Honeywell

THE POWER OF CONNECTED

HH1802

Wireless Area-Imaging Scanner

User Guide

Rev B

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Web Address: www.honeywellaidc.com

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

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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.

For our latest contact information, see www.honeywellaidc.com/locations.

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Limited Warranty

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

CHAPTER

1 GET STARTED

About This Manual

This User Guide provides installation and programming instructions for the HH1802 cordless area- imaging scanners. Product specifications, dimensions, warranty, and customer support information are also included.

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

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

Unpack Your Device

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

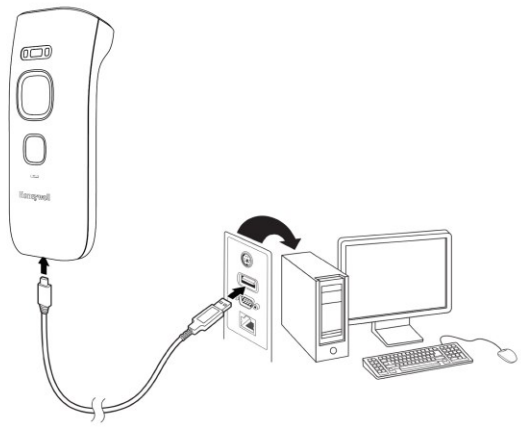
- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

Connect the Device

Connect with USB

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

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



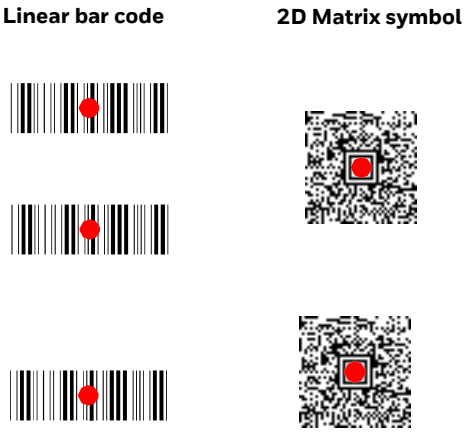
Note: *The power supply must be ordered separately, if needed.*

1. If you connect a HH1802 Base, make sure the cables are secured inthe wireways in the bottom of the cordless base and the base sits flat on a horizontal surface.
2. Verify the cordless base operation by scanning a bar code from the Sample Symbols in the back of this manual.
3. The unit defaults to a Bluetooth HID. Refer to page 14 for other USB terminal settings.

Reading Techniques

Mount a Charge Base

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



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

Menu Bar Code Security Settings

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

Set Custom Defaults

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

Set Custom Defaults

Save Custom Defaults

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

Reset the Custom Defaults

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

Activate Custom Defaults

CHAPTER

2 PROGRAM THE INTERFACE

Introduction

HH1802 only supports Bluetooth HID/Bluetooth SPP port. No other interface supported.

CHAPTER

3 WIRELESS SYSTEM OPERATION

The HH1802 scanner can be used with Bluetooth devices such as personal computers, laptops, PADs, and Honeywell mobility systems devices.

Bluetooth Settings

Refer to Pairing the canner with Bluetooth Devices, beginning on page3, to link your scanner to a host via Bluetooth. The following settings allow you to refine your Bluetooth connection.

Bluetooth Device Disconnect

If your scanner has been connected directly to an iPad, smart phone, or laptop you must disconnect it in order to once again communicate with the host. Scan the BT_DIS barcode to unlink the scanner from the currently linked host. If you want to reconnect it again, you need to scan the BT_ADV barcode. And there are two Bluetooth connect method ,HID and SPP.

Bluetooth Disconnect

Bluetooth connect

BT HID

BT SPP

Change the Scanner's Bluetooth PIN Code

Some devices required a PIN code as part of Bluetooth security features. Your scanner's default PIN is 123456, which you may need to enter the first time connect to your host. The PIN code must be 6 characters. To change the PIN, scan the barcode below and then scan the appropriate numeric barcodes from the Programming Chart. Scan to save your selection.

Bluetooth PIN

BASPIN123456.

Communication Between the scanner and the host

The scanner provides immediate feedback in the form of a "good read", indication with a green LED on the scanner and audible beep. This indicates that the barcode has been scanned correctly.

Reset the Scanner BT module

The scanner BT module can be reset, if there is some issue can not be fixed by configure, the command will make the BT module in to a factory mode, and the previous connection no longer works, you have to remove the connection on your host. And reconnect again.

BT RST

Pairing the Scanner with Bluetooth Devices

The scanner can be paired with Bluetooth devices such as personal computers, laptops, tablets, and Apple devices. When the scanner is turned on, the device in advertising state, the host device can search for the scanner's Bluetooth name and pair it. You need to enter a PIN code during the pairing process.

Note:

1. Set your personal computer, laptop, tablet, or Apple device so it searches for other Bluetooth devices. (Refer to your device's User Guide for pairing instructions.)
2. Once your personal computer, laptop, tablet, or Apple device has located the scanner, select the scanner name. Some personal computers, laptops, or tablets will automatically pair with the scanner. If your device automatically pair with the scanner, it displays a successful pairing message and you do not need to continue to the next step.

System Conditions

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

Link Process

Once the Blue led blinks, you can try to search the scanner with its ser num on your PC/Mobile.

Scanner Is Out of Range

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

Scanner Is Moved Back Into Range

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

Out of Range and Back into Range with Batch Mode On

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

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

About the Battery

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

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

directed by the governing agency for the country where the batteries are

Charge Information

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

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

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

Battery Recommendations

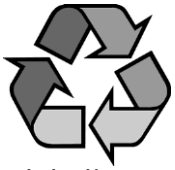
- The battery is a lithium ion cell and can be used without a full charge, and can also be charged without fully discharging, without impacting the battery life. There is no need to perform any charge/discharge conditioning on this type of battery.
- Keep the base connected to power when the host is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

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

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

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

Proper Disposal of the Battery



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

Beeper and LED Sequences and Meaning

The scanner contains 3 LEDs on the rear of the unit that indicate linking status, decoding state, battery condition and Bluetooth condition. Scanners have audible indicators as well: 1 razz or error tone = error; 2 beeps = menu change; 1 beep = all other successes.

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

Scanner LED Sequences and Meaning

Led Type	LED Indication	Beeper Indication	Cause
Normal Operation			
Battery LED	Red on	None	Battery low
	Orange Flash	None	Charging
	Green on	None	Battery is fully charged
	Red Blink	None	Charging error
Bluetooth LED	Blue on	1 beep	Successful Bluetooth pairing
	Blue Flash	None	Scanner is attempting to pair with Bluetooth device
	Blue off	1 beep	Bluetooth connection has not been established
Decode LED	Green on	1 beep	Successful scan
	Red on	Razz or error tone	Failed scan
Menu Operation			
Decode LED	Green Flash	2 beeps	Successful menu change
	Red Blinking	Razz or error tone	Unsuccessful menu change

Reset Scanner

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

Reset Scanner

Scanner Power Time-Out Timer

Note: 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).

