HP Linear Barcode Scanner II

Programming Reference Guide

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Chapter 1
Introduction

About this Guide

This Programming Reference Guide (PRG) is provided for users seeking advanced technical information, including connection, programming, maintenance and specifications. Other publications associated with this product are downloadable from the HP website.

Typically, units are factory-programmed for the most common terminal and communications settings. If you need to modify any programmable settings, custom configuration can be accomplished by scanning the programming bar codes within this guide.

Overview

Chapter 1, Introduction provides a product overview, unpacking instructions, and cable connection information.

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

Chapter 3, Interfaces consists of interface configuration bar codes and details.

Chapter 4, Configuration Using Bar Codes provides instructions and bar code labels for customizing your reader. There are different sections for interface types, general features, data formatting, symbology-specific and model-specific features.

Chapter 5, References provides additional details concerning programmable features.

Appendix A, Technical Specifications lists physical and performance characteristics, as well as environmental and regulatory specifications. It also provides standard cable pin-outs.

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

Appendix C, Sample Bar Codes offers sample bar codes of several common symbologies.

Appendix D, Keypad includes numeric bar codes 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 reader of key issues or procedures that must be observed when using the reader:

NOTE

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

CAUTION

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

Other Resources

Current versions of this Programming Reference Guide (PRG) and any other manuals, instruction sheets and utilities for this product can be downloaded from the HP website www.hp.com/support.

For safety and regulatory information, refer to the *Product Notices* provided in your documentation kit. To locate updates to the user guide for your product, go to www.hp.com/support. Select **Find your product,** and then follow the on-screen instructions.

Contacting Support

To resolve a hardware or software problem, go to www.hp.com/support.Use this site to get more information about your product, including links to discussion forums and instructions on troubleshooting. You can also find information on how to contact HP and open a support case.

Chapter 2
Setup

About the Reader

One distinctive feature offered by the reader is a very wide scan angle which can read long linear bar codes, such as utility bills. Whether used in Single Trigger or Continuous Mode, the ergonomic design of the reader will help to promote comfortable handling during extended periods of use.

USB: Select to communicate either by USB OEM, USB COM STD, or USB Keyboard interface types by scanning the appropriate interface type bar codes available in this manual. The default interface is USB-KBD.

Unpacking

Check carefully to ensure the reader and any accessories ordered are present and undamaged. If any damage occurred during shipment, contact your HP reseller.

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

Setting up the Reader

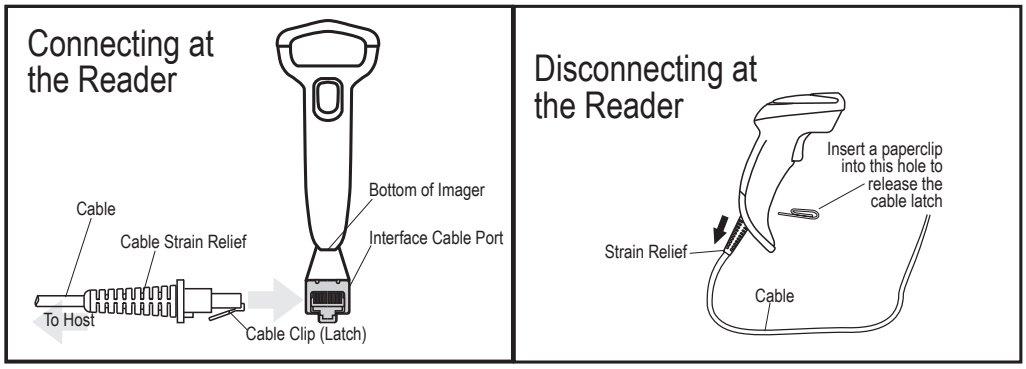
Follow the steps in this section to connect and get your reader up and communicating with its host.

1. Install the interface cable.
2. Select the interface type (see page 15).
3. Configure the reader starting on page 15 (optional, depends on settings needed).

Install the Interface Cable

The reader kit you ordered to match your interface should provide a compatible cable for your installation. If not, contact your HP reseller.
Seat the cable assembly into the reader, aligning the connector and the cable clip as shown in the insert portion of Figure 1.

