HP Wireless Barcode Scanner

Programming Reference Guide

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Chapter 1
Introduction

About this Manual

This Programming Reference Guide (PRG) is provided for users seeking advanced technical information, including connection, programming, maintenance and specifications. The HP Wireless Barcode Scanner User Guide and other publications associated with this product are available for free download from the HP website.

This manual covers the HP Wireless Barcode Scanner.

Overview

Chapter 1, (this chapter) presents information about manual conventions, and an overview of the scanner, its features and operation.

Chapter 2, Setup presents information about unpacking and setting up the scanner.

Chapter 3, Configuration Using Barcodes provides instructions and barcode labels for customizing your scanner. There are different sections for interface types, general features, data formatting, symbology-specific and model-specific features.

Chapter 4, References provides background information and detailed instructions for more complex programming items.

Chapter 5, Message Formatting gives details for programming options.

Appendix A, Technical Specifications lists physical and performance characteristics, as well as environmental and regulatory specifications. It also provides standard cable pinouts and LED/Beeper functions.

Appendix B, Standard Defaults references common factory default settings for scanner features and options.

Appendix C, Sample Barcodes offers sample barcodes for several common symbologies.

Appendix D, Keypad includes numeric barcodes to be scanned for certain parameter settings.

Appendix E, Scancode Tables lists control character emulation information for Wedge and USB Keyboard interfaces.

Manual Conventions

The following conventions are used in this document:

The symbols listed below are used in this manual to notify the user of key issues or procedures that must be observed when using the scanner:

Notes contain information necessary for properly diagnosing, repairing and operating the scanner.

The CAUTION symbol advises you of actions that could damage equipment or property.

CAUTION

References

Current versions of this Programming Reference Guide (PRG), User Guide, the HP Wireless Barcode Scanner Configuration application, and any other manuals, instruction sheets and utilities for this product can be downloaded from the website listed below. Alternatively, printed copies or product support CDs for most products can be purchased through your authorized HP reseller or service provider.

Technical Support

HP Website Support

The HP website (www.hp.com/support) is the complete source for technical support and information for HP products. The site offers product support, product registration, warranty information, product manuals, product tech notes, software updates, demos, and instructions for returning products for repair.

Reseller Technical Support

An excellent source for technical assistance and information is an authorized HP reseller. A reseller is acquainted with specific types of businesses, application software, and computer systems and can provide individualized assistance.

Telephone Technical Support

If you do not have Internet or email access, you may contact HP technical support in your region using the telephone numbers document provided with your HP retail point of sale computer.

About the Scanner

Typically, units are factory-programmed for the appropriate terminal and communications settings. If modification is needed for any programmable settings, custom configuration can be accomplished by scanning the programming barcodes within this guide.

Programming can alternatively be performed using the HP Configuration application that can be installed from the CD included with the scanner. This multi-platform utility program allows device configuration using a PC. It communicates to the device using the host interface cable and can also create configuration barcodes to print.

Advancements in the LED technology used in the imager-based scanners significantly improve the illumination of the target field of view, resulting in higher scan efficiency. Whether used in Single Trigger or Continuous Mode, the ergonomic design of the scanner will help to promote efficient retail performance during extended periods of use.

Programming the Scanner

Configuration Methods

Programming Barcodes

The scanner is factory-configured with a standard set of default features. After scanning the interface barcode (optional - only if you wish to change the host interface type), you can select other options and customize your scanner through use of the instructions and programming barcode labels available in the corresponding features section for your interface. Customizable settings for many features are found in "Configuration Parameters" starting on page 11.

Some programming labels, like "Restore Custom Defaults" on page 10, require only the scan of the single label to enact the change. Most, however, require the scanner to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT barcode once to enter Programming Mode. Once the scanner is in Programming Mode, scan a number of parameter settings before scanning the ENTER/EXIT barcode a second time, which will then accept your changes, exit Programming Mode and return the scanner to normal operation.

> **NOTE** There are some exceptions to the typical programming sequence described above. Please read the description and setting instructions carefully when configuring each programmable feature.

HP Configuration Software

HP Configurator is a multi-platform utility program providing a quick and user-friendly configuration method via the USB-COM interface. The application is available on the CD-ROM provided with your product, and also from the HP website. It allows you to program the scanner by selecting configuration commands through a user-friendly graphical interface running on a PC. These commands are sent to the scanner over the USB host interface, or they can be printed as barcodes to be scanned.

The utility also provides the ability to perform a software upgrade for the connected device.

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Chapter 2
Setup

Unpacking

Check carefully to ensure the scanner and any accessories ordered are present and undamaged. If any damage occurred during shipment, contact HP Technical Support. Information is shown on page 2.

KEEP THE PACKAGING. Should the unit ever require service, it should be returned in its original shipping container.

Setting Up the Scanner

Follow the steps provided in this section to connect and get your scanner up and communicating with its host.

1. Refer to the *HP Wireless Barcode Scanner User Guide* for instructions on connecting the base station.

2. Go to Interface Selection and set the desired interface.

3. Configure Interface Settings (only if not using factory settings for that interface).

4. Go to Configuring Other Features (if modifications are needed from factory settings).

Connecting the Base when Security Pin is Enabled

When connecting the Base to a system that has a custom Security Pin enabled, follow the steps below in the order shown:

1. Power down the host system.

2. Connect the appropriate interface cable into the Base.

3. Place the scanner in the Base.

4. Power up the host. The scanner will link to the Base

5. When the host completely powers up, a new custom Security Pin Code may be sent to the scanner and Base, depending on host configuration. Contact HP Technical Support for more information.

> **If you want to change security settings or set up a PIN, see** "BT Security Mode" starting on page 203.

Linking the Scanner to a Base Station

For the HP Wireless Barcode Scanner, before configuring the interface it is necessary to link the handheld scanner with the base. To link the handheld and the base, press the trigger to wake it and place it on the base. If the scanner was previously linked to another base, you must first scan the Unlink action command before re-linking to the new base.

Unlnk

Important: The mandatory condition for establishing a new linking between a BT handheld and a BT base is that the handheld is unlinked and they share the same security configuration. A successful link is indicated by three ascending tones from the scanner. A high-low-high-low tone indicates the link attempt was unsuccessful. A single green LED flash after this tone indicates no Base Station was discovered. Two green LED flashes after this tone indicates that more than one Base Station was discovered and the scanner did not link. Three LED flashes after this tone indicate a security error.

Linking the BT Scanner to a PC

The scanner can optionally be linked to a Bluetooth-enabled PC with the serial port profile, in either server mode or client mode.

Linking to a PC in Server Mode (BT Slave Mode)

To link a BT scanner in server mode to a Bluetooth-enabled PC, follow these steps:

1. Install any drivers provided with the Bluetooth adapter.

2. Scan the barcode below to make the scanner visible to the host computer.

³ L n k S v
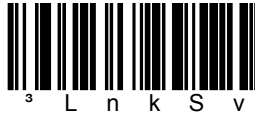
3. Use the host computer's Bluetooth manager to "Discover new devices" and select "HP Wireless Barcode Scanner." If you receive an error message, it may be necessary to disable security on the device.

4. Select "connect" on the PC to link the scanner to the PC. Use a host terminal program to see incoming data on the port designated by the computer's Bluetooth manager.

Linking to a PC in Client Mode (BT Master Mode)

The scanner can optionally be linked in client mode to a Bluetooth-enabled PC with the serial port profile. To do this, follow these steps:

1. Ensure the PC or terminal can network with Bluetooth devices and that it is powered on.

2. Ensure that a COM port is assigned under Services within the Bluetooth setup menu.

3. Create a Link label that contains the address of the PC Bluetooth adapter.

The Bluetooth address can be found under "Properties" in the Bluetooth setup menu.

NOTE

The link label is a Code 128 function 3 label with the following format:

`<FN3 char>LnkB<12 character Bluetooth address>`

4. Scan the link label you created in step 3.

Power Off

Shuts off power to the BT handheld until next trigger pull.

PowerOff

Interface Selection

Upon completing the physical connection between the scanner and its host, proceed to Table 1 below o select the interface type (if needed to change for specific application). Scan the appropriate barcode in that section to configure your system's correct interface type.

The scanner supports USB interface with types HID Keyboard and COM.

Setting the Interface

Scan the programming barcode from this section which selects the appropriate interface type matching the system the scanner will be connected to. Next, proceed to the corresponding section in this manual (also listed in Table 1 below) to configure any desired settings and features associated with that interface.

> **Unlike some programming features and options, interface selections require that you scan only one programming barcode label. DO NOT scan an ENTER/EXIT barcode prior to scanning an interface selection barcode.**
>
> **Some interfaces require the scanner to start in the disabled state when powered up. If additional scanner configuration is desired while in this state, pull the trigger and hold it for five seconds. The scanner will change to a state that allows programming with barcodes.**

Table 1. USB Interfaces

USB	FEATURES
Select USB Keyboard — USB Keyboard with standard key encoding	Set USB Interface Features
USB Keyboard with alternate key encoding — **Select USB Alternate Keyboard**	
Select USB-COM-STD[a] — USB Com to simulate RS-232 standard interface	

a. Download the correct USB Com driver from the HP website.

Customizing Configuration Settings

Configure Interface Settings

If after scanning the interface barcode from the previous table, your installation requires you to select options to further customize your scanner, turn to "Configuration Parameters" starting on page 11.

Global Interface Features

See "Global Interface Features" on page 13 for settings configurable by all interface types.

Configuring Other Features

If your installation requires different programming than the default settings, the following sections of this manual allow configuration of non-interface-specific settings you might require:

Reading Parameters**:** Reading Parameters include programming for scanning, beeper and LED indicators and other universal settings.

1D Symbologies**:** Includes options concerning the barcode label types (symbologies). These settings allow you to enable/disable symbologies, set label lengths, require check digit, etc.

WIRELESS-SPECIFIC FEATURES**:** Contains programming options pertaining specifically to wireless operation.

Software Version Transmission

The software version of the device can be transmitted through the host interface by scanning the following label.

Transmit Software Version

Resetting the Product Configuration to Defaults

Restore Custom Defaults

If you aren't sure what programming options are in your imager, or you've changed some options and want to restore the Custom Default Configuration that may have been saved in the scanner, scan the Restore Custom Default Configuration barcode below. This will restore the custom configuration for the currently active interface.

Custom defaults are based on the interface type. Configure the imager for the correct interface before scanning this label.
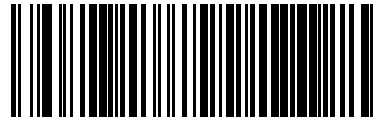
Restore Custom Default Configuration

Chapter 3
Configuration Using Barcodes

This and following sections provide programming barcodes to configure your scanner by changing the default settings. For details about additional methods of programming, see "Configuration Methods" on page 3.

 You must first enable your scanner to read barcodes in order to use this section. If you have not done this, go to Setup, starting on page 5 **and complete the appropriate procedure.**

Configuration Parameters

Once the scanner is set up, you can change the default parameters to meet your application needs. Refer to "Standard Defaults" starting on page 255 for initial configuration in order to set the default values and select the interface for your application.

Interface Configuration:
- "USB-Com Interface" on page 15

Parameters common to all interface applications:
- "Data Format" on page 31 gives options to control the messages sent to the Host system.
- "Reading Parameters" on page 45 control various operating modes and indicators status functioning.

Symbology-specific parameters:
- "1D Symbologies" on page 65 provides configuration of a personalized mix of 1D codes, code families and their options.
- "2D Symbologies" on page 159 provides configuration of a personalized mix of 2D codes, code families and their options.

 You must first enable your scanner to read barcodes in order to use this section. If you have not done this, go to Setup, starting on page 5 **and complete the appropriate procedure.**

To program features:

1. Scan the ENTER/EXIT PROGRAMMING barcode, available at the top of each programming page, when applicable.

2. Scan the barcode to set the desired programming feature. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the scanner reads only the barcode you intend to scan.

3. If additional input parameters are needed, go to Appendix D, Keypad, and scan the appropriate characters from the keypad.

> **Additional information about many features can be found in the "References" chapter.**
>
> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

4. Complete the programming sequence by scanning the ENTER/EXIT PROGRAMMING barcode to exit Programming Mode.

For more detailed descriptions, programming information and examples for setting selected configuration items, see References, starting on page 209.

> **The scanner can be set to decode barcode labels only when they are close to the center of the aiming pattern. This allows the handheld to accurately target labels when they are placed close together, such as on a pick sheet. See Pick Mode, starting on page 56.**

GLOBAL INTERFACE FEATURES

The following interface features are configurable by all interface types.

Host Commands — Obey/Ignore

This option specifies whether the scanner will obey or ignore host commands. When set to ignore, the scanner will ignore all host commands except for those necessary for:

- service mode
- flash programming mode
- keeping the interface active
- transmission of labels.

DEFAULT
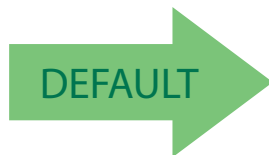
Host Commands = Obey
(Do Not Ignore Host Commands)

Host Commands = Ignore

USB Suspend Mode

This setting enables/disables the ability of USB interfaces to enter suspend mode.

DEFAULT
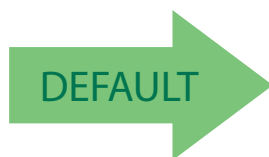
USB Suspend Mode = Disable

USB Suspend Mode = Enable

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USB-COM INTERFACE

The programming barcodes in this chapter allow modifications to the standard USB-Com interfaces. Reference Appendix B, Standard Defaults for a listing of standard factory settings.

Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay.

See page 217 for more information.

Intercharacter Delay = No Delay

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Select Intercharacter Delay Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
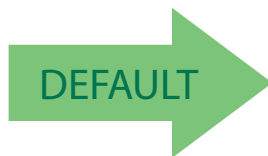
DEFAULT **00 = No Intercharacter Delay**

Beep On ASCII BEL

When this parameter is enabled, the reader issues a beep when a <BEL> character is detected on the serial line. <BEL> is issued to gain a user's attention to an illegal entry or other important event.

Beep On ASCII BEL = Disable

DEFAULT

Beep On ASCII BEL = Enable

Beep On Not on File

This option enables/disables the action of the reader to sound a three beep sequence upon receiving a Not-On-File (NOF) host command.

Beep On Not On File = Disable
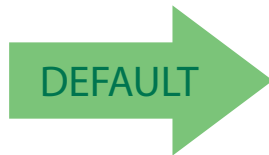
DEFAULT

Beep On Not On File = Enable

ACK NAK Options

This enables/disables the ability of the reader to support the ACK/NAK protocol.
See page 211 for more information.

DEFAULT
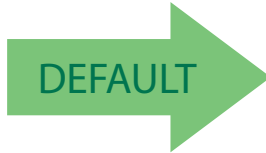
ACK/NAK Protocol = Disable ACK/NAK

ACK/NAK Protocol = Enable for label transmission

ACK/NAK Protocol = Enable for host-command
acknowledge

ACK/NAK Protocol = Enable for label transmission and
host-command acknowledge

ACK Character

This setting specifies an ASCII character or hex value to be used as the ACK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See page 211 for more information.

> **NOTE** **Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.**

Select ACK Character Setting
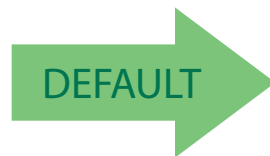
DEFAULT → **0x06 'ACK' Character**

NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See page 212 for more information.

> **NOTE** **Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.**

Select NAK Character Setting
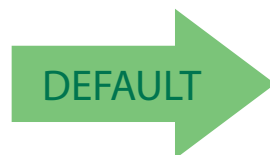
DEFAULT → **0x15 'NAK' Character**

ACK NAK Timeout Value

This option specifies the amount of time the reader waits for an ACK character from the host following label transmission. The selectable timeout range is 200 milliseconds to 15,000ms (15 seconds) in 200ms increments. A selection of 0 disables the timeout.

See page 212 for more information on setting this feature.

Select ACK NAK Timeout Value Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
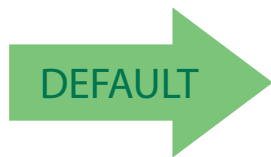
DEFAULT **01 ACK NAK Timeout value is 200ms**

ACK NAK Retry Count

This feature specifies the number of times the reader retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See page 214 for more information.

Select ACK NAK Retry Count Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
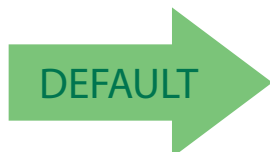
DEFAULT **003 = 3 Retries**

ACK NAK Error Handling

This feature specifies the method the reader uses to handle receive errors detected while waiting for an ACK character from the host.

DEFAULT
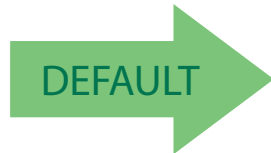
ACK NAK Error Handling = Ignore Errors Detected

ACK NAK Error Handling = Process Error as Valid ACK Character

ACK NAK Error Handling = Process Error as Valid NAK Character

Indicate Transmission Failure

This option enables/disables the reader's ability to sound an error beep to indicate a transmission failure while in ACK/NAK mode.

Indicate Transmission Failure = Disable Indication

DEFAULT

Indicate Transmission Failure = Enable Indication

Disable Character

Specifies the value of the host command used to disable the reader.

ASCII characters or any hex value from 0 to 0xFF can be selected.

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.

See for more information on setting this feature.

Select Disable Character Setting
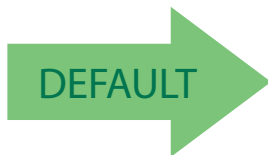
| DEFAULT | **0x44 = Disable Character is 'D'** |

Enable Character

Specifies the value of the host command used to enable the reader.

ASCII characters or any hex value from 0 to 0xFF can be selected.

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.

See in "References" for more information on setting this feature.

Select Enable Character Setting
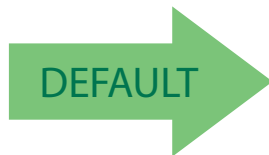
| DEFAULT | **0x45 = Enable Character is 'E'** |

USB KEYBOARD SETTINGS

COUNTRY MODE on page 24
SEND CONTROL CHARACTERS on page 27
INTERCODE DELAY on page 28
USB KEYBOARD SPEED on page 29
USB KEYBOARD NUMERIC KEYPAD on page 30

Use the programming barcodes in this chapter to select options for USB Keyboard Interface. Reference Appendix B, Standard Defaults for a listing of standard factory settings.

Information about control character emulation which applies to keyboard interfaces is listed in Appendix E, Scancode Tables.

Country Mode

This feature specifies the country/language supported by the USB keyboard.

DEFAULT
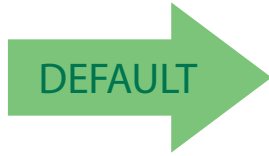
Country Mode = U.S.

Country Mode = Belgium

Country Mode = Britain

Country Mode = Croatia

Supports only the interfaces listed in the Country Mode feature description.

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Czech Republic

Country Mode = Denmark

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = France

Country Mode (continued)

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = French Canadian

Country Mode = Germany

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Hungary

Country Mode = Italy

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Japanese 106-key

Country Mode = Lithuanian

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Norway

Country Mode (continued)

Country Mode = Poland

Supports only the interfaces listed in the Country Mode feature description.

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Portugal

Country Mode = Romania

Supports only the interfaces listed in the Country Mode feature description.

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Slovakia

Country Mode = Spain

Country Mode = Sweden

Country Mode = Switzerland

Supports only the interfaces listed in the Country Mode feature description.

Send Control Characters

This feature specifies how the scanner transmits ASCII control characters to the host. Reference Appendix E, Scancode Tables for more information about control characters.

Options are as follows:

Control Character 00 : Characters from 00 to 0x1F are sent as control character Ctrl+Keys, special keys are located from 0x80 to 0xA1.

Control Character 01 : Characters from 00 to 0x1F are sent as control character Ctrl+Capital Key, special keys are located from 0x80 to 0xA1.

Control Character 02 : Special keys are located from 00 to 0x1F and characters from 0x80 to 0xFE are intended as an extended ASCII table (see "Microsoft Windows Codepage 1252" on page 277).

DEFAULT
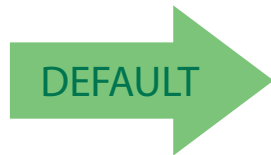
Scanner Send Control Characters = 00

Scanner Send Control Characters = 01

Scanner Send Control Characters = 02

Intercode Delay

Specifies the delay between labels transmitted to the host for this interface. The selectable range for this feature is from 0 to 99 seconds.

See page 218 in "References" for detailed information and examples for setting this feature.

Set Intercode Delay

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT
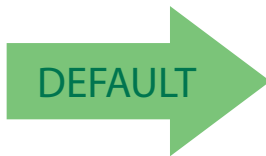
00 = No Intercode Delay

USB Keyboard Speed

This option specifies the USB poll rate for a USB keyboard.

DEFANT
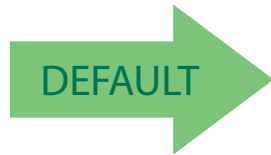
USB Keyboard Speed = 1ms

USB Keyboard Speed = 2ms

USB Keyboard Speed = 3ms

USB Keyboard Speed = 4ms

USB Keyboard Speed = 5ms

USB Keyboard Speed = 6ms

USB Keyboard Speed (continued)

USB Keyboard Speed = 7ms

USB Keyboard Speed = 8ms

USB Keyboard Speed = 9ms

USB Keyboard Speed = 10ms

USB Keyboard Numeric Keypad

This option Controls whether numeric characters will be sent using standard keys or the numeric keypad.

DEFAULT

Standard Keys

Numeric Keypad

DATA FORMAT

 The features in this chapter can be used to build specific user-defined data into a message string. See "References" starting on for more detailed instructions on setting these features.

Global Prefix/Suffix

This option sets up to 20 characters each from the set of ASCII characters or any hex value from 00 to FF. The characters may be added as a prefix (in a position before the barcode data, also called a header) and/or as a suffix (in a position following the barcode data, also called a footer). See page 221 for more detailed instructions on setting this feature.

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above to place the unit in Programming Mode, then the "Set Global Prefix" or "Set Global Suffix," barcode followed by the digits (in hex) from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). If less than the expected string of 20 characters are selected, scan the ENTER/EXIT barcode to terminate the string. Exit programming mode by scanning the ENTER/EXIT barcode again.

Set Global Prefix

Set Global Suffix

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT
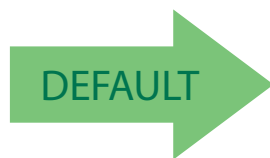
**No Global Prefix
Global Suffix = 0x0D (CR)**

Global AIM ID

This feature enables/disables addition of AIM IDs for all symbology types.

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned barcode data. See Table 2 on page 3-33 for a listing of AIM IDs.

AIM label identifiers consist of three characters as follows:

- A close brace character (ASCII ']'), followed by...
- A code character (see some samples in the table below), followed by...
- A modifier character (the modifier character is symbol dependent).

DEFAULT
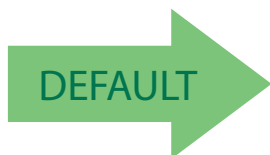
Global AIM ID = Disable

Global AIM ID = Enable

Table 2. AIM IDs

Tag Name	AIM ID code character	AIM ID code ASCII value
ABC CODABAR	X	58
ANKER PLESSEY	N	4E
AZTEC	z	7A
CHINA SENSIBLE CODE	X	58
CODABAR	F	46
CODE11	H	48
CODE128	C	43
CODE32	A	41
CODE39	A	41
CODE39 CIP	X	58
CODE39 DANISH PPT	X	58
CODE39 LAPOSTE	X	58
CODE39 PZN	X	58
CODE93	G	47
DATABAR 14	e	65
DATABAR 14 COMPOSITE	e	65
DATABAR EXPANDED	e	65

DATABAR EXPANDED COMPOSITE	e	65
DATABAR LIMITED	e	65
DATABAR LIMITED COMPOSITE	e	65
DATA MATRIX	d	64
EAN128	C	43
EAN128 COMPOSITE	C	43
EAN13	E	45
EAN13 P2	E	45
EAN13 P5	E	45
EAN13 COMPOSITE	E	45
EAN8	E	45
EAN8 P2	E	45
EAN8 P5	E	45
EAN8 COMPOSITE	E	45
FOLLET 2OF5	X	58
I2OF5	I	49
IATA INDUSTRIAL 2OF5	X	58
INDUSTRIAL 2OF5	X	58
ISBN	X	58
ISBT128 CONCAT	X	58
ISSN	X	58
MAXICODE	U	55
MICRO QR	Q	51
MICRO PDF	L	4C
MSI	M	4D
PDF417	L	4C
PLESSEY	P	50
POSTAL AUSTRALIAN	X	58
POSTAL IMB	X	58
POSTAL JAPANESE	X	58
POSTAL KIX	X	58
POSTAL PLANET	X	58
POSTAL PORTUGAL	X	58
POSTAL POSTNET BB	X	58
POSTAL ROYAL MAIL	X	58
POSTAL SWEDISH	X	58
POSTNET	X	58
QR CODE	Q	51
S25	S	53
TRIOPTIC	X	58
UPCA	E	45
UPCA P2	E	45
UPCA P5	E	45
UPCA COMPOSITE	E	45
UPCE	E	45
UPCE P2	E	45
UPCE P5	E	45
UPCE COMPOSITE	E	45

Set AIM ID Individually for GS1-128

This feature configures a Label ID individually for the GS1-128 symbology and the programming for this works the same way as Label ID. See Label ID: Set Individually Per Symbology, starting on page 226 for detailed instructions on setting this feature.

Set AIM ID Individually for GS1-128 = Disable

Set AIM ID Individually for GS1-128 = Enable

DEFAULT

Label ID

A Label ID is a customizable code of up to three ASCII characters (convert to Hex using the ASCII Chart on the inside back cover of this manual), used to identify a barcode symbology type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs or individually per symbology (see "Individually Set Label ID" on page 37). If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see the previous feature "Global AIM ID" on page 33.

See Label ID, starting on page 223 of "References" for more information on setting this feature.

Label ID: Pre-Loaded Sets

The scanner supports two pre-loaded sets of Label IDs. See Label ID: Pre-loaded Sets, starting on page 223 for details on the USA set and EU set.

CAUTION

When changing from one Label ID set to another, all other scanner configuration settings, including the host interface type, will be erased and set to the standard factory defaults. Any custom configuration or custom defaults will be lost.
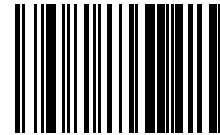
Label ID Pre-loaded Set = USA Set

DEFAULT
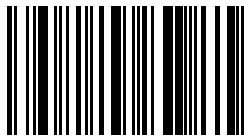
Label ID Pre-loaded Set = EU Set

Individually Set Label ID

This feature configures a Label ID individually for a single symbology. To set, first define whether you want it as a prefix or suffix by scanning a label below. Then turn to Label ID Symbology Selection − 1D Symbologies, starting on page 38 to select the symbology you want to set, followed by up to 3 characters from the ASCII Chart at the back of this manual. See "Label ID: Set Individually Per Symbology" on page 226 for detailed instructions on setting this feature.

Label ID Control

This option controls whether a Label ID is disabled, or sent as a prefix or suffix for a given symbology type.

DEFAULT
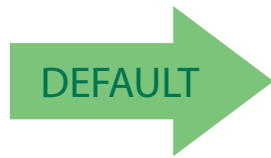
Label ID Transmission = Disable

Label ID Transmission = Enable as Prefix

Label ID Transmission = Enable as Suffix

Label ID Symbology Selection – 1D Symbologies

This option selects the symbology for which a Label ID is to be configured. See "Label ID" on page 36 or page 226 in "References" for more detailed instructions.

NOTE

If less than the expected string of 3 characters are selected, scan the ENTER/ EXIT barcode twice to accept the selection and exit Programming Mode.

