7-38</a>
	EAN8 to EAN13 Conversion	EANEMU4	<a href="#">7-38</a>
	*GS1 Emulation Off	EANEMU0	<a href="#">7-38</a>
TCIF Linked Code 39	On	T39ENA1	<a href="#">7-38</a>
	*Off	T39ENA0	<a href="#">7-38</a>
QR Code	Default All QR Code Settings	QRCDFT	<a href="#">7-38</a>
	*On	QRCENA1	<a href="#">7-38</a>
	Off	QRCENA0	<a href="#">7-38</a>
QR Code Msg. Length	Minimum (1-7089) *1	QRCMIN####	<a href="#">7-39</a>
	Maximum (1-7089) *7089	QRCMAX####	<a href="#">7-39</a>
QR Code Append	*On	QRCAPP1	<a href="#">7-39</a>
	Off	QRCAPP0	<a href="#">7-39</a>
QR Code Page	QR Code Page (*3)	QRCDP##	<a href="#">7-39</a>
Data Matrix	Default All Data Matrix Settings	IDMDFT	<a href="#">7-40</a>
	*On	IDMENA1	<a href="#">7-40</a>
	Off	IDMENA0	<a href="#">7-40</a>
Data Matrix Msg. Length	Minimum (1-3116) *1	IDMMIN####	<a href="#">7-40</a>
	Maximum (1-3116) *3116	IDMMAX####	<a href="#">7-40</a>
Data Matrix Append	*On	IDMAPP1	<a href="#">7-40</a>
	Off	IDMAPP0	<a href="#">7-40</a>
Data Matrix Code Page	Data Matrix Code Page (*51)	IDMDCP##	<a href="#">7-40</a>



<b>Selection</b>	<b>Setting</b> <i>* Indicates default</i>	<b>Serial Command</b> <i># Indicates a numeric entry</i>	<b>Page</b>
MaxiCode	Default All MaxiCode Settings	MAXDFT	<a href="#">7-41</a>
	On	MAXENA1	<a href="#">7-41</a>
	*Off	MAXENA0	<a href="#">7-41</a>
MaxiCode Msg. Length	Minimum (1-150) *1	MAXMIN###	<a href="#">7-41</a>
	Maximum (1-150) *150	MAXMAX###	<a href="#">7-41</a>
Aztec Code	Default All Aztec Code Settings	AZTDFT	<a href="#">7-42</a>
	*On	AZTENA1	<a href="#">7-42</a>
	Off	AZTENA0	<a href="#">7-42</a>
Aztec Code Msg. Length	Minimum (1-3832) *1	AZTMIN####	<a href="#">7-42</a>
	Maximum (1-3832) *3832	AZTMAX####	<a href="#">7-42</a>
Aztec Append	*On	AZTAPP1	<a href="#">7-42</a>
	Off	AZTAPP0	<a href="#">7-42</a>
Aztec Code Page	Aztec Code Page (*51)	AZTDCP##	<a href="#">7-42</a>
Chinese Sensible (Han Xin) Code	Default All Han Xin Code Settings	HX_DFT	<a href="#">7-43</a>
	On	HX_ENA1	<a href="#">7-43</a>
	*Off	HX_ENA0	<a href="#">7-43</a>
Chinese Sensible (Han Xin) Code Msg. Length	Minimum (1-7833) *1	HX_MIN####	<a href="#">7-43</a>
	Maximum (1-7833) *7833	HX_MAX####	<a href="#">7-43</a>
<b>Postal Codes - 2D</b>			
2D Postal Codes	*Off	POSTAL0	<a href="#">7-44</a>
Single 2D Postal Codes	Australian Post On	POSTAL1	<a href="#">7-44</a>
	British Post On	POSTAL7	<a href="#">7-44</a>
	Canadian Post On	POSTAL30	<a href="#">7-44</a>
	Intelligent Mail Bar Code On	POSTAL10	<a href="#">7-44</a>
	Japanese Post On	POSTAL3	<a href="#">7-44</a>
	KIX Post On	POSTAL4	<a href="#">7-44</a>
	Planet Code On	POSTAL5	<a href="#">7-44</a>
	Postal-4i On	POSTAL9	<a href="#">7-44</a>
	Postnet On	POSTAL6	<a href="#">7-45</a>
	Postnet with B and B' Fields On	POSTAL11	<a href="#">7-45</a>
	InfoMail On	POSTAL2	<a href="#">7-45</a>