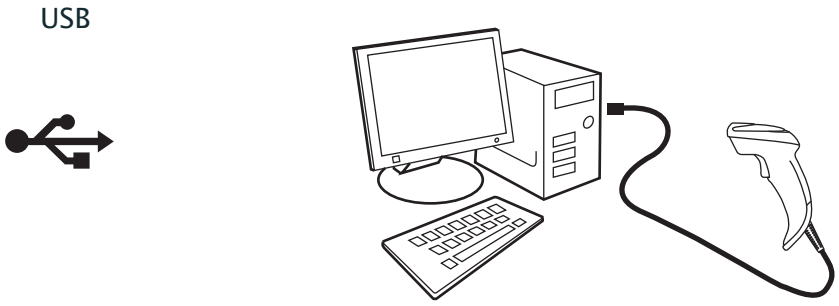
Figure 1. Connecting/Disconnecting the Interface Cable



Host connection types are described below and illustrated in Figure 2.

USB Connection: Connect the reader to a USB port on the terminal/PC using the correct USB cable for the interface type you ordered.

Figure 2. USB Connection



NOTE **Specific cables are required for connection to different hosts. The connection illustrated above is an example only. Actual connectors may vary from those illustrated, but the steps to connect the reader remain the same.**

Programming

The reader is typically factory-configured with a set of default features standard to the interface type you ordered. After scanning the interface bar code from the Interfaces on page 7 section, you can select other options and customize your reader through use of the instructions and programming bar codes available in the corresponding features section for your interface and also the Data Format on page 35 and Symbologies on page 65 chapters of this guide.

Select the Interface Type

Upon completing the physical connection between the reader and its host, proceed directly to "Interfaces" on page 7 for information and programming for the interface type the reader is connected to and scan the appropriate bar code in that section to select your system's correct interface type.

Configure Interface Settings

The reader is typically factory-configured with a set of default features standard to the interface type you ordered. If after scanning the interface bar code from the Interfaces section, your installation requires you to select options to further customize your reader, turn to the appropriate section for your interface type as listed below:

- "USB-COM (RS-232 Simulated) Interface" on page 13
- "Keyboard Interface," starting on page 23
- "USB-OEM Interface," starting on page 33

Configure Other Features

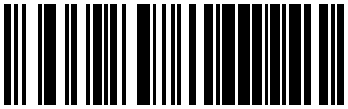
If your installation requires different programming than the standard factory default settings, the following sections of this guide allow configuration of non-interface-specific settings you might require:

Reading Parameters: Includes general features such as programming for scanning, beeper and LED indicators and other universal settings.

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

Software Version Transmission

The software version of the device can be transmitted over the USB-COM (RS-232) and Keyboard interfaces by scanning the following label.



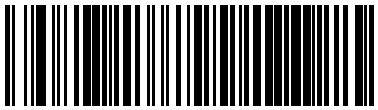
Transmit Software Version

Resetting the Product Configuration to Defaults

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

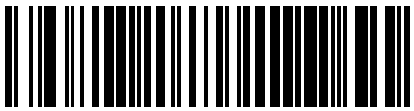
NOTE

Custom defaults are based on the interface type. Configure the reader for the correct interface before scanning this label.

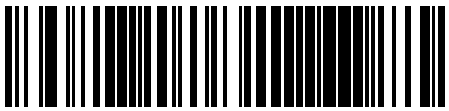


Restore Custom Default Configuration

If you aren't sure what programming options are in your reader, or you've changed some options and want to restore the Factory Configuration, you have two options. You can scan the Restore USA Factory Configuration bar code or the Restore EU Factory Configuration bar code below. Both labels restore the reader configuration to the factory settings including the interface type. The USA label restores Label IDs to those historically used in the USA. The EU label restores Label IDs to those historically used in Europe. The Label ID sets for USA and EU are shown in the Label ID section of this guide.



Restore USA Factory Configuration



Restore EU Factory Configuration

The programming section lists the factory default settings for each of the menu commands (indicated by shaded blocks and bold text) on the following pages.

Chapter 3
Interfaces

Interface Selection

Each reader model will support one of the following sets of host interfaces:

USB KBD

USB COM STD

USB OEM

USB Composite

Configuring the Interface

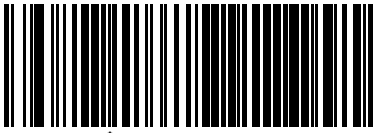
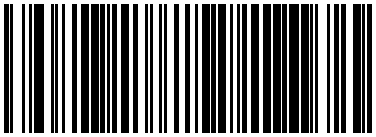
Scan the programming bar code from this section which selects the appropriate interface type matching the system the reader will be connected to. Next, proceed to the corresponding chapter in this manual (also listed in Table 1) to configure any desired settings and features associated with that interface.