If there are no trigger pulls during the timer interval, the scanner goes into power down mode. Whenever the trigger is enabled, the timer is reset. If the scanner is placed in the charge base cradle and the battery is in the process of being charged, the scanner will not go into power down mode. *Default = 1800 seconds.*

400 seconds

800 seconds

1800 seconds

3600 seconds

Note: *When the scanner is in power down mode, pull the trigger 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.*

Batch Mode

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

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

Default = Batch Mode Off.

*** Batch Mode Off**

Automatic Batch Mode

CHAPTER

4 INPUT/OUTPUT SETTINGS

Power Up Beeper

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

Power Up Beeper Off - Scanner

*** Power Up Beeper On - Scanner**

Beep on BEL Character

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

***Beep on BEL Off**

Beep on BEL On

Trigger Click

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

***Trigger Click Off**

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.*

Beeper - Good Read Off

*** 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)


BEPFQ12400.
*** Medium (2400 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. *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. *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 Programming Chart, then scanning **Save**.

User-Specified Good Read Delay

Manual Trigger Mode

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

*** Manual Trigger - Normal**

LED Illumination - Manual Trigger

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

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

Low

Medium

*** High**

Read Time-Out

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

Read Time-Out

Presentation Mode

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

Note: *If you are using a cordless charge base in Presentation Mode, the battery will notcharge unless the power supply is plugged into the base's auxiliary power port.*

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

Presentation Mode

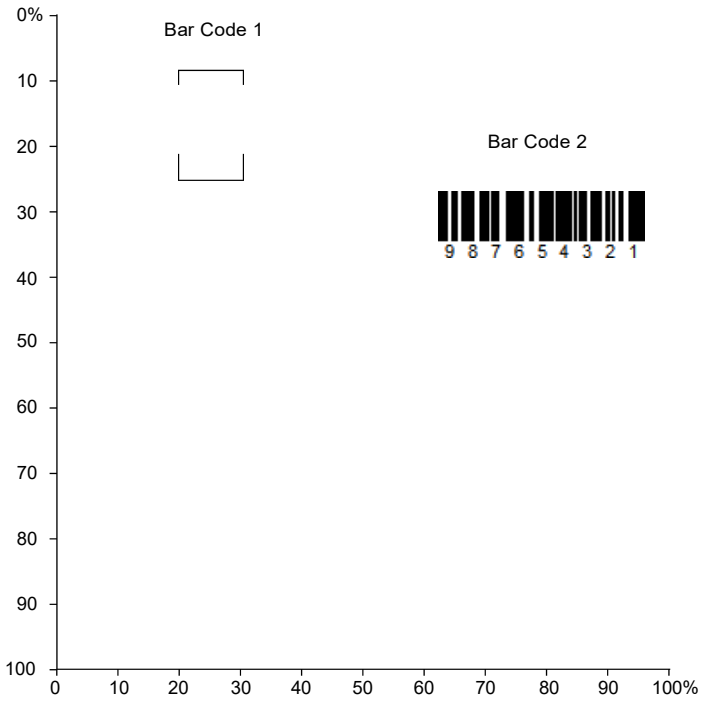
Presentation Centering

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

Note: *To adjust centering when the scanner is hand-held, see Centering.*

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

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



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

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

PDCWIN1.
Presentation Centering On

PDCWIN0.
*** Presentation Centering Off**

PDCTOP.
Top of Presentation Centering Window

PDCBOT.
Bottom of Presentation Centering Window

PDCLFT.
Left of Presentation Centering Window

PDCRGT.
Right of Presentation Centering Window

Scan mode switch button

There are two buttons on HH1802, big one is for manual trigger. You can press it to scan until a bar code is read, or until the trigger is released. The smaller one is for scan mode switch. You can press it to switch the scan mode between Manual Trigger mode and Presentation Mode.

You can scan below configuration codes to enable or disable the function.

Default =Scan mode switch enabled.

Scan mode switch disabled

RSVBUT0

*Scan mode switch enabled

RSVBUT4

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. It is useful when a complete bar code cannot be seen in one image. This setting does not affect 1D bar code reading. *Default = Poor Quality PDF Reading Off.*

Poor Quality PDF Reading On

*** Poor Quality PDF Reading**

Hands Free Time-Out

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

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

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

Hands Free Time-Out

Reread Delay

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


DLYRRD500.
Short (500 ms)


DLYRRD750.
*** Medium (750 ms)**


DLYRRD1000.
Long (1000 ms)


DLYRRD2000.
Extra Long (2000 ms)

User-Specified Reread Delay

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


DLYRRD.
User-Specified Reread Delay

2D Reread Delay

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


DLY2RR0.
*** 2D Reread Delay Off**

Short (1000ms)

Medium (2000ms)

Long (3000ms)

Extra Long (4000ms)

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*

*** Lights On**

Lights Off

Aimer Mode

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

Always Off

Always On

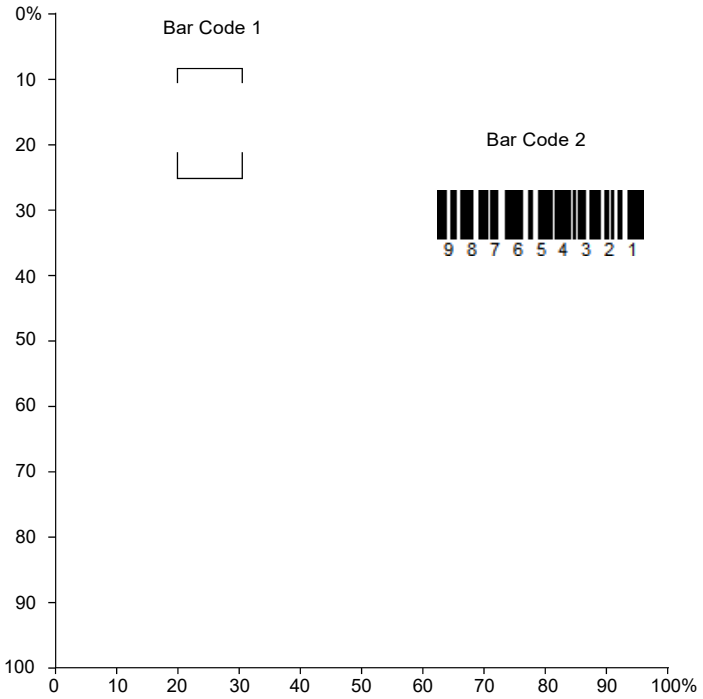
Centering

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

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

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

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



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

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

DECWIN1.
Centering On

DECWIN0.
*** Centering Off**


DECTOP.
Top of Centering Window


DECBOT.
Bottom of Centering Window


DECLFT.
Left of Centering Window


DECRGT.
Right of Centering Window

No Read

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


SHWNRD1.
On


SHWNRD0.
*** Off**

Video Reverse

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

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

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

Video Reverse Only

Video Reverse and Standard Bar Codes

*** Video Reverse Off**

Working Orientation

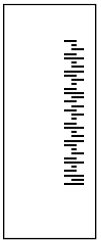
Some bar codes are direction-sensitive. For example, KIX codes can misread when scanned sideways or upside down. Use the working orientation settings if your direction-sensitive codes will not usually be presented upright to the scanner. *Default = Upright.*