<b>Selection</b>	<b>Setting</b> <i>* Indicates default</i>	<b>Serial Command</b> <i># Indicates a numeric entry</i>	<b>Page</b>
Combination 2D Postal Codes	InfoMail and British Post On	POSTAL8	<a href="#">7-45</a>
	Intelligent Mail Bar Code and Postnet with B and B' Fields On	POSTAL20	<a href="#">7-45</a>
	Postnet and Postal-4i On	POSTAL14	<a href="#">7-45</a>
	Postnet and Intelligent Mail Bar Code On	POSTAL16	<a href="#">7-45</a>
	Postal-4i and Intelligent Mail Bar Code On	POSTAL17	<a href="#">7-45</a>
	Postal-4i and Postnet with B and B' Fields On	POSTAL19	<a href="#">7-45</a>
	Planet and Postnet On	POSTAL12	<a href="#">7-45</a>
	Planet and Postnet with B and B' Fields On	POSTAL18	<a href="#">7-46</a>
	Planet and Postal-4i On	POSTAL13	<a href="#">7-46</a>
	Planet and Intelligent Mail Bar Code On	POSTAL15	<a href="#">7-46</a>
	Planet, Postnet, and Postal-4i On	POSTAL21	<a href="#">7-46</a>
	Planet, Postnet, and Intelligent Mail Bar Code On	POSTAL22	<a href="#">7-46</a>
	Planet, Postal-4i, and Intelligent Mail Bar Code On	POSTAL23	<a href="#">7-46</a>
Combination 2D Postal Codes (continued)	Postnet, Postal-4i, and Intelligent Mail Bar Code On	POSTAL24	<a href="#">7-46</a>
	Planet, Postal-4i, and Postnet with B and B' Fields On	POSTAL25	<a href="#">7-46</a>
	Planet, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL26	<a href="#">7-46</a>
	Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL27	<a href="#">7-46</a>
	Planet, Postal-4i, Intelligent Mail Bar Code, and Postnet On	POSTAL28	<a href="#">7-47</a>
	Planet, Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL29	<a href="#">7-46</a>
Planet Code Check Digit	Transmit	PLNCKX1	<a href="#">7-47</a>
	*Don't Transmit	PLNCKX0	<a href="#">7-47</a>
Postnet Check Digit	Transmit	NETCKX1	<a href="#">7-47</a>
	*Don't Transmit	NETCKX0	<a href="#">7-47</a>
Australian Post Interpretation	Bar Output	AUSINT0	<a href="#">7-48</a>
	Numeric N Table	AUSINT1	<a href="#">7-48</a>
	Alphanumeric C Table	AUSINT2	<a href="#">7-48</a>
	Combination N and C Tables	AUSINT3	<a href="#">7-48</a>