Set ABC Codabar Label ID Character(s)

Set Code 32 Pharmacode Label ID Character(s)

Set Anker Plessey Label ID Character(s)

Set Code 93 Label ID Character(s)

Set Australian Postal Code Label ID Character(s)

Set Concatenated ISBT 128 Label ID Character(s)

Set Codabar Label ID Character(s)

Set Danish PPT Label ID Character(s)

Set Code 11 Label ID Character(s)

Set EAN 13 Label ID Character(s)

Set Code 128 Label ID Character(s)

Set EAN 13 Composite Label ID Character(s)

Set Code 39 Label ID Character(s)

Set EAN 13 P2 Label ID Character(s)

Label ID Symbology Selection – 1D Symbologies (continued)

Set Code 39 CIP Label ID Character(s)

Set EAN 13 P5 Label ID Character(s)

Set EAN 8 Label ID Character(s)

Set GS1 DataBar Expanded Composite Label ID Character(s)

Set EAN 8 Composite Label ID Character(s)

Set GS1-128 Label ID Character(s)

Set EAN 8 P2 Label ID Character(s)

Set GS1-128 Composite Label ID Character(s)

Set EAN 8 P5 Label ID Character(s)

Set GSI DataBar Limited Label ID Character(s)

Set Follett 2 of 5 Label ID Character(s)

GSI DataBar Limited Composite Label ID Character(s)

Set GS1 DataBar 14 Label ID Character(s)

Set GTIN 2 Label ID Character(s)

Set GS1 DataBar 14 Composite Label ID Character(s)

Set GTIN 5 Label ID Character(s)

Label ID Symbology Selection – 1D Symbologies (continued)

Set GS1 DataBar Expanded Label ID Character(s)

Set GTIN 8 Label ID Character(s)

Set IATA Industrial 2 of 5 Label ID Character(s)

Set LaPoste Code 39 Label ID Character(s)

Set IMB Postal Code Label ID Character(s)

Set MSI Label ID Character(s)

Set Industrial 2 of 5 Label ID Character(s)

Set Planet Postal Code Label ID Character(s)

Set Interleaved 2 of 5 Label ID Character(s)

Set Plessey Label ID Character(s)

Set ISBN Label ID Character(s)

Set Portugal Postal Code Label ID Character(s)

Set ISSN Label ID Character(s)

Set Postnet Label ID Character(s)

Set Japan Postal Code Label ID Character(s)

Set Kix Postal Code Label ID Character(s)

Label ID Symbology Selection – 1D Symbologies (continued)

Set PZN Code Label ID Character(s)

Set Postnet BB Label ID Character(s)

Set Royal Postal Code Label ID Character(s)

Set UPC-A Composite Label ID Character(s)

Set Standard 2 of 5 Label ID Character(s)

Set UPC-A P2 Label ID Character(s)

Set Swedish Postal Code Label ID Character(s)

Set UPC-A P5 Label ID Character(s)

Set Trioptic Code Label ID Character(s)

Set UPC-E Label ID Character(s)

Set UPC-A Label ID Character(s)

Set UPC-E P5 Label ID Character(s)

Label ID Symbology Selection – 2D Symbologies

Set Aztec Label ID Character(s)

Set Maxicode Label ID Character(s)

Set China Sensible Label ID Character(s)

Set PDF 417 Label ID Character(s)

Set Data Matrix Label ID Character(s)

Set Micro PDF 417 Label ID Character(s)

Set Micro QR Label ID Character(s)

Set QR Code Label ID Character(s)

Advanced Formatting: User Label Edit

Advanced formatting is available to create user label edit scripts. See the HP Configuration application or contact Technical Support.

Case Conversion

This feature allows conversion of the case of all alphabetic characters to upper or lower case.

Case conversion affects ONLY scanned barcode data, and does not affect Label ID, Prefix, Suffix, or other appended data.

DEFAULT
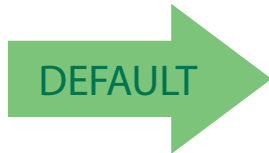
Case Conversion = Disable (no case conversion)

Case Conversion = Convert to upper case

Case Conversion = Convert to lower case

Character Conversion

Character conversion is an eight byte configuration item. The eight bytes are 4 character pairs represented in hexadecimal ASCII values. The first character in the pair is the character that will be converted. The second character in the pair is the character to convert to. If the character to convert in a pair is FF, then no conversion is done.

> **NOTE** If less than the expected string of 16 characters are selected, scan the ENTER/EXIT barcode twice to accept the selections and exit Programming Mode.

Configure Character Conversion

DEFAULT **0xFFFFFFFFFFFFFFFF
(No character conversion)**

READING PARAMETERS

Double Read Timeout

Double Read Timeout prevents a double read of the same label by setting the minimum time allowed between reads of labels of the same symbology and data. If the unit reads a label and sees the same label again within the specified timeout, the second read is ignored. Double Read Timeout does not apply to scan modes that require a trigger pull for each label read.

Double Read Timeout = 0.1 Second

Double Read Timeout = 0.2 Second

Double Read Timeout = 0.3 Second

Double Read Timeout = 0.4 Second

Double Read Timeout = 0.5 Second

Double Read Timeout = 0.6 Second

DEFAULT

Double Read Timeout = 0.7 Second

Double Read Timeout (continued)

Double Read Timeout = 0.8 Second

Double Read Timeout = 0.9 Second

Double Read Timeout = 1 Second

LED AND BEEPER INDICATORS

Power On Alert

Disables or enables the indication (from the Beeper) that the scanner is receiving power.

Power On Alert = Disable (No Audible Indication)

Power On Alert = Power-up Beep

DEFAULT

Good Read: When to Indicate

This feature specifies when the scanner will provide indication (beep and/or flash its green LED) upon successfully reading a barcode.

DEFAULT

Indicate Good Read = After Decode

Indicate Good Read = After Transmit

Indicate Good Read =
After CTS goes inactive then active

Good Read Beep Type

Specifies whether the good read beep has a mono or bitonal beep sound.

DEFAULT →
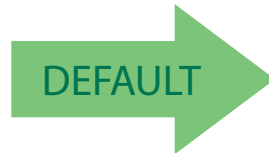
Good Read Beep Type = Mono

Good Read Beep Type = Bitonal

Good Read Beep Frequency

Adjusts the good read beep to sound at a selectable low, medium or high frequency, selectable from the list below. (Controls the beeper's pitch/tone.)

Good Read Beep Frequency = Low

Good Read Beep Frequency = Medium

DEFAULT →
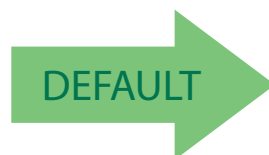
Good Read Beep Frequency = High

Good Read Beep Length

Good Read Beep Length = 60 msec

DEFAULT

Good Read Beep Length = 80 msec

Good Read Beep Length = 100 msec

Good Read Beep Length = 120 msec

Good Read Beep Length = 140 msec

Good Read Beep Length = 160 msec

Good Read Beep Length = 180 msec

Good Read Beep Length = 200 msec

Good Read Beep Volume

Selects the beeper volume (loudness) upon a good read beep. There are three selectable volume levels.

Good Read Beep Volume = Beeper Off

Good Read Beep Volume = Low

Good Read Beep Volume = Medium

DEFAULT

Good Read Beep Volume = High

Good Read LED Duration

This feature specifies the amount of time that the Good Read LED remains on following a good read. The good read LED on time can be set within a range of 100 milliseconds to 25,500 milliseconds (0.1 to 25.5 seconds) in 100ms increments. A setting of 00 keeps the LED on until the next trigger pull.

See page 229 in "References" for detailed instructions and examples for setting this feature.

Good Read LED Duration Setting =
Keep LED on until next trigger pull

Select Good Read LED Duration Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
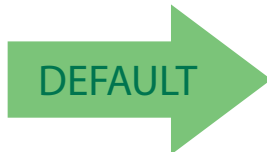
DEFAULT   **003 = Good Read LED stays on for 300 ms.**

Indicators are dimmed during sleep.

SCANNING FEATURES

Scan Mode

Selects the scanner's scan operating mode. See page 230 in "References" for descriptions.

Scan Mode = Trigger Single

DEFAULT
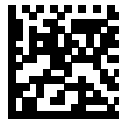
Scan Mode = Trigger Hold Multiple
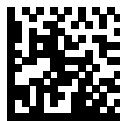
Scan Mode = Trigger Pulse Multiple

Scan Mode = Flashing

Scan Mode = Always On

Scan Mode = Stand Mode

NOTE

Options concerning Stand Mode behavior are available at the following feature, Stand Operation**.**

Stand Mode Indication

This operation is useful for indicating when the scanner is in Stand Mode. If enabled, the blue indicator will blink when Stand Mode scanning is active. If scanner detects motion (or removed from base station) and switches out of Stand Mode into Triggered Mode, blinking will stop until Stand Mode is active again.

DEFAULT
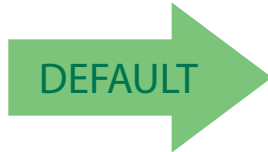
Stand Mode Indication = Disable

Stand Mode Indication = Enable

Stand Operation

Specifies the behavior of the scanner when stationary in a stand. There are two conditions which cause the scanner to switch to Stand Mode:

1. The scanner is configured to switch to Stand Mode when stationary.

2. The scanner is placed into the cradle of the base station.

Below are further options concerning Stand Operation.

Ignore Autorecognition. Disables mode switching when the scanner is placed in a stand.

Switch to Stand Mode. Automatically switches the scanner to Stand Mode when the scanner is placed in the stand.

Switch to Flashing. Automatically switches the scanner to Flash Mode when the scanner is placed in the stand.

Switch to Always On. Automatically switches the scanner to Always On mode when the scanner is placed in the stand.

Do Not Change Mode

Change to Stand Mode

DEFAULT

Change to Always On

Change to Flashing
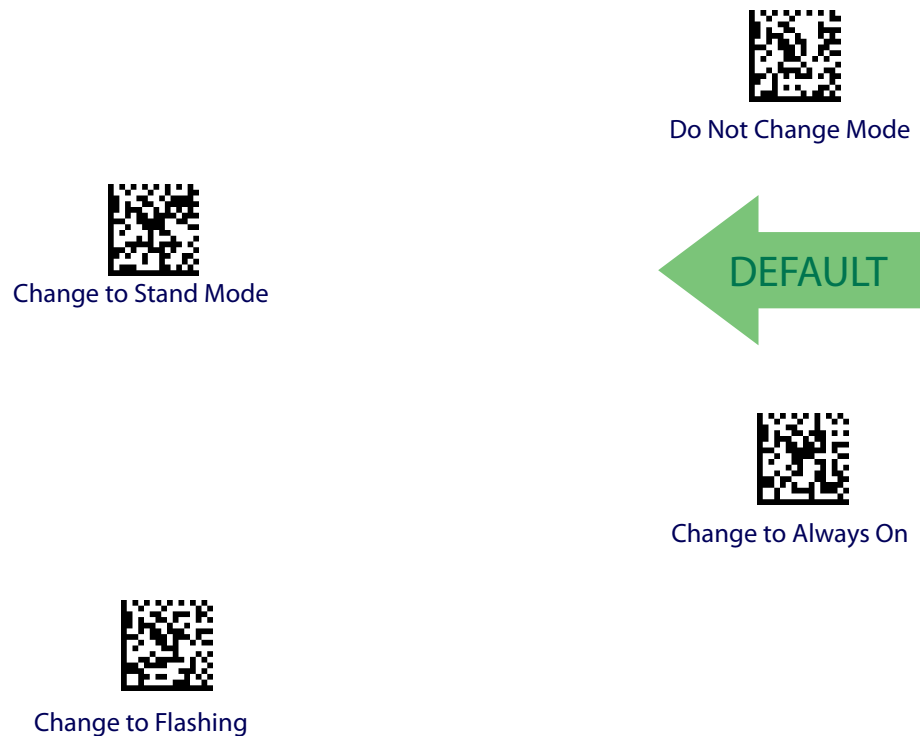
Pick Mode

Specifies the ability of the scanner to decode labels only when they are close to the center of the aiming pattern. This allows the scanner to accurately target labels when they are placed close together, such as on a pick sheet.

This feature is not compatible with Multiple Labels Reading in a Volume.

DEFAULT
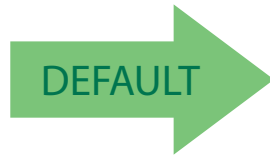
Pick Mode = Disable

Pick Mode = Enable

Stand Mode Sensitivity

Sets the sensitivity level for stand mode wakeup. Choices are low, medium and high.

Stand Mode Sensitivity = Low

Stand Mode Sensitivity = Medium

DEFAULT

Stand Mode Sensitivity = High

Stand Mode Illumination Off Time

Specifies the amount of time scanner illumination stays off after pulling the trigger when in Stand Mode. The configurable range is 01 to 32 by 01 in increments of 500ms (500ms to 16 seconds). See page 231 in "References" for a description of this feature.

Select Stand Mode Time Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

DEFAULT
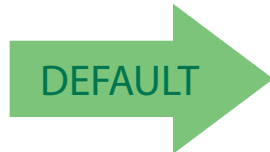
04 = 2 Seconds

Scanning Active Time

This setting specifies the amount of time that the scanner stays in scan ON state once the state is entered. The range for this setting is from 1 to 255 seconds in 1-second increments. See page 232 in "References" for further description of this feature.

Scanning Active Time = 3 seconds

DEFAULT

Scanning Active Time = 5 seconds

Scanning Active Time = 8 seconds

Stand Illumination Control

Controls the illumination status while the reading mode is stand mode and the scanner is attempting to detect objects.

DEFAULT
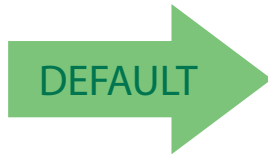
Stand Illumination Control = OFF

Stand Illumination Control = ON

Stand Illumination Control = Dim

Motion Still Timeout

Motion Still Timeout specifies the waiting time after which no motions is detected. When no motion is detected for period of time longer than the set Motion Still Timeout period, the scanner assumes it is in a motionless condition. The selectable setting are from 500 to 25,500 milliseconds in 100 millisecond increments. The default is 2 seconds. This option relates to such features and the Aimer On timing and Stand Mode Object Sense scanning with respect to motion. See page 240 in "References" for detailed information on setting this feature.

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Select Motion Still Timeout Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
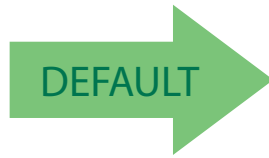
DEFAULT **14 = Motion Still Timeout for 2 seconds**

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See page 234 in "References" for detailed information on setting this feature.

Select Flash ON Time Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
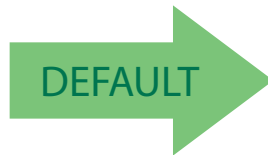
DEFAULT **10 = Flash is ON for 1 Second**

Flash Off Time

This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See page 235 in "References" for detailed information on setting this feature.

Select Flash OFF Time Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
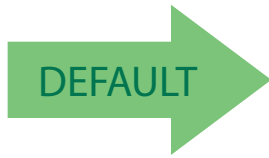
DEFAULT ➡ **06 = Flash is OFF for 600ms**

Aiming Pointer

Enables/disables the aiming pointer for all symbologies.

Aiming Pointer = Disable

Aiming Pointer = Enable

⬅ DEFAULT

Aiming Duration Timer

Specifies the frame of time the aiming pointer remains on after decoding a label, when in trigger single mode. The range for this setting is from 1 to 255 seconds in 1-second increments. See page 233 in "References" for a description of this feature.

DEFAULT ➡
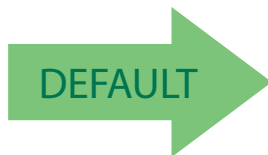
Aiming Off After Decoding

Set Aiming Duration Timer

To configure, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

Green Spot Duration

Specifies the duration of the good read pointer beam after a good read.

Green Spot Duration = Disable (Green Spot is Off)

Green Spot Duration = Short (300 msec)

DEFAULT

Green Spot Duration = Medium (500 msec)

Green Spot Duration = Long (800 msec)

Mobile Phone Mode

This mode is useful for scanning barcodes displayed on a mobile phone. Other options for this feature can be configured using the HP Configuration application.

Mobile Phone Mode = Disable

Mobile Phone Mode = Enable

DEFAULT

Partial Label Reading Control

Enable/Disable to ignore partial labels to be read within the boundary of the field of view.

Partial Label Reading Control = Disable

Partial Label Reading Control = Enable

Decode Negative Image

Enable/Disable the ability to decode a negative image for all symbologies. When this feature is enabled, you will be unable to read normally-printed labels or programming labels in this manual. Scan the "Disable" barcode below to return the scanner to its default for this feature. To set decoding for only 2D codes, go to 2D Normal/Inverse Symbol Control" on page 161. For additional options, see the HP Configuration application.

NOTE: Unlike some programming features and options, Decode Negative Image selections require that you scan only one programming barcode label. DO NOT scan an ENTER/EXIT barcode prior to scanning a Decode Negative Image barcode.

CAUTION: When this feature is enabled, you will be unable to read other programming labels in this manual.
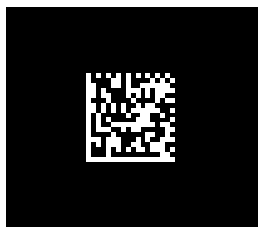
Decode Negative Image = Disable

DEFAULT

Decode Negative Image = Enable

Image Capture

For information and a list of options for Image Capture, use the HP Configuration application, available for free download from the HP website.

MULTIPLE LABEL READING

In standard (default) mode, when the scanner's aiming system is activated (by a trigger pull, motion or other method depending on the mode), it then acquires and processes each image in the area in front of it (the Volume). In this case, the scanner stops processing the image once it decodes a label. If several labels are present in the volume, only the first label encountered is decoded and sent.

When Multiple Reading Mode is enabled, the scanner keeps on processing the image until all the labels present are decoded. The scanner then sorts the data from all the barcodes (if configured to do so) before transmitting it.

Multiple Labels per Frame

Specifies the ability of the scanner to decode and transmit a set of code labels in a specific volume and in a single frame of time. When in Multiple Labels per Frame the scanner beeps and turns on the good read LED indication for each code read in a frame.

When Multiple Labels Mode is enabled, ISBT pairing, ABC Codabar pairing, and composites are not allowed.

DEFAULT
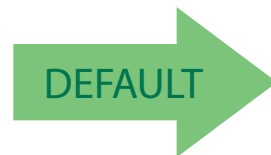
Multiple Labels per Frame = Disable

Multiple Labels per Frame = Enable

Multiple Labels Ordering by Code Symbology

This feature allows you to specify the order multiple labels are transmitted by symbology type, when Multiple Labels per Frame is enabled. See page 236 in "References" for detailed information on setting this feature.

Select Symbologies for Multiple Labels Ordering

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits From the alphanumeric characters In Appendix d, keypad representing your desired Character(s). end by scanning the enter/exit barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
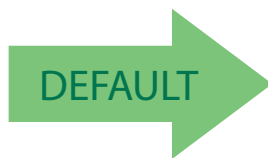
DEFAULT **000000000000 = Random order**

Multiple Labels Ordering by Code Length

Specifies the transmission ordering by code length, when Multiple Labels per Frame is enabled.

DEFAULT

Multiple Labels Ordering = Disable

Transmit Increasing Length Order

Transmit Decreasing Length Order

1D SYMBOLOGIES

1D Code Selection

The scanner supports the following 1D symbologies (barcode types). See "2D Symbologies" starting on page 159 for 2D barcodes. Symbology-dependent options are included in each chapter.

Default settings are indicated at each feature/option with a green arrow. Also reference Appendix B, Standard Defaults for a listing of the most widely used set of standard factory settings. That section also provides space to record any custom settings needed or implemented for your system.

To set most features:

1. Scan the ENTER/EXIT PROGRAMMING barcode at the top of applicable programming pages.

2. Scan the correct barcode to set the desired programming feature or parameter. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the scanner reads only the barcode you intend to scan.

3. If additional input parameters are needed, go to Appendix D, Keypad, and scan the appropriate characters from the keypad.

> **Additional information about many features can be found in the "References" chapter.**
>
> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

4. Complete the programming sequence by scanning the ENTER/EXIT PROGRAMMING barcode to exit Programming Mode.

DISABLE ALL SYMBOLOGIES

Use this feature to disable all symbologies.

1. Scan the ENTER/EXIT PROGRAMMING Mode barcode.

2. Scan the Disable All Symbologies barcode.

3. Complete the programming sequence by scanning the ENTER/EXIT PROGRAMMING barcode.

Disable All Symbologies

> **This does not disable the reading of programming labels.**

CODE EAN/UPC

Coupon Control

This feature is used to control the scanner's method of processing coupon labels.

Coupon Control = Allow all coupon barcodes to be decoded

Coupon Control = Enable only UPCA coupon decoding

DEFAULT

Coupon Control = Enable only GS1 DataBar™ coupon decoding

UPC-A

The following options apply to the UPC-A symbology.

UPC-A Enable/Disable

When disabled, the scanner will not read UPC-A barcodes.

UPC-A = Disable

UPC-A = Enable

DEFAULT

UPC-A Check Character Transmission

Enable this option to transmit the check character along with UPC-A barcode data.

UPC-A Check Character Transmission = Don't Send

UPC-A Check Character Transmission = Send

DEFAULT

Expand UPC-A to EAN-13

Expands UPC-A data to the EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

DEFAULT
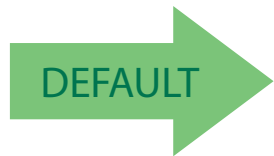
UPC-A to EAN-13 = Don't Expand

UPC-A to EAN-13 = Expand

UPC-A Number System Character Transmission

This feature enables/disables transmission of the UPC-A number system character.

UPC-A Number System Character = Do not transmit

UPC-A Number System Character = Transmit

DEFAULT

UPC-A 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label of this symbology is decoded.

DEFAULT
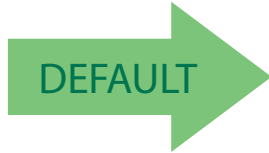
EAN-13 2D Component =
Disable (2D component not required)

EAN-13 2D Component =
2D component must be decoded

UPC-E

The following options apply to the UPC-E symbology.

UPC-E Enable/Disable

When disabled, the scanner will not read UPC-E barcodes.

UPC-E = Disable

DEFAULT

UPC-E = Enable

UPC-E Check Character Transmission

Enable this option to transmit the check character along with UPC-E barcode data.
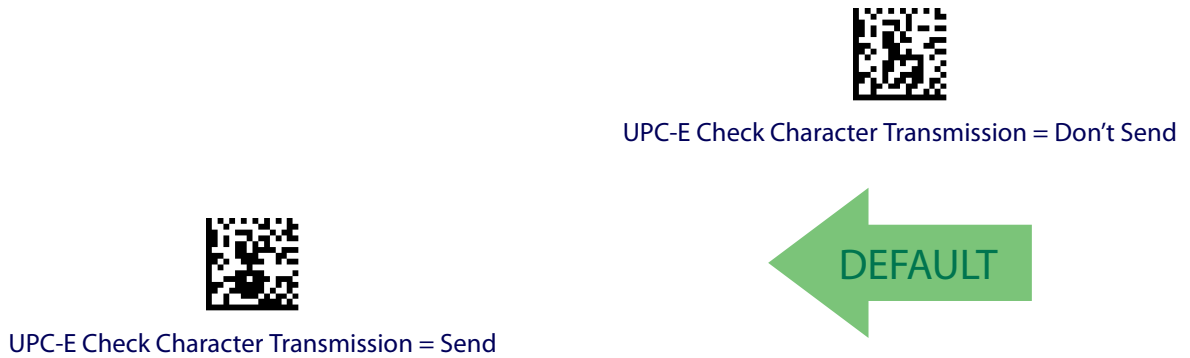
UPC-E Check Character Transmission = Don't Send
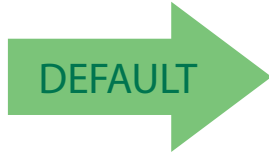
DEFAULT

UPC-E Check Character Transmission = Send

UPC-E 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label for this symbology is decoded.

DEFAULT

UPC-E 2D Component =
Disable (2D component not required)

UPC-E 2D Component =
2D component must be decoded
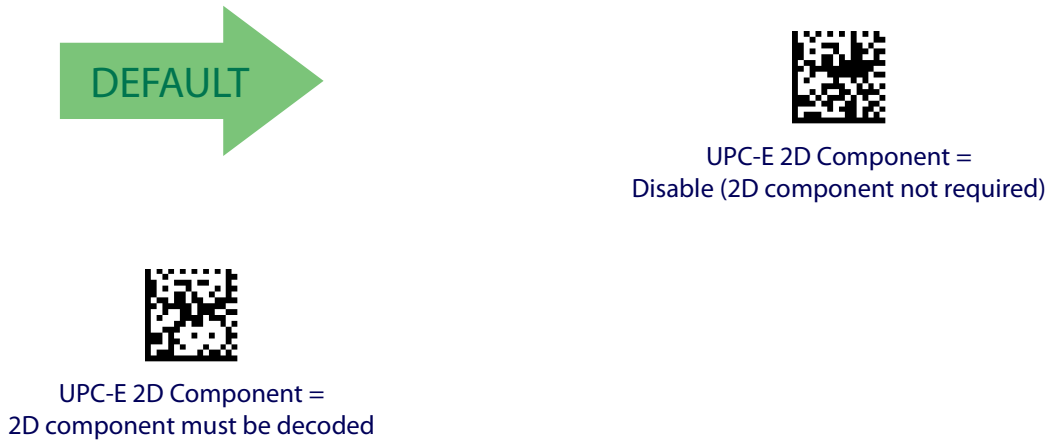
Expand UPC-E to EAN-13

Expands UPC-E data to the EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

DEFAULT

UPC-E to EAN-13 = Don't Expand

UPC-E to EAN-13 = Expand

Expand UPC-E to UPC-A

Expands UPC-E data to the UPC-A data format.

DEFAULT
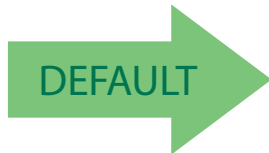
UPC-E to UPC-A = Don't Expand

UPC-E to UPC-A = Expand

UPC-E Number System Character Transmission

This feature enables/disables transmission of the UPC-E system number character.

UPC-E Number System Character = Do not transmit

DEFAULT

UPC-E Number System Character = Transmit
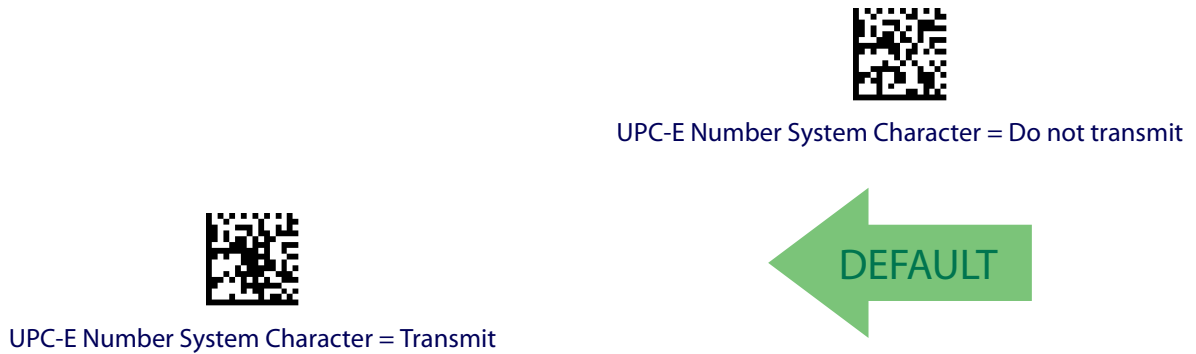
GTIN FORMATTING

This feature enables/disables the ability to convert UPC-E, UPC-A, EAN 8, and EAN 13 labels into the GTIN 14-character format.

NOTE

If add-on information is present on the base label prior to the conversion taking place, the add-on information will be appended to the converted GTIN label.

DEFAULT

GTIN Formatting = Disable

GTIN Formatting = Enable

EAN 13 (JAN 13)

The following options apply to the EAN 13 (Jan 13) symbology.

EAN 13 Enable/Disable

When disabled, the scanner will not read EAN 13/JAN 13 barcodes.

EAN 13 = Disable

DEFAULT

EAN 13 = Enable

EAN 13 Check Character Transmission

Enable this option to transmit the check character along with EAN 13 barcode data.

EAN 13 Check Character Transmission = Don't Send

DEFAULT

EAN 13 Check Character Transmission = Send

EAN-13 Flag 1 Character

Enables/disables transmission of an EAN/JAN13 Flag1 character. The Flag 1 character is the first character of the label.

EAN-13 Flag 1 Char= Don't transmit

DEFAULT

EAN-13 Flag 1 Char= Transmit

EAN-13 ISBN Conversion

This option enables/disables conversion of EAN 13/JAN 13 Bookland labels starting with 978 to ISBN labels.