NOTE

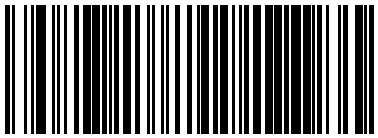
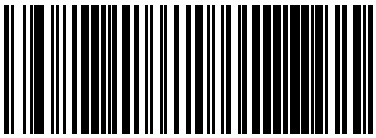
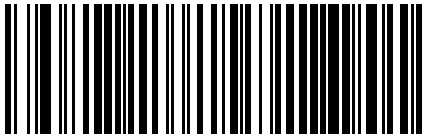
Unlike some other programming features and options, interface selections require that you scan only one programming bar code label. DO NOT scan an ENTER/EXIT bar code prior to scanning an interface selection bar code.

Some interfaces require the reader to start in the disabled state when powered up. If additional reader configuration is desired while in this state, pull the trigger and hold it for five seconds. The reader will change to a state that allows programming with bar codes.

Table 1. Available Interfaces

USB-COM	FEATURES
 Select USB-COM-STD[a] — USB Com to simulate RS-232 standard interface	Set RS-232 Interface Features starting on page 13
USB-OEM	**FEATURES**
USB-OEM (can be used for OPOS/UPOS/JavaPOS) —  Select USB-OEM	Set USB-OEM Interface Features starting on page 33

a. Download the correct USB Com driver from www.hp.com/support.

KEYBOARD	FEATURES
USB Keyboard with standard key encoding —  Select USB Keyboard	Set KEYBOARD WEDGE Interface Features starting on page 23
 Select USB Alternate Keyboard — USB Keyboard with alternate key encoding	
Select USB Composite (KEYBOARD + COM) — 	

Chapter 4
Configuration Using Bar Codes

This and following sections provide programming bar codes to configure your reader by changing the default settings. For details about additional methods of programming, see "Programming" on page 5.

NOTE

You must first enable your reader to read bar codes in order to use this section. If you have not done this, go to Setup, starting on page 3 and complete the appropriate procedure.

Using the Programming Bar Codes

This manual contains feature descriptions and bar codes which allow you to reconfigure your reader. Some programming bar code labels, like "Resetting the Product Configuration to Defaults" on page 6, require only the scan of that single label to enact the change. Most of the programming labels in this manual, however, require the reader to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT bar code once to enter Programming Mode. Once the reader is in Programming Mode, you can scan a number of parameter settings before scanning the ENTER/EXIT bar code a second time, which will then accept your changes, exit Programming Mode and return the reader 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 given programmable feature.

HP Configuration Utility

Programming can alternatively be performed using the HP Configuration utility available for download from the HP support website www.hp.com/support. This multi-platform utility program allows device configuration using a PC. It communicates to the device using a serial or USB cable and can also create configuration bar codes to print.

The HP Configuration utility provides a quick and user-friendly configuration method via the USB-COM interface. The utility 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 selected communication interface, or they can be printed as bar codes to be scanned.

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

Configuration Parameters

Once the reader is set up, you can change the default parameters to meet your application needs. Refer to "Standard Defaults" starting on page 265 for initial configuration in order to set the default values and select the interface for your application.

The following configuration parameters are divided into logical groups, making it easy to find the desired function based on its reference group.

Interface-specific parameters:

- "USB-COM (RS-232 Simulated) Interface" on page 13
- "Keyboard Interface" on page 23
- "USB-OEM Interface" on page 33

Parameters common to all interface applications:

- "Data Format" on page 35 control various operating modes and indicators status functioning.
- "Reading Parameters" on page 49 gives options to control the messages sent to the host system.

Symbology-specific parameters:

- "Symbologies" on page 65 provides configuration of a personalized mix of 1D codes, code families and their options.

NOTE

You must first enable your reader to read bar codes in order to use this section. If you have not done this, go to Setup, starting on page 3 and complete the appropriate procedure.