Selection	Setting <i>* Indicates default</i>	Serial Command <i># Indicates a numeric entry</i>	Page
<b>Postal Codes - Linear</b>			
China Post (Hong Kong 2 of 5)	Default All China Post (Hong Kong 2 of 5) Settings	CPCDFT	7-48
	*Off	CPCENA0	7-48
	On	CPCENA1	7-48
China Post (Hong Kong 2 of 5) Msg. Length	Minimum (2 - 80) *4	CPCMIN##	7-48
	Maximum (2 - 80) *80	CPCMAX##	7-48
Korea Post	Default All Korea Post Settings	KPCDFT	7-49
	*Off	KPCENA0	7-49
	On	KPCENA1	7-49
Korea Post Msg. Length	Minimum (2 - 80) *4	KPCMIN##	7-49
	Maximum (2 - 80) *48	KPCMAX##	7-49
Korea Post Check Digit	Transmit Check Digit	KPCCHK1	7-49
	*Don't Transmit Check Digit	KPCCHK0	7-49
<b>Utilities</b>			
Add Code I.D. Prefix to All Symbolologies (Temporary)		PRECA2,BK2995C80!	9-1
Show Decoder Revision		REV_DR	9-1
Show Scan Driver Revision		REV_SD	9-1
Show Software Revision		REVINF	9-1
Show Data Format		DFMBK3?	9-1
Test Menu	On	TSTMNU1	9-2
	*Off	TSTMNU0	9-2
Application Plug-Ins (Apps)	*Decoding Apps On	PLGDCE1	9-2
	Decoding Apps Off	PLGDCE0	9-2
	*Formatting Apps On	PLGFOE1	9-2
	Formatting Apps Off	PLGFOE0	9-2
	List Apps	PLGINF	9-2
Resetting the Factory Defaults	Remove Custom Defaults	DEFOVR	9-4
	Activate Defaults	DEFALT	9-4

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## Product Specifications

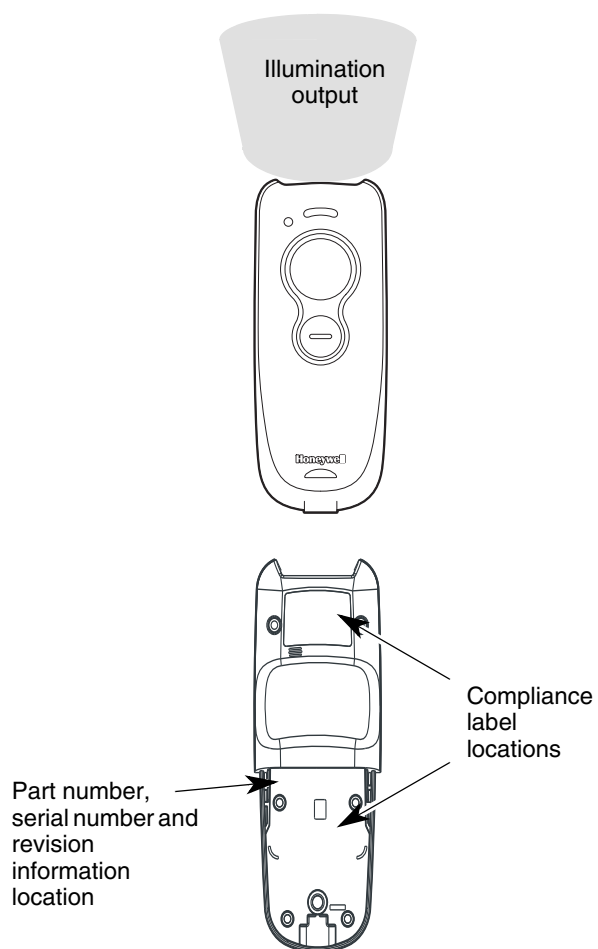
### Voyager 1602g Wireless Pocket Scanner Product Specifications