DEFAULT

EAN-13 ISBN Conversion = Disable

EAN-13 ISBN Conversion = Convert to ISBN

EAN-13 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label of this symbology is decoded.

DEFAULT
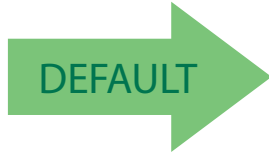
EAN-13 2D Component =
Disable (2D component not required)

EAN-13 2D Component =
2D component must be decoded

ISSN

The following options apply to the ISSN symbology.

ISSN Enable/Disable

Enables/disables conversion of EAN/JAN13 Bookland labels starting with 977 to ISSN labels.

DEFAULT

ISSN = Disable

ISSN = Enable

EAN 8 (JAN 8)

The following options apply to the EAN 8 (Jan 8) symbology.

EAN 8 Enable/Disable

When disabled, the scanner will not read EAN 8/JAN 8 barcodes.

EAN 8 = Disable

DEFAULT

EAN 8 = Enable

EAN 8 Check Character Transmission

Enable this option to transmit the check character along with EAN 8 barcode data.

EAN 8 Check Character Transmission = Don't Send

DEFAULT

EAN 8 Check Character Transmission = Send
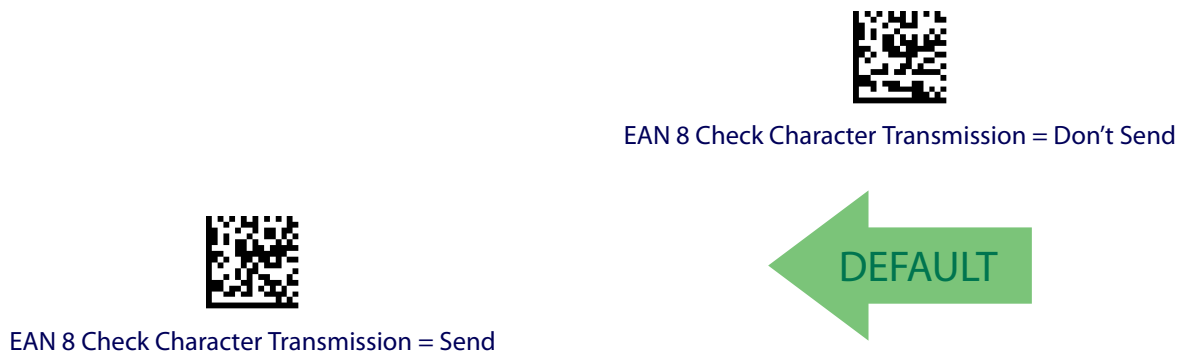
Expand EAN 8 to EAN 13

Enable this option to expand EAN 8/JAN 8 labels to EAN 13/JAN 13.

DEFAULT
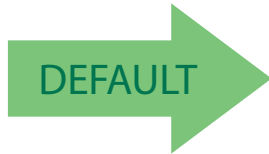
Expand EAN 8 to EAN 13 = Disable

Expand EAN 8 to EAN 13 = Enable

EAN 8 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label for this symbology is decoded.

DEFAULT
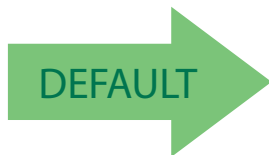
EAN 8 2D Component =
Disable (2D component not required)

EAN 8 2D Component =
2D component must be decoded

UPC/EAN GLOBAL SETTINGS

This section provides configuration settings for UPC-A, UPC-E, EAN 13 and EAN 8 symbologies, and affects all of these unless otherwise marked for each feature description.

UPC/EAN Price Weight Check

This feature enables/disables calculation and verification of price/weight check digits.

DEFACT
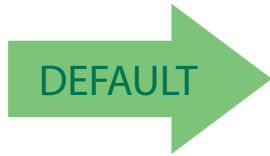
Price Weight Check = Disabled

Price Weight Check = 4-digit price-weight check

Price Weight Check = 5-digit price-weight check

Price Weight Check = European 4-digit price-weight check

Price Weight Check = European 5-digit price-weight check

UPC/EAN Quiet Zones

This feature specifies the number of quiet zones for UPC/EAN labels. Quiet zones are blank areas at the ends of a barcode, typically 10 times the width of the narrowest bar or space in the label. The property applies to all EAN-UPC symbologies globally and to the ADDONs.

DEFAULT
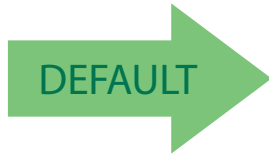
UPC/EAN Quiet Zones = Two Modules

UPC/EAN Quiet Zones = Three Modules

ADD-ONS

Contact Customer Support for advanced programming of optional and conditional add-ons.

Optional Add-ons

The scanner can be enabled to optionally read the following add-ons (supplementals):

If a UPC/EAN base label and an add-on are both decoded, the scanner will transmit the base label and add-on. If a UPC/EAN base label is decoded without an add-on, the base label will be transmitted without an add-on. Conditional add-on settings (if enabled) are considered by the scanner before optional add-on settings.

DEFAULT

Optional Add-Ons = Disable P2

Optional Add-Ons = Enable P2

DEFAULT
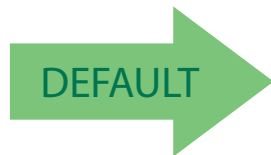
Optional Add-Ons = Disable P5

Optional Add-Ons = Enable P5

DEFAULT
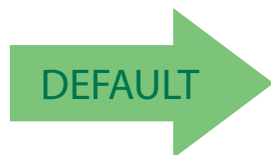
Optional Add-Ons = Disable GS1-128

Optional Add-Ons = Enable GS1-128

Optional Add-On Timer

This option sets the time the scanner will look for an add-on when an add-on fragment has been seen and optional add-ons are enabled. (Also see "Optional GS1-128 Add-On Timer" on page 85.)

Optional Add-on Timer = 10ms

Optional Add-on Timer = 20ms

Optional Add-on Timer = 30ms

Optional Add-on Timer = 40ms

Optional Add-on Timer = 50ms

Optional Add-On Timer (continued)

Optional Add-on Timer = 60ms

DEFAULT

Optional Add-on Timer = 70ms

Optional Add-on Timer = 100ms

Optional Add-on Timer = 120ms

Optional Add-on Timer = 140ms

Optional Add-on Timer = 160ms
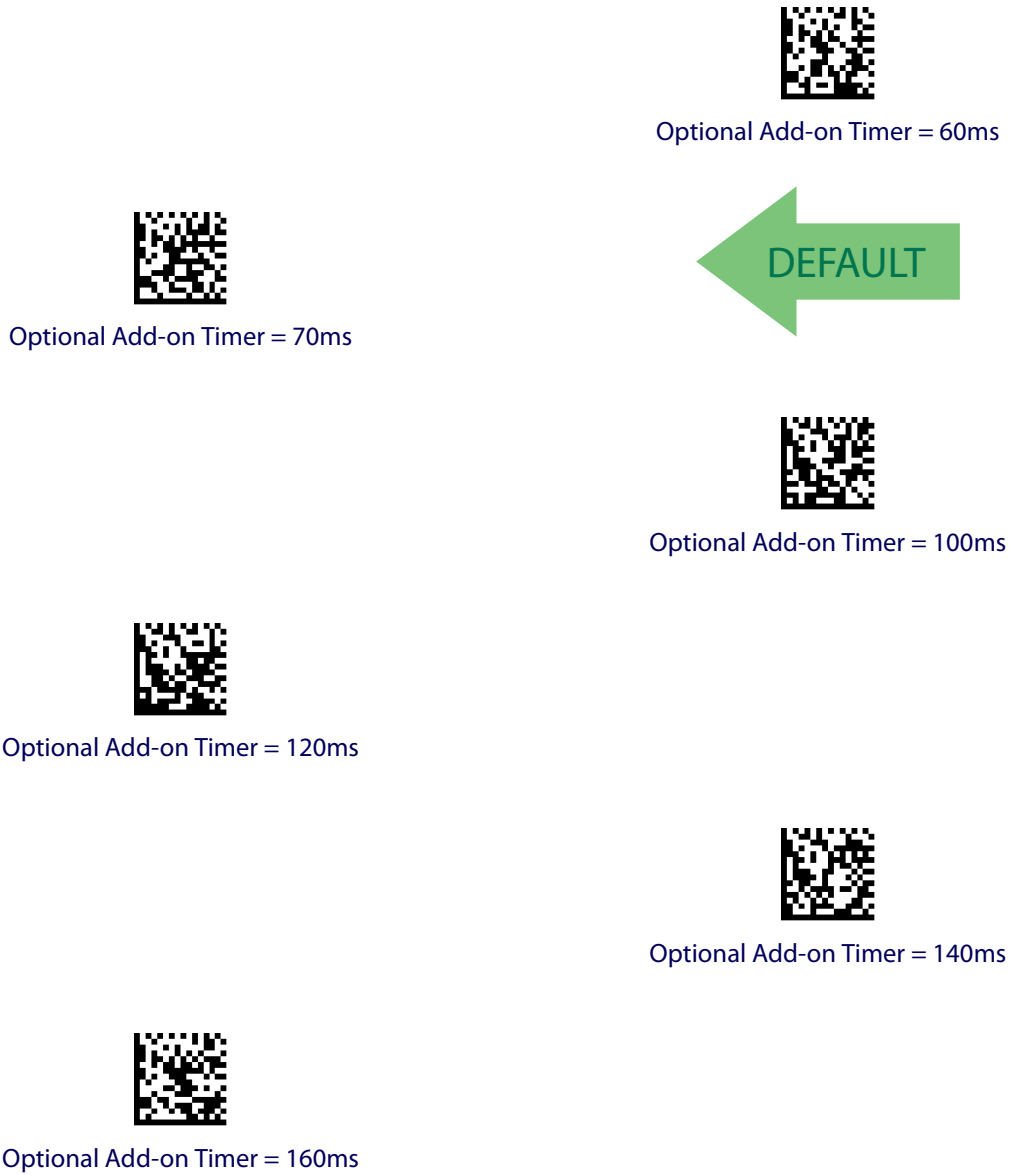
Optional Add-On Timer (continued)

Optional Add-on Timer = 180ms

Optional Add-on Timer = 200ms

Optional Add-on Timer = 220ms

Optional Add-on Timer = 240ms

Optional Add-on Timer = 260ms

Optional Add-on Timer = 280ms

Optional Add-on Timer = 300ms

Optional GS1-128 Add-On Timer

This option sets the timer expiration value to read the added part after reading the linear EAN/UPC part. For UPC/EAN add-ons other than those of that type, see "Optional Add-On Timer" on page 82.

DEFAULT
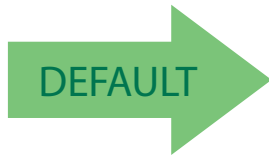
Optional GS1-128 Add-On Timer = Disable

Optional GS1-128 Add-On Timer = 10ms

Optional GS1-128 Add-On Timer = 20ms

Optional GS1-128 Add-On Timer = 30ms

Optional GS1-128 Add-On Timer = 40ms

Optional GS1-128 Add-On Timer = 50ms

Optional GS1-128 Add-On Timer (continued)

Optional GS1-128 Add-On Timer = 60ms

Optional GS1-128 Add-On Timer = 70ms

Optional GS1-128 Add-On Timer = 100ms

Optional GS1-128 Add-On Timer = 120ms

Optional GS1-128 Add-On Timer = 140ms

Optional GS1-128 Add-On Timer = 160ms

— cont.

Optional GS1-128 Add-On Timer (continued)

Optional GS1-128 Add-On Timer = 180ms

Optional GS1-128 Add-On Timer = 200ms

Optional GS1-128 Add-On Timer = 220ms

Optional GS1-128 Add-On Timer = 240ms

Optional GS1-128 Add-On Timer = 260ms

Optional GS1-128 Add-On Timer = 280ms

Optional GS1-128 Add-On Timer = 300ms

CODE 39

The following options apply to the Code 39 symbology.

Code 39 Enable/Disable

Code 39 = Disable

DEFAULT

Code 39 = Enable

Code 39 Check Character Calculation

Enable this option to enables/disables calculation and verification of an optional Code 39 check character. When disabled, any check character in the label is treated as a data character

Code 39 Check Character Calculation = Don't Calculate

DEFAULT

Code 39 Check Character Calculation = Calculate Std Check

Code 39 Check Character Calculation = Calculate Mod 7 Check

Code 39 Check Character Calculation (continued)

Code 39 Check Character Calculation =
Enable Italian Post Check

Code 39 Check Character Calculation =
Enable Daimler Chrysler Check

Code 39 Check Character Transmission

Enable this option to transmit the check character along with Code 39 barcode data.

Code 39 Check Character Transmission = Don't Send

DEFAULT

Code 39 Check Character Transmission = Send

Code 39 Start/Stop Character Transmission

Enable this option to enable/disable transmission of Code 39 start and stop characters.

DEFAULT
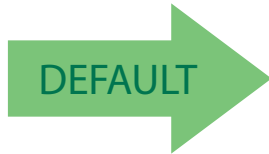
Code 39 Start/Stop Character Transmission =
Don't Transmit

Code 39 Start/Stop Character Transmission = Transmit

Code 39 Full ASCII

Enables/disables the translation of Code 39 characters to Code 39 full-ASCII characters.

DEFAULT

Code 39 Full ASCII = Disable

Code 39 Full ASCII = Enable

Code 39 Quiet Zones

This feature specifies the number of quiet zones for Code 39 labels. Quiet zones are blank areas at the ends of a barcode, typically 10 times the width of the narrowest bar or space in the label.

Code 39 Quiet Zones = Quiet Zones on two sides

DEFAULT

Code 39 Quiet Zones = Small Quiet Zones on two sides

Code 39 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 39 symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
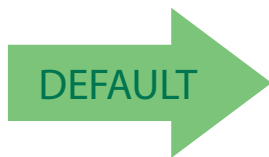
Code 39 Length Control = Variable Length

Code 39 Length Control = Fixed Length

Code 39 Set Length 1

This feature specifies one of the barcode lengths for Code 39 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 0 to 50 characters.

Table 3 provides examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 3. Code 39 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 39 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 39 Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
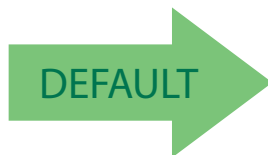
DEFAULT   **02 = Length 1 is 2 Characters**

Code 39 Set Length 2

This feature specifies one of the barcode lengths for Code 39 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

Table 4 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 4. Code 39 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	Scan ENTER/EXIT PROGRAMMING MODE				
3	Scan SELECT CODE 39 LENGTH 2 SETTING				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	Scan ENTER/EXIT PROGRAMMING .MODE				

Select Code 39 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **50 = Length 2 is 50 Characters**

TRIOPTIC CODE

The following options apply to the Trioptic symbology.

Trioptic Code Enable/Disable

DEFAULT
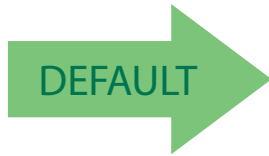
Trioptic Code = Disable

Trioptic Code = Enable

CODE 32 (ITAL PHARMACEUTICAL CODE)

The following options apply to the Code 32 (Italian Pharmaceutical Code) symbology.

Code 32 Enable/Disable

When disabled, the scanner will not read Code 32 barcodes.

DEFAULT
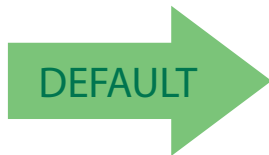
Code 32 = Disable

Code 32 = Enable

Code 32 Feature Setting Exceptions

The following features are set for Code 32 by using these Code 39 settings:

"Code 39 Quiet Zones" on page 91
"Code 39 Length Control" on page 91
"Trioptic Code" on page 94

Code 32 Check Char Transmission

Enable this option to transmit the check character along with Code 32 barcode data.

DEFAULT
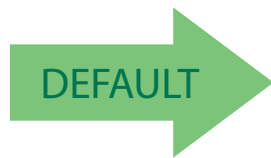
Code 32 Check Character Transmission = Don't Send

Code 32 Check Character Transmission = Send

Code 32 Start/Stop Character Transmission

This option enables/disables transmission of Code 32 start and stop characters.

DEFAULT
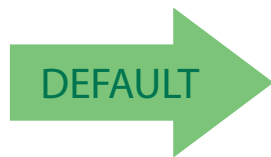
Code 32 Start/Stop Character Transmission = Don't Transmit

Code 32 Start/Stop Character Transmission = Transmit

CODE 39 CIP (FRENCH PHARMACEUTICAL)

The following options apply to the Code 39 CIP symbology.

Code 39 CIP Enable/Disable

Enables/Disables ability of the scanner to decode Code 39 CIP labels.

DEFAULT
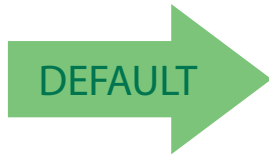
Code 39 CIP = Disable

Code 39 CIP = Enable

CODE 39 DANISH PPT

The following options apply to the Code 39 Danish PPT symbology.

Code 39 Danish PPT Enable/Disable

Enables/Disables AIM ID for Code 39 Danish PPT Codes.

DEFAULT
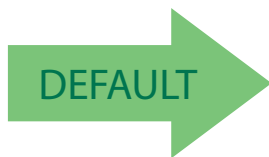
Code 39 Danish PPT = Disable

Code 39 Danish PPT = Enable

CODE 39 LAPOSTE

The following options apply to the Code 39 LaPoste symbology.

Code 39 LaPoste Enable/Disable

Enables/disables the ability of the scanner to decode Code39 La Poste labels.

DEFAULT

Code 39 LaPoste = Disable

Code 39 LaPoste = Enable

CODE 39 PZN

The following options apply to the Code 39 PZN symbology.

Code 39 PZN Enable/Disable

Enables/disables the ability of the scanner to decode Code39 PZN labels.

DEFAULT
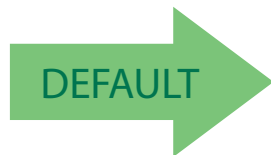
Code 39 PZN = Disable

Code 39 PZN = Enable

CODE 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

When disabled, the scanner will not read Code 128 barcodes.

Code 128 = Disable

DEFAULT

Code 128 = Enable

Expand Code 128 to Code 39

This feature enables/disables expansion of Code 128 labels to Code 39 labels.

DEFAULT
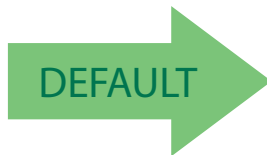
Code 128 to Code 39 = Don't Expand

Code 128 to Code 39 = Expand

Code 128 Check Character Transmission

Enable this option to transmit the check character along with Code 128 barcode data.

DEFAULT
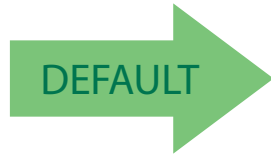
Code 128 Check Character Transmission = Don't Send

Code 128 Check Character Transmission = Send

Code 128 Function Character Transmission

Enables/disables transmission of Code128 function characters 1, 2, 3, and 4.

DEFAULT
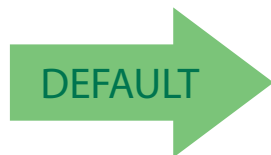
Code 128 Function Character Transmission = Don't Send

Code 128 Function Character Transmission = Send

Code 128 Sub-Code Exchange Transmission

Enables/disables the transmission of "Sub-Code Exchange" characters (NOT transmitted by standard decoding).

DEFAULT
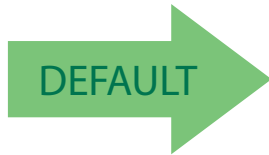
Code 128 Sub-Code Exchange Transmission = Disable

Code 128 Sub-Code Exchange Transmission = Enable

Code 128 Quiet Zones

This feature specifies the number of quiet zones for Code 128 labels. Quiet zones are blank areas at the ends of a barcode and are typically 10 times the width of the narrowest bar or space in the label.

Code 128 Quiet Zones = Quiet Zones on two sides

DEFAULT

Code 128 Quiet Zones = Small Quiet Zones on two sides

Code 128 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 128 symbology. See page 219 for more information.

DEFAULT
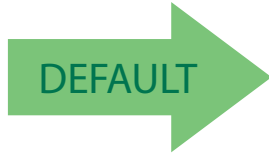
Code 128 Length Control = Variable Length

Code 128 Length Control = Fixed Length

Code 128 Set Length 1

Specifies one of the barcode lengths for Code 128 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 1 to 80 characters.

Table 5 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 5. Code 128 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	15 Characters	80 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 128 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'1' and '5'	'8' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 128 Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
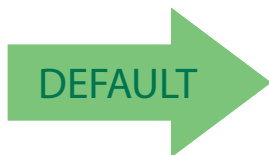
DEFAULT → **01 = Length 1 is 1 Character**

Code 128 Set Length 2

This feature specifies one of the barcode lengths for Code 128 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's data characters only.

The length can be set from 1 to 80 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 6 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 6. Code 128 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	80 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 128 LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'8' and 0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

.

Select Code 128 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT ➤ **80 = Length 2 is 80 Characters**

GS1-128

The following options apply to the GS1-128 symbology. (Also known as USS-128, GS1-128, GTIN-128, UCC-128, EAN-128.)

GS1-128 Enable

This option enables/disables the ability of the scanner to translate GS1-128 labels to the GS1-128 data format. Options are:

- Transmit GS1-128 labels in Code 128 data format.
- Transmit GS1-128 labels in GS1-128 data format.
- Do not transmit GS1-128 labels.

GS1-128 = Transmit in Code 128 data format

GS1-128 = Transmit in GS1-128 data format

DEFAULT

GS1-128 = Do not transmit GS1-128 labels

GS1-128 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label of this symbology is decoded.

DEFAULT
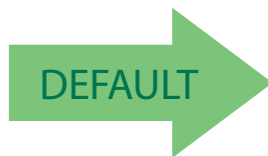
GS1-128 2D Component = Disable

GS1-128 2D Component = Enable

CODE ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

Use this option to enable/disable ISBT128 concatenation of 2 labels.

DEFAULT
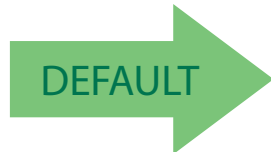
ISBN 128 Concatenation = Disable

ISBN 128 Concatenation = Enable

ISBT 128 Force Concatenation

When enabled, this feature forces concatenation for ISBT.

NOTE

This option is only valid when ISBT 128 Concatenation **is enabled.**

DEFAULT
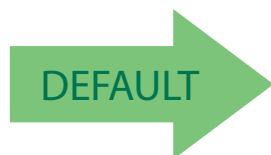
ISBT 128 Force Concatenation = Disable

ISBT 128 Force Concatenation = Enable

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

This option is only valid when ISBT 128 Concatenation is enabled (see "ISBT 128 Concate-nation" on page 105).

DEFAULT
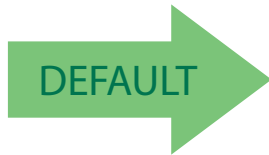
ISBT 128 Concatenation Mode = Static

ISBT 128 Concatenation Mode = Dynamic

ISBT 128 Dynamic Concatenation Timeout

Specifies the timeout used by the ISBT 128 Dynamic Concatenation Mode.

ISBT 128 Dynamic Concatenation Timeout = 50 msec

ISBT 128 Dynamic Concatenation Timeout = 100 msec

DEFAULT
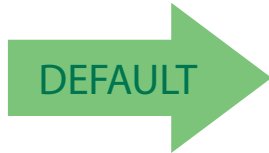
ISBT 128 Dynamic Concatenation Timeout = 200 msec

ISBT 128 Dynamic Concatenation Timeout = 500 msec

ISBT 128 Dynamic Concatenation Timeout = 750 msec

ISBT 128 Dynamic Concatenation Timeout = 1 second

ISBT 128 Advanced Concatenation Options

To set up pairs of label types for concatenation, use the HP Configuration application or contact HP Technical Support, as described on **.**

INTERLEAVED 2 OF 5 (I 2 OF 5)

The following options apply to the I 2 of 5 symbology.

I 2 of 5 Enable/Disable

When disabled, the scanner will not read I 2 of 5 barcodes.

DEFAULT

I 2 of 5 = Disable

I 2 of 5 = Enable

I 2 of 5 Check Character Calculation

This option enables/disables calculation and verification of an optional I 2 of 5 check character. Combinations of these settings are possible via the HP configuration utility, or contact Technical Support.

DEFAULT
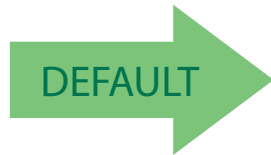
I 2 of 5 Check Character Calculation = Disable

I 2 of 5 Check Character Calculation = Check Standard (Modulo 10)

I 2 of 5 Check Character Calculation = Check German Parcel

I 2 of 5 Check Character Calculation = Check DHL

I 2 of 5 Check Character Calculation = Check Daimler Chrysler

I 2 of 5 Check Character Calculation = Check Bosch

I 2 of 5 Check Character Calculation = Italian Post

I 2 of 5 Check Character Transmission

Enable this option to transmit the check character along with I 2 of 5 barcode data.

I 2 of 5 Check Character Transmission = Don't Send

I 2 of 5 Check Character Transmission = Send

DEFAULT

I 2 of 5 Length Control

This feature specifies either variable length decoding or fixed length decoding for the I 2 of 5 symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
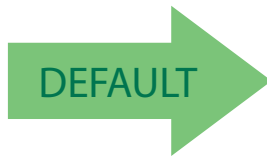
I 2 of 5 Length Control = Variable Length

I 2 of 5 Length Control = Fixed Length

I 2 of 5 Set Length 1

This feature specifies one of the barcode lengths for I 2 of 5 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the barcode's check and data characters. The length can be set from 2 to 50 characters in increments of two.

Table 7 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 7. I 2 of 5 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	2 Characters	6 Characters	14 Characters	50 Characters
2	**Pad with leading zeroes to yield two digits**	02	06	14	50
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT I 2 of 5 LENGTH 1 SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '2'	'0' and '6'	'1' and '4'	'5' AND '0'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select I 2 of 5 Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
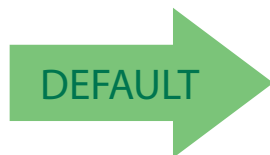
DEFAULT   **06 = Length 1 is 6 Characters**

I 2 of 5 Set Length 2

This feature specifies one of the barcode lengths for I 2 of 5 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the barcode's check and data characters.

The length can be set from 2 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 8 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 8. I 2 of 5 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	Ignore This Length	4 Characters	14 Characters	50 Characters
2	**Pad with leading zeroes to yield two digits**	00	04	14	50
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT I 2 OF 5 LENGTH 2 SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '4'	'1' and '4'	'5' AND '0'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select I 2 of 5 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
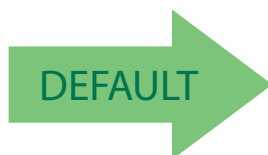
DEFAULT   **50 = Length 2 is 50 Characters**

INTERLEAVED 2 OF 5 CIP HR

The following options apply to the Interleaved 2 of 5 CIP HR symbology.

Interleaved 2 of 5 CIP HR Enable/Disable

Enables/Disables ability of scanner to decode Interleaved 2 of 5 CIP HR labels.

DEFAULT

Interleaved 2 of 5 CIP HR = Disable

Interleaved 2 of 5 CIP HR = Enable

FOLLETT 2 OF 5

The following options apply to the Follett 2 of 5 symbology.

Follett 2 of 5 Enable/Disable

Enables/Disables ability of scanner to decode Plessey labels.

DEFAULT
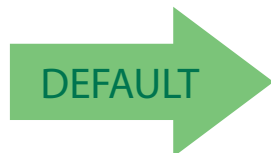
Follett 2 of 5 = Disable

Follett 2 of 5 = Enable

STANDARD 2 OF 5

The following options apply to the Standard 2 of 5 symbology.

Standard 2 of 5 Enable/Disable

When disabled, the scanner will not read Standard 2 of 5 barcodes.

DEFAULT
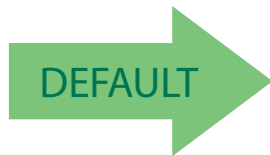
Standard 2 of 5 = Disable

Standard 2 of 5 = Enable

Standard 2 of 5 Check Character Calculation

This option enables/disables calculation and verification of an optional Standard 2 of 5 check character.