To program features:

1. Scan the ENTER/EXIT PROGRAMMING bar code, available at the top of each programming page, when applicable.
2. Scan the bar code to set the desired programming feature. You may need to cover unused bar codes on the page, and possibly the facing page, to ensure that the reader reads only the bar code you intend to scan.
3. If additional input parameters are needed, go to Appendix D, Keypad, and scan the appropriate characters from the keypad.

NOTE

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

If you make a mistake before the last character, scan the CANCEL bar code 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 bar code to exit Programming Mode.

For more detailed descriptions, programming information and examples for setting selected configuration items, see References, starting on page 231.

GLOBAL INTERFACE FEATURES

The following interface features are configurable by all interface types.

Global Interface Features

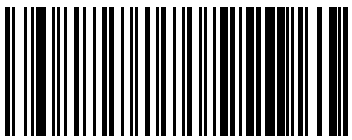
The following interface features are configurable by all interface types. To set features specific to your interface, turn to that section of this manual:

- "USB-COM (RS-232 Simulated) Interface" on page 13
- "Keyboard Interface" on page 23
- "USB-OEM Interface" on page 33

Host Commands — Obey/Ignore

This option specifies whether the reader will obey or ignore host commands. When set to ignore, the reader 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
 Host Commands = Ignore	

USB Suspend Mode

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

	USB Suspend Mode = Disable
USB Suspend Mode = Enable	DEFAULT

USB-COM (RS-232 Simulated) Interface

The USB-COM interface is used to simulate the operation of a "standard RS-232" interface between scanner and host when using a USB connection. The USB-COM interface and associated drivers on the Host allow the system to present a virtual COM Port to an application. This port can be used by OPOS/JavaPOS or a legacy Serial application to communicate with the scanning device.

When using the HP OPOS or JavaPOS drivers, certain configurable scanner settings should not be changed to ensure proper operation. The user should not change the label identifiers, host command characters, or enable ACK/NAK protocol in USB-COM when using the drivers.

The programming bar codes in this chapter allow modifications to the standard USB-COM 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. See "Intercharacter Delay" on page 232 or "Intercharacter Delay" on page 239 for more detailed programming instructions.

	Intercharacter Delay = No Delay
Select Intercharacter Delay Setting	
Make a mistake? Scan the CANCEL bar code 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 RS-232 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.

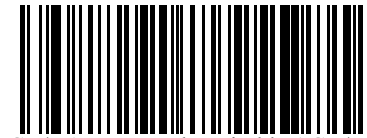
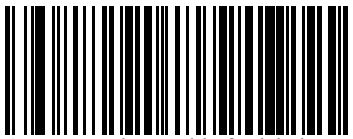
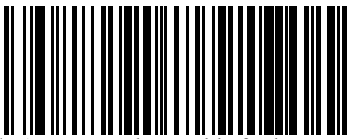
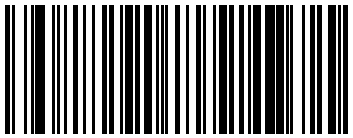
Beep On Not On File = Disable	
DEFAULT	Beep On Not On File = Enable

ACK NAK Options

This enables/disables the ability of the reader to support the RS-232 ACK/NAK protocol. When configured, the reader 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 reader expects an ACK/NAK response from the host when a label is sent.
- Enable for host-command acknowledge — The reader will respond with ACK/NAK when the host sends a command.
- Enable for label transmission and host-command acknowledge

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 "ACK Character" on page 233 for more detailed programming instructions.

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 "NAK Character" on page 234 for more detailed programming instructions.

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 "ACK NAK Timeout Value" on page 235 for more detailed programming instructions.

Select ACK NAK Timeout Value Setting	
Make a mistake? Scan the CANCEL bar code 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 "ACK NAK Retry Count" on page 236 for more detailed programming instructions.

Select ACK NAK Retry Count Setting	
Make a mistake? Scan the CANCEL bar code 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.

Options are:

- Ignore errors detected
- Process error as valid ACK character
- Process error as valid NAK character

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
Indicate Transmission Failure = Enable Indication	DEFAULT

Disable Character

Specifies the value of the RS-232 host command used to disable the reader.

ASCII characters or any hex value from 0 to 0xFF can be selected. See "Disable Character" on page 237 for more detailed programming instructions.

Select Disable Character Setting	

DEFAULT **0x44 = Disable Character is 'D'**

Enable Character

Specifies the value of the RS-232 host command used to enable the reader.