Parameter	Specification
<b>Mechanical</b>	
Height	.9 in. (22mm)
Length	4.7 in. (120mm)
Width	1.9 in. (48mm)
Weight	3.5 oz. (100g)
<b>Electrical</b>	
Battery:	
Lithium Ion	3.7v 750mAh
Number of Scans	up to 2250 from full charge
Expected Hours of Operation	12 from full charge
Expected Charge Time	3 - 5 hours
Illumination LED	White emitting color
Aiming	624nm peak wavelength
<b>Radio</b>	
Frequency	2.4 to 2.5 GHz (ISM Band) Frequency Hopping Bluetooth v.2.1
Range	328 ft. (100m) typical
Data Rate	Up to 1 MBps
<b>Environmental</b>	
Operating Temperature	32° to 122°F (0° to 50°C)
Storage Temperature*	4° to 140°F (-20° to 60°C)
Charging Temperature	41° to 104°F (5° to 40°C)
Humidity	Up to 95%, non-condensing
Drop	Operational after 30 drops from 4 feet (1.2m) to concrete
Environmental Sealing	IP42
Vibration	Withstands 10G peak from 10 to 500 Hz
ESD	12kV air, 8kV direct
<b>Image</b>	
Image Size	640 x 480 pixels
<b>Scan Performance</b>	
Pitch, Skew	±60°, ±70°
Symbol Contrast	35%
Motion Tolerance:	up to 10cm per second for 13 mil UPC
Symbol Contrast	Grade 1.0 (20% or greater)
<b>Depth of Field</b>	
<b>Typical Performance</b>	
5 mil Code 39	39 - 113mm (1.53 - 4.45 in.)
13 mil UPC-A	43 - 293mm (1.69 - 11.53 in.)
20 mil Code 39	59 - 483mm (2.32 - 19.02 in.)
6.7 mil PDF417	47 - 113mm (1.85 - 4.45 in.)
10mil Data Matrix	39 - 114mm (1.53 - 4.49 in.)
20mil QR Code	31 - 245mm (1.22 - 9.65 in.)
<b>Guaranteed Performance</b>	
5 mil Code 39	46 - 106mm (1.81 - 4.17 in.)
13 mil UPC-A	51 - 245mm (2.01 - 9.65 in.)

Parameter	Specification
20 mil Code 39	66 - 425mm (2.6 - 16.73 in.)
6.7 mil PDF417	62 - 108mm (2.44 - 4.25 in.)
10mil Data Matrix	54 - 108mm (2.13 - 4.25 in.)
20mil QR Code	41 - 230mm (1.61 - 9.05 in.)

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

## ***Required Safety Labels***

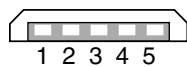


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## Standard Connector Pinout

*Note: Use of a cable with improper pin assignments may lead to damage to the unit. Use of any cables not provided by the manufacturer may result in damage not covered by your warranty.*

### **Micro-B USB**



1	Vcc
2	Data -
3	Data +
4	ID
5	Ground

---



## ***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 [Customer Support](#) on page -ix.

### ***Maintenance***

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

#### ***Cleaning the Scanner***

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



#### **Caution:**

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

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

#### ***Cleaning the Window***

Reading performance may degrade if the scanner's window is not clean. If the window is visibly dirty, or if the scanner isn't operating well, clean the window with gentle dish soap and water.

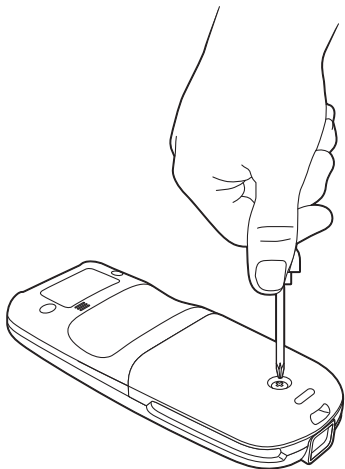
#### ***Inspecting Cords and Connectors***

Inspect the interface cable and connector for wear or other signs of damage. A badly worn cable or damaged connector may interfere with scanner operation. Contact your distributor for information about cable replacement. Cable replacement instructions are on [page 12-2](#).

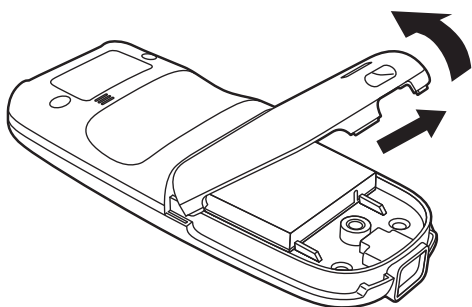
---

## ***Replacing a Battery***

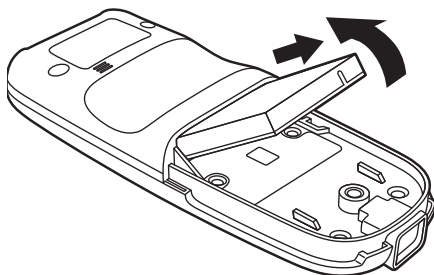
**Step 1.** Use a Phillips head screwdriver to remove the back cover of the scanner.