Upright:

Upside Down:

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

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



*** Upright**

Vertical, Bottom to Top

Upside Down

Vertical, Top to Bottom

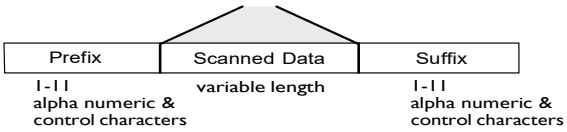
CHAPTER

5 DATA EDIT

Prefix/Suffix Overview

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

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



Points to Keep In Mind

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

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

To Add a Prefix or Suffix:

Step 1. Scan the **Add Prefix** or **Add Suffix** symbol (page 95).

Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in the Symbology Charts) for the symbology to which you want to apply the prefix or suffix. For example, for Code 128, Code ID is "j" and Hex ID is "6A".

Step 3. Scan the 2 hex digits from the Programming Chart or scan **9**, **9** for all symbologies.

To add the Code I.D., scan **5, C, 8, 0**.
To add the AIM I.D., scan **5, C, 8, 1**.
To add the serial number, scan **5, C, 8, 8**.
To add a backslash (\), scan **5, C, 5, C**.

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

Step 4. Repeat Steps 2 and 3 for every prefix or suffix character.

Step 5. Scan **Save** to exit and save, or scan **Discard** to exit without saving.

Repeat the steps above to add a prefix or suffix for another symbology.

Example: Add a Tab Suffix to All Symbologies

Step 1. Scan **Add Suffix**.

Step 2. Scan **9, 9** from the Programming Chart to apply this suffix to all symbologies.

Step 3. Scan **0, 9** from the Programming Chart. This corresponds with the hex value for a horizontal tab, shown in the ASCII Conversion Chart (Code Page 1252), beginning on page 216.

Step 4. Scan **Save**, or scan **Discard** to exit without saving.

Clear One or All Prefixes or Suffixes

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

Step 1. Scan the **Clear One Prefix** or **Clear One Suffix** symbol.

Step 2. Determine the 2 digit Hex value from the Symbology Charts for the symbology from which you want to clear the prefix or suffix.

Step 3. Scan the 2 digit hex value from the Programming Chart or scan **9, 9** for all symbologies.

Your change is automatically saved.

Add a Carriage Return Suffix to All Symbologies

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

Add CR Suffix All Symbologies

Prefix Selections

Add Prefix

Clear One Prefix

Clear All Prefixes

Suffix Selections

Add Suffix

Clear One Suffix

Clear All Suffixes

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 the ASCII Conversion Chart (Code Page 1252). *Default = Enable.*

*** Enable**

Disable

CHAPTER

6 DATA FORMAT

Data Format Editor Introduction

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

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

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

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

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

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

DFMDF3.

*** Default Data Format**

Show Data Format

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

DFMBK3?.

Data Format Settings

Add a Data Format

Step 1. Scan the Enter Data Formatsymbol.

Step 2. Select **Primary/Alternate** Format
Determine if this will be your primary data format, or one of 3 alternate formats. This allows you to save a total of 4 different data formats. To program your primary format, scan **0** using the Programming Chart. If you are programming an alternate format, scan **1, 2**, or **3**, depending on which alternate format you are programming. (See Primary/Alternate Data Formats for further information.)

Step 3. **Terminal Type**
Refer to Terminal ID Table and locate the Terminal ID number for your PC. Scan three numeric bar codes on the Programming Chart to program the scanner for your terminal ID (you must enter 3 digits). For example, scan **0 0 3** for an AT wedge.

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

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

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

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

Note: ***9999*** *indicates all lengths.*

Step 6. **Editor Commands**
Refer to Data Format Editor Commands. Scan the symbols that represent the command you want to enter.

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

DFMBK3.

Enter Data Format

Save

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. If you are clearing an alternate format, scan **1, 2**, or **3**, depending on the format you are clearing. Scan the Terminal Type and Code I.D. (see Symbology Charts), and the bar code data length for the specific data format that you want to delete. All other formats remain unaffected.
- **Clear all Data Formats**
  This clears all data formats.
- **Save** to exit and save your data format changes.
- **Discard** to exit without saving any data format changes.

Clear One Data Format

Clear All Data Formats

Save

Discard

Data Format Editor Commands

Send 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 all characters

F1 Include in the output message all of the characters from the input message, starting from current cursor position, followed by an insert character. *Syntax = F1xx* where xx stands for the insert character's hex value for its ASCII code.
Refer to the ASCII Conversion Chart (Code Page 1252) for decimal, hex and character codes.

Send a number of characters

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

F2 Example: Send a number of characters

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

F2 is the “Send a number of characters” command

10 is the number of characters to send

0D is the hex value for a CR

The data is output as: **1234567890**

F2 and F1 Example: Split characters into 2 lines

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

Command string: **F2100DF10D**

F2 is the “Send a number of characters” command

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

0D is the hex value for a CR

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:
1234567890
ABCDEFGHIJ
<CR>

Send all characters up to a particular character

F3 Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the search character “ss,” followed by an insert character. The cursor is moved forward to the “ss” character. *Syntax = F3ssxx* where ss stands for the search character’s hex value for its ASCII code, and xx stands for the insert character’s hex value for its ASCII code.
Refer to the ASCII Conversion Chart (Code Page 1252) for decimal, hex and character codes.

F3 Example: Send all characters up to a particular character

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

Command string: **F3440D**

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

44 is the hex value for a 'D”

0D is the hex value for a CR

The data is output as:
1234567890ABC
<CR>

Send all but the last characters

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

Insert a character multiple times

F4 Send “xx” character “nn” times in the output message, leaving the cursor in the current position. *Syntax = F4xxnn* where xx stands for the insert character’s hex value for its ASCII code, and nn is the numeric value (00-99) for the number of times it should be sent.
Refer to the ASCII Conversion Chart (Code Page 1252), beginning on page 216 for decimal, hex and character codes.