ASCII characters or any hex value from 0 to 0xFF can be selected. See "Enable Character" on page 238 for more detailed programming instructions.

Select Enable Character Setting	

DEFAULT

0x45 = Enable Character is 'E'

Keyboard Interface

Use the programming bar codes in this chapter to select options for USB Keyboard and Wedge Interfaces.

Standard factory settings

Reference Appendix B, Standard Defaults for a listing of standard factory settings.

Scancode tables

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

Country Mode

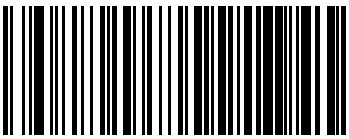
This feature specifies the country/language supported by the keyboard.

Below are the Country Modes supported by each product version (Standard or European):

Supported Country Codes	Standard Version	European Version
English (USA)	•	•
Spanish (Latin American)	•	•
Japanese	•	
Polish	•	
Portuguese (Brazilian)	•	•
Lithuanian	•	
Hungarian	•	
Croatian	•	
Romanian	•	
Czech	•	
Slovakian	•	
Italian		•
French		•
German		•
English (British)		•
Swedish		•
Belgian		•
Danish		•
Norwegian		•
Swiss		•

DEFAULT


Country Mode = English (USA)


Country Mode = Belgian

Country Mode (continued)

	Country Mode = English (British)
Country Mode = Croatian	
	Country Mode = Czech
Country Mode = Danish	
	Country Mode = French
Country Mode = German	
	Country Mode = Hungarian
Country Mode = Lithuanian	

Country Mode (continued)

Country Mode = Italian	
	Country Mode = Japanese 106-key
Country Mode = Norwegian	
	Country Mode = Polish
Country Mode = Portuguese (Brazilian)	
	Country Mode = Romanian
Country Mode = Slovakian	

Country Mode (continued)

Country Mode = Spanish (Latin American)	
	Country Mode = Swedish
Country Mode = Swiss	

Caps Lock State

This option specifies the format in which the reader sends character data. This does not apply when an alternate key encoding keyboard is selected.

DEFAULT	Caps Lock State = Caps Lock OFF
Caps Lock State = Caps Lock ON	
	Caps Lock State = AUTO Caps Lock Enable

Keyboard Numeric Keypad

This feature specifies if numeric characters will be sent using the standard keys or the numeric keypad.

DEFAULT	Keyboard Numeric Keypad = Standard Keys
Keyboard Numeric Keypad = Numeric Keypad	

Keyboard Send Control Characters

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

Options are as follows:

Send Ctrl+Key : ASCII characters from 00H to 0x1FH inclusive are transmitted in the format Ctrl+Key. Special keys are available in the range from 81H to A1.

Send Ctrl+Shift+Key : The behavior is the same as above, but control keys are sent in the format Ctrl+Shift+Keys.

Send Special Function Key : Send characters between 00H and 1FH according to the special function key mapping table (see "Microsoft Windows Codepage 1252" on page 294). This is used to send keys that are not in the normal ASCII set. A unique set is provided for each available scancode set.

DEFAULT	Keyboard Send Control Characters = 00
Keyboard Send Control Characters = 01	
	Keyboard 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 "Intercode Delay" on page 240 for more detailed programming instructions.

Set Intercode Delay	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

DEFAULT **00 = No Wedge Intercode Delay**

USB Keyboard Speed

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

DEFAULT	USB Keyboard Speed = 1ms
USB Keyboard Speed = 2ms	
	USB Keyboard Speed = 3ms
USB Keyboard Speed = 4ms	
	USB Keyboard Speed = 5ms

USB Keyboard Speed (continued)

USB Keyboard Speed = 6ms	
	USB Keyboard Speed = 7ms
USB Keyboard Speed = 8ms	
	USB Keyboard Speed = 9ms
USB Keyboard Speed = 10ms	

USB-OEM Interface

Introduction

Feature settings for USB interfaces differ depending upon which host type the reader will be connected with. Use the feature settings in this chapter to specifically configure for the USB-OEM interface. Other USB interfaces are included in the appropriate chapter for their host type.

Standard factory settings

Reference Appendix B, Standard Defaults for a listing of standard factory settings.

USB-OEM Device Usage

The USB-OEM protocol allows for the reader to be identified as one of two different types of bar code readers. Depending on what other scanners you may already have connected to a USB-OEM POS, you may need to change this setting to enable all devices to communicate.