**Step 2.** Lift the back cover up and out to expose the battery.



**Step 3.** Lift out the battery and replace, making sure the contacts on the battery line up with the contacts in the scanner.



**Step 4.** Replace the back cover and secure with the Phillips head screw.

---

## Troubleshooting

*Note: Make sure that your scanner's battery is charged. Visit the Services and Support section of our website ([www.honeywellaidc.com](http://www.honeywellaidc.com)) to check for the latest software for both the scanner and the host.*

### ***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 5-1 for further information.

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

- Scan the sample bar codes in the back of this manual. If the scanner reads the sample bar codes, check that your bar code is readable.

Verify that your bar code symbology is enabled (see [Chapter 7](#)).

If the scanner still can't read the sample bar codes, scan [All Symbologies](#) on page 7-1.

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## Reference Charts

### Symbology Charts

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

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

Refer to [Data Editing](#) beginning on page 5-1 and [Data Formatting](#) beginning on page 6-1 for information about using Code ID and AIM ID.

### Linear Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Codabar	]Fm	0-1	a	61
Code 11	]H3		h	68
Code 128	]Cm	0, 1, 2, 4	j	6A
Code 32 Pharmaceutical (PARAF)	]X0		<	3C
Code 39 (supports Full ASCII mode)	]Am	0, 1, 3, 4, 5, 7	b	62
TCIF Linked Code 39 (TLC39)	]L2		T	54
Code 93 and 93i	]Gm	0-9, A-Z, a-m	i	69
EAN	]Em	0, 1, 3, 4	d	64
EAN-13 (including Bookland EAN)	]E0		d	64
EAN-13 with Add-On	]E3		d	64
EAN-13 with Extended Coupon Code	]E3		d	64
EAN-8	]E4		D	44
EAN-8 with Add-On	]E3		D	44
GS1				
GS1 DataBar	]em	0	y	79
GS1 DataBar Limited	]em		{	7B
GS1 DataBar Expanded	]em		}	7D
GS1-128	]C1		l	49
2 of 5				
China Post (Hong Kong 2 of 5)	]X0		Q	51
Interleaved 2 of 5	]Im	0, 1, 3	e	65
Matrix 2 of 5	]X0		m	6D
NEC 2 of 5	]X0		Y	59
Straight 2 of 5 IATA	]Rm	0, 1, 3	f	66
Straight 2 of 5 Industrial	]S0		f	66
MSI	]Mm	0, 1	g	67
Telepen	]Bm		t	74
UPC		0, 1, 2, 3, 8, 9, A, B, C		

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
UPC-A	]E0		c	63
UPC-A with Add-On	]E3		c	63
UPC-A with Extended Coupon Code	]E3		c	63
UPC-E	]E0		E	45
UPC-E with Add-On	]E3		E	45
UPC-E1	]X0		E	45

Add Honeywell Code ID				5C80
Add AIM Code ID				5C81
Add Backslash				5C5C
Batch mode quantity			5	35

## 2D Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
<i>All Symbologies</i>				99
Aztec Code	]zm	0-9, A-C	z	7A
Chinese Sensible Code (Han Xin Code)	]X0		H	48
Codablock A	]O6	0, 1, 4, 5, 6	V	56
Codablock F	]Om	0, 1, 4, 5, 6	q	71
Code 49	]Tm	0, 1, 2, 4	l	6C
Data Matrix	]dm	0-6	w	77
GS1	]em	0-3	y	79
GS1 Composite	]em	0-3	y	79
GS1 DataBar Omnidirectional	]em	0-3	y	79
MaxiCode	]Um	0-3	x	78
PDF417	]Lm	0-2	r	72
MicroPDF417	]Lm	0-5	R	52
QR Code	]Qm	0-6	s	73
Micro QR Code	]Qm		s	73