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

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

Command string: **E908F40902**

E9 is the “Send all but the last characters” command

08 is the number of characters at the end to ignore

F4 is the “Insert a character multiple times” command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

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

Move Commands

Move the cursor forward a number of characters

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

Move the cursor to the beginning

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

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

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

Command string: **FE31F7F2060D**

FE is the “Compare characters” command

31 is the hex value for 1

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

F2 is the “Send a number of characters” command

06 is the number of characters to send

0D is the hex value for a CR

The data is output as:
123456
<CR>

Move the cursor to the end

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

Search Commands

Search forward for a character

F8 Search the input message forward for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character. *Syntax = F8xx* where xx stands for the search character’s hex value for its ASCII code.
Refer to the ASCII Conversion Chart (Code Page 1252), beginning on page 216 for decimal, hex and character codes.

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

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

Command string: **F844F10D**

F8 is the “Search forward for a character” command

44 is the hex value for “D”

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:
DEFGHIJ
<CR>

Search backward for a character

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

Search forward for a non-matching character

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

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

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

Command string: **E630F10D**

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

30 is the hex value for 0

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:
37692
<CR>

Search backward for a non-matching character

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

Miscellaneous Commands

Suppress characters

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

FB Example: Remove spaces in bar code data

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

Command string: **FB0120F10D**

FB is the “Suppress characters” command

01 is the number of character types to be suppressed

20 is the hex value for a space

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:
34567890
<CR>

Stop suppressing characters

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

Replace characters

E4 Replaces up to 15 characters in the output message, without moving the cursor. Replacement continues until the E5 command is encountered. *Syntax = E4nnxx$_1$xx$_2$yy$_1$yy$_2$...zz$_1$zz$_2$* where nn is the total count of the number of characters in the list (characters to be replaced plus replacement characters); xx$_1$ defines characters to be replaced and xx$_2$ defines replacement characters, continuing through zz$_1$ and zz$_2$.

E4 Example: Replace zeros with CRs in bar code data

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

Command string: **E402300DF10D**

E4 is the “Replace characters” command

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

30 is the hex value for 0

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

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:
1234
5678
ABC
<CR>

Stop replacing characters

E5 Terminates character replacement. *Syntax = E5.*

Compare characters

FE Compare the character in the current cursor position to the character “xx.” If characters are equal, move the cursor forward one position. *Syntax = FExx* where xx stands for the comparison character’s hex value for its ASCII code.
Refer to the ASCII Conversion Chart (Code Page 1252), beginning on page 216 for decimal, hex and character codes.

Check for a number

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

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

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

Command string: **ECF10D**

EC is the “Check for a number” command

F1 is the “Send all characters” command

0D is the hex value for a CR

If this bar code is read, 

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_EN0.
Data Formatter Off

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

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

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


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


DFM_EN2.
Data Format Required, Keep Prefix/Suffix

Primary/Alternate Data Formats

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


ALTFNM0.
Primary Data Format

Data Format 1

Data Format 2

Data Format 3

CHAPTER

7 SYMBOLOGIES

This programming section contains the following menu selections.

- 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 On/Off
- Matrix 2 of 5
- MaxiCode
- MicroPDF417
- MSI
- NEC 2 of 5
- Postal Codes - 2D
- Postal Codes - Linear
- PDF417
- GS1 DataBar Omnidirectional
- QR Code
- Straight 2 of 5 IATA (two-bar start/stop)
- Straight 2 of 5 Industrial (three-bar start/stop)
- TCIF Linked Code 39 (TLC39)
- •UPC-A
- UPC-A
- UPC-A/EAN-13 with Extended Coupon Code
- UPC-E0
- UPC-E1

All Symbologies

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

All Symbologies Off

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

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

All Symbologies On

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 mis-read.

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

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

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

Codabar

<Default All Codabar Settings>


CBRDFT.

Codabar On/Off


CBRENA1.
*** On**


CBRENA0.
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*.


CBRSSX1.
Transmit


CBRSSX0.
*** Don't Transmit**

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 114) for additional information. Minimum and Maximum lengths = 2-60. Minimum Default = 4, Maximum Default = 60.


CBRMIN.
Minimum Message Length


CBRMAX.
Maximum Message Length

Code 39

< Default All Code 39 Settings >


C39DFT.

Code 39 On/Off


C39ENA1.
*** On**


C39ENA0.
Off

Code 39 Start/Stop Characters

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


C39SSX1.
Transmit


C39SSX0.
*** Don't Transmit**

Code 39 Check Character

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

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

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


C39CK20.
*** No Check Character**


C39CK21.
Validate, but Don't Transmit


C39CK22.
Validate and Transmit

Code 39 Message Length

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


C39MIN.
Minimum Message Length


C39MAX.
Maximum Message Length

Code 39 Append

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

On

*** 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.

On

*** 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.

Full ASCII On

*** Full ASCII Off**

Code 39 Code Page

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

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

C39DCP.
Code 39 Code Page

Interleaved 2 of 5

< Default All Interleaved 2 of 5 Settings >

I25DFT.

Interleaved 2 of 5 On/Off

I25ENA1.
*** On**

I25ENA0.
Off

Check Digit

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

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

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

I25CK20.
*** No Check Digit**

I25CK21.
Validate, but Don't Transmit

I25CK22.
Validate and Transmit

Interleaved 2 of 5 Message Length

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

I25MIN.
Minimum Message Length

I25MAX.
Maximum Message Length

NEC 2 of 5

< Default All NEC 2 of 5 Settings >

N25DFT.

NEC 2 of 5 On/Off

N25ENA1.
*** On**

N25ENA0.
Off

Check Digit

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

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

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


N25CK20.
*** No Check Digit**


N25CK21.
Validate, but Don't Transmit


N25CK22.
Validate and Transmit

NEC 2 of 5 Message Length

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


N25MIN.
Minimum Message Length


N25MAX.
Maximum Message Length

Code 93

< Default All Code 93 Settings >

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 114) 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.*

C93APP1.
On

C93APP0.
*** Off**

Code 93 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements on page 220), and scan the value and the **Save** bar code from the Programming Chart. The data characters should then appear properly.

C93DCP.
Code 93 Code Page

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

<Default All Straight 2 of 5 Industrial Settings>

R25DFT.

Straight 2 of 5 Industrial On/Off

R25ENA1.
On

R25ENA0.
*** Off**

Straight 2 of 5 Industrial Message Length

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

R25MIN.
Minimum Message Length

R25MAX.
Maximum Message Length

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

<Default All Straight 2 of 5 IATA Settings>

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 114) 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 114) 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>

C11DFT.

Code 11 On/Off

C11ENA1.
On

C11ENA0.
*** Off**

Check Digits Required

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

C11CK20.
One Check Digit

C11CK21.
*** Two Check Digits**

Code 11 Message Length

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

C11MIN.
Minimum Message Length

C11MAX.
Maximum Message Length

Code 128

<Default All Code 128 Settings>


128DFT.

Code 128 On/Off


128ENA1.
*** On**


128ENA0.
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.*


ISBENA1.
On


ISBENA0.
*** Off**

Code 128 Message Length

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

Minimum Message Length

Maximum Message Length

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.*

*** On**

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 220), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

Code 128 Code Page

GS1-128

<Default All GS1-128 Settings>

GS1DFT.