DEFAULT
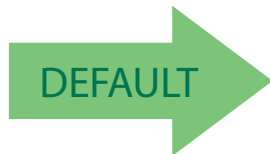
Standard 2 of 5 Check Character Calculation = Disable

Standard 2 of 5 Check Character Calculation = Enable

Standard 2 of 5 Check Character Transmission

This feature enables/disables transmission of an optional Standard 2 of 5 check character.

Standard 2 of 5 Check Character Transmission = Don't Send

DEFAULT

Standard 2 of 5 Check Character Transmission = Send

Standard 2 of 5 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Standard 2 of 5 symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT

Standard 2 of 5 Length Control = Variable Length

Standard 2 of 5 Length Control = Fixed Length

Standard 2 of 5 Set Length 1

This feature specifies one of the barcode lengths for Standard 2 of 5 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's check and data characters. The length can be set from 1 to 50 characters.

Table 9 provides some examples for setting Length 1. See page 219 if you want detailed instructions on setting this feature.

Table 9. Standard 2 of 5 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT STANDARD 2 OF 5 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Standard 2 of 5 Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **08 = Length 1 is 8 Characters**

Standard 2 of 5 Set Length 2

This feature specifies one of the barcode lengths for Standard 2 of 5 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check and data characters.

The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 10 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 10. Standard 2 of 5 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting (pad with leading zeroes)**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT STANDARD 2 OF 5 LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Standard 2 of 5 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

INDUSTRIAL 2 OF 5

The following options apply to the Industrial 2 of 5 symbology.

Industrial 2 of 5 Enable/Disable

Enables/Disables ability of scanner to decode Industrial 2 of 5 labels.

DEFAULT
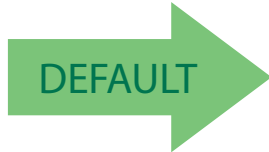
Industrial 2 of 5 = Disable

Industrial 2 of 5 = Enable

Industrial 2 of 5 Check Character Calculation

Enables/Disables calculation and verification of an optional Industrial 2 of 5 check character.

DEFAULT
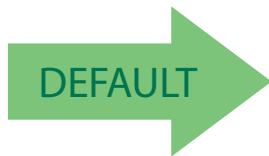
Industrial 2 of 5 Check Character Calculation = Disable

Industrial 2 of 5 Check Character Calculation = Enable

Industrial 2 of 5 Check Character Transmission

Enables/disables transmission of an Industrial 2 of 5 check character.

Industrial 2 of 5 Check Character Transmission = Disable

DEFAULT

Industrial 2 of 5 Check Character Transmission = Enable

Industrial 2 of 5 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Industrial 2 of 5 symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
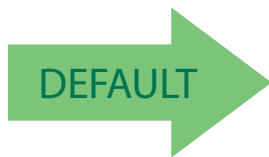
Industrial 2 of 5 Length Control = Variable Length

Industrial 2 of 5 = Fixed Length

Industrial 2 of 5 Set Length 1

This feature specifies one of the barcode lengths for Industrial 2 of 5 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 0 to 50 characters.

Table 11 provides some examples for setting Length 1. See page 219 if you want detailed instructions on setting this feature.

Table 11. Industrial 2 of 5 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT INDUSTRIAL 2 OF 5 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Industrial 2 of 5 Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
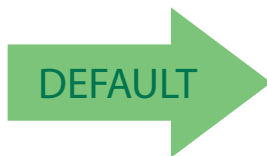
DEFAULT **01 = Length 1 is 1 Character**

Industrial 2 of 5 Set Length 2

This feature specifies one of the barcode lengths for Industrial 2 of 5 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 12 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 12. Industrial 2 of 5 Length 2 Setting Examples

| STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT INDUSTRIAL 2 OF 5 LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Industrial 2 of5 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **50 = Length 2 is 50 Characters**

CODE IATA

The following options apply to the IATA symbology.

IATA Enable/Disable

Enables/Disables the ability of the scanner to decode IATA labels.

DEFAULT
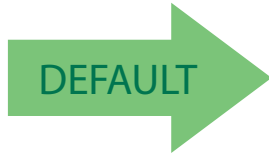
IATA = Disable

IATA = Enable

IATA Check Character Transmission

Enables/Disables calculation and verification of an optional Industrial 2 of 5 check character.

IATA Check Character Transmission = Disable

DEFAULT

IATA Check Character Transmission = Enable

CODABAR

The following options apply to the Codabar symbology.

Codabar Enable/Disable

When disabled, the scanner will not read Codabar barcodes.

DEFAULT
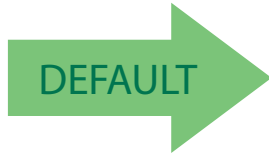
Codabar = Disable

Codabar = Enable

Codabar Check Character Calculation

Enable this option to enables/disables calculation and verification of an optional Codabar check character. When disabled, any check character in the label is treated as a data character

DEFAULT
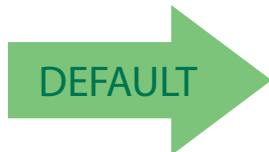
Codabar Check Character Calculation = Don't Calculate

Codabar Check Character Calculation = Enable AIM standard check char.

Codabar Check Character Calculation = Enable Modulo 10 check char.

Codabar Check Character Transmission

Enable this option to transmit the check character along with Codabar barcode data.

Codabar Check Character Transmission = Don't Send

DEFAULT

Codabar Check Character Transmission = Send

Codabar Start/Stop Character Transmission

Enable this option to enable/disable transmission of Codabar start and stop characters.

Codabar Start/Stop Character Transmission = Don't Transmit

DEFAULT

Codabar Start/Stop Character Transmission = Transmit

Codabar Start/Stop Character Set

This option specifies the format of transmitted Codabar start/stop characters.

Codabar Check Character Set = ABCD/TN*E

Codabar Check Character Set = ABCD/ABCD

Codabar Check Character Set = abcd/tn*e

DEFAULT

Codabar Check Character Set = abcd/abcd

Codabar Start/Stop Character Match

When enabled, this option requires that start and stop characters match.

DEFAULT
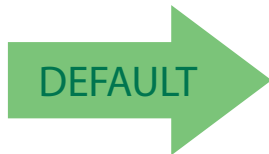
Codabar Start/Stop Character Match = Don't Require Match

Codabar Start/Stop Character Match = Require Match

Codabar Quiet Zones

Specifies the number of quiet zones for Codabar labels. Quiet zones are blank areas at the ends of a barcode and are typically 10 times the width of the narrowest bar or space in the label.

Codabar Quiet Zones = Quiet Zones on two sides

DEFAULT

Codabar Quiet Zones = Small Quiet Zones on two sides

Codabar Length Control

This feature specifies either variable length decoding or fixed length decoding for the Codabar symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
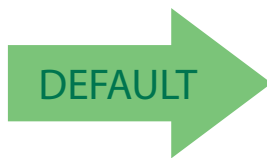
Codabar Length Control = Variable Length

Codabar Length Control = Fixed Length

Codabar Set Length 1

This feature specifies one of the barcode lengths for Codabar Length ControlCodabar Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's start, stop, check and data characters. The length must include at least one data character. The length can be set from 3 to 50 characters.

Table 13 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 13. Codabar Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting (and pad with leading zeroes)**	03 Characters	09 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODABAR LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '3'	'0' and '9'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Codabar Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
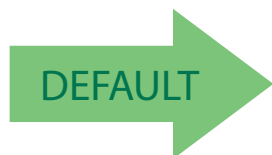
DEFAULT ➤ **03 = Length 1 is 3 Characters**

Codabar Set Length 2

This feature specifies one of the barcode lengths for Codabar Length ControlCodabar Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the barcode's start, stop, check and data characters. The length must include at least one data character.

The length can be set from 3 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 14 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 14. Codabar Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting (and pad with leading zeroes)**	00 Ignore This Length	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODABAR LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Codabar Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **50 = Length 2 is 50 Characters**

ABC CODABAR

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

Enables/Disables ability of scanner to decode ABC Codabar labels.

DEFAULT
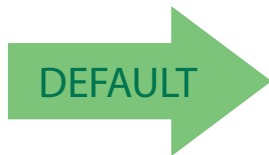
ABC Codabar = Disable

ABC Codabar = Enable

ABC Codabar Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

DEFAULT
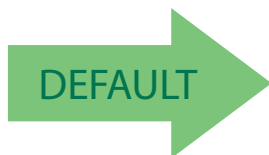
ABC Codabar Concatenation Mode = Static

ABC Codabar Concatenation Mode = Dynamic

ABC Codabar Dynamic Concatenation Timeout

Specifies the timeout in 10-millisecond ticks used by the ABC Codabar Dynamic Concatenation Mode.

ABC Codabar Dynamic Concatenation Timeout = 50 msec

ABC Codabar Dynamic Concatenation Timeout = 100 msec

DEFAULT
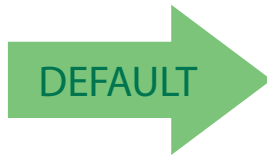
ABC Codabar Dynamic Concatenation Timeout = 200 msec

ABC Codabar Dynamic Concatenation Timeout = 500 msec

ABC Codabar Dynamic Concatenation Timeout = 750 msec

ABC Codabar Dynamic Concatenation Timeout = 1 Second

ABC Codabar Force Concatenation

Forces labels starting or ending with D to be concatenated.

DEFAULT
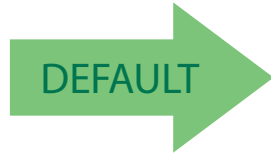
ABC Codabar Force Concatenation = Disable

ABC Codabar Force Concatenation = Enable

CODE 11

The following options apply to the Code 11 symbology.

Code 11 Enable/Disable

When disabled, the scanner will not read Code 11 barcodes.

DEFAULT
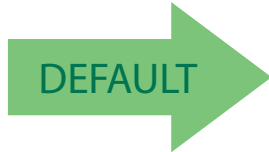
Code 11 = Disable

Code 11 = Enable

Code 11 Check Character Calculation

This option enables/disables calculation and verification of optional Code 11 check character.

Code 11 Check Character Calculation = Disable

Code 11 Check Character Calculation = Check C
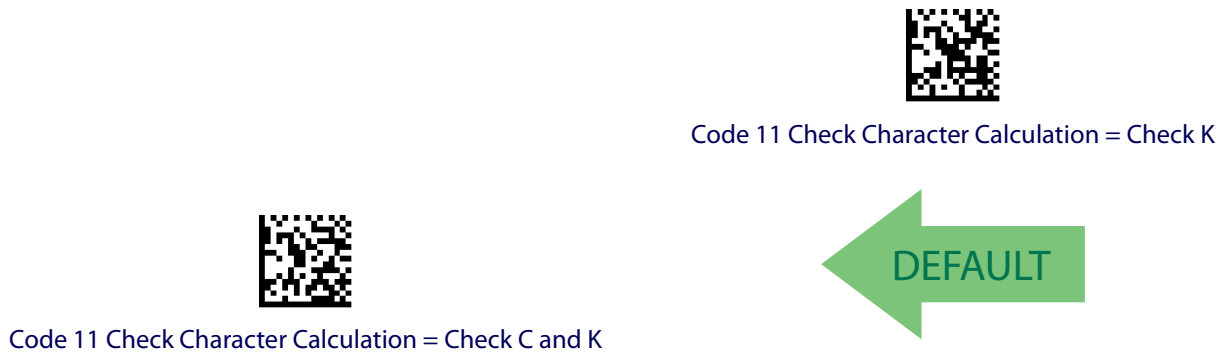
Code 11 Check Character Calculation = Check K

DEFAULT

Code 11 Check Character Calculation = Check C and K

Code 11 Check Character Transmission

This feature enables/disables transmission of an optional Code 11 check character.

Code 11 Check Character Transmission = Don't Send

DEFAULT

Code 11 Check Character Transmission = Send
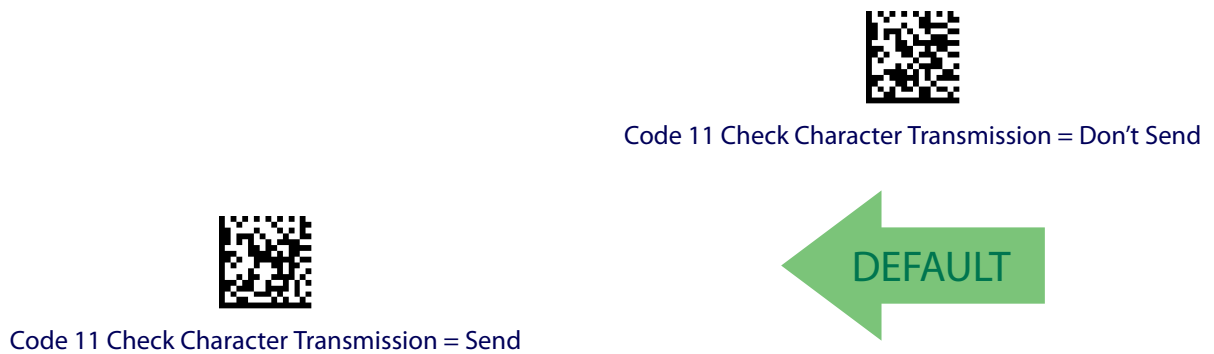
Code 11 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 11 symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
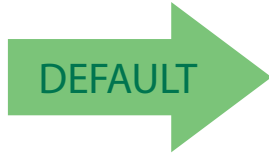
Code 11 Length Control = Variable Length

Code 11 Length Control = Fixed Length

Code 11 Set Length 1

This feature specifies one of the barcode lengths for Code 11 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's check and data characters. The length can be set from 2 to 50 characters.

Table 15 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 15. Code 11 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting (pad with leading zeroes)**	02 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 11 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '2'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 11 Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.
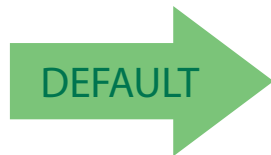
CANCEL
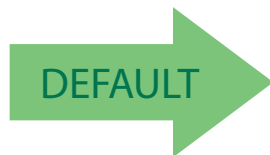
DEFAULT   **04 = Length 1 is 4 Characters**

Code 11 Set Length 2

This feature specifies one of the barcode lengths for Code 11 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check and data characters.

The length can be set from 2 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 16 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 16. Code 11 Length 2 Setting Examples

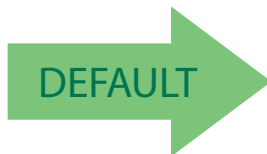| STEP	ACTION	EXAMPLES			
1	**Desired Setting (pad with leading zeroes)**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 11 LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' and 0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 11 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **50 = Length 2 is 50 Characters**

GS1 DATABAR™ OMNIDIRECTIONAL

The following options apply to the GS1 DataBar™ Omnidirectional (formerly RSS-14) symbology.

GS1 DataBar™ Omnidirectional Enable/Disable

When disabled, the scanner will not read GS1 DataBar™ Omnidirectional barcodes.

DEFAULT
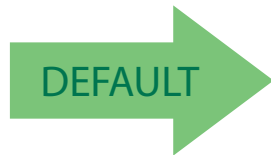
GS1 DataBar™ Omnidirectional = Disable

GS1 DataBar™ Omnidirectional = Enable

GS1 DataBar™ Omnidirectional GS1-128 Emulation

When enabled, GS1 DataBar™ Omnidirectional barcodes will be translated to the GS1-128 label data format.
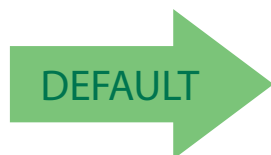
DEFAULT

GS1 DataBar™ Omnidirectional GS1-128 Emulation = Disable

GS1 DataBar™ Omnidirectional GS1-128 Emulation = Enable

GS1 DataBar™ Omnidirectional 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label for this symbology is decoded.

DEFAULT
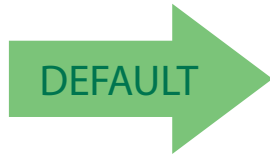
GS1 DataBar™ Omnidirectional 2D Component = Disable (2D component not required)

GS1 DataBar™ Omnidirectional 2D Component = 2D component must be decoded

GS1 DATABAR™ EXPANDED

The following options apply to the GS1 DataBar™ Expanded (formerly RSS Expanded) symbology.

GS1 DataBar™ Expanded Enable/Disable

When disabled, the scanner will not read GS1 DataBar™ Expanded barcodes.

DEFAULT
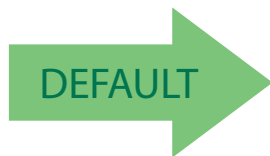
GS1 DataBar™ Expanded = Disable

GS1 DataBar™ Expanded = Enable

GS1 DataBar™ Expanded GS1-128 Emulation

When enabled, GS1 DataBar™ Expanded barcodes will be translated to the GS1-128 label data format.
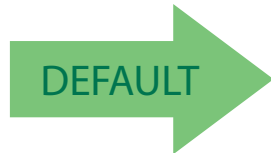
DEFAULT

GS1 DataBar™ Expanded GS1-128 Emulation = Disable

GS1 DataBar™ Expanded GS1-128 Emulation = Enable

GS1 DataBar™ Expanded 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label of this symbology is decoded.

DEFAULT
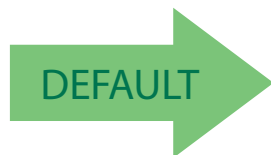
GS1 DataBar™ Expanded 2D Component = Disable

GS1 DataBar™ Expanded 2D Component = Enable

GS1 DataBar™ Expanded Length Control

This feature specifies either variable length decoding or fixed length decoding for the GS1 DataBar™ Expanded symbology.

Variable Length: For variable-length decoding, a minimum length may be set.

Fixed Length: For fixed-length decoding, two different lengths may be set.

DEFAULT
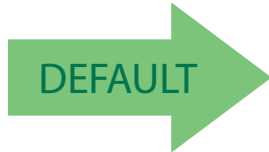
GS1 DataBar™ Expanded Length Control = Variable Length

GS1 DataBar™ Expanded Length Control = Fixed Length

GS1 DataBar™ Expanded Set Length 1

This feature specifies one of the barcode lengths for GS1 DataBar™ Expanded Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 1 to 74 characters.

Table 17 provides some examples for setting Length 1. See for detailed instructions on setting this feature.

Table 17. GS1 DataBar™ Expanded Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	52 Characters	74 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT GS1 DataBar™ EXPANDED LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'5' and '2'	'7' AND '4'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select GS1 DataBar™ Expanded Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
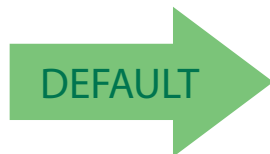
DEFAULT   **01 = Length 1 is 1 Character**

GS1 DataBar™ Expanded Set Length 2

This feature specifies one of the barcode lengths for GS1 DataBar™ Expanded Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 1 to 74 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 18 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 18. GS1 DataBar™ Expanded Length 2 Setting Examples

| STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (ignore second length)	07 Characters	52 Characters	74 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT GS1 DataBar™ EXPANDED LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'5' and '2'	'7' and '4'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select GS1 DataBar™ Expanded Set Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
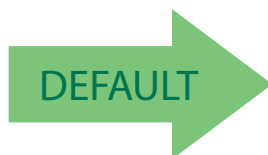
DEFAULT **74 = Length 2 is 74 Characters**

GS1 DATABAR™ LIMITED

The following options apply to the GS1 DataBar™ Limited (formerly RSS Limited) symbology.

GS1 DataBar™ Limited Enable/Disable

When disabled, the scanner will not read GS1 DataBar™ Limited barcodes.

DEFAULT
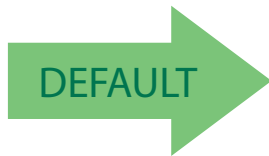
GS1 DataBar™ Limited = Disable

GS1 DataBar™ Limited = Enable

GS1 DataBar™ Limited GS1-128 Emulation

When enabled, GS1 DataBar™ Limited barcodes will be translated to the GS1-128 label data format.
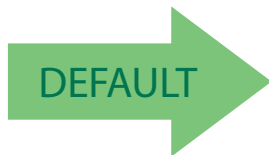
DEFAULT

GS1 DataBar™ Limited GS1-128 Emulation = Disable

GS1 DataBar™ Limited GS1-128 Emulation = Enable

GS1 DataBar™ Limited 2D Component

This feature enables/disables a requirement that a 2D label component be decoded when a base label of this symbology is decoded.

DEFAULT

GS1 DataBar™ Limited 2D Component = Disable (2D component not required)

GS1 DataBar™ Limited 2D Component = 2D component must be decoded

CODE 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

Enables/Disables ability of scanner to decode Code 93 labels.

DEFAULT
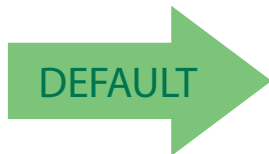
Code 93 = Disable

Code 93 = Enable

Code 93 Check Character Calculation

Enables/disables calculation and verification of an optional Code 93 check character.

Code 93 Check Character Calculation = Disable

Code 93 Check Character Calculation = Enable Check C

Code 93 Check Character Calculation = Enable Check K

DEFAULT

Code 93 Check Character Calculation = Enable Check C
and K

Code 93 Check Character Transmission

Enables/disables transmission of an optional Code 93 check character.

Code 93 Check Character Transmission = Disable

DEFAULT

Code 93 Check Character Transmission = Enable

Code 93 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 93 symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
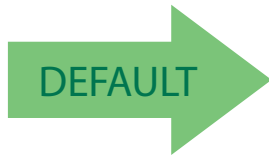
Code 93 Length Control = Variable Length

Code 93 = Fixed Length

Code 93 Set Length 1

Specifies one of the barcode lengths for Code 93 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 01 to 50 characters.

Table 19 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 19. Code 93 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 93 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 93 Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
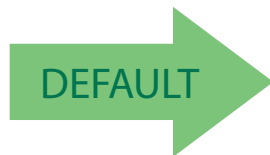
DEFAULT   **01 = Length 1 is 1 Character**

Code 93 Set Length 2

This feature specifies one of the barcode lengths for Code 93 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters. The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 20 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 20. CODE 93 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 93 LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 93 Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

Code 93 Quiet Zones

Enables/disables quiet zones for Code 93.

Code 93 Quiet Zones = Quiet Zones on two sides

DEFAULT

Code 93 Quiet Zones = Small Quiet Zones on two sides

MSI

The following options apply to the MSI symbology.

MSI Enable/Disable

Enables/Disables ability of scanner to decode MSI labels.

DEFAULT
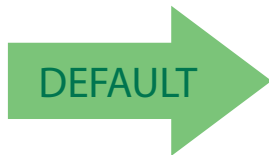
MSI = Disable

MSI = Enable

MSI Check Character Calculation

Enables/Disables calculation and verification of an optional MSI check character.

MSI Check Character Calculation = Disable

DEFAULT

MSI Check Character Calculation = Enable Mod10

MSI Check Character Calculation = Enable Mod11/10

MSI Check Character Calculation = Enable Mod10/10

MSI Check Character Transmission

Enables/disables transmission of an MSI check character.

MSI Check Character Transmission = Disable

DEFAULT

MSI Check Character Transmission = Enable

MSI Length Control

This feature specifies either variable length decoding or fixed length decoding for the MSI symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFACE

DEFAULT
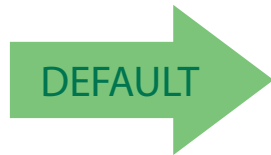
MSI Length Control = Variable Length

MSI = Fixed Length

MSI Set Length 1

This feature specifies one of the barcode lengths for MSI Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 01 to 50 characters.

Table 21 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 21. MSI Length 1 Setting Examples

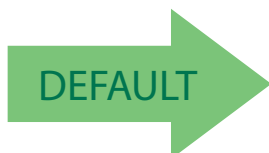| STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT MSI LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select MSI Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
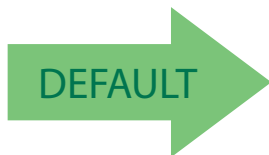
DEFAULT **01 = Length 1 is 1 Character**

MSI Set Length 2

This feature specifies one of the barcode lengths for MSI Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 22 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 22. MSI Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT MSI LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select MSI Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
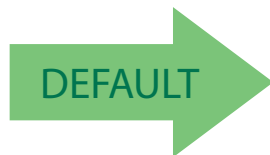
DEFAULT   **50 = Length 2 is 50 Characters**

PLESSEY

The following options apply to the Plessey symbology.

Plessey Enable/Disable

Enables/Disables ability of scanner to decode Plessey labels.

DEFAULT
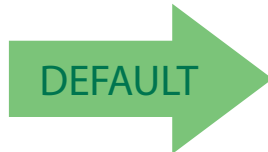
Plessey = Disable

Plessey = Enable

Plessey Check Character Calculation

Enables/Disables calculation and verification of an optional Plessey check character.

Plessey Check Character Calculation = Disable

Plessey Check Character Calculation =
Enable Plessey std. check char. verification

DEFAULT

Plessey Check Character Calculation =
Enable Anker check char. verification

Plessey Check Character Calculation =
Enable Plessey std. and Anker check char verification

Plessey Check Character Transmission

Enables/disables transmission of an MSI check character.

Plessey Check Character Transmission = Disable

DEFAULT

Plessey Check Character Transmission = Enable

## Plessey Length Control

This feature specifies either variable length decoding or fixed length decoding for the Plessey symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT

Plessey Length Control = Variable Length

Plessey = Fixed Length

Plessey Set Length 1

This feature specifies one of the barcode lengths for Plessey Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. The length can be set from 01 to 50 characters.

Table 23 provides some examples for setting Length 1. See page 219 for detailed instructions on setting this feature.

Table 23. Plessey Length 1 Setting Examples

| STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT Plessey LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Plessey Set Length 1 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
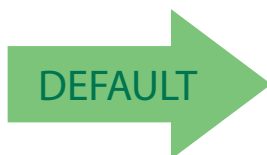
DEFAULT   **01 = Length 1 is 1 Character**

Plessey Set Length 2

This feature specifies one of the barcode lengths for Plessey Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 24 provides examples for setting Length 2. See page 219 for detailed instructions on setting this feature.

Table 24. Plessey Length 2 Setting Examples

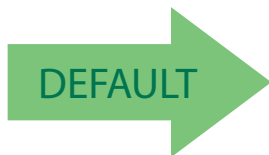| STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT PLESSEY LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Plessey Length 2 Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.


CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

NOTES

2D SYMBOLOGIES

2D Global Features

- 2D Maximum Decoding Time, page 160
- 2D Structured Append, page 161
- 2D Normal/Inverse Symbol Control, page 161

The reader supports the following 2D symbologies (barcode types). Symbology-dependent options for each symbology are included in this chapter. See "1D Code Selection" starting on page 65 for configuration of 1D barcodes.

2D Symbologies

- Aztec Code, page 162
- China Sensible Code, page 165
- Data Matrix, page 168
- Maxicode, page 171
- PDF417, page 174
- Micro PDF417, page 177
- QR Code, page 180
- Micro QR Code, page 183
- UCC Composite, page 186
- Postal Code Selection, page 188

2D Global Features

The following features are common to all, or in some cases, most of the available 2D symbologies. Default settings are indicated at each feature/option with a green arrow. Also reference Appendix B, Standard Defaults for a listing of the most widely used set of standard factory settings. That section also provides space to record any custom settings needed or implemented for your system.

To set most features:

1. Scan the ENTER/EXIT PROGRAMMING barcode at the top of applicable programming pages.

2. Scan the correct barcode to set the desired programming feature or parameter. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.

3. If additional input parameters are needed, go to Appendix D, Keypad, and scan the appropriate characters from the keypad.

   Additional information about many features can be found in the "References" chapter.

   If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

Complete the programming sequence by scanning the ENTER/EXIT PROGRAMMING barcode to exit Programming Mode.

2D Maximum Decoding Time

This feature specifies the maximum amount of time the software will spend attempting to decode a 2D label. The selectable range is 10 milliseconds to 2.55 milliseconds.

2D Maximum Decoding Time = 100 msec

2D Maximum Decoding Time = 200 msec

2D Maximum Decoding Time = 350 msec

DEFAULT

2D Maximum Decoding Time = 500 msec

2D Maximum Decoding Time = 1 Second

2D Maximum Decoding Time = 2 Seconds

2D Maximum Decoding Time = 2.55 Seconds

2D Structured Append

Enables/disables ability of reader to append multiple 2D Codes labels in a structured format. The structured append property is globally applied to the following symbologies, if these are enabled:

- Data Matrix
- QR Code
- Aztec
- PDF 417

DEFAULT →
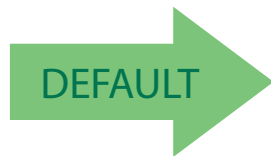
Structured Append = Disable

Structured Append = Enable

2D Normal/Inverse Symbol Control

Specifies the options available for decoding normal/negative printed 2D symbols. This configuration item applies globally to all the 2D symbologies that support that feature according to Standard AIM Specification: Data Matrix, QR, MicroQR, Aztec and Chinese Sensible Code.