Options are:

- Table Top Scanner
- Handheld Scanner

NOTE **It may be necessary to switch device usage when connecting two readers/scanners of the same type to a POS system.**

	USB-OEM Device Usage = Table Top Scanner
USB-OEM Device Usage = Handheld Scanner	DEFAULT

USB-OEM Interface Options

This setting provides for an interface specific control mechanism..

Options are:

- Obey — Obey Reader Configuration Host Commands
- Ignore — Ignore Reader Configuration Host Commands

	USB-OEM Interface Options = Obey
USB-OEM Interface Options = Ignore	DEFAULT

Data Format

The features in this chapter can be used to build specific user-defined data into a message string. See "References" starting on page 231 for more detailed instructions on setting these features.

Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the bar code data) and/or as a suffix (in a position following the bar code data) as indicated in "Global Prefix/Suffix" on page 242.

	Set Global Prefix
Set Global Suffix	

Make a mistake? Scan the CANCEL bar code 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.

NOTE

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. See "Global AIM ID" on page 243 for more detailed programming instructions.

DEFAULT	Global AIM ID = Disable
Global AIM ID = Enable	

GS1-128 AIM ID

If Global AIM ID is disabled, the AIM ID for GS1-128 can be enabled/disabled independently. The AIM ID for GS1-128 is a]C1,]C2 or]C3.

AIM IDs for other symbologies can be enabled/disabled independently as well. Contact Customer Support for assistance.

	GS1-128 AIM ID = Disable
GS1-128 AIM ID = Enable	DEFAULT

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 bar code (symbology) type. It can be appended previous to or following the transmitted bar code 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" on page 38) or individually per symbology (see "Label ID: Set Individually per Symbology" on page 39). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see the previous feature "Global AIM ID" on page 37.

Label ID: Pre-loaded Sets

The reader supports two pre-loaded sets of Label IDs. Shown is the USA set and the EU set. See "Label ID: Pre-loaded Sets" on page 244 for more information concerning the pre-loaded sets that are provided.

CAUTION **When changing from one Label ID set to another, all other reader configuration settings, including the host interface type, will be erased and set to the factory defaults. Any custom configuration or custom defaults will be lost.**

DEFAULT	Label ID Pre-loaded Set = USA Set
Label ID Pre-loaded Set = EU Set	

Label ID: Set Individually per Symbology

This feature configures a Label ID individually for a single symbology.

NOTE

This setting requires the scanning of bar codes from multiple sections. See "Label ID: Set Individually Per Symbology" on page 246 for more detailed programming instructions.

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

Label ID Symbology Selection

This option selects the symbology for which a Label ID is to be configured. See "Label ID: Set Individually Per Symbology" on page 246 for full instructions.

	Set UPC-A Label ID Character(s)
Set UPC-A/P2 Label ID Character(s)	
	Set UPC-A/P5 Label ID Character(s)
Set UPC-A/GS1-128 Label ID Character(s)	
	Set UPC-E Label ID Character(s)
Set UPC-E/P2 Label ID Character(s)	
	Set UPC-E/P5 Label ID Character(s)

Label ID Symbology Selection (continued)

Set UPC-E/GS1-128 Label ID Character(s)	
	Set EAN 13 Label ID Character(s)
Set EAN 13/P2 Label ID Character(s)	
	Set EAN 13/P5 Label ID Character(s)
Set EAN 13/GS1-128 Label ID Character(s)	
	Set EAN 8 Label ID Character(s)
Set EAN 8/P2 Label ID Character(s)	
	Set EAN 8/P5 Label ID Character(s)

Label ID Symbology Selection (continued)

Set EAN 8/GS1-128 Label ID Character(s)	
	Set GS1 DataBar Omnidirectional Label ID Character(s)
Set GS1 DataBar Expanded Label ID Character(s)	
	Set GS1 DataBar Limited Label ID Character(s)
Set Code 39 Label ID Character(s)	
	Set Code 32 Label ID Character(s)
Set Code 39 CIP Label ID Character(s)	
	Set Code 128 Label ID Character(s)

Label ID Symbology Selection (continued)

Set GS1-128 Label ID Character(s)

Set Codabar Label ID Character(s)

Set Interleaved 2 of 5 Label ID Character(s)

Set Interleaved 2 of 5 CIP HR Label ID Character(s)