GS1-128 On/Off

GS1ENA1.
*** On**

GS1ENA0.
Off

GS1-128 Message Length

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

GS1MIN.
Minimum Message Length

GS1MAX.
Maximum Message Length

UPC-A

<Default All UPC-A Settings>


UPADFT.

UPC-A On/Off


UPAENA1.
*** On**


UPAENA0.
Off

Note: *To convert UPC-A bar codes to EAN-13, see Convert UPC-A to EAN-13 on page 138.*

UPC-A Check Digit

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


UPACKX1.
*** On**


UPACKX0.
Off

UPC-A Number System

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


UPANSX1.
*** On**


UPANSX0.
Off

UPC-A Addenda

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


UPAAD21.
2 Digit Addenda On


UPAAD20.
*** 2 Digit Addenda Off**


UPAAD51.
5 Digit Addenda On


UPAAD50.
*** 5 Digit Addenda Off**

UPC-A Addenda Required

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


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.*

*** On**

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.*

*** Off**

Allow Concatenation

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>

UPEDFT.

UPC-E0 On/Off

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

UPEEN01.
*** UPC-E0 On**

UPEEN00.
UPC-E0 Off

UPC-E0 Expand

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

UPEEXP1.
On

*** Off**

UPC-E0 Addenda Required

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

Required

*** 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.*

*** On**

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.*

*** On**

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

UPEEN11.
UPC-E1 On


UPEEN10.
*** UPC-E1 Off**

EAN/JAN-13

<Default All EAN/JAN Settings>


E13DFT.

EAN/JAN-13 On/Off


E13ENA1.
*** On**


E13ENA0.
Off

Convert UPC-A to EAN-13

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


UPAENA0.
UPC-A Converted to EAN-13


UPAENA1.
*** Do not Convert UPC-A**

EAN/JAN-13 Check Digit

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

E13CKX1.
*** On**

E13CKX0.
Off

EAN/JAN-13 Addenda

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

E13AD21.
2 Digit Addenda On

E13AD20.
*** 2 Digit Addenda Off**

E13AD51.
5 Digit Addenda On

E13AD50.
*** 5 Digit Addenda Off**

EAN/JAN-13 Addenda Required

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

E13ARQ1.
Required


E13ARQ0.
*** Not Required**

EAN/JAN-13 Addenda Separator

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


E13ADS1.
*** On**


E13ADS0.
Off

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

ISBN Translate

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


E13ISB1.
On


E13ISB0.
*** Off**

EAN/JAN-8

<Default All EAN/JAN-8 Settings>

EA8DFT.

EAN/JAN-8 On/Off

EA8ENA1.
*** On**

EA8ENA0.
Off

EAN/JAN-8 Check Digit

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

EA8CKX1.
*** On**

EA8CKX0.
Off

EAN/JAN-8 Addenda

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

EA8AD21.
2 Digit Addenda On

EA8AD20.
*** 2 Digit Addenda Off**

5 Digit Addenda On

*** 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.*

Required

*** 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.*

*** On**

Off

MSI

<Default All MSI Settings>

MSIDFT.

MSI On/Off

MSIENA1.
On

MSIENA0.
*** 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.

MSICHK0.
*** Validate Type 10, but Don't Transmit**

MSICHK1.
Validate Type 10 and Transmit

MSICHK2.
Validate 2 Type 10 Characters, but Don't Transmit

MSICHK3.
Validate 2 Type 10 Characters and Transmit

MSICHK4.
Validate Type 11 then Type 10 Character, but Don't Transmit

MSICHK5.
Validate Type 11 then Type 10 Character and Transmit

MSICHK6.
Disable MSI Check Characters

MSI Message Length

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

MSIMIN.
Minimum Message Length

MSIMAX.
Maximum Message Length

GS1 DataBar Omnidirectional

< Default All GS1 DataBar Omnidirectional Settings >

RSSDFT.

GS1 DataBar Omnidirectional On/Off

RSSENA1.
*** On**

RSSENA0.
Off

GS1 DataBar Limited

< Default All GS1 DataBar Limited Settings >

RSLDFT.

GS1 DataBar Limited On/Off

RSLENA1.
*** On**

RSLENA0.
Off

GS1 DataBar Expanded

< Default All GS1 DataBar Expanded Settings >

RSEDFT.

GS1 DataBar Expanded On/Off

RSEENA1.
*** On**

RSEENA0.
Off

GS1 DataBar Expanded Message Length

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

RSEMIN.
Minimum Message Length

RSEMAX.
Maximum Message Length

Codablock A

<Default All Codablock A Settings>

CBADFT.

Codablock A On/Off

CBAENA1.
On

CBAENA0.
*** Off**

Codablock A Message Length

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

CBAMIN.
Minimum Message Length

CBAMAX.
Maximum Message Length

Codablock F

<Default All Codablock F Settings>

CBFDFT.

Codablock F On/Off

CBFENA1.
On

CBFENA0.
*** Off**

Codablock F Message Length

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

CBFMIN.
Minimum Message Length

CBFMAX.
Maximum Message Length

PDF417

< Default All PDF417 Settings >

PDFDFT.

PDF417 On/Off

PDFENA1.
*** On**

PDFENA0.
Off

PDF417 Message Length

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

PDFMIN.
Minimum Message Length

PDFMAX.
Maximum Message Length

MacroPDF417

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

PDFMAC1.
*** On**

PDFMAC0.
Off

MicroPDF417

< Default All MicroPDF417 Settings >

MPDDFT.

MicroPDF417 On/Off

MPDENA1.
On

MPDENA0.
*** Off**

MicroPDF417 Message Length

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

MPDMIN.
Minimum Message Length

MPDMAX.
Maximum Message Length

GS1 Composite Codes

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

On

*** 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.*

UPC/EAN Version On

*** UPC/EAN Version Off**

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

GS1 Composite Code Message Length

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

Minimum Message Length

Maximum Message Length

GS1 Emulation

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

If **GS1-128 Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-128 AIM ID,]C1 (see Symbology Charts on page 213).

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

If **GS1 Code Expansion Off** is scanned, retail code expansion is disabled, and UPC-E expansion is controlled by the UPC-E0 Expand (page 135) setting. If the AIM ID is enabled, the value will be the GS1-128 AIM ID,]C1 (see Symbology Charts on page 213).

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

Default = GS1 Emulation Off.

GS1-128 Emulation

GS1 DataBar Emulation

GS1 Code Expansion Off

EAN8 to EAN13 Conversion

*** GS1 Emulation Off**

TCIF Linked Code 39 (TLC39)

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


T39ENA1.
On


T39ENA0.
*** Off**

QR Code

< Default All QR Code Settings >


QRCDFT.

QR Code On/Off

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


QRCENA1.
*** On**


QRCENA0.
Off

QR Code Message Length

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

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. There are 3 ways to scan appended QR Code:

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

Default = One Scan.