To decode all symbologies, including linear symbologies, refer to "Decode Negative Image" on page 62D Symbology Selection

DEFAULT →
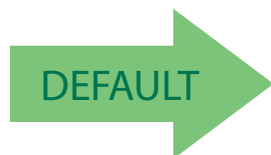
Normal/Inverse Symbol Control = Normal

Normal/Inverse Symbol Control = Inverse

Normal/Inverse Symbol Control = Both Normal and Inverse

Aztec Code

Aztec Code Enable / Disable

Enables/disables the ability of the reader to decode Aztec Code labels.

DEFAULT
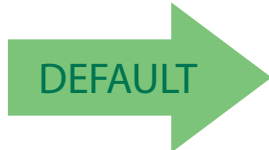
Aztec Code = Disable

Aztec Code = Enable

Aztec Code Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
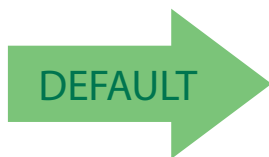
Aztec Code Length Control = Variable Length

Aztec Code Length Control = Fixed Length

Aztec Code Set Length 1

Specifies one of the barcode lengths for Aztec Code Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,832 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select Aztec Code Length 1 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

Aztec Code Set Length 2

This feature specifies one of the barcode lengths for Aztec Code Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,832 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select Aztec Code Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **Length 2 is 3,832 Characters**

China Sensible Code

China Sensible Code Enable / Disable

Enables/disables the ability of the reader to decode China Sensible Code labels.

DEFAULT
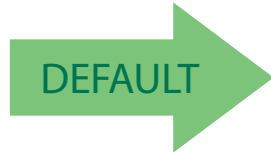
China Sensible Code = Disable

China Sensible Code = Enable

China Sensible Code Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
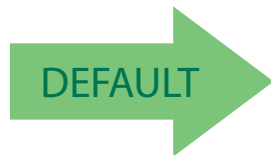
China Sensible Code Length Control = Variable Length

China Sensible Code Length Control = Fixed Length

China Sensible Code Set Length 1

Specifies one of the barcode lengths for China Sensible Code Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,827 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.
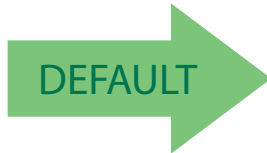
Select China Sensible Code Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **0001 = Length 1 is 1 Character**

China Sensible Code Set Length 2

This feature specifies one of the barcode lengths for China Sensible Code Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,827 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select China Sensible Code Length 2 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **Length 2 is 7,827 Characters**

Data Matrix

Data Matrix Enable / Disable

Enables/disables ability of reader to decode Data Matrix labels.

Data Matrix = Disable

Data Matrix = Enable

DEFAULT

Data Matrix Square/Rectangular Style

Specifies the options available when reading Data Matrix with different form factors. Choices are:

- Square Style
- Rectangular Style
- Both Square and Rectangular Style

The configuration item can also be configured as a bit mask to filter one or more Data Matrix labels with different symbol size AND shape styles.

Data Matrix Dimensions Mask = Square Style

Data Matrix Dimensions Mask = Rectangular Style

DEFAULT
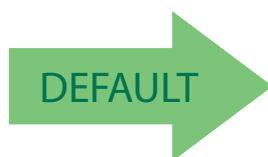
Data Matrix Dimensions Mask = Both Square and Rectangular Style

Data Matrix Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
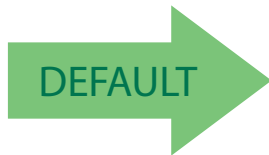
Data Matrix Length Control = Variable Length

Data Matrix Length Control = Fixed Length

Data Matrix Set Length 1

Specifies one of the barcode lengths for Data Matrix Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,116 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select Data Matrix Length 1 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.
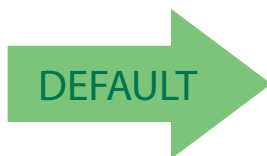
Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
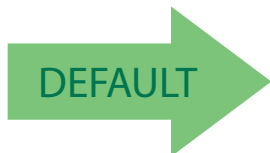
DEFAULT   **0001 = Length 1 is 1 Character**

Data Matrix Set Length 2

This feature specifies one of the barcode lengths for Data Matrix Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,116 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select Data Matrix Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
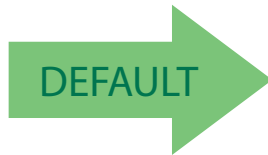
DEFAULT **Length 2 is 3,116 Characters**

Maxicode

Maxicode Enable / Disable

Enables/disables ability of reader to decode Maxicode labels.

DEFAULT
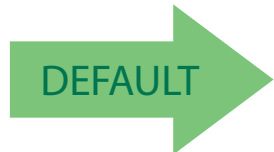
Maxicode = Disable

Maxicode = Enable

Maxicode Primary Message Transmission

Enables/disables the transmission of only the Primary Message when the Secondary Message is not readable.

DEFAULT
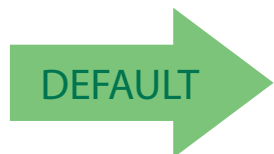
Maxicode Primary Message Transmission = Disable

Maxicode Primary Message Transmission = Enable

Maxicode Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
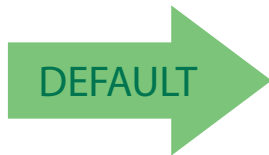
Maxicode Length Control = Variable Length

Maxicode Length Control = Fixed Length

Maxicode Set Length 1

Specifies one of the barcode lengths for Maxicode Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0145 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select Maxicode Length 1 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT

0001 = Length 1 is 1 Character

Maxicode Set Length 2

This feature specifies one of the barcode lengths for Maxicode Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0145 characters in increments of 0001 (pad with zeroes).

See for detailed instructions on setting this feature.

Select Maxicode Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **Length 2 is 0145 Characters**

PDF417

PDF417 Enable / Disable

Enables/disables the ability of the reader to decode PDF417 labels.

PDF417 = Disable

DEFAULT

PDF417 = Enable

PDF417 Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT

PDF417 Length Control = Variable Length

PDF417 Length Control = Fixed Length

PDF417 Set Length 1

Specifies one of the barcode lengths for PDF417 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. Characters can be set from 0001 to 2,710 characters (pad with zeroes) in increments of 01. Any value greater than 2,710 will be considered to be 2,710.

See page 219 for detailed instructions on setting this feature.

Select PDF417 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
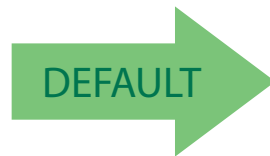
DEFAULT   **0001 = Length 1 is 1 Character**

PDF417 Set Length 2

This feature specifies one of the barcode lengths for PDF417 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters. Characters can be set from 01 to 2,710 characters (pad with zeroes) in increments of 01. Any value greater than 2,710 will be considered to be 2,710.

See page 219 for detailed instructions on setting this feature.

Select PDF417 Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
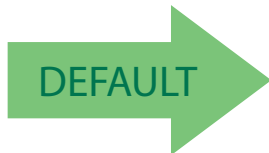
DEFAULT **Length 2 is 2,710 Characters**

Micro PDF417

Micro PDF417 Enable / Disable

Enables/disables the ability of the reader to decode Micro PDF417 labels.

DEFAULT
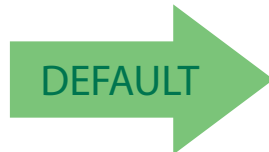
Micro PDF417 = Disable

Micro PDF417 = Enable

Micro PDF417 Code 128 GS1-128 Emulation

Specifies which AIM ID to use for MicroPDF labels when doing Code 128 or GS1-128 emulation.

Emulation choices are:

- Micro PDF AIM ID and label type
- Code 128 / EAN128 AIM Id and label type

DEFAULT
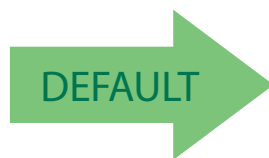
Micro PDF417 Code 128 GS1-128 Emulation = Micro PDF AIM ID and label type

Micro PDF417 Code 128 GS1-128 Emulation = Code 128 / EAN128 AIM ID and label type

Micro PDF417 Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
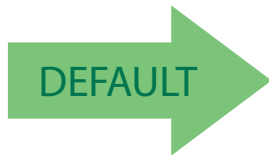
Micro PDF417 Length Control = Variable Length

Micro PDF417 Length Control = Fixed Length

Micro PDF417 Set Length 1

Specifies one of the barcode lengths for Micro PDF417 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. Characters can be set from 0001 to 0366 characters (pad with zeroes) in increments of 01. Any value greater than 0366 will be considered to be 0366.

See page 219 for detailed instructions on setting this feature.

Select Micro PDF417 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.
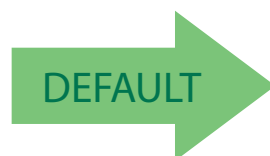
Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **0001 = Length 1 is 1 Character**

Micro PDF417 Set Length 2

This feature specifies one of the barcode lengths for Micro PDF417 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length includes the barcode's data characters only. Characters can be set from 0001 to 0366 characters (pad with zeroes) in increments of 01. Any value greater than 0366 will be considered to be 0366.

See page 219 for detailed instructions on setting this feature.

Select Micro PDF417 Length 2 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **Length 2 is 0366 Characters**

QR Code

QR Code Enable / Disable

Enables/disables the ability of the reader to decode QR Code labels.

QR Code = Disable

DEFAULT

QR Code = Enable

QR Code Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT

QR Code Length Control = Variable Length

QR Code Length Control = Fixed Length

QR Code Set Length 1

Specifies one of the barcode lengths for QR Code Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,089 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select QR Code Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

QR Code Set Length 2

This feature specifies one of the barcode lengths for QR Code Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,089 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

Select QR Code Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT   **Length 2 is 7,089 Characters**

Micro QR Code

Micro QR Code Enable/Disable

Enables/disables the ability of the reader to decode Micro QR Code labels.

DEFAULT

Micro QR Code = Disable

Micro QR Code = Enable

Micro QR Code Length Control

This feature specifies either variable length decoding or fixed length decoding for this symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

DEFAULT
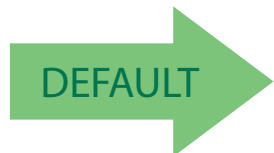
Micro QR Code Length Control = Variable Length

Micro QR Code Length Control = Fixed Length

Micro QR Code Set Length 1

Specifies one of the barcode lengths for Micro QR Code Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0035 characters in increments of 0001 (pad with zeroes).

See page 219 for detailed instructions on setting this feature.

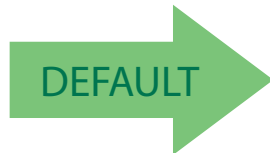Select Micro QR Code Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
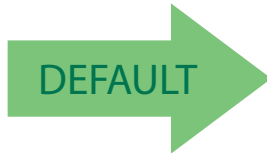
DEFAULT   **0001 = Length 1 is 1 Character**

Micro QR Code Set Length 2

This feature specifies one of the barcode lengths for Micro QR Code Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0035 characters in increments of 0001 (pad with zeroes).

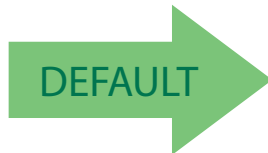See page 219 for detailed instructions on setting this feature.

Select QR Code Length 2 Setting

To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT **Length 2 is 0035 Characters**

UCC Composite

UCC Composite Enable / Disable

Enables/disables the ability of the reader to decode the stacked part of a UCC Composite label.

This feature is not effective when Global AIM IDs are enabled (see "Global AIM ID" on page 33**).**

DEFAULT
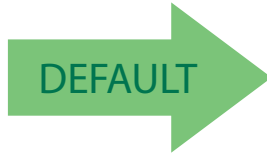
UCC Composite = Disable

UCC Composite = Enable

UCC Optional Composite Timer

Specifies the amount of time the system will wait for the stacked part of a UCC Composite label before transmitting the linear label without an add-on.

DEFAULT
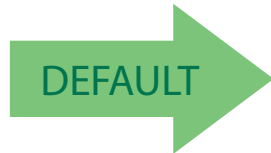
UCC Optional Composite Timer = Timer Disabled

UCC Optional Composite Timer = 100msec

UCC Optional Composite Timer = 200msec

UCC Optional Composite Timer = 300msec

UCC Optional Composite Timer = 400msec

UCC Optional Composite Timer = 500msec

Postal Code Selection

Enables/disables the ability of the scanner to decode labels of a specific postal symbology.

- Disable All Postal Codes
- Postnet
- Planet
- Royal Mail
- Kix

- Australia Post
- Japan Post
- IMB
- Sweden Post
- Portugal Post

DEFAULT
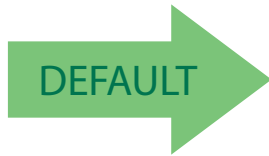
Postal Code Selection = Disable All Postal Codes

Postal Code Selection = Enable Postnet

Postal Code Selection = Enable Planet

Postal Code Selection = Enable Royal Mail

Postal Code Selection = Enable Kix

Postal Code Selection = Enable Australia Post

Postal Code Selection (continued)

Postal Code Selection = Enable Japan Post

Postal Code Selection = Enable IMB

Postal Code Selection = Enable Sweden Post

Postal Code Selection = Enable Portugal Post

Postnet BB Control

Controls the ability of the scanner to decode B and B' fields of Postnet labels.

DEFAULT
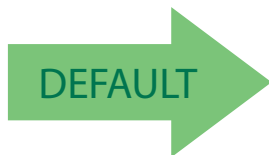
Postnet BB Control = Disable

Postnet BB Control = Enable

NOTES

WIRELESS-SPECIFIC FEATURES

This section provides options and programming related to the scanner's wireless communication features. Reference Appendix B. for a listing of standard factory settings.

Wireless Beeper Features

Several options are available to configure beeper behavior for RF operation.

Good Transmission Beep

Enables/disables the Good Transmission Beep indication. When enabled, a beep occurs when a Label is correctly transmitted to the base.

Good Transmission Beep = Disable

DEFAULT

Good Transmission Beep = Enable

Beep Frequency

Adjusts radio-specific beep indications to sound at a low, medium or high frequency, selectable from the list below (controls the beeper's pitch/tone).

DEFAULT

Beep Frequency = Low

Beep Frequency = Medium

Beep Frequency = High
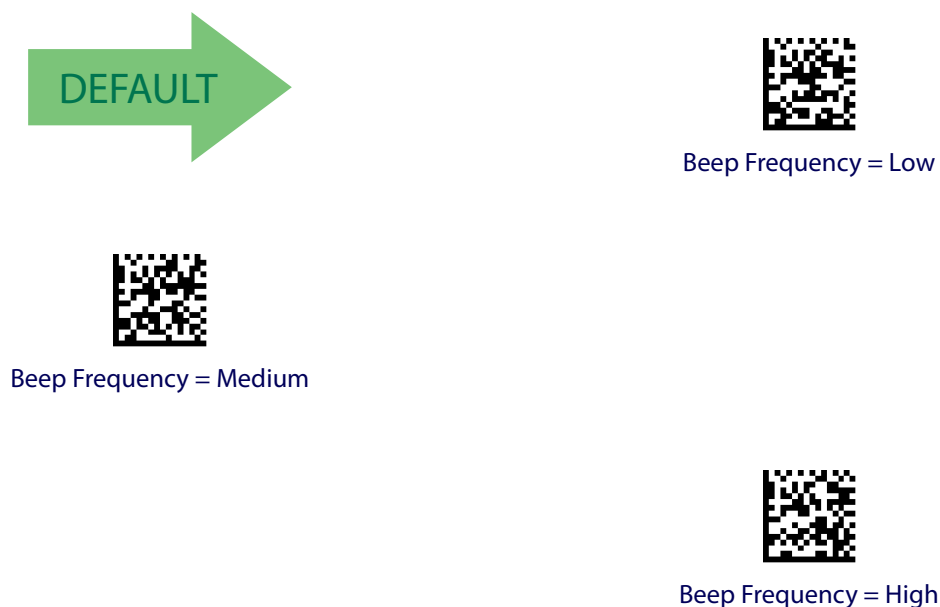
Beep Duration

This feature controls the duration of radio-specific beep indications.

Beep Duration = 60 msec

Beep Duration = 80 msec

DEFAULT

Beep Duration = 100 msec

Beep Duration = 120 msec

Beep Duration = 140 msec

Beep Duration = 160 msec

Beep Duration = 180 msec

Beep Duration = 200 msec
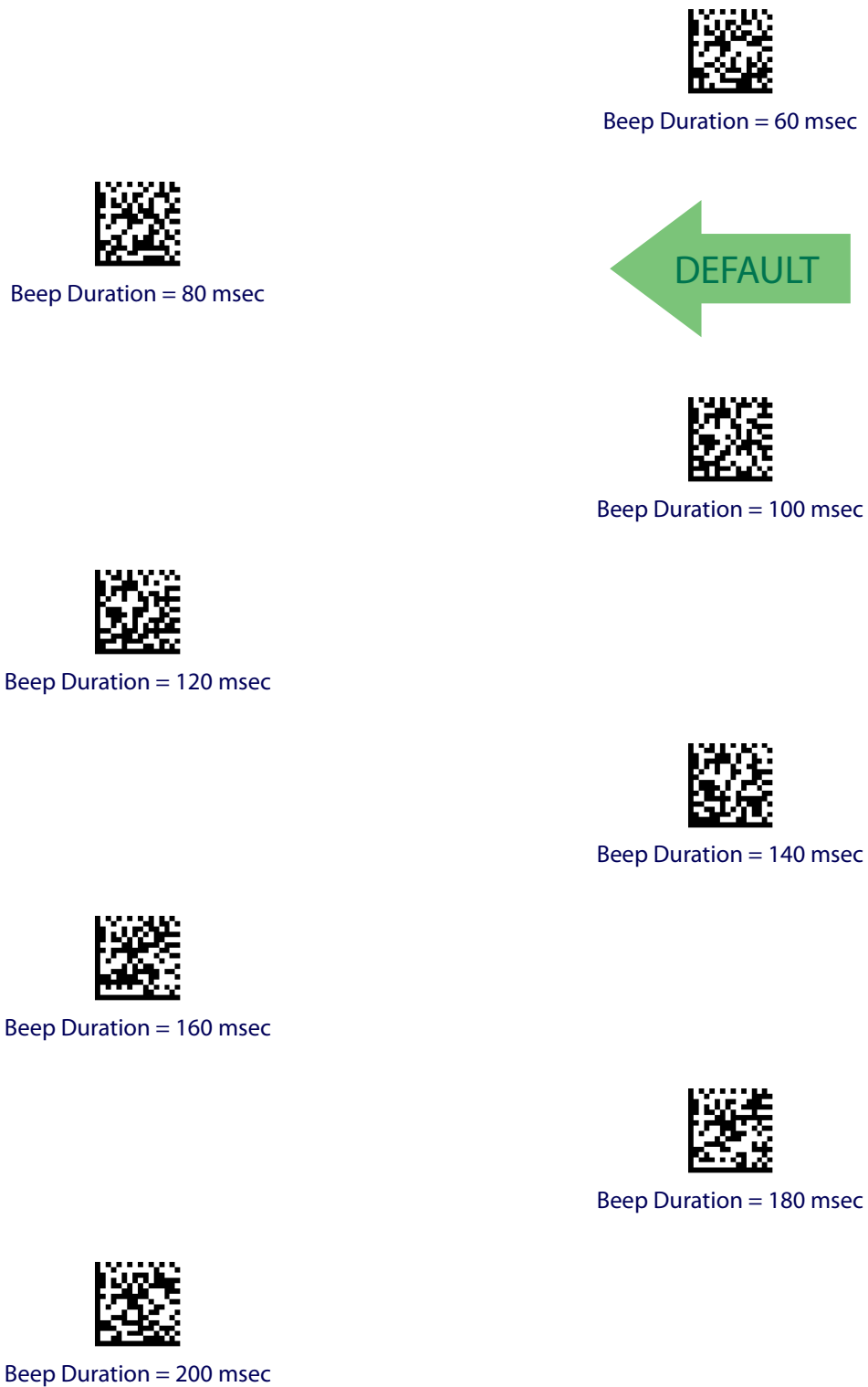
Beep Volume

Selects the beeper volume (loudness) of radio-specific beep indications. There are three selectable volume levels.

Beep Volume = Low

Beep Volume = Medium

DEFAULT

Beep Volume = High

Disconnect Beep

Enables/disables the beep indication that a handheld has become connected or disconnected from a Base Station.

The defaults are different for the STAR and BT models.

Disconnect Beep = Disable

DEFAULT

Disconnect Beep = Enable

Docking Beep

Enables/disables a beep indication when the handheld is placed in the Base Station.

Docking Beep = Disable

DEFAULT

Docking Beep = Enable

Leash Alarm

This setting specifies the number of seconds to sound the Leash Mode beeps (three per second) when the handheld goes out of range. This is especially useful in instances where the scanner might inadvertently have been placed in a bag or cart.

For this mode to be effective, the scanner must be linked to the Base Station. If the scanner is asleep or disconnected from the Base Station, there is no way for it to know where it is relative to the Base Station because communication is not active between the devices.

DEFAULT
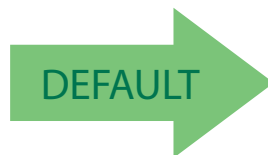
Leash Alarm = Disabled

Leash Alarm = 1 Second

Leash Alarm = 2 Seconds

Leash Alarm (continued)

Leash Alarm = 3 Seconds

Leash Alarm = 4 Seconds

Leash Alarm = 5 Seconds

Leash Alarm = 10 Seconds

Leash Alarm = 25 Seconds

Leash Alarm = 30 Seconds

Configuration Updates

See in "References" for detailed information and examples of these features.

Automatic Configuration Update

When this feature is enabled, a scanner and its linked Base Station can automatically ensure they stay in sync with regard to application hardware and/or configuration. See for more information on this feature.

Automatic Configuration Update = Disable

Automatic Configuration Update = Enable

DEFAULT

Copy Configuration to Scanner

Scan the following label to copy the current Base Station configuration to the scanner. Use this method when the Auto Configuration Update feature is disabled and you want a one-time configuration update to be performed on the scanner.

NOTE

Do not scan an ENTER/EXIT PROGRAMMING MODE label in conjunction with this barcode.
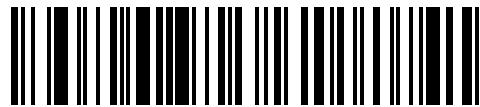
Copy Configuration to Scanner

Copy Configuration to Base Station

Scan the following label to copy the current scanner configuration to the Base Station. Use this method when the Auto Configuration Update feature is disabled and you want a one-time configuration update to be performed on the Base Station.

Copy Configuration to Base Station

NOTE

Do not scan an ENTER/EXIT PROGRAMMING MODE label with this barcode.

Batch Features

Batch Mode

This option specifies whether to store labels in the handheld while disconnected from the base. Options are as follows:

- Disabled — The handheld will not store/batch labels.

- Automatic — The handheld will store labels to memory when the handheld goes out of range and is disconnected from the remote device.

- Manual — The handheld will always store labels to Flash memory. The user must manually send the stored labels to the remote device using a special "batch send" label.

DEFAULT
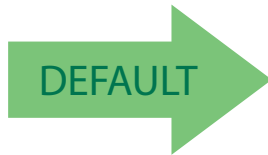
Batch Mode = Disabled

Batch Mode = Automatic

Batch Mode = Manual

Send Batch

When the scanner is configured in Manual Batch Mode, use the following barcode to initiate sending of labels stored in batch memory.

Do not scan an ENTER/EXIT PROGRAMMING MODE label in conjunction with this barcode.

Send Batch

Erase Batch Memory

When the scanner is configured in Manual Batch Mode, use the following barcode to erase any labels stored in batch memory.

Do not scan an ENTER/EXIT PROGRAMMING MODE label in conjunction with this barcode.
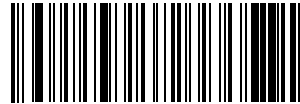
Erase Batch Memory

RF Batch Mode Transmit Delay

Specifies the delay in 10 msec increments between transmitting labels stored in batch memory.

DEFAULT

RF Batch Mode Transmit Delay = No Delay

RF Batch Mode Transmit Delay = 50 mS

RF Batch Mode Transmit Delay = 100 mS

RF Batch Mode Transmit Delay = 0.5 seconds

RF Batch Mode Transmit Delay = 1 second

RF Batch Mode Transmit Delay = 2.5 seconds

Direct Radio Autolink

This feature enables/disables the ability to link a wireless handheld to a base station without scanning the Unlink label first.

DEFAULT
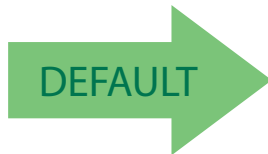
Direct Radio Link = Unlink Label Required

Direct Radio Link = Automatic Unlinking

BLUETOOTH-SPECIFIC FEATURES

The features in this section are specific to Bluetooth wireless operation. Also reference the Setup section for instructions on Linking the BT Scanner to a PC, starting on page 7.

RF Address Stamping

These features allow configuration of source radio data inclusion.

Source Radio Address Transmission

Enables/disables the ability of source radio address information to be transmitted to the host and, if so, at what position with respect to the label data. See page 238 in "References" for detailed information and examples for setting this feature.

> **NOTE**
>
> **When included as a prefix, the source-radio ID is displayed after all label formatting has been applied. The 6 byte hex address is sent as 12 ascii characters, i.e., an address of 00 06 66 00 1A ED will be sent as (shown in hex): 30 30 30 36 36 36 30 30 31 41 45 44**

DEFAULT
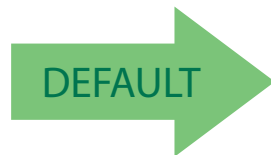
Source Radio Address Transmission = Do Not Include

Source Radio Address Transmission = Prefix

Source Radio Address Delimiter Character

This option specifies the delimiter character to be placed between the label data and radio address when address stamping is enabled.

This feature only applies if "Source Radio Address Transmission" on page 201 is enabled.
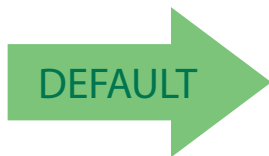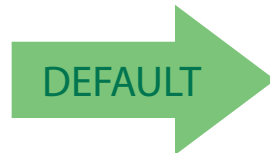
Set Source Radio Address Delimiter Character

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D. Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT
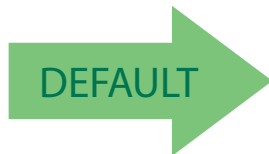
00 = No Delimiter Character

Link Timeout

This feature specifies the wait time in one-second ticks for response from the remote. The selectable timeout range is 01 to 40 (01-0x28) seconds in one second increments.

See page 212 for more information on setting this feature.

Set Link Timeout

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D. Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL

DEFAULT

02 Link Timeout value is 2 seconds

BT Security Features

On the BT system, it is possible to set a (configurable) PIN code to authenticate/connect BT devices, and encrypt the data.

The BT PIN code can be enabled and configured by reading the barcodes in the following sections.

If you are using a BT scanner directly connected to a host through a BT dongle, verify that the scanner and the BT driver used by the dongle share the same PIN code and the same security level. Otherwise the connection cannot be established.

Follow these steps to set the PIN code for a scanner:

1. Enable BT Security Mode by scanning the "Enable" barcode below.

2. Select a PIN code length of either 4 or 16 characters by scanning the appropriate barcode in "Select PIN Code Length" on page 204.

3. Scan the relevant barcode from "Set PIN Code" on page 204, then scan the desired alphanumeric characters from the keypad in Appendix D. Keypad to set the PIN code.

See page 239 in "References" for more detailed information and examples for this feature.

BT Security Mode

This feature enables/disables authentication and encryption of the BT link. Use the feature "BT PIN Code" on page 204 to specify the length and digits in the PIN code used to authenticate the BT Link.

Changing the security mode setting will unlink the devices. If the Automatic Configuration Update is set to the default "Enabled" setting, the devices must only be relinked. If the Automatic Configuration Update is set to "Disabled," the Security Mode setting must also be updated in the Base Station using HP Configurator tool. After the Base Station has been updated, the devices must be relinked.