Set Datalogic 2 of 5 CIP HR Label ID Character(s)

Set ABC Codabar Label ID Character(s)

Set Code 11 Label ID Character(s)

Set Standard 2 of 5 Label ID Character(s)

Label ID Symbology Selection (continued)

Set Industrial 2 of 5 Label ID Character(s)	
	Set ISSN Label ID Character(s)
Set IATA Label ID Character(s)	
	Set Concatenated ISBT 128 Label ID Character(s)
Set MSI Label ID Character(s)	
	Set Code 93 Label ID Character(s)
Set Codablock F Label ID Character(s)	
	Set Code 4 Label ID Character(s)

Label ID Symbology Selection (continued)

Set Code 5 Label ID Character(s)	
	Set Follett 2 of 5 Label ID Character(s)
Set ISBN Label ID Character(s)	
	Set Concatenated ISBT Label ID Character(s)
Set Anker Plessey Label ID Character(s)	
	Set Plessey Label ID Character(s)

Set Global Mid Label ID Character(s)

Specifies a mid label ID that is added for transmission between the labels of a two label pair. The expected string is a maximum of 20 characters. When combining two label pairs into a single label for transmission to the host, this label ID can be added to the data, following the first label and preceding the second label. See "Set Global Mid Label ID Character(s)" on page 248 for more information.

Set Global Mid Label ID Character(s)

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

CANCEL

DEFAULT

No Global Mid Label ID Character(s)
00000000000000000000

Case Conversion

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

It may be necessary to switch device usage when connecting two readers/scanners of the same type to a POS system.

NOTE

Case conversion affects ONLY scanned bar code 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. See "Character Conversion" on page 248 for more detailed programming instructions.

Configure Character Conversion

DEFAULT

0xFFFFFFFFFFFFFFFF
(No character conversion)

Reading Parameters

Double Read Timeout

To prevent a double read of the same label, the Double Read Timeout sets 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 Double Read Timeout, the second read of the label will be ignored. Double Read Timeout does not apply to scan modes that require a trigger pull for each label that is 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 (continued)

Double Read Timeout = 0.6 Second	DEFAULT
	Double Read Timeout = 0.7 Second
Double Read Timeout = 0.8 Second	
	Double Read Timeout = 0.9 Second
Double Read Timeout = 1 Second	

Label Gone Timeout

This feature sets the time after the last label segment is seen before the reader prepares for a new label. The timeout can be set within a range of 10 milliseconds to 2,550 milliseconds (2.55 seconds) in 10ms increments. Label Gone Timeout does not apply to scan modes that require a trigger pull for each label that is read. See "Label Gone Timeout" on page 250 for more detailed programming instructions.

Select Label Gone Timeout Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

DEFAULT **10 = Timeout of 160 ms**

LED and Beeper Indicators

Power On Alert

Disables or enables the indication (from the beeper) that the reader 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 reader will provide indication (beep and/or flash its green LED) upon successfully reading a bar code. Choices are:

- Good Read = Indicate after decode
- Good Read = Indicate after transmit
- Good Read = Indicate after CTS goes inactive, then active

NOTE

This option, which uses CTS, is only valid for Q21XX models with RS-232 interfaces.

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 CORDED

DEFAULT CORDLESS

Good Read Beep Frequency = High

Good Read Beep Length

Specifies the duration of a good read beep.

	Good Read Beep Length = 60 msec
Good Read Beep Length = 80 msec	DEFAULT CORDLESS
DEFAULT CORDED	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 (continued)

	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
Good Read Beep Volume = High	DEFAULT

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 0.1 to 25.5 seconds in 100ms increments. A setting of 00 keeps the LED on until the next trigger pull. See "Good Read LED Duration" on page 251 for more detailed programming instructions.

Select Good Read LED Duration Setting	
Make a mistake? Scan the CANCEL bar code 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 0.3 seconds.

NOTE

Indicators are dimmed during sleep.

Scanning Features

Scan Mode

See "Scan Mode" on page 252 for more detailed programming instructions.

Scan Mode = Trigger Single	DEFAULT
	Scan Mode = Trigger Hold Multiple
Scan Mode = Trigger Pulse Multiple	
	Scan Mode = Flashing
Scan Mode = Always On	
	Scan Mode = Autosense® Stand Mode
Scan Mode = Trigger Object Sense	AVAILABLE ONLY FOR CORDED MODELS

Stand Mode Triggered Timeout

This feature specifies the time to remain in Trigger Single on page 252 mode after the trigger is pulled while in Autosense® Stand Mode on page 252.