QRCAPP1.
*** One Scan**

QRCAPP2.
Swipe

QRCAPP3.
Point and Shoot

QRCAPP0.
Off

QR Code Page

QR Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements on page 220), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

QRCDCP.
QR Code Page

Data Matrix

< Default All Data Matrix Settings >

IDMDFT.

Data Matrix On/Off

IDMENA1.
*** On**

IDMENA0.
Off

Data Matrix Message Length

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

IDMMIN.
Minimum Message Length

IDMMAX.
Maximum Message Length

Data Matrix Code Page

Data Matrix Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements on page 220), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

IDMDCP.
Data Matrix Code Page

MaxiCode

< Default All MaxiCode Settings >

MAXDFT.

MaxiCode On/Off

MAXENA1.
On

MAXENA0.
*** Off**

MaxiCode Message Length

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


MAXMIN.
Minimum Message Length


MAXMAX.
Maximum Message Length

Aztec Code

< Default All Aztec Code Settings >


AZTDFT.

Aztec Code On/Off


AZTENA1.
*** On**


AZTENA0.
Off

Aztec Code Message Length

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


AZTMIN.
Minimum Message Length

Maximum Message Length

Aztec Append

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

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

Default = One Scan.

*** One Scan**

Swipe

Point and Shoot

Off

Aztec Code Page

Aztec Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements on page 220), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.


AZTDCP.
Aztec Code Page

Chinese Sensible (Han Xin) Code

< Default All Han Xin Settings >


HX_DFT.

Han Xin Code On/Off


HX_ENA1.
On


HX_ENA0.
*** Off**

Han Xin Code Message Length

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


HX_MIN.
Minimum Message Length


HX_MAX.
Maximum Message Length

Postal Codes – 2D

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


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


POSTAL9.
Postal-4i On

Postnet On

Also see Postnet

Postnet with B and B' Fields On

InfoMail On

Combination 2D Postal Codes:

InfoMail and British Post On

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

Postnet and Postal-4i On

Postnet and Intelligent Mail Bar Code On

Postal-4i and Intelligent Mail Bar Code On

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


POSTAL12.
Planet Code and Postnet On


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


POSTAL13.
Planet Code and Postal-4i On


POSTAL15.
Planet Code and Intelligent Mail Bar Code


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


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


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


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


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


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

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

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

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

Transmit Check Digit

*** 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.*

Transmit Check Digit

*** 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.

*** Bar Output**

Numeric N Table

Alphanumeric C Table

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>

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

CPCENA1.
On

CPCENA0.
*** Off**

China Post (Hong Kong 2 of 5) Message Length

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

CPCMIN.
Minimum Message Length

CPCMAX.
Maximum Message Length

Korea Post

<Default All Korea Post Settings>

KPCDFT.

Korea Post On/Off

KPCENA1.
On

KPCENA0.
*** Off**

Korea Post Message Length

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


KPCMIN.

Minimum Message Length


KPCMAX.

Maximum Message Length

Korea Post Check Digit

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


KPCCHK1.

Transmit Check Digit


KPCCHK0.

*** Don't Transmit Check Digit**

CHAPTER 8

UTILITIES

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

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

Add Code I.D. Prefix to All Symbologies (Temporary)

Show Software Revision

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

REVINF.
Show Revision

Show Data Format

See "Show Data Format" on page 100.

Test Menu

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

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

TSTMNU1.
On

TSTMNU0.
*** Off**

Reset the Factory Defaults

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

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

Remove Custom Defaults

Activate Defaults

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

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

CHAPTER

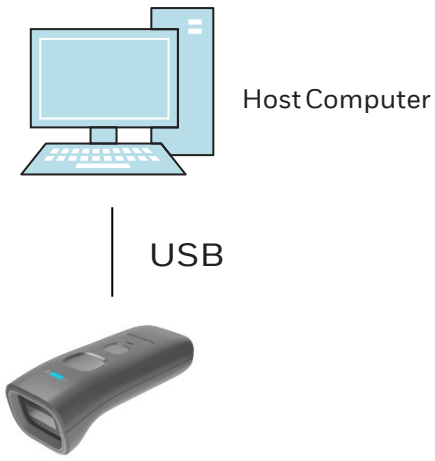
9 SECURITY

This section defines the security processes, both implemented and recommended by Honeywell, for using HH1802 cordless area-imaging scanner.

System Architecture

Connect with USB

HH1802 cordless scanner can be connected to the USB port of a computer.



Security Checklist

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

Bluetooth Security

Follow these security recommendations and precautions for Bluetooth security:

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

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

Infection by Malicious Software Agents

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

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

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

Unauthorized External Access

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

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

Mitigation Steps	
Implement file system encryption.	
Use a two-factor authentication method such as Google Authenticator when the Honeywell device is connecting to Web applications.	
Secure Bluetooth devices.	For information, see Bluetooth Security
Set the minimum level of privilege for all external accounts and enforce a strong password policy.	

Use the most recent version of the SDK that supports your application.	
Disable all unnecessary access ports, such as FTP.	
Use a VPN when the Linux system requires data to traverse an untrusted network.	
Use SSL for communication between native applications and specialty servers.	
Use intrusion detection on WLAN networks.	

Unauthorized Internal Access

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

Unauthorized internal access can result in:

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

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

Securing barcode scanner series

Honeywell recommendations for securing barcode scanner series:

- Enforce the most restrictive set of rights/privilege to access barcode scanner series and its assets needed by users or processes for the performance or specific tasks. Specifically prohibit, remove, and/or restrict the use of unnecessary functions, ports, protocols, and/ or services. This would include access to scripts debuggers, etc. Log requests for access to assets.
- Use the proper setting of privilege.
- Ensure access is restricted to administrators for secure process channels, devices, and components related to barcode scanner series.
- Enforce proper configuration at installation of barcode scanner series and its components, including secure by default, baseline configurations for detection of unauthorized changes, and configuration of least functionality required and management of configuration changes. When possible, the configuration should be automatically traced and reported.