DEFAULT
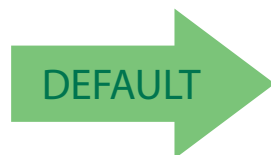
BT Security Mode = Disable

BT Security Mode = Enable

BT PIN Code

After enabling Security Mode (see "BT Security Mode" on page 203), specify whether you want to set a 4-digit or a 16-digit PIN Code. See page 239 for detailed information and examples for setting this feature.

Select PIN Code Length
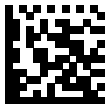
Select 4-character BT PIN Code

DEFAULT

Select 16-character BT PIN Code

Set PIN Code

Determine the desired characters for the PIN code, then convert to hexadecimal using the ASCII Chart on the inside back cover of this manual. See page 239 for detailed information and examples for setting this feature.

Set 4-character BT PIN Code

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D. Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Set 16-character BT PIN Code

CANCEL

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

DEFAULT

31323334 = Default PIN Code is 1234

Other BT Features

BT Poll Rate

This feature specifies the time between BT polls.

BT Poll Rate = Maximum BT Poll Rate

BT Poll Rate = 10 ms

DEFAULT

BT Poll Rate = 20 ms

BT Poll Rate = 50 ms

BT Poll Rate = 100 ms

BT Poll Rate = 200 ms

Power Off

See "Power Off" on page 7 for information about this BT feature.

Powerdown Timeout

The Powerdown Timeout feature sets the time for automatically switching the unit off when the imager has been idle.

Powerdown Timeout = Disable

Powerdown Timeout = 10 minutes

Powerdown Timeout = 20 minutes

Powerdown Timeout = 30 minutes

DEFAULT

Powerdown Timeout = 60 Minutes (1 Hour)

Powerdown Timeout = 120 Minutes (2 Hours)

MOTION FEATURES

Use this chapter to configure motion settings for the handheld.

Reference Appendix B for a listing of standard factory settings.

Motion Aiming Control

Configures the ability of the scanner to Enable/Disable the Aiming system when motion is detected.

Motion Aiming Control = Disable

DEFAULT

Motion Aiming Control = Enable

Motion Sensitivity

Defines discrete set of levels for scanner motion sensitivity when in handheld use.

Motion Sensitivity = Low

Motion Sensitivity = Medium

DEFAULT

Motion Sensitivity = High
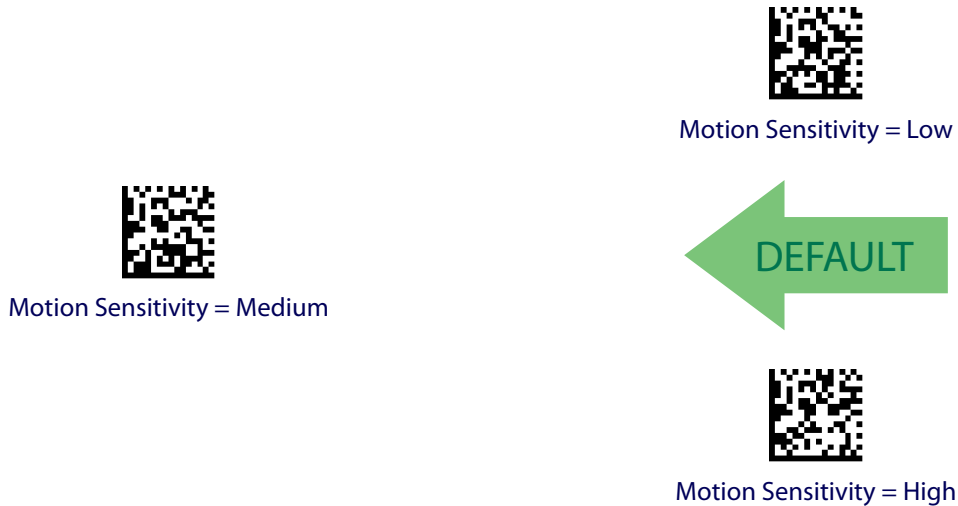
Motionless Timeout

Specifies the waiting time in 100 millisecond ticks to assume that the scanner is in a motionless condition. The selectable range is 500 msec to 25.5 Seconds. When no motion event is detected for a period of time longer than this timeout, the software assumes the scanner is in a motionless condition. This normally results in returning the scanner to Stand Mode. This option relates to such features as Aimer On and Stand Mode Object Sense scanning with respect to motion. See "Motionless Timeout" on page 240 in References.
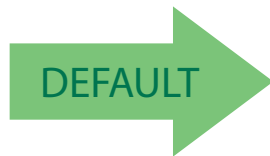
To configure this feature, scan the ENTER/EXIT PRO-GRAMMING MODE barcode above, then the barcode at left followed by three digits from the Alphanumeric characters in Appendix D Keypad representing your desired character(s). End by scanning the ENTER/EXIT barcode again.

Select Motionless Timeout Setting

Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

CANCEL
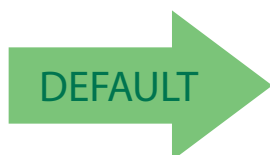
DEFAULT   **020 = Motionless Timeout = 2 seconds**

Chapter 4
References

This section contains explanations and examples of selected barcode features. See "Configuration Using Barcodes" starting on page 11 for the actual barcode labels used to configure the scanner.

USB-COM PARAMETERS starting on page 210

- •Intercharacter Delay
- •ACK NAK Options
- •ACK Character
- •NAK Character

- •ACK NAK Timeout Value
- •ACK NAK Retry Count
- •Disable Character
- •Enable Character

USB KEYBOARD INTERFACE starting on page 217
- •Intercharacter Delay
- •Intercode Delay

SYMBOLOGIES starting on page 219

Set Length

DATA EDITING starting on page 220
- •Global Prefix/Suffix
- •Global AIM ID
- •Label ID
- •Character Conversion

READING PARAMETERS starting on page 229
- •Good Read LED Duration

SCANNING FEATURES starting on page 230
- •Scan Mode
- •Stand Mode Off Time
- •Scanning Active Time
- •Aiming Duration Time
- •Flash On Time
- •Flash Off Time
- •Multiple Labels Ordering by Code Symbology

RF FEATURES starting on page 238
- •Automatic Configuration Update
- •RF Address Stamping
- •BT-Specific Features

MOTION FEATURES starting on page 240
- •Motionless Timeout

USB-COM Parameters

Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay.

To set the delay:

1. Determine the desired setting in milliseconds.

2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3. Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Go to page 16 and scan the barcode: SELECT INTERCHARACTER DELAY SETTING.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **NOTE** If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit.

This completes the procedure. See Table 25 for some examples of how to set this feature.

Table 25. Intercharacter Delay Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	50ms	150ms	600ms	850ms
2	**Divide by 10 (pad with leading zeroes to yield two-digits)**	05	15	60	85
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT INTERCHARACTER DELAY SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '5'	'5' and '0'	'6' and '0'	'8' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

ACK NAK Options

This enables/disables the ability of the scanner to support the RS-232 ACK/NAK protocol. When configured, the scanner and/or host sends an "ACK" when it receives data properly, and sends "NAK" when the data is in error.

Options are:
- Disable
- Enable for label transmission — The scanner expects an ACK/NAK response from the host when a label is sent.
- Enable for host-command acknowledge — The scanner will respond with ACK/NAK when the host sends a command.
- Enable for label transmission and host-command acknowledge

ACK Character

This setting specifies an ASCII character or hex value to be used as the ACK character. ASCII characters or any hex value from 0 to 0xFF can be selected.

> **NOTE** Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.

1. Determine the desired character or value.

2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.

3. Go to page 19 and scan ENTER/EXIT PROGRAMMING MODE to enter Programming Mode.

4. Scan the barcode: SELECT ACK CHARACTER SETTING.

5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit.

See Table 26 for some examples of how to set this feature.

Table 26. ACK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Character/Value**	ACK	$	@	>
2	**Hex equivalent from** ASCII Chart	0x06	0x24	0x40	0x3E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ACK CHARACTER SETTING**				
5	**Scan Two Characters from** Appendix D, Keypad	'0' and '6'	'2' and '4'	'4' and '0'	'3' AND 'E'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected.

> **NOTE** Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.

To set this feature:

1. Determine the desired character or value.

2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.

3. Go to page 19 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT NAK CHARACTER SETTING.

5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 27 for some examples of how to set this feature.

Table 27. NAK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Character/Value	NAK	$	@	>
2	Hex equivalent from ASCII Chart	0x15	0x24	0x40	0x3E
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECT NAK CHARACTER SETTING				
5	Scan Two Characters From Appendix D, Keypad	'1' and '5'	'2' and '4'	'4' and '0'	'3' AND 'E'
6	Scan ENTER/EXIT PROGRAMMING MODE				

ACK NAK Timeout Value

This option specifies the amount of time the scanner waits for an ACK character from the host following label transmission. The selectable timeout range is 200 milliseconds to 15,000ms (15 seconds) in 200ms increments. A selection of 0 disables the timeout.

To set this value:

1. Determine the desired setting in milliseconds.

2. Divide the desired setting by 200 (setting is in 200ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3. Go to page 20 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT ACK NAK TIMEOUT VALUE SETTING.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 28 for some examples of how to set this feature.

Table 28. ACK NAK Timeout Value Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	200ms	1,000ms (1 sec.)	5200ms (5.2 sec.)	15,000ms (15 sec.)
2	**Divide by 200**	01	05	26	75
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ACK NAK TIMEOUT VALUE SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '5'	'2' and '6'	'7' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

ACK NAK Retry Count

This feature specifies the number of times the scanner retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries.

To set this feature:

1. Determine the desired setting.

2. Pad the number with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.

3. Go to page 20 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT ACK NAK RETRY COUNT SETTING.

5. Scan the appropriate three digits from the keypad in Appendix D, Keypad, that represent the number which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 29 for some examples of how to set this feature.

Table 29. ACK NAK Retry Count Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	Disable Retry Count	3 Retries	54 Retries	Unlimited Retries
2	**Pad with leading zero(es)**	000	003	054	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ACK NAK RETRY COUNT SETTING**				
5	**Scan Three Characters From** Appendix D, Keypad	'0', '0' and '0'	'0', '0' and '3'	'0', '5' and '4'	'2', '5' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Disable Character

Specifies the value of the host command used to disable the scanner.

ASCII characters or any hex value from 0 to 0xFF can be selected.

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the Disable Character is not used (not available).

2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.

3. Go to page 22 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT DISABLE CHARACTER SETTING.

5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 30 for some examples of how to set this feature.

Table 30. Disable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/value**	'd'	'}'	'D'	Disable Command Not Used
2	**Hex equivalent from** ASCII Chart	0x64	0x7D	0x44	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT DISABLE CHARACTER VALUE SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'6' and '4'	'7' and 'D'	'4' and '4'	'F' AND 'F'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Enable Character

Specifies the value of the host command used to enable the scanner.

ASCII characters or any hex value from 0 to 0xFF can be selected.

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of this character.

To set this feature:

Determine the desired character or value. A setting of 0xFF indicates the Enable Character is not used (not available).

1. Determine the desired character or value.

2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.

3. Go to page 22 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT ENABLE CHARACTER SETTING.

5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value in step 2 above. The second character will cause a two-beep indication.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 31 for some examples of how to set this feature.

Table 31. Enable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/value**	'e'	'}'	'E'	Enable Command Not Used
2	**Hex equivalent from** ASCII Chart	0x65	0x7D	0x45	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ENABLE CHARACTER VALUE SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'6' and '5'	'7' and 'D'	'4' and '5'	'F' AND 'F'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

USB Keyboard Interface

Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay.

This feature applies ONLY to the Keyboard Wedge interface.

To set the delay:

1. Determine the desired setting in milliseconds.

2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3. Go to page 16 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT INTERCHARACTER DELAY SETTING.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 32 for some examples of how to set this feature.

Table 32. Intercharacter Delay Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	50ms	150ms	600ms	850ms
2	**Divide by 10 (and pad with leading zeroes to yield two-digits)**	05	15	60	85
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT INTERCHARACTER DELAY SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '5'	'1' and '5'	'6' and '0'	'8' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Intercode Delay

Specifies the delay between labels transmitted to the host for this interface. The selectable range for this feature is from 0 to 99 seconds.

Follow these instructions to set this feature:

1. Determine the desired setting.

2. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc

3. Go to page 28 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT INTERCODE DELAY SETTING.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 33 for some examples of how to set this feature.

Table 33. Wedge Intercode Delay Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	No Delay	5 Seconds	60 Seconds	99 Seconds
2	**Pad with leading zero(es)**	00	05	60	99
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT INTERCODE DELAY SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '5'	'6' and '0'	'9' AND '9'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Symbologies

Set Length

Length Control allows you to select either variable length decoding or fixed length decoding for the specified symbology.

Variable Length: For variable length decoding, a minimum and maximum length may be set.

Fixed Length: For fixed length decoding, two different lengths may be set.

Set Length 1

This feature specifies one of the barcode lengths for Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only.

The number of characters that can be set varies, depending on the symbology. Reference the page for your selected symbology to see specific variables.

1. Determine the desired character length (varies depending on symbology). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

2. Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

3. Scan the barcode to SELECT LENGTH 1 SETTING for your selected symbology.

4. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the length setting which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

5. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Prog Mode.

Set Length 2

This feature allows you to set one of the barcode lengths for the specified symbology. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. See the page for the specific symbology for parameters.

The length that can be set varies depending on the symbology. A setting of 0 specifies to ignore this length (only one fixed length).

Follow these instructions to set this feature:

1. Determine the desired character length (from 1 to 50 — or 0 to ignore this length). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

2. Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

3. Scan the barcode to SELECT LENGTH 2 SETTING for your selected symbology.

4. Scan the appropriate two digits from the keypad in Appendix D, Keypad that represent the length setting which was determined in the steps above. You will hear a two-beep indication after the last character.

> **NOTE** **If you make a mistake, before the last character scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

5. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure.

Data Editing

When a barcode is scanned, additional information can be sent to the host computer along with the barcode data. This combination of barcode data and supplementary user-defined data is called a "message string." The Data Editing features can be used to build specific user-defined data into a message string.

There are several types of selectable 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. Figure 1 shows the available elements you can add to a message string:

Figure 1. Breakdown of a Message String

| Prefix | Label ID | AIM ID | Bar Code Data | Label ID | Suffix |

Label ID Transmission: Enable this option to transmit the Label ID you configure for the scanned symbology.

OR...

AIM ID: This function is used to identify and display the common label identifier for its symbology. When enabled, this ID code will be transmitted before the scanned bar code data.

00 - 20 Characters (ASCII)

> **NOTE** **Additional advanced editing is available. See the Advanced formatting features in the HP Configuration software, or contact Technical Support (as described on page 2) for more information.**

Please Keep In Mind...
- Modifying a message string is not a mandatory requirement. Data editing is a sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.

- A prefix or suffix may be applied only to a specified symbology (reference "1D Code Selection" starting on page 65) or across all symbologies (set via the Global features in this chapter).
- You can add any character from the ASCII Chart (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the barcode data) and/or as a suffix (in a position following the barcode data) as indicated in Figure 2.

Figure 2. Prefix and Suffix Positions
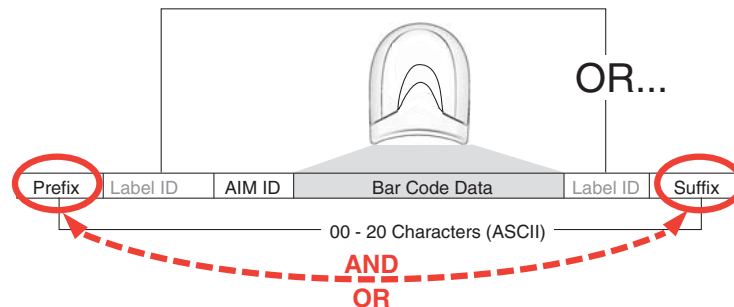
Example: Setting a Prefix

In this example, we'll set a prefix for all symbologies.

1. Determine which ASCII character(s) are to be added to scanned barcode data. In this example, we'll add a dollar sign ('$') as a prefix.

2. Go to page 32 and scan the ENTER/EXIT PROGRAMMING MODE barcode, then scan the SET GLOBAL PREFIX barcode.

3. Reference the ASCII Chart on the inside back cover of this manual to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' barcodes from Appendix D, Keypad.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

4. If less than the expected string of 20 characters are selected, scan the ENTER/EXIT barcode to terminate the string.

5. Scan the ENTER/EXIT barcode once again to exit Programming Mode.

6. The resulting message string would appear as follows:
   Scanned barcode data: **12345**
   Resulting message string output: **$12345**

Global AIM ID

> **This feature enables/disables addition of AIM IDs for all symbology types.**

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned barcode data. AIM label identifiers consist of three characters as follows:

- A close brace character (ASCII ']'), followed by...
- A code character (see the table below), followed by...
- A modifier character (the modifier character is symbol dependent).

SYMBOLOGY	CHAR	SYMBOLOGY	CHAR
UPC/EAN	E[a]	Code 128/GS1-128	C
Code 39 and Code 32	A	DataBar Omnidirectional, DataBar Expanded	e
Codabar	F	Standard 2 of 5	S
Interleaved 2 of 5	I	ISBN	X[b]
Code 93	G	Code 11	H

a. UPC-A and UPC-E labels are converted to EAN 13 when adding AIM IDs.
b. ISBN (X with a 0 modifier character)

Figure 3. AIM ID

| Prefix | Label ID | AIM ID | Bar Code Data | Label ID | Suffix |
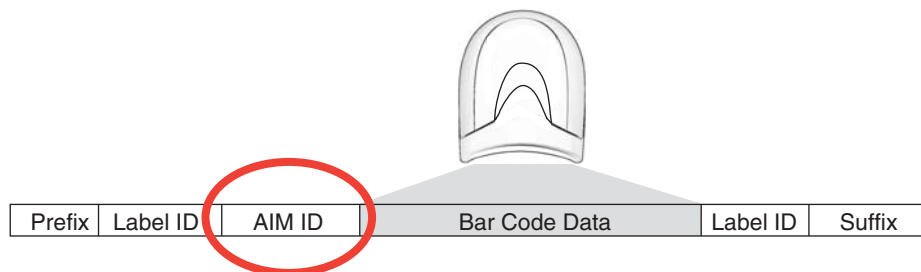
Label ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a barcode (symbology) type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" below) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 226). If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see "Global AIM ID" on page 33.

Label ID: Pre-loaded Sets

The scanner supports two pre-loaded sets of Label IDs. Table 34 shows the USA and the EU sets.

⚠️ **CAUTION** **When changing from one Label ID set to another, all other scanner configuration settings, including the host interface type, will be erased and set to the standard factory defaults. Any custom configuration or custom defaults will be lost.**

Table 34. **Label ID Pre-loaded Sets**

Symbology	USA Label ID set		EU Label ID set	
	Default Character	Default ASCII	Default Character	Default ASCII
ABC CODABAR	S	530000	S	530000
ANKER PLESSEY	o	6F0000	o	6F0000
AZTEC	Az	417A00	!	210000
CHINA SENSIBLE CODE	$S	245300	$S	245300
CODABAR	%	250000	R	520000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
CODE39 CIP	Y	590000	Y	590000
CODE39 DANISH PPT	$Y	245900	$Y	245900
CODE39 LAPOSTE	$a	246100	$a	246100
CODE39 PZN	$Z	245A00	$Z	245A00
CODE93	&	260000	U	550000

Symbology	USA Label ID set		EU Label ID set	
	Default Character	Default ASCII	Default Character	Default ASCII
DATABAR 14	R4	523400	u	750000
DATABAR 14 COMPOSITE	R4	523400	c	523400
DATABAR EXPANDED	RX	525800	t	740000
DATABAR EXPANDED COMPOS-ITE	RX	525800	d	525800
DATABAR LIMITED	RL	524C00	v	760000
DATABAR LIMITED COMPOSITE	RL	524C00	i	524C00
DATA MATRIX	Dm	446D00	w	770000
EAN128		000000	k	6B0000
EAN128 COMPOSITE		000000	$E	244500
EAN13	F	460000	B	420000
EAN13 P2	F	460000	L	4C0000
EAN13 P5	F	460000	M	4D0000
EAN13 COMPOSITE	F	460000	$F	244600
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000
EAN8 COMPOSITE	FF	464600	$G	244700
FOLLET 2OF5	O	4F0000	O	4F0000
GTIN	G	470000	$A	244100
GTIN2	G2	473200	$B	244200
GTIN5	G5	473500	$C	244300
I2OF5	i	690000	N	4E0000
IATA INDUSTRIAL 2OF5	IA	494100	&	260000
INDUSTRIAL 2OF5	W	570000	W	570000
ISBN	I	490000	@	400000
ISBT128 CONCAT	f	660000	f	660000
ISSN	n	6E0000	n	6E0000
MAXICODE	MC	4D4300	x	780000

Symbology	USA Label ID set		EU Label ID set	
	Default Character	Default ASCII	Default Character	Default ASCII
MICRO QR	$Q	245100	$Q	245100
MICRO PDF	mP	6D5000	8	380000
MSI	@	400000	Z	5A0000
PDF417	P	500000	r	720000
PLESSEY	a	610000	a	610000
POSTAL AUSTRALIAN	$K	244B00	$K	244B00
POSTAL IMB	$V	245600	$V	245600
POSTAL JAPANESE	$R	245200	$R	245200
POSTAL KIX	$U	245500	$U	245500
POSTAL PLANET	$W	245700	$W	245700
POSTAL PORTUGAL	$P	245000	$P	245000
POSTAL POSTNET BB	$L	244C00	$L	244C00
POSTAL ROYAL MAIL	$M	244D00	$M	244D00
POSTAL SWEDISH	$X	245800	$X	245800
POSTNET	1	310000	1	310000
QR CODE	QR	515200	y	790000
S25	s	730000	P	500000
TRIOPTIC	$T	245400	$T	245400
UPCA	A	410000	C	430000
UPCA P2	A	410000	F	460000
UPCA P5	A	410000	G	470000
UPCA COMPOSITE	A	410000	$H	244800
UPCE	E	450000	D	440000
UPCE P2	E	450000	H	480000
UPCE P5	E	450000	I	490000
UPCE COMPOSITE	E	450000	$J	244A00

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1. Go to page 37 and scan the ENTER/EXIT barcode.

2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate barcode in the section "Label ID Control" on page 37. Reference Figure 4 for Label ID positioning options if multiple identification features are enabled.

3. Scan a barcode to select the symbology for which you wish to configure a custom Label ID from the section "Label ID Symbology Selection − 1D Symbologies" on page 38.

4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.

5. Turn to the ASCII Chart on the inside back cover of this manual and find the equivalent hex digits associated with your choice of Label ID. For example, if you wish to select an equal sign (=) as a Label ID, the chart indicates its associated hex characters as 3D. Turn to "Keypad" starting on page 271 and scan the barcodes representing the hex characters determined. For the example given, the characters '3' and 'D' would be scanned. More examples of Label ID settings are provided in Table 35.

   If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

6. Scan the ENTER/EXIT barcode to exit Label ID entry.

7. Scan the ENTER/EXIT barcode once again to exit Programming Mode.

This completes the steps to configure a Label ID for a given symbology.

Figure 4. Label ID Position Options
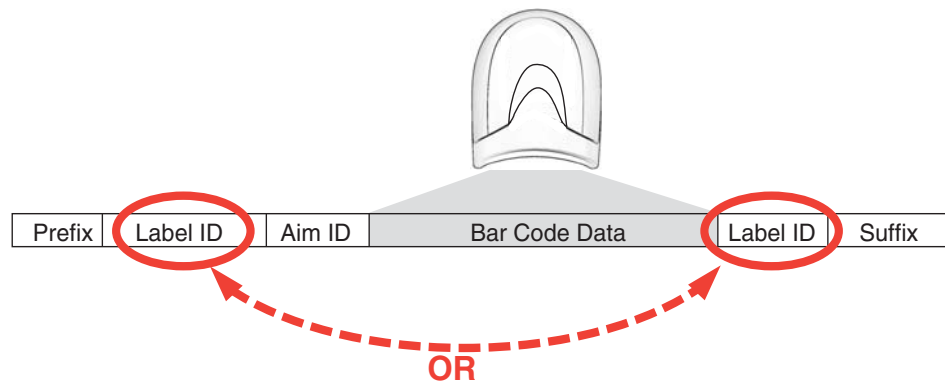
Table 35. Label ID Examples

STEP	ACTION	EXAMPLES			
1.	Scan the ENTER/EXIT barcode	(Scanner enters Programming Mode)			
2.	Determine placement of the Label ID characters BEFORE or AFTER with regard to scanned data using "Label ID Control" starting on page 37	Enable as Prefix	Enable as Suffix	Enable as Prefix	Enable as Suffix
3.	Scan the barcode selecting the symbology type you wish to designate label ID characters for using "Label ID Symbology Selection – 1D Symbologies" starting on page 38.	DataBar Omnidirectional	Code 39	Interleaved 2 of 5	Code 32
4.	Custom Label ID example (desired characters):	D B *	= C 3	+	P H
5.	Find hex equivalents from the ASCII Chart (inside back cover), then scan in these digits/characters using the barcodes in the section: "Keypad" starting on page 271. If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.	44 42 2A	3D 43 33	2B	50 48
6.	Scan the ENTER/EXIT barcode	(Scanner exits Label ID entry)			
7.	Scan the ENTER/EXIT barcode once again	(Scanner exits Programming Mode)			
	Result:	DB*[barcode data]	[barcode data]=C3	+[barcode data]	[barcode data]PH

Character Conversion

Character conversion is an eight byte configuration item. The eight bytes are 4 character pairs represented in hexadecimal ASCII values. The first character in the pair is the character that will be converted. The second character in the pair is the character to convert to. If the character to convert in a pair is FF, then no conversion is done.

For example, if you have the character conversion configuration item set to the following: 41423132FFFFFFFF

The first pair is 4142 or AB (41 hex is an ASCII capital A, 42 hex is an ASCII capital B) and the second pair is 3132 or 12 (31 hex is an ASCII 1, 32 is an ASCII 2). The other two pairs are FFFF and FFFF.

With the label, AB12BA21, it would look as follows after the character conversion: BB22BB22.

The A characters were converted to B characters and the 1 characters were converted to 2 characters. Nothing is done with the last two character pairs, since they are all FF.

To set Character Conversion:

1. Go to page 44 and scan the ENTER/EXIT barcode.

2. Scan the "Configure Character Conversion" barcode.

3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the ASCII Chart on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.

4. Turn to Appendix D, Keypad and scan the barcodes representing the hex characters determined in the previous step.

5. Scan the ENTER/EXIT barcode to exit Programming Mode.

> **NOTE**
>
> **If less than the expected string of 16 characters are selected, scan the ENTER/EXIT barcode twice to accept the selections and exit Programming Mode.**

Reading Parameters

Good Read LED Duration

This feature specifies the amount of time that the Good Read LED remains on following a good read. The good read LED on time can be set within a range of 10 milliseconds to 2,550 milliseconds (0.001 to 2.55 seconds) in 100ms increments.

Follow these instructions to set this feature:

1. Determine the desired setting in milliseconds. A setting of 0 means that the good read LED stays on until the next time the trigger is pulled.

2. Divide the desired setting by 10 (setting is in 100ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 000, 20 = 020, etc.

3. Go to page 52 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT GOOD READ LED DURATION SETTING.

5. Scan the appropriate three digits from the keypad in Appendix D, Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **NOTE** If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 36 for some examples of how to set this feature.

Table 36. Good Read LED Duration Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	Good Read LED stays on until next trigger pull (00)	20ms	150ms	2550ms (2.55 sec.)
2	**Divide by 10 (and pad with leading zeroes)**	000	002	015	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT GOOD READ LED DURATION SETTING**				
5	**Scan Three Characters From** Appendix D, Keypad	'0', '0' and '0'	'0', '0' and '2'	'0', '1' and '5'	'2', '5' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Scanning Features

Scan Mode

This mode is associated with typical handheld scanner operation. Selects the scan operating mode for the scanner. The following selections are valid for the HP Wireless Barcode Scanner:

Trigger Single: When the trigger is pulled, scanning is activated until one of the following occurs:
- Scanning Active Time has elapsed
- a label has been read
- the trigger is released

Trigger Hold Multiple: When the trigger is pulled, scanning starts and the product scans until the trigger is released or Scanning Active Time has elapsed. Reading a label does not disable scanning. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Trigger Pulse Multiple: When the trigger is pulled, continuous scanning is activated until Scanning Active Time has elapsed or the trigger has been released and pulled again. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Flashing: The scanner flashes on and off regardless of the trigger status. Flash rate is controlled by Flash On Time and Flash Off Time. When Flash is ON the imager reads continuously; when Flash is OFF scanning is deactivated.