## Postal Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
<i>All Symbologies</i>				99
Australian Post	]X0		A	41

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

## ASCII Conversion Chart (Code Page 1252)

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

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

Non-printable characters			Keyboard Control + ASCII (CTRL+X) Mode		
				Windows Mode Control + X Mode On (KBDCAS2)	
DEC	HEX	Char	Control + X Mode Off (KBDCAS0)	CTRL + X	CTRL + X function
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

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

Note:

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	}



Printable Characters (Continued)								
DEC	HEX	Character	DEC	HEX	Character	DEC	HEX	Character
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	†	â	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
140	8C	Œ	î	Reserved	n/a
141	8D		ì	Reserved	n/a
142	8E	Ž	Ä	Numeric Keypad Enter	0x1C
143	8F		Å	Numeric Keypad /	0x35
144	90		É	F1	0x3B
145	91	‘	æ	F2	0x3C
146	92	’	Æ	F3	0x3D
147	93	“	ô	F4	0x3E
148	94	”	ö	F5	0x3F
149	95	•	ò	F6	0x40
150	96	—	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	›	ø	F12	0x58
156	9C	œ	£	Numeric Keypad +	0x4E
157	9D		¥	Numeric Keypad -	0x4A
158	9E	ž	Þ	Numeric Keypad *	0x37
159	9F	ÿ	f	Caps Lock	0x3A
160	A0		á	Num Lock	0x45
161	A1	ı	í	Left Alt	0x38
162	A2	ç	ó	Left Ctrl	0x1D
163	A3	£	ú	Left Shift	0x2A
164	A4	¤	ñ	Right Shift	0x36
165	A5	¥	Ñ	Print Screen	n/a
166	A6	ı	ª	Tab	0x0F
167	A7	§	º	Shift Tab	0x8F
168	A8	¨	¿	Enter	0x1C
169	A9	©	¬	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

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
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	┘		
194	C2	Â	┘		
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	┘		
214	D6	Ö	┘		
215	D7	×	┘		
216	D8	Ø	┘		
217	D9	Ù	┘		
218	DA	Ú	┘		
219	DB	Û	█		
220	DC	Ü	█		
221	DD	Ý	█		
222	DE	Þ	█		
223	DF	ß	█		
224	E0	à	α		
225	E1	á	β		

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

## ISO 2022/ISO 646 Character Replacements

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

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

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

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

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## Keyboard Key Maps

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

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# Sample Symbols

**UPC-A**



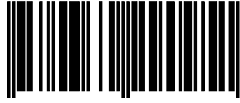
0 123456 7890

**Interleaved 2 of 5**



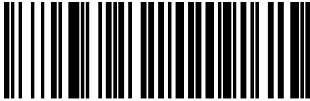
1234567890

**EAN-13**



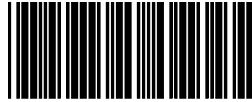
9 780330 290951

**Code 128**



Code 128

**Code 39**



BC321

**Codabar**



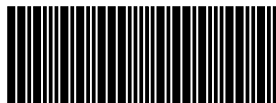
A13579B

**Code 93**



123456-9\$

**Straight 2 of 5 Industrial**



123456

---

---

**Matrix 2 of 5**



6543210

**GS1 DataBar**



(01)00123456789012

**PDF417**



Car Registration

**Data Matrix**



Test Symbol

**QR Code**



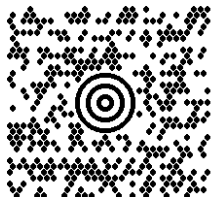
Numbers

**Aztec**



Package Label

**MaxiCode**



Test Message

**Micro PDF417**



Test Message

**Postnet**



Zip Code

---



---

**4-CB (4-State Customer Bar Code)**



01,234,567094,987654321,01234567891

**ID-tag (UPU 4-State)**



J18CUSA8E6N062315014880T

---

# ***Programming Chart***



K0K  
0



K2K  
2



K4K  
4



K6K  
6



K8K  
8



K1K  
1



K3K  
3



K5K  
5



K7K  
7



K9K  
9

---

---

# ***Programming Chart***



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**

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