Security Updates and Service Packs

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

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

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

Additional Resources

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

CHAPTER

10 PRODUCT SPECIFICATIONS

Parameter	Specification
Vibration	Withstands 10G peak from 10 to 500 Hz
ESD	12kV Air, 8kV contact
Image	
Image Size	1280 x 800 pixels
Scan Performance	
Pitch, Skew	± 60°, ± 45°
Motion Tolerance: Presentation Mode	Up to 75 cm/s (134 in/s) for 13 mil UPC at optimal focus Scan Angle
Symbol Contrast	20%

HH1802 Cordless Scanner Product Specifications

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

Charge Only Base Product Specifications

Parameter	Specification
Dimensions (Typical):	
Height	9.65 in. (24.5mm)
Length	4.33 in. (110.0mm)
Width	18.31 in. (46.5mm)
Weight	3.7 oz. (105g)
Electrical	
Battery: Lithium Ion	900 mAH Lithium-ion Up to 9,000 per charge 4s/Scan
Voltage:	4.5 to 5.5 volts
Current Draw:	
Host Terminal Port	500mA
Aux Power Port	1A
Charge Time	
Expected Charge Time	3-4 hours
Radio	
Frequency	Bluetoothv5.0
Range	164 ft. (50 m) typical
Environmental	
Temperature Ranges:	
Storage Temperature	-13° F to 158° F (-25° C to 70° C)
Operate Temperature (Charing)	41° F to 104° F (5° C to 40° C)
Storage	-13° F to +158° F (-25° C to +70° C)
Operate Temperature (Non-Charging)	32° F to 122° F (0° C to 50° C)
Humidity	Up to 95% non-condensing
Drop	Operational after 12 drops to concrete from 4.9ft (1.5 m)
Environmental Sealing	IP42

Parameter	Specification
Dimensions (Typical):	
Height	1.38 inches (35mm)
Length	3.15 inches (80mm)
Width	3.15 inches (80mm)
Weight	3.0 oz (85g)
Voltage:	4.5 to 5.5 volts
Current Draw:	
Host Terminal Port	500mA
Aux Power Port	1A
Charge Time	
Expected Charge Time	3-4 hours
Illumination	White color
Aiming	Red color, 624nm peak wavelength
Radio	
Frequency	Bluetoothv5.0
Range	164 ft. (50 m) typical
Environmental	
Temperature Ranges:	
Storage Temperature	-13° F to 158° F (-25° C to 70° C)
Operate Temperature (Charing)	41° F to 104° F (5° C to 40° C)
Storage	-13° F to +158° F (-25° C to +70° C)
Operate Temperature (Non-Charging)	32° F to 122° F (0° C to 50° C)
Humidity	Up to 95% non-condensing

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

Depth of Field Charts

Typical Performance

Symbology		Near Distance	Far Distance
5mil Code 39	mm	50	230
	in.	2.0	9.1
6.7mil PDF417	mm	40	210
	in.	1.6	8.3
10mil DM	mm	50	190
	in.	2.0	7.5
13mil UPC	mm	40	430
	in.	1.6	16.9
20mil QR	mm	25	385
	in.	1.0	15.2

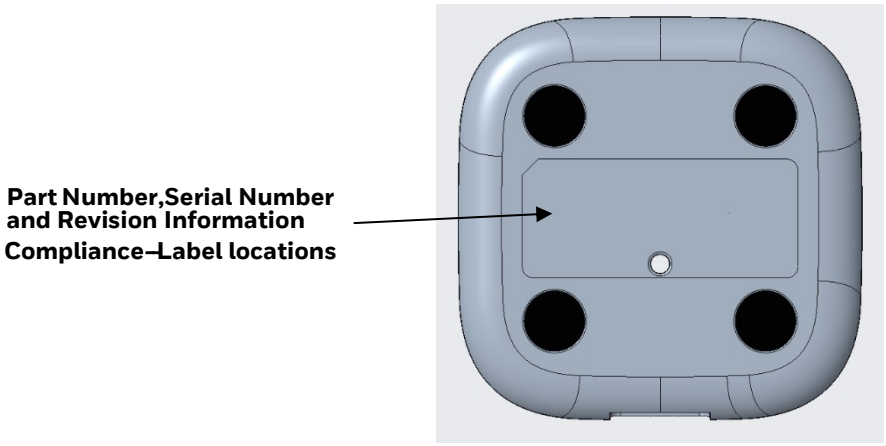
Guaranteed Performance

Symbology		Near Distance	Far Distance
5mil Code 39	mm	60	180
	in.	2.4	7.1
6.7mil PDF417	mm	65	190
	in.	2.6	7.5
10mil DM	mm	60	170
	in.	2.4	6.7
13mil UPC	mm	45	340
	in.	1.8	13.6
20mil QR	mm	35	360
	in.	1.4	14.2

Required Safety Labels

HH1802 Scanner

HH1802 Base


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

CHAPTER 11

MAINTENANCE AND TROUBLESHOOTING

Repairs

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

Maintenance

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

Clean the Scanner

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

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

or window.Solvents may damage the finish or the window.

Replace Cables in Cordless Systems

Replace a Charge Cable in a Base

1. Turn the power to the host system OFF.
2. Disconnect the base's cable from the terminal or computer.
3. Turn the base upside down.
4. Pull the connector out.
5. Replace with the new cable.

Troubleshoot a Cordless System

Troubleshoot a Base

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

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

Is the green LED on?

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

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

Troubleshoot a Cordless Scanner

Note: *Make sure that your scanner's battery is charged.*
Visit the Services and Support section of our website (www.honeywellaidc.com) to check for the latest software for both the scanner and the base or Access Point.

Is the scanner having trouble reading your symbols?

If the scanner isn't reading symbols well, check that the symbols:

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

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

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

- You need to program a suffix. Programming a suffix enables the scanner to output the bar code data plus the key you need (such as "CR") to enter the data into your application. Refer to Prefix/Suffix Overview on page 93 for further information.

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

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

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

APPENDIX

A 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 Edit beginning on page 93 and Data Format beginning on page 99 for information about using Code ID and AIM ID.

Linear Symbologies

	AIM		Honeywell	
Symbology	**ID**	**Possible modifiers (m)**	**ID**	**Hex**
All Symbologies				99
Codabar	]F*m*	0-1	a	61
Code 11	]H3		h	68
Code 128	]C*m*	0, 1, 2, 4	j	6A
Code 32 Pharmaceutical (PARAF)	]X0		<	3C
Code 39 (supports Full ASCII mode)	]A*m*	0, 1, 3, 4, 5, 7	b	62
TCIF Linked Code 39 (TLC39)	]L2		T	54
Code 93 and 93i	]G*m*	0-9, A-Z, a-m	i	69
EAN	]E*m*	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

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

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

2D Symbologies

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

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

Postal Symbologies

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

ASCII Conversion Chart (Code Page 1252)