Always On: No trigger pull is required to read a barcode. Scanning is continually on. If the trigger is pulled, the scanner acts as if it is in Trigger Single Mode. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Stand Mode: No trigger pull is required to read a barcode. Scanning is turned on automatically when an item is placed in the scanner's field of view. If the trigger is pulled, the scanner acts as if it in single read mode. Double Read Timeout prevents undesired multiple reads while in this mode.

Stand Mode Off Time

This feature specifies the amount of time scanner illumination stays off after pulling the trigger when in Stand Mode. The configurable range is 01 to 32 by 01 in increments of 500ms (500ms to 16 seconds).

Follow these instructions to set this feature:

1. Determine the desired setting.

2. Pad the result with leading zeroes to yield two digits. For example: 2 = 02, 5 = 05, 20 = 20, etc.

3. Go to page 57 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: Set Stand Mode Illuminator Off Time.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the setting which was determined in the steps above. You will hear a two-beep indication after the last character.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 37 for some examples of how to set this feature.

Table 37. Stand Mode Off Time

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	500 ms	1 Second	5.5 Seconds	16 Seconds
2	**Pad leading zero**	01	02	11	32
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT STAND MODE OFF TIME**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '2'	'1' and '1'	'3' and '2'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Scanning Active Time

This setting specifies the amount of time that the scanner stays in scan ON state once the state is entered. The range for this setting is from 1 to 255 seconds in 1-second increments.

Follow these instructions to set this feature:

1. Determine the desired setting.

2. Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.

3. Go to page 57 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT SCANNING ACTIVE TIME SETTING.

5. Scan the appropriate three digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 38 for some examples of how to set this feature.

Table 38. Scanning Active Time Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	1 Second	90 Sec. (1.5 min.)	180 Sec. (3 min.)	255 Seconds (4.25 min.)
2	**Pad leading zero(es)**	001	090	180	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT SCANNING ACTIVE TIME SETTING**				
5	**Scan Three Characters From** Appendix D, Keypad	'0', '0' and '1'	'0', '9' and '0'	'1', '8' and '0'	'2', '5' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Aiming Duration Time

Specifies the frame of time the aiming pointer remains on after decoding a label, when in trigger single mode. The range for this setting is from 1 to 255 seconds in 1-second increments.

Follow these instructions to set this feature:

1. Determine the desired setting.

2. Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.

3. Go to page 60 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT AIMING DURATION TIME SETTING.

5. Scan the appropriate three digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 39 for some examples of how to set this feature.

Table 39. Aiming Duration Time Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	1 Second	90 Sec. (1.5 min.)	180 Sec. (3 min.)	255 Seconds (4.25 min.)
2	**Pad leading zero(es)**	001	090	180	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT AIMING DURATION TIME SETTING**				
5	**Scan Three Characters From** Appendix D, Keypad	'0', '0' and '1'	'0', '9' and '0'	'1', '8' and '0'	'2', '5' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments.

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.

2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3. Go to page 58 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT FLASH ON TIME SETTING.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 40 for examples of how to set this feature.

Table 40. Flash On Time Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	500ms	1,000ms (1 sec.)	5200ms (5.2 sec.)	9,900ms (9.9 sec.)
2	**Divide by 100 (and pad with leading zeroes to yield two digits)**	05	10	52	99
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT FLASH ON TIME SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '5'	'1' and '0'	'5' and '2'	'9' and '9'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Flash Off Time

This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments.

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.

2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3. Go to page 59 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT FLASH OFF TIME SETTING.

5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **NOTE** If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 41 for some examples of how to set this feature.

Table 41. Flash Off Time Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	500ms	1,000ms (1 sec.)	5200ms (5.2 sec.)	9,900ms (9.9 sec.)
2	**Divide by 100 (and pad with leading zeroes to yield two digits)**	05	10	52	99
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT FLASH OFF TIME SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0' and '5'	'1' and '0'	'5' and '2'	'9' and '9'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Multiple Labels Ordering by Code Symbology

This feature Specifies the transmission ordering by symbology type, when Multiple Labels per Frame is enabled.Up to six symbologies can be selected. Zeroes must be added to pad the string to 12 characters if not using all six symbologies.

The labels are ordered first as specified in the output mask. Labels present in the volume but not specified will be transmitted as unspecified symbologies in random order as allowed by the reading time sequence. For each label decoded in the volume the scanner signals the standard beeper and LED indications.

To specify the symbology order:

1. Determine the symbologies and order you want to specify.

2. Use Table 43 on page 237 to find the hex values for up to six symbologies.

3. Go to page 64 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: "SELECT SYMBOLOGIES FOR MULTIPLE LABELS ORDER-ING".

5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value in step 2 above.

6. Scan zeroes if needed to make a 12-character string.

7. When finished, scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 42 for some examples of how to set this feature.

Table 42. Multiple Labels Ordering by Code Symbology Examples

STEP	ACTION	EXAMPLES			
1	**Desired symbology**	Code 39	Data Matrix	Code 128	Aztec
2	**Hex equivalent from** Table 43	24	0E	0C	4E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT SYMBOLOGIES FOR MULTIPLE LABELS ORDERING**				
5	**Scan Two Characters From** Appendix D, Keypad	'2' and '4'	'0' and 'E'	'0' and 'C'	'4' and 'E'
	RESULT	**0x240E0C4E0000**			
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Table 43 on page 237 shows the hex value associated with each symbology.

Table 43. Symbology Hex Values

Hex Value	Symbology ID	Hex Value	Symbology ID
00	Don't care	2C	GTIN5
01	UPC-A	2D	GTIN8
02	UPC-E	2E	S2OF5
03	EAN8	2F	PDF417
04	EAN13	30	CODE11
05	UPC2	31	IATA
06	UPC5	32	MICRO_PDF
07	C128_ADDON	33	GS1 DataBar_LIM_ID
0A	EAN128	34	GS1 DataBar_LIM_COMP
0B	C128_PROGRAMMING_LABEL	35	GS1 DataBar_Omnidirectional_COMP
0C	CODE128	36	GS1 DataBar_EXP_COMP
0D	FNC3_C128_LABEL	37	GENERIC_DATA
0E	DATA MATRIX	38	CC_A
0F	MAXICODE	39	CC_B
10	QRCODE	3A	CC_C
11	Reserved	3B	LABELIMAGE
12	Reserved	3C	CAPTURE_IMAGE_LABEL
13	CODE49	3D	Reserved
14	UPC-E2	3E	M2OF5
15	UPC-E5	3F	D2OF5
16	Reserved	40	PLESSEY65
17	UPC-A2	42	ISSN
18	UPC-A5	43	ISBT
19	Reserved	44	Reserved
1A	EAN82	45	TIMER_EXPIRED_EVENT
1B	EAN85	46	FOLLETT_2OF5
1C	Reserved	47	Reserved
1D	EAN132	48	Reserved
1E	EAN135	49	CODE39_CIP
1F	EAN138	4A	ABC_CODABAR
20	ISBN_ID	4B	I2OF5_CIP
21	TWO_LABEL_PAIR	4C	C2OF5
22	I2OF5	4D	IND2OF5
23	CODABAR	4E	AZTEC
24	CODE39	4F	UPC-E_COMP
25	PHARMAC39	50	UPC-A_COMP
26	MSI_PLESSEY	51	EAN8_COMP
27	CODE93	52	EAN13_COMP
28	RSS_EXP_ID	53	EAN128_COMP

Hex Value	Symbology ID	Hex Value	Symbology ID
29	RSS_14_ID	54	DATA MATRIX_PROGRAMMING_LABEL
2A	GTIN	55	LABEL_ID_MAX
2B	GTIN2	FF	INVALID_LABEL_TYPE

RF Features

Automatic Configuration Update

When this feature is enabled, the base station and scanner will keep their configurations synchronized. If a scanner's configuration is altered by reading programming labels, this change is automatically transferred and updated in a linked base station. Likewise, if the base station's configuration is changed using HP Configurator or by host commands, then the scanner's configuration will automatically be updated if this feature is enabled.

RF Address Stamping

Source Radio Address Delimiter Character

This option specifies the delimiter character to be placed between the label data and radio address when address stamping is enabled.

This feature only applies if "Source Radio Address Transmission" on page 201 **is enabled.**

Follow these instructions to select the delimiter character:

1. Determine the desired character, then find its hexadecimal equivalent on the ASCII Chart on the inside back cover. A setting of 00 specifies no delimiter character.

2. Go to page 202 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

3. Scan the barcode: SET SOURCE RADIO ADDRESS DELIMITER CHARACTER.

4. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the hexadecimal characters which were determined in the steps above. You will hear a two-beep indication after the last character.

   If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

5. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit.

Table 44. Source Radio Address Delimiter Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	No delimiter character	, (comma)	- (dash)	/ (slash)
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SET SOURCE RADIO ADDRESS DELIMiTER CHARACTER**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'2' and 'C'	'2' and 'D'	'2' AND 'F'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

BT-Specific Features

BT Pin Code

This option specifies the 4-character or 16-character pin code to be used for authentication of the BT link. To set the pin code:

1. Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode, then enable "BT Security Mode" on page 203.

2. Specify the desired pin code length (4 or 16) by scanning the appropriate barcode in "Select PIN Code Length" on page 204.

3. Determine the desired characters. For example, D254 or STOR12345678135M

4. Convert the characters to hexadecimal using the ASCII Chart on the inside back cover of this manual.

5. Go to page 204 and Scan the barcode: SET 4 CHAR PIN CODE or SET 16-CHAR PIN CODE.

6. Scan the appropriate alphanumeric characters from the keypad in Appendix D, Keypad, representing the hexadecimal entries determined in the steps above. You will hear a two-beep indication after the last character.

   NOTE: If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

7. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

   NOTE: Changing the pin code setting will unlink the devices. If the Automatic Configuration Update is set to the default enabled setting, the devices must only be relinked. If the Automatic Configuration Update is set to the disabled setting, the Pin Code setting must also be updated in the Base Station using HP Configurator. After the Base Station has been updated, the devices must be relinked.

Table 45. BT Pin Code Setting Examples

STEP	ACTION	EXAMPLES	
1	Desired Setting	D254	STOR12345678135M
2	Convert the characters to hexadecimal	44 32 35 34	53 54 4F 52 31 32 33 34 35 36 37 38 31 33 35 4D
3	Scan ENTER/EXIT PROGRAMMING MODE		
4	Scan SET BT PIN CODE		
5	Scan 8 or 32 Alphanumeric Characters From Appendix D, Keypad	44323534	53544F5231323334353637383133354D
6	Scan ENTER/EXIT PROGRAMMING MODE		

Motion Features

Motionless Timeout

This setting specifies the amount of time that the scanner takes to assume that it is in a motionless condition. The range for this setting is from 500 msec to 25.5 seconds, in 100 millisecond increments.

Follow these instructions to set this feature.

1. Determine the desired setting.

2. Pad the result with leading zeroes to yield three digits. For example: 0.5 = 0005 = 00, 5 = 050, 20 = 200, etc.

3. Go to page 208 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4. Scan the barcode: SELECT MOTIONLESS TIMEOUT SETTING.

5. Scan the appropriate three digits from the keypad in Appendix D, Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

> **If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**

6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table 46 for examples of how to set this feature.

Table 46. Motionless Timeout Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	500ms	1 sec.	10 sec	9,900ms (9.9 sec.)
2	**Divide by 100 (and pad with leading zeroes to yield two digits)**	005	010	100	250
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT MOTIONLESS TIMEOUT SETTING**				
5	**Scan Two Characters From** Appendix D, Keypad	'0', '0' and '5'	'0', '1' and '0'	'1', '0', and '0'	'2', '5', and '0'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

NOTES

Chapter 5
Message Formatting

Message Formatting

A message from the Host to the base must follow these rules:

- If Address stamping options or address delimiter are enabled on the base, the Host replay must have address field and delimiter too. Otherwise the message will be ignored. Address delimiter is present only when address stamping is enabled.
- Address stamping is necessary to correctly route the message to the scanner, especially when more than one handheld is linked to the same base. Address stamping could be disabled if the system is in point to point configuration. If address stamping is not enabled, the messages are addressed to the first handheld linked to the base.
- The maximum character length for messages is 48.
- Messages end with "CR" 0x0D ASCII character. The CR character cannot be contained in the middle.
- Messages cannot start with '$' or # because these are reserved for Service mode command
- Base station can receive host message only if Host Commands Obey/Ignore is set to Ignore.
- Message could be sent to the HH in response to a Label when "Transmit mode" require Ack from Host (see transmit mode parameter) or at any time. When messages are sent not in response to a label must start with DC2 0x12 ASCII character and could be sent in any transmit mode setting.
- Message could be sent to all HH linked to base by using a Multicast message: **"00 00 00 00 2A AA"**
- In order to receive a message, handhelds must not be in sleep state.

The format of the ACK from Host message (used for transmission mode 02) is:
[Scanner_Addr] [Scanner_Addr_delimiter] MESSAGE <CR>

The format of a generic message From Host to HH is:
[Scanner_Addr] [Scanner_Addr_delimiter] DC2 MESSAGE <CR>

where DC2 is ASCII 0x12 (^R) character.

[Items in square brackets are optional.]

- If you want to control the Scanner's beeper from the host, you will also probably want to disable the good transmission beep that is emitted when the code is received from the cradle. (See "Wireless Beeper Features" on page 192).

The message field can store plain text and escape sequences.

- Escape sequences are interpreted as commands.

LED and Beeper Control

ESC [0 q	Emit short High tone + short delay
ESC [1 q	Emit short Low tone + short delay
ESC [2 q	Emit long Low tone + short delay
ESC [3 q	Emit good read tone
ESC [4 q	Emit bad tx tone
ESC [5 q	Wait 100 ms
ESC [6 q	Turn on the green LED
ESC [7 q	Turn off the green LED
ESC [8 q	Turn on the green spot
ESC [9 q	Turn off the green spot
ESC [0 r	Beep for Find me function (new)
ESC [1 r	Power-off (new)

The LED control escape sequences are intended to activate the LEDs for short periods of time and can be used in combination with the Beeper. The LED and Beeper will be controlled by the system after the entire command sequence is interpreted.

Example:

ESC [6 q ESC [3 q ESC [7 q	Turns on the green LED, emits a good read tone, and turns off the green LED.
ESC [6 q ESC [5 q ESC [7 q	Turns on the green LED for 100 ms and then turns off the green LED.

Escape sequences different from those listed will be ignored.

Appendix A
Technical Specifications

Table 47 contains Physical and Performance Characteristics, User Environment and Regulatory information.

Table 47. Technical Specifications

Item	Description
	HP Wireless Barcode Scanner
Physical Characteristics	
Color	Black
Dimensions	Height 7.1"/181 mm Length 3.9"/100 mm Width 2.8"/71 mm
Weight (without cable)	Handheld Unit: Approximately 8.7 ounces/246 g Base Station/Charger: Approximately 8.7 ounces/246 g
Electrical Characteristics	
Battery Type	Li-Ion battery pack
Typical charge time for full charge from full discharge	4 hours with 12V external power supply adapter[a]
	Max 22 hours with Host power (In this case no supply adapter is needed)[a]
Operating autonomy (continuous reading)	scans typical/fully charged battery >50,000 reads
Base Station Consumption and DC input supply range	Volt 4.75-14 VDC; Power <8W[b]; Imax 500mA when in host/bus powered mode[b]
Performance Characteristics	
Scanning Illumination Source	LEDs
Aiming Source	Laser Class 2

Item	Description
Roll (Tilt) Angle[c]	Up to ± 180°
Pitch Angle[c]	± 40°
Skew (Yaw) Angle[c]	± 40°
Field of View	40° Hx26° V

Depth of Field (Typical) [d]

Symbology

Code 39	5mil: 1.6" -7.5" (4.0 -19cm) 10mil: 0.4" - 11.8" (1.0 - 30cm) 20mil: up to 17.7" (up to 45cm)
EAN	7.5mil: 0.5" - 10.6" (2.0 - 27cm) 13mil: 0.6" - 15.7" (1.5 - 40cm)
PDF 417	6.6mil: 1.0" - 5.9" (2.5 - 15cm) 10mil: 0.2" - 8.6" (0.5 - 22cm) 15mil: 0.6" - 13.4" (1.5 - 34cm)
Data Matrix	10mil: 0.8" to 6.3" (2.0 - 16cm) 15mil: 0" to 9.3" (0 - 23.6cm)
QR Code	10mil: 1.2" to 4.9" (3.0 - 12.5cm) 15mil: 0.4" to 7.5" (1.0 - 19cm)
Minimum Element Width	1D Minimum Resolution = 4 mil PDF-417 Minimum Resolution = 5 mil Data Matrix Minimum Resolution = 7 mil
Print Contrast Minimum	25% minimum reflectance

Item	Description
Decode Capability	**1D Barcodes** UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN /Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit enabled); Danish PPT; Code 32 (Italian Pharmacode 39); Code 128; Code 128 ISBT; Interleaved 2 of 5; Standard 2 of 5; Interleaved 2 of 5 CIP (HR); Industrial 2 of 5; Discrete 2 of 5; IATA 2of5 Air cargo code; Code 11; Codabar; ABC Codabar; Code 93; MSI; PZN; Plessey; Anker Plessey; Follett 2 of 5; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.
	2D / Stacked Codes The HP Wireless Barcode scanner is capable of decoding the following symbologies using multiple frames (i.e. Multi-Frame Decoding): PDF-417; QR Code; Aztec; Data Matrix; Inverse Data Matrix; Data Matrix is configurable for the following parameters:; Normal or Inverted; Square or Rectangular Style; Data length (1 - 3600 characters); Maxicode; QR Codes (QR and Multiple QR Codes); Aztec; Postal Codes; Australian Post; Japanese Post; KIX Post; Planet Code; Postnet; Royal Mail Code (RM45CC); Intelligent Mail Barcode (IMB); Sweden Post; Portugal Post; LaPoste A/R 39; 4-State Canada; PDF-417; Micro PDF417; GS1 Composites (1 - 12); French CIP13[e]; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; GS1 DataBar Expanded Stacked; GSI Databar Composites; Chinese Sensible Code; Inverted 2D codes. Note: The scanner can apply the Normal/Reverse Decoding Control to the following symbologies: Data Matrix, QR, Aztec and Chinese Sensible Code.
Interfaces Supported	USB Com Standard, USB Keyboard, USB Alternate Keyboard

a. Charge Times are much lower when battery is within daily typical operating condition.
b. Typical input current measured under factory default configuration.
c. Based on ISO 15423 specifications
d. 13 mils DOF based on EAN. All other 1D codes are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°
e. It is acceptable to handle this with ULE.

Item	Description
User Environment	
Operating Temperature	32° to 122° F (0° to 50° C)
Charging Temperature	32° to 104° F (0° to 40° C)
Storage Temperature	-4° to 158° F (-20° to 70° C)
Humidity	Operating: 5% to 90% relative humidity, non-condensing
Drop Specifications	Scanner withstands 18 drops from 1.8 meters (5.9 feet) to concrete
Ambient Light Immunity	Up to 100,000 Lux
Contaminants Spray/Rain/ Dust/Particulates	IEC 529-IP52
ESD Level	16 KV

Imager Labeling

Sample labels are shown for illustrative purposes only. Please view the labels on the product for actual details.

Scanner Regulatory Label
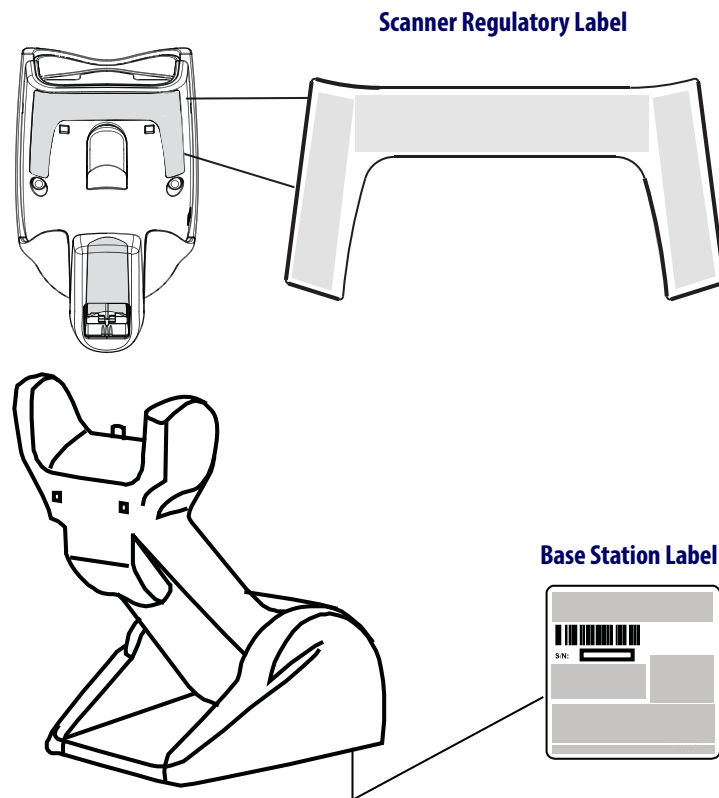
Base Station Label

Radio Features

Radio Features	
Frequency Range	2400 to 2483.5 MHz
Range (in open air)	30m

Standard Cable Pinouts

Figure 5 and Table 48 provide standard pinout information for the interface cable.

Figure 5. Standard Cable Pinouts: Base Station
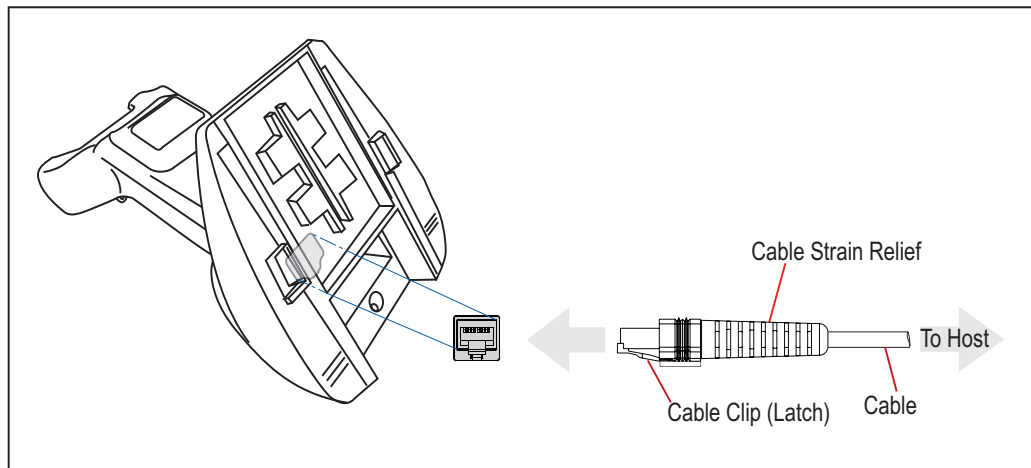
The signal descriptions in Table 48 apply to the connector in the base station and are for reference only.

Table 48. Standard Cable Pinouts

Pin	USB
1	
2	D+
3	D-
4	GND
5	
6	
7	VCC
8	
9	
10	

LED and Beeper Indications

The scanner's beeper sounds and its LED illuminates to indicate various functions or errors on the scanner. An optional "Green Spot" also performs useful functions. The tables below list these indications. One exception to the behaviors listed in the tables is that the scanner's functions are programmable, and may or may not be turned on. For example, certain indications such as the power-up beep can be disabled using programming barcode labels.

Table 49. LED and Beeper Indications

INDICATION	DESCRIPTION	LED	BEEPER
Power-up Beep	The scanner is in the process of powering-up.		Scanner beeps four times at highest frequency and volume upon power-up.
Good Read Beep	A label has been successfully scanned by the scanner.	LED behavior for this indication is configurable via the feature "Good Read: When to Indicate"	The scanner will beep once at current frequency, volume, mono/bi-tonal setting and duration upon a successful label scan.
ROM Failure	There is an error in the scanner's software/programming	Flashes	Scanner sounds one error beep at highest volume.
Limited Scanning Label Read	Indicates that a host connection is not established when the USB interface is enabled.	N/A	Scanner 'chirps' six times at the highest frequency and current volume.
Scanner Active Mode	The scanner is active and ready to scan.	The LED is lit steadily[a]	N/A
Scanner Disabled	The scanner has been disabled by the host.	The LED blinks continuously	N/A
Green Spot is on continuously	While in Stand Mode or Trigger Stand Mode the green spot shall be on while in stand watch state.	N/A	N/A
Green Spot[a] flashes momentarily	Upon successful read of a label, the software shall turn the green spot on for the time specified by the configured value.	N/A	N/A
Image Capture	When ready to capture image	Blue light flashes 2 times when updating	N/A

a. Except when in sleep mode or when a Good Read LED Duration other than 00 is selected

Table 50. Programming Mode Indications

Programming Mode - The following indications ONLY occur when the scanner is in Programming Mode.

Label Program-ming Mode Entry	A valid programming label has been scanned.	LED blinks continuously	Scanner sounds four low fre-quency beeps.
Label Program-ming Mode Rejection of Label	A label has been rejected.	N/A	Scanner sounds three times at lowest frequency & current volume.
Label Program-ming Mode Acceptance of Partial Label	In cases where multiple labels must be scanned to program one feature, this indication acknowledges each portion as it is successfully scanned.	N/A	Scanner sounds one short beep at highest frequency & current volume.
Label Program-ming Mode Acceptance of Programming	Configuration option(s) have been successfully pro-grammed via labels and the scanner has exited Program-ming Mode.	N/A	Scanner sounds one high fre-quency beep and 4 low fre-quency beeps followed by reset beeps.
Label Program-ming Mode Cancel Item Entry	Cancel label has been scanned.	N/A	Scanner sounds two times at low frequency and current volume.

Error Codes

Upon startup, if the scanner sounds a long tone, this means the scanner has not passed its automatic Selftest and has entered FRU (Field Replaceable Unit) isolation mode. If the scanner is reset, the sequence will be repeated. The following table describes the LED flashes/beep codes associated with an error found.

NUMBER OF LED FLASHES/BEEPS	ERROR	CORRECTIVE ACTION
1	Configuration	
2	Interface PCB	Contact your technical support organization for assistance.
6	Digital PCB	
12	Imager	
15	Accelerometer	

Base Station Indications

INDICATION	LEDS
Power-up Complete	Yellow LED on
Scanner Disabled by the HOST or the communication with HOST is not established	Yellow LED blinking ~1Hz
Data/labels are transmitted to the HOST	Yellow LEDs turned off for 100mSec
Programming Mode	Yellow LED blinks quickly
Configuration alignment with the handheld is in progress	Red LED blinks quickly
Battery charging in progress	Red LED on
Battery charging complete	Green LED on
Battery charger error	Green LED and Red LEDs blink alternatively ~1Hz
Scanner not placed in the cradle	Red and Green LEDs off

Base Station Button Indicators

BUTTON PUSH EVENT	CORDLESS	RED INDICATOR	GREEN INDICATOR
Push at power-up	force device connection (HP Configurator)	Off	Slow blink Fast blink
1 to 5 sec	Paging	Off	Fast blink
5 to 10 sec	Unlink (Only BT)	Off	Slow blink
10 to 15 sec	Reset	Fast blink	Off
15 to 20 sec	Restore custom defaults	Slow blink	Off
> 20 sec	No action	Off	Off

NOTES

Appendix B
Standard Defaults

The most common configuration settings are listed in the "Default" column of the table below. Page references are also provided for feature descriptions and programming barcodes for each parameter. A column has also been provided for recording of your preferred default settings for these same configurable features.