NOTE **This timeout is only used when the Scan Mode is configured as Autosense® Stand Mode on page 252.**

Stand Mode Triggered Timeout = 0.5 Seconds	
	Stand Mode Triggered Timeout = 1.5 Seconds
Stand Mode Triggered Timeout = 2 Seconds	
DEFAULT	Stand Mode Triggered Timeout = 3 Seconds
Stand Mode Triggered Timeout = 4 Seconds	

Stand Mode Triggered Timeout (continued)

	Stand Mode Triggered Timeout = 6 Seconds
Stand Mode Triggered Timeout = 8 Seconds	
	Stand Mode Triggered Timeout = Switch back to Trigger Single on trigger pull

Stand Detection

Specifies the behavior of the scanner when placed in a stand that contains autorecognition hardware.

	Ignore Autorecognition
Switch to Stand Mode	DEFAULT
	Switch to Always On
Switch to Flashing	

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

Scanning Active Time

This setting specifies the amount of time that the reader 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 "Scanning Active Time" on page 253 for more detailed programming instructions.

Select Scanning Active Time Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

DEFAULT **005 = Scanning is active for 5 Seconds**

Stand Mode Flash

Enables/disables the LED flash when the reader is in Stand Mode.

DEFAULT

Stand Mode Flash = Disable

Stand Mode Flash = Enable

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 "Flash On Time" on page 254 for more detailed programming instructions.

Select Flash ON Time Setting

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

CANCEL

DEFAULT

OA = 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 "Flash Off Time" on page 255 for more detailed programming instructions.

Select Flash OFF Time Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

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)	

Symbologies

The reader supports the following symbologies (bar code types). Options for each symbology are included in this chapter.

Standard Factory Settings for 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.

Disable All Symbologies

Scan this label to disable all symbologies.

	Disable all symbologies

Coupon Control

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

Options are:

- Allow all — allow all coupon bar codes to be decoded
- Enable only UPC/EAN — enables only UPC/EAN coupon decoding
- Enable only GS1 DataBar — enables only GS1 DataBar coupon decoding

To set this feature:

1. Scan the Enter/Exit bar code.
2. Scan either the enable or disable bar code below. You'll need to cover any unused bar codes on this and the facing page to ensure that the reader sees only the bar code you intend to scan.
3. Complete the programming sequence by scanning the Enter/Exit bar code.

	Coupon Control = Allow all
Coupon Control = Enable only UPC/EAN	DEFAULT
	Coupon Control = Enable only GS1 DataBar

UPC-A

The following options apply to the UPC-A symbology.

UPC-A Enable/Disable

When disabled, the reader will not read UPC-A bar codes.

	UPC-A = Disable
UPC-A = Enable	DEFAULT

UPC-A Check Character Transmission

Enable this option to transmit the check character along with UPC-A bar code 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

In-Store Minimum Reads

This feature specifies the minimum number of consecutive times an in-store label must be decoded before it is accepted as good read.

In-store labels are defined as UPC-A labels with a number-system character of 2 or 4 as well as EAN 8 and EAN 13 labels with a Flag1 character of 2 or an EAN 13 label starting with the three characters '980'.

	In-Store Minimum Reads = 1
In-Store Minimum Reads = 2	DEFAULT
	In-Store Minimum Reads = 3
In-Store Minimum Reads = 4	

UPC-E

The following options apply to the UPC-E symbology.

UPC-E Enable/Disable

When disabled, the reader will not read UPC-E bar codes.

	UPC-E = Disable
UPC-E = Enable	DEFAULT

UPC-E Check Character Transmission

Enable this option to transmit the check character along with UPC-E bar code data.

DEFAULT	UPC-E Check Character Transmission = Don't Send
UPC-E Check Character Transmission = Send	

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
UPC-E Number System Character = Transmit	DEFAULT

UPC-E Minimum Reads

This feature specifies the minimum number of consecutive times a UPC-E label must be decoded before it is accepted as good read.

	UPC-E Minimum Reads = 1
UPC-E Minimum Reads = 2	DEFAULT
	UPC-E Minimum Reads = 3
UPC-E Minimum