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

Non-printable ASCII control characters			**Keyboard Control + ASCII (CTRL+X) Mode**		
			Control + X Mode Off (KBDCAS0)	**Windows Mode Control + X Mode On (KBDCAS2)**	
DEC	**HEX**	**Char**		**CTRL + X**	**CTRL + X function**
0	00	NUL	Reserved	CTRL+ @	
1	01	SOH	NP Enter	CTRL+ A	Select all
2	02	STX	Caps Lock	CTRL+ B	Bold
3	03	ETX	ALT Make	CTRL+ C	Copy
4	04	EOT	ALT Break	CTRL+ D	Bookmark
5	05	ENQ	CTRL Make	CTRL+ E	Center
6	06	ACK	CTRL Break	CTRL+ F	Find
7	07	BEL	Enter / Ret	CTRL+ G	
8	08	BS	*(Apple Make)*	CTRL+ H	History
9	09	HT	Tab	CTRL+ I	Italic
10	0A	LF	*(Apple Break)*	CTRL+ J	Justify
11	0B	VT	Tab	CTRL+ K	hyperlink
12	0C	FF	Delete	CTRL+ L	list, left align
13	0D	CR	Enter / Ret	CTRL+ M	
14	0E	SO	Insert	CTRL+ N	New
15	0F	SI	ESC	CTRL+ O	Open
16	10	DLE	F11	CTRL+ P	Print
17	11	DC1	Home	CTRL+ Q	Quit
18	12	DC2	PrtScn	CTRL+ R	
19	13	DC3	Backspace	CTRL+ S	Save
20	14	DC4	Back Tab	CTRL+ T	
21	15	NAK	F12	CTRL+ U	
22	16	SYN	F1	CTRL+ V	Paste
23	17	ETB	F2	CTRL+ W	
24	18	CAN	F3	CTRL+ X	
25	19	EM	F4	CTRL+ Y	?
26	1A	SUB	F5	CTRL+ Z	?
27	1B	ESC	F6	CTRL+ [	?
28	1C	FS	F7	CTRL+ \	?
29	1D	GS	F8	CTRL+]	?
30	1E	RS	F9	CTRL+ ^	?
31	1F	US	F10	CTRL+ -	?
127	7F	⌂	NP Enter		?

Lower ASCII Reference Table

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

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

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

Extended ASCII Characters (Continued)					
DEC	**HEX**	**CP 1252**	**ASCII**	**Alternate Extended**	**PS2 Scan Code**
140	8C	Œ	î	Reserved	n/a
141	8D		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	›	¢	F12	0x58
156	9C	œ	£	Numeric Keypad +	0x4E
157	9D		¥	Numeric Keypad -	0x4A
158	9E	ž	Pts	Numeric Keypad *	0x37
159	9F	Ÿ	ƒ	Caps Lock	0x3A
160	A0		á	Num Lock	0x45
161	A1	¡	í	Left Alt	0x38
162	A2	¢	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	¦	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		¡	Control Break	0x9D
174	AE	®	«	Alt Sequence with 1 Character	0x36
175	AF	¯	»	Ctrl Sequence with 1 Character	0x1D
176	B0	°	░		
177	B1	±	▒		
178	B2	²	▓		
179	B3	³	│		
180	B4	´	┤		
181	B5	µ	╡		
182	B6	¶	╢		
183	B7	·	╖		
184	B8	¸	╕		
185	B9	¹	╣		
186	BA	º	║		
187	BB	»	╗		
188	BC	¼	╝		
189	BD	½	╜		
190	BE	¾	╛		
191	BF	¿	┐		
192	C0	À	└		
193	C1	Á	┴		

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

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

ISO 2022/ISO 646 Character Replacements

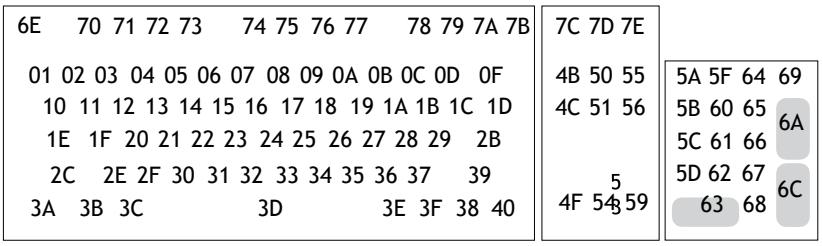
Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code 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
Default "Automatic National Character replacement" will select the below Honeywell Code Page options for Code128, Code 39 and Code 93.			
United States	ISO/IEC 646-06	0	1
Canada	ISO /IEC 646-121	54	95
Canada	ISO /IEC 646-122	18	96
Japan	ISO/IEC 646-14	28	98
China	ISO/IEC 646-57	92	99
Great Britain (UK)	ISO /IEC 646-04	7	87
France	ISO /IEC 646-69	3	83
Germany	ISO/IEC646-21	4	84
Switzerland	ISO /IEC 646-CH	6	86
Sweden / Finland (extended Annex C)	ISO/IEC 646-11	2	82
Ireland	ISO /IEC 646-207	73	97
Denmark	ISO/IEC 646-08	8	88
Norway	ISO/IEC 646-60	9	94
Italy	ISO/IEC 646-15	5	85
Portugal	ISO/IEC 646-16	13	92

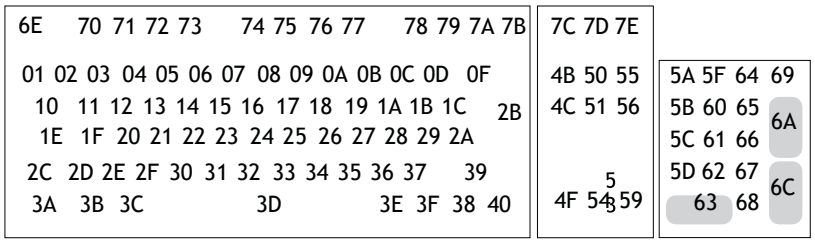
Code Page Selection Method/ Country	Standard	Keyboard Country	Honeywell Code Page Option
Spain	ISO/IEC 646-17	10	90
Spain	ISO/IEC 646-85	51	91

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

Keyboard Key References

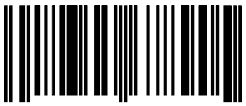


104 Key U.S. Style Keyboard



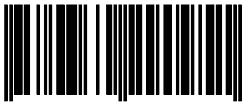
105 Key European Style Keyboard

SAMPLE SYMBOLS



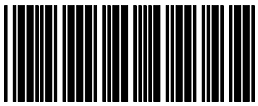
Interleaved 2 of 5

EAN-13



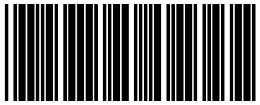
Code 128

Code 39

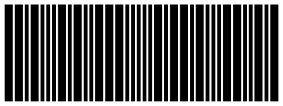


Codabar

Code 93



Straight 2 of 5 Industrial



Matrix 2 of 5

RSS-14

PDF417

Code 49

SAMPLE SYMBOLS(CONTINUED)

Zip Code

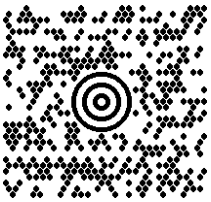
Data Matrix

Test Symbol

QR Code

Numbers

MaxiCode



Test Message

Micro PDF417

Test Message

4-CB (4-State Customer Bar Code)

01,234,567094,987654321,01234567891

ID-tag (UPU 4-State)

J18CUSA8E6N062315014880T

PROGRAMMING CHART

0

1

2

3

4

5

6

7

8

9

PROGRAMMING CHART (CONTINUED)

A

B

C

D

E

F

Save

Discard

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.*

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