Table 51. Standard Defaults

Parameter	Default	Your Setting	Page Number
GLOBAL INTERFACE FEATURES			
Host Commands — Obey/Ignore	Obey		13
USB Suspend Mode	Disable		13
USB-Com			
Intercharacter Delay	No Delay		16
Beep On ASCII BEL	Disable		16
Beep On Not on File	Enable		17
ACK NAK Options	Disable		18
ACK Character	'ACK'		19
NAK Character	'NAK'		19
ACK NAK Timeout Value	200 ms		20
ACK NAK Retry Count	3 Retries		20
ACK NAK Error Handling	Ignore Errors Detected		21
Indicate Transmission Failure	Enable		21
Disable Character	'D'		22
Enable Character	'E'		22
USB KEYBOARD			
Country Mode	U.S. Keyboard		24
Send Control Characters	00		27
Intercode Delay	No Delay		28
USB Keyboard Speed	1 ms		29

Parameter	Default	Your Setting	Page Number
USB Keyboard Numeric Keypad	Standard Keys		30
Data Format			
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)		32
Global AIM ID	Disable		33
Set AIM ID Individually for GS1-128	Enable		35
Label ID: Pre-Loaded Sets	EU Set		36
Individually Set Label ID	Disable		37
Case Conversion	Disable		43
Character Conversion	No Char Conversion		44
READING PARAMETERS			
Double Read Timeout	0.6 Second		45
Power On Alert	Power-up Beep		48
Good Read: When to Indicate	After Decode		48
Good Read Beep Type	Mono		49
Good Read Beep Frequency	High		49
Good Read Beep Length	80 ms		50
Good Read Beep Volume	High		51
Good Read LED Duration	300 ms		52
Scanning Features			
Scan Mode	Trigger Single		53
Stand Mode Indication	Disable		54
Stand Operation	Switch to Stand Mode		55
Pick Mode	Disable		56
Stand Mode Sensitivity	Medium		56
Stand Mode Illumination Off Time	2 Seconds		57
Scanning Active Time	5 Seconds		57
Stand Illumination Control	OFF		58
Flash On Time	10 = Flash is ON for 1 Second		59

Parameter	Default	Your Setting	Page Number
Flash Off Time	06 = Flash is OFF for 600ms		59
Aiming Pointer	Enable		60
Aiming Duration Timer	Aiming Off After Decoding		60
Green Spot Duration	300 ms		61
Mobile Phone Mode	Enable		61
Partial Label Reading Control	Enable		62
Decode Negative Image	Disable		62
Multiple Label Reading			
Multiple Labels per Frame	Disable		63
Multiple Labels Ordering by Code Symbology	Random Order		64
Multiple Labels Ordering by Code Length	Disable		64
CODE SELECTION - 1D SYMBOLOGIES			
Code EAN/UPC			
Coupon Control	Enable only UPCA coupon decoding		67
UPC-A			
UPC-A Enable/Disable	Enable		68
UPC-A Check Character Transmission	Send		68
Expand UPC-A to EAN-13	Don't Expand		69
UPC-A Number System Character Transmission	Transmit		69
UPC-A 2D Component	2D Component Not Required		70
UPC-E			
UPC-E Enable/Disable	Enable		70
UPC-E Check Character Transmission	Send		71
UPC-E 2D Component	2D Component Not Required		71
Expand UPC-E to EAN-13	Don't Expand		72
Expand UPC-E to UPC-A	Don't Expand		72

Parameter	Default	Your Setting	Page Number
UPC-E Number System Character Transmission	Transmit		73
GTIN			
GTIN Formatting	Disable		73
EAN 13 (Jan 13)			
EAN 13 Enable/Disable	Enable		74
EAN 13 Check Character Transmission	Send		74
EAN-13 Flag 1 Character	Transmit		75
EAN-13 ISBN Conversion	Disable		75
EAN-13 2D Component	2D Component Not Required		76
ISSN			
ISSN Enable/Disable	Disable		76
EAN 8			
EAN 8 Enable/Disable	Enable		77
EAN 8 Check Character Transmission	Send		77
Expand EAN 8 to EAN 13	Disable		78
EAN 8 2D Component	2D Component Not Required		78
UPC/EAN Global Settings			
UPC/EAN Price Weight Check	Disable		79
UPC/EAN Quiet Zones	Two Modules		80
Add-Ons			
Optional Add-ons	Disable P2, P5 and P8		81
Optional Add-On Timer	70 ms		82
Optional GS1-128 Add-On Timer	Disable		85
Code 39			
Code 39 Enable/Disable	Enable		88
Code 39 Check Character Calculation	Calculate Std Check		88
Code 39 Check Character Transmission	Send		89
Code 39 Start/Stop Character Transmission	Don't Transmit		90
Code 39 Full ASCII	Disable		90

Parameter	Default	Your Setting	Page Number
Code 39 Quiet Zones	Small Quiet Zones on two sides		91
Code 39 Length Control	Variable		91
Code 39 Set Length 1	2		92
Code 39 Set Length 2	50		93
Trioptic Code			
Trioptic Code Enable/Disable	Disable		94
Code 32 (Italian Pharmaceutical Code)			
Code 32 Enable/Disable	Disable		94
Code 32 Check Char Transmission	Don't Send		95
Code 32 Start/Stop Character Transmission	Don't Transmit		95
Code 39 CIP (French Pharmaceutical Code)			
Code 39 CIP Enable/Disable	Disable		96
Special Codes			
Code 39 Danish PPT Enable/Disable	Disable		96
Code 39 LaPoste Enable/Disable	Disable		97
Code 39 PZN Enable/Disable	Disable		97
Code 128			
Code 128 Enable/Disable	Enable		98
Expand Code 128 to Code 39	Don't Expand		98
Code 128 Check Character Transmission	Don't Send		99
Code 128 Function Character Transmission	Don't Send		99
Code 128 Sub-Code Exchange Transmission	Disable		100
Code 128 Quiet Zones	Small Quiet Zones on two sides		100
Code 128 Length Control	Variable		101
Code 128 Set Length 1	1		102
Code 128 Set Length 2	80		103
GS1-128			
GS1-128 Enable	Transmit in Code 128 Data Format		104
GS1-128 2D Component	Disable		104

Parameter	Default	Your Setting	Page Number
ISBT 128			
ISBT 128 Concatenation	Disable		105
ISBT 128 Force Concatenation	Disable		105
ISBT 128 Concatenation Mode	Static		106
ISBT 128 Dynamic Concatenation Timeout	200 msec		107
Interleaved 2 of 5			
I 2 of 5 Enable/Disable	Disable		108
I 2 of 5 Check Character Calculation	Disable		109
I 2 of 5 Check Character Transmission	Send		110
I 2 of 5 Length Control	Variable		110
I 2 of 5 Set Length 1	6		111
I 2 of 5 Set Length 2	50		112
Interleaved 2 of 5 CIP HR			
Interleaved 2 of 5 CIP HR Enable/Disable	Disable		113
Follett 2 of 5			
Follett 2 of 5 Enable/Disable	Disable		113
Standard 2 of 5			
Standard 2 of 5 Enable/Disable	Disable		114
Standard 2 of 5 Check Character Calculation	Disable		114
Standard 2 of 5 Check Character Transmission	Send		115
Standard 2 of 5 Length Control	Variable		115
Standard 2 of 5 Set Length 1	8		116
Standard 2 of 5 Set Length 2	50		117
Industrial 2 of 5			
Industrial 2 of 5 Enable/Disable	Disable		118
Industrial 2 of 5 Check Character Calculation	Disable		118
Industrial 2 of 5 Check Character Transmission	Enable		119
Industrial 2 of 5 Length Control	Variable		119
Industrial 2 of 5 Set Length 1	1		120

Parameter	Default	Your Setting	Page Number
Industrial 2 of 5 Set Length 2	50		121
Code IATA			
IATA Enable/Disable	Disable		122
IATA Check Character Transmission	Enable		122
Codabar			
Codabar Enable/Disable	Disable		123
Codabar Check Character Calculation	Don't Calculate		123
Codabar Check Character Transmission	Send		124
Codabar Start/Stop Character Transmission	Transmit		124
Codabar Start/Stop Character Set	abcd/abcd		125
Codabar Start/Stop Character Match	Don't Require Match		125
Codabar Quiet Zones	Small Quiet Zones on two sides		126
Codabar Length Control	Variable		126
Codabar Set Length 1	3		127
Codabar Set Length 2	50		128
ABC Codabar	Disable		129
ABC Codabar			
ABC Codabar Enable/Disable	Disable		129
ABC Codabar Concatenation Mode	Static		129
ABC Codabar Dynamic Concatenation Timeout	200 msec		130
ABC Codabar Force Concatenation	Disable		131
Code 11			
Code 11 Enable/Disable	Disable		132
Code 11 Check Character Calculation	Check C and K		132
Code 11 Check Character Transmission	Send		133
Code 11 Length Control	Variable		133
Code 11 Set Length 1	4		135
Code 11 Set Length 2	50		136

Parameter	Default	Your Setting	Page Number
GS1 DataBar™ Omnidirectional			
GS1 DataBar™ Omnidirectional Enable/Disable	Disable		137
GS1 DataBar™ Omnidirectional GS1-128 Emulation	Disable		137
GS1 DataBar™ Omnidirectional 2D Component	2D component not required		138
GS1 DataBar™ Expanded			
GS1 DataBar™ Expanded Enable/Disable	Disable		138
GS1 DataBar™ Expanded GS1-128 Emulation	Disable		139
GS1 DataBar™ Expanded 2D Component	2D component not required		139
GS1 DataBar™ Expanded Length Control	Variable		140
GS1 DataBar™ Expanded Set Length 1	1		141
GS1 DataBar™ Expanded Set Length 2	74		142
GS1 DataBar™ Limited			
GS1 DataBar™ Limited Enable/Disable	Disable		143
GS1 DataBar™ Limited GS1-128 Emulation	Disable		143
GS1 DataBar™ Limited 2D Component	2D component not required		144
Code 93			
Code 93 Enable/Disable	Disable		144
Code 93 Check Character Calculation	Enable Check C and K		145
Code 93 Check Character Transmission	Enable		145
Code 93 Length Control	Variable		146
Code 93 Set Length 1	1		147
Code 93 Set Length 2	50		148
Code 93 Quiet Zones	Small Quiet Zones on two sides		149
MSI			
MSI Enable/Disable	Disable		149
MSI Check Character Calculation	Enable Mod10		150

Parameter	Default	Your Setting	Page Number
MSI Check Character Transmission	Enable		150
MSI Length Control	Variable		152
MSI Set Length 1	1		152
MSI Set Length 2	50		153
Plessey			
Plessey Enable/Disable	Disable		154
Plessey Check Character Calculation	Enable Plessey std. check char. verification		154
Plessey Check Character Transmission	Enable		155
Plessey Length Control	Variable		155
Plessey Set Length 1	1		156
Plessey Set Length 2	50		157
CODE SELECTION - 2D SYMBOLOGIES			
2D Maximum Decoding Time	350msec		160
2D Structured Append	Disable		161
2D Normal/Inverse Symbol Control	Normal		161
Aztec Code Enable / Disable	Disable		162
Aztec Code Length Control	Enable		162
Aztec Code Length Control	Variable		162
Aztec Code Set Length 1	1		163
China Sensible Code Enable / Disable	Disable		165
China Sensible Code Length Control	Variable		165
China Sensible Code Set Length 1	1		166
China Sensible Code Set Length 2	7,827		167
Data Matrix Enable / Disable	Enable		168
Data Matrix Square/Rectangular Style	Both Square and Rectangular style		168
Data Matrix Length Control	Variable		169
Data Matrix Set Length 1	1		169
Data Matrix Set Length 2	3,116		170
Maxicode Enable / Disable	Disable		171

Parameter	Default	Your Setting	Page Number
Maxicode Primary Message Transmission	Disable		171
Maxicode Length Control	Variable		172
Maxicode Set Length 1	1		172
Maxicode Set Length 2	0145		173
PDF417 Enable / Disable	Enable		174
PDF417 Length Control	Variable		174
PDF417 Set Length 1	1		175
PDF417 Set Length 2	2,710		176
Micro PDF417 Enable / Disable	Disable		177
Micro PDF417 Code 128 GS1-128 Emulation	Micro PDF AIM ID and label type		177
Micro PDF417 Length Control	Variable		178
Micro PDF417 Set Length 1	1		178
Micro PDF417 Set Length 2	0366		179
QR Code Enable / Disable	Enable		180
QR Code Length Control	Variable		180
QR Code Set Length 1	1		181
QR Code Set Length 2	7,089		182
Micro QR Code Enable/Disable	Disable		183
Micro QR Code Length Control	Variable		183
Micro QR Code Set Length 1	0001		184
Micro QR Code Set Length 2	0035		185
UCC Composite Enable / Disable	Disable		186
UCC Optional Composite Timer	Timer Disabled		187
Postal Code Selection	Disable all Postal codes		188
Postnet BB Control	Disable		189
WIRELESS Features			
Good Transmission Beep	Enable		192
Beep Frequency	Low		192
Beep Duration	80 msec		193
Beep Volume	High		194

Parameter	Default	Your Setting	Page Number
Disconnect Beep	Enable		194
Docking Beep	Enable		195
Leash Alarm	Disable		195
Automatic Configuration Update	Enable		197
Copy Configuration to Scanner	N/A		197
Copy Configuration to Base Station	N/A		197
Batch Mode	Disable		198
Send Batch	N/A		198
Erase Batch Memory	N/A		199
RF Batch Mode Transmit Delay	No Delay		199
Direct Radio Autolink	Unlink Label Required		200
Source Radio Address Transmission	Do not include		201
Source Radio Address Delimiter Character	No Delimiter Character		202
Link Timeout	2 Seconds		202
BT Security Features			
BT Security Mode	Disable		203
Select PIN Code Length	4-character BT PIN Code		204
Set PIN Code	31323334 = Default Pin Code is 1234		204
BT Poll Rate	20 ms		205
Powerdown Timeout	30 minutes		206
Motion Features			
Motion Aiming Control	Enable		207
Motion Sensitivity	Medium		208
Motionless Timeout	2 seconds		208

NOTES

Appendix C
Sample Barcodes

The sample barcodes in this appendix are typical representations for their symbology types.

1D Barcodes

UPC-A

1 23456 78901 2

EAN-13

978033029095

Code 39

ABCDEF

Code 128

Code 128

Interleaved 2 of 5

123456

Sample Barcodes (continued)

Code 32

B9P91Q

Codabar
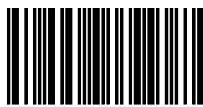
13579

Code 93

ABCDEF

Code 11

123456789

GS1 DataBar™ (RSS)

> **GS1 DataBar™** variants must be enabled to read the barcodes below (see GS1 DataBar™ Omnidirectional on page 137).

GS1 DataBar™ Expanded Stacked

10293847560192837465019283746029478450366523

GS1 DataBar™ Expanded

1234890hjio9900mnb

GS1 DataBar™ Limited

08672345650916

GS1 DataBar™-14

GS1 DataBar™ Omnidirectional Truncated

55432198673467

GS1 DataBar™ Omnidirectional Stacked

90876523412674

GS1 DataBar™ Omnidirectional Stacked

78123465709811

2D Barcodes

Aztec

Datamatrix

China Sensible Code

MaxiCode
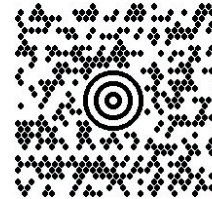
PDF 417

ABCabc

Micro PDF 417

BV17453

QR Code
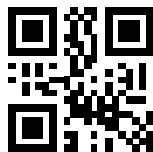
35900G9

Micro QR Code

123456

UCC Composite

(17) 050923 (10) ABC123

(01) 0 4012345 67890 1 1

Appendix D
Keypad

Use the barcodes in this appendix to enter numbers as you would select digits/characters from a keypad.
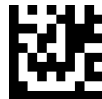
0

1
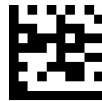
2

3

4

5

6

7

8
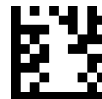
9

A

B

C

D

E

F

Appendix E
Scancode Tables

Control Character Emulation

Control character emulation selects from different scancode tables as listed in this appendix. Each of the control character sets below are detailed by interface type in the tables. These apply to USB Keyboard platforms.

Control Character 00 : Characters from 00 to 0x1F are sent as control character Ctrl+Keys, special keys are located from 0x80 to 0xA1.

Control Character 01 : Characters from 00 to 0x1F are sent as control character Ctrl+Capital Key, special keys are located from 0x80 to 0xA1.

Control Character 02 : Special keys are located from 00 to 0x1F and characters from 0x80 to 0xFE are intended as an extended ASCII table (Microsoft Windows Codepage 1252 — See page -276.)

Single Press and Release Keys

In the following tables, Ar↓ means Alt right pressed and Ar↑ means Alt right released and so on. Definitions for other keys are Al (Alt left), Cr (Control Right) Cl (Control Left) Sh (shift). This method can be used for combining Alt, Control or Shift with other keys.

Example: Consider a Control character set to 00. If AltRight+A is required before sending a label to the host, it could be done by setting three Prefix keys in this way: 0x99 0x41 0x9A.

Interface type USB-Keyboard Alt Mode

Table 52. Scancode Set When Control Character is 00 or 01

	x0	x1	x2	x3	x4	x5	X6	x7	x8	x9	xA	xB	xC	xD	xE	Xf
0x	Alt+000	Alt+001	Alt+002	Alt+003	Alt+004	Alt+005	Alt+006	Alt+007	BS	HT TAB	Alt+010	Alt+011	Alt+012	CR Enter	Alt+014	Alt+015
1x	Alt+016	Alt+017	Alt+018	Alt+019	Alt+020	Alt+021	Alt+022	Alt+023	Alt+024	Alt+025	Alt+026	ESC Esc	Alt+028	Alt+029	Alt+030	Alt+031
2x	A+032	A+033	A+034	A+035	A+036	A+037	A+038	A+039	A+040	A+041	A+042	A+043	A+044	A+045	A+046	A+047
3x	A+048	A+049	A+050	A+051	A+052	A+053	A+054	A+055	A+056	A+057	A+058	A+059	A+060	A+061	A+062	A+063
4x	A+064	A+065	A+066	A+067	A+068	A+069	A+070	A+071	A+072	A+073	A+074	A+075	A+076	A+077	A+078	A+079
5x	A+080	A+081	A+082	A+083	A+084	A+085	A+086	A+087	A+088	A+089	A+090	A+091	A+092	A+093	A+094	A+095
6x	A+096	A+097	A+098	A+099	A+100	A+101	A+102	A+103	A+104	A+105	A+106	A+107	A+108	A+109	A+110	A+111
7x	A+112	A+113	A+114	A+115	A+116	A+117	A+118	A+119	A+120	A+121	A+122	A+123	A+124	A+125	A+126	A+127
8x	€	Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Home	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr ↑	A+0161	A+0162	A+0163	A+0164	A+0165	A+0166	A+0167	A+0168	A+0169	A+0170	A+0171	A+0172	A+0173	A+0174	A+0175
Bx	A+0176	A+0177	A+0178	A+0179	A+0180	A+0181	A+0182	A+0183	A+0184	A+0185	A+0186	A+0187	A+0188	A+0189	A+0190	A+0191
Cx	A+0192	A+0193	A+0194	A+0195	A+0196	A+0197	A+0198	A+0199	A+0200	A+0201	A+0202	A+0203	A+0204	A+0205	A+0206	A+0207
Dx	A+0208	A+0209	A+0210	A+0211	A+0212	A+0213	A+0214	A+0215	A+0216	A+0217	A+0218	A+0219	A+0220	A+0221	A+0222	A+0223
Ex	A+0224	A+0225	A+0226	A+0227	A+0228	A+0229	A+0230	A+0231	A+0232	A+0233	A+0234	A+0235	A+0236	A+0237	A+0238	A+0239
Fx	A+0240	A+0241	A+0242	A+0243	A+0244	A+0245	A+0246	A+0247	A+0248	A+0249	A+0250	A+0251	A+052	A+0253	A+0254	A+0255

Interface type USB-Keyboard Alt Mode (continued)

Table 53. Scancode Set When Control Character is 02

	x0	x1	x2	x3	x4	x5	X6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓	Cr ↑	BS	Tab	→	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	A+032	A+033	A+034	A+035	A+036	A+037	A+038	A+039	A+040	A+041	A+042	A+043	A+044	A+045	A+046	A+047
3x	A+048	A+049	A+050	A+051	A+052	A+053	A+054	A+055	A+056	A+057	A+058	A+059	A+060	A+061	A+062	A+063
4x	A+064	A+065	A+066	A+067	A+068	A+069	A+070	A+071	A+072	A+073	A+074	A+075	A+076	A+077	A+078	A+079
5x	A+080	A+081	A+082	A+083	A+084	A+085	A+086	A+087	A+088	A+089	A+090	A+091	A+092	A+093	A+094	A+095
6x	A+096	A+097	A+098	A+099	A+100	A+101	A+102	A+103	A+104	A+105	A+106	A+107	A+108	A+109	A+110	A+111
7x	A+112	A+113	A+114	A+115	A+116	A+117	A+118	A+119	A+120	A+121	A+122	A+123	A+124	A+125	A+126	A+127
8x	A+0128	A+0129	A+0130	A+0131	A+0132	A+0133	A+0134	A+0135	A+0136	A+0137	A+0138	A+0139	A+0140	A+0141	A+0142	A+0143
9x	A+0144	A+0145	A+0146	A+0147	A+0148	A+0149	A+0150	A+0151	A+0152	A+0153	A+0154	A+0155	A+0156	A+0157	A+0158	A+0159
Ax	A+0160	A+0161	A+0162	A+0163	A+0164	A+0165	A+0166	A+0167	A+0168	A+0169	A+0170	A+0171	A+0172	A+0173	A+0174	A+0175
Bx	A+0176	A+0177	A+0178	A+0179	A+0180	A+0181	A+0182	A+0183	A+0184	A+0185	A+0186	A+0187	A+0188	A+0189	A+0190	A+0191
Cx	A+0192	A+0193	A+0194	A+0195	A+0196	A+0197	A+0198	A+0199	A+0200	A+0201	A+0202	A+0203	A+0204	A+0205	A+0206	A+0207
Dx	A+0208	A+0209	A+0210	A+0211	A+0212	A+0213	A+0214	A+0215	A+0216	A+0217	A+0218	A+0219	A+0220	A+0221	A+0222	A+0223
Ex	A+0224	A+0225	A+0226	A+0227	A+0228	A+0229	A+0230	A+0231	A+0232	A+0233	A+0234	A+0235	A+0236	A+0237	A+0238	A+0239
Fx	A+0240	A+0241	A+0242	A+0243	A+0244	A+0245	A+0246	A+0247	A+0248	A+0249	A+0250	A+0251	A+052	A+0253	A+0254	A+0255

IBM XT

Table 54. Scancode Set When Control Character is 00 or 01

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS C(S)+H	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C(S)+\	GS C+]	RS C(S)+^	US C(S)+_
2x	Space	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{	|	}		Del
8x		Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Home	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al↑	Cl↓	Cl↑	Cr↓
Ax	Cr↑															

Table 55. Scancode Set when Control Character 02

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	Ar↓	Ar↑	Al↓	Al↑	Cl↓	Cl↑	Cr↓	Cr↑	BS	Tab	→	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Space	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{	|	}		Del

Microsoft Windows Codepage 1252

Windows-1252 is a character encoding of the Latin alphabet, used by default in the legacy components of Microsoft Windows in English and some other Western languages.

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL 0000	STX 0001	SOT 0002	ETX 0003	EOT 0004	ENQ 0005	ACK 0006	BEL 0007	BS 0008	HT 0009	LF 000A	VT 000B	FF 000C	CR 000D	SO 000E	SI 000F
10	DLE 0010	DC1 0011	DC2 0012	DC3 0013	DC4 0014	NAK 0015	SYN 0016	ETB 0017	CAN 0018	EM 0019	SUB 001A	ESC 001B	FS 001C	GS 001D	RS 001E	US 001F
20	SP 0020	! 0021	" 0022	# 0023	$ 0024	% 0025	& 0026	' 0027	(0028	) 0029	* 002A	+ 002B	, 002C	- 002D	. 002E	/ 002F
30	0 0030	1 0031	2 0032	3 0033	4 0034	5 0035	6 0036	7 0037	8 0038	9 0039	: 003A	; 003B	< 003C	= 003D	> 003E	? 003F
40	@ 0040	A 0041	B 0042	C 0043	D 0044	E 0045	F 0046	G 0047	H 0048	I 0049	J 004A	K 004B	L 004C	M 004D	N 004E	O 004F
50	P 0050	Q 0051	R 0052	S 0053	T 0054	U 0055	V 0056	W 0057	X 0058	Y 0059	Z 005A	[005B	\ 005C	] 005D	^ 005E	_ 005F
60	` 0060	a 0061	b 0062	c 0063	d 0064	e 0065	f 0066	g 0067	h 0068	i 0069	j 006A	k 006B	l 006C	m 006D	n 006E	o 006F
70	p 0070	q 0071	r 0072	s 0073	t 0074	u 0075	v 0076	w 0077	x 0078	y 0079	z 007A	{ 007B	| 007C	} 007D	~ 007E	DEL 007F
80	€ 20AC		‚ 201A	ƒ 0192	„ 201E	… 2026	† 2020	‡ 2021	ˆ 02C6	‰ 2030	Š 0160	‹ 2039	Œ 0152		Ž 017D	
90		' 2018	' 2019	" 201C	" 201D	• 2022	– 2013	— 2014	˜ 02DC	™ 2122	š 0161	› 203A	œ 0153		ž 017E	Ÿ 0178
A0	NBSP 00A0	¡ 00A1	¢ 00A2	£ 00A3	¤ 00A4	¥ 00A5	¦ 00A6	§ 00A7	¨ 00A8	© 00A9	ª 00AA	« 00AB	¬ 00AC	- 00AD	® 00AE	¯ 00AF
B0	° 00B0	± 00B1	² 00B2	³ 00B3	´ 00B4	µ 00B5	¶ 00B6	· 00B7	¸ 00B8	¹ 00B9	º 00BA	» 00BB	¼ 00BC	½ 00BD	¾ 00BE	¿ 00BF
C0	À 00C0	Á 00C1	Â 00C2	Ã 00C3	Ä 00C4	Å 00C5	Æ 00C6	Ç 00C7	È 00C8	É 00C9	Ê 00CA	Ë 00CB	Ì 00CC	Í 00CD	Î 00CE	Ï 00CF
D0	Ð 00D0	Ñ 00D1	Ò 00D2	Ó 00D3	Ô 00D4	Õ 00D5	Ö 00D6	× 00D7	Ø 00D8	Ù 00D9	Ú 00DA	Û 00DB	Ü 00DC	Ý 00DD	Þ 00DE	ß 00DF
E0	à 00E0	á 00E1	â 00E2	ã 00E3	ä 00E4	å 00E5	æ 00E6	ç 00E7	è 00E8	é 00E9	ê 00EA	ë 00EB	ì 00EC	í 00ED	î 00EE	ï 00EF
F0	ð 00F0	ñ 00F1	ò 00F2	ó 00F3	ô 00F4	õ 00F5	ö 00F6	÷ 00F7	ø 00F8	ù 00F9	ú 00FA	û 00FB	ü 00FC	ý 00FD	þ 00FE	ÿ 00FF

NOTES

ASCII Chart

ASCII Char.	Hex No.	ASCII Char.	Hex No.	ASCII Char.	Hex No.	ASCII Char.	Hex No.
NUL	00	SP	20	@	40	'	60
SOH	01	!	21	A	41	a	61
STX	02	"	22	B	42	b	62
ETX	03	#	23	C	43	c	63
EOT	04	$	24	D	44	d	64
ENQ	05	%	25	E	45	e	65
ACK	06	&	26	F	46	f	66
BEL	07	'	27	G	47	g	67
BS	08	(	28	H	48	h	68
HT	09	)	29	I	49	i	69
LF	0A	*	2A	J	4A	j	6A
VT	0B	+	2B	K	4B	k	6B
FF	0C	,	2C	L	4C	l	6C
CR	0D	-	2D	M	4D	m	6D
SO	0E	.	2E	N	4E	n	6E
SI	0F	/	2F	O	4F	o	6F
DLE	10	0	30	P	50	p	70
DC1	11	1	31	Q	51	q	71
DC2	12	2	32	R	52	r	72
DC3	13	3	33	S	53	s	73
DC4	14	4	34	T	54	t	74
NAK	15	5	35	U	55	u	75
SYN	16	6	36	V	56	v	76
ETB	17	7	37	W	57	w	77
CAN	18	8	38	X	58	x	78
EM	19	9	39	Y	59	y	79
SUB	1A	:	3A	Z	5A	z	7A
ESC	1B	;	3B	[	5B	{	7B
FS	1C	<	3C	\	5C			7C
GS	1D	=	3D	]	5D	}	7D
RS	1E	>	3E	^	5E	~	7E
US	1F	?	3F	_	5F	DEL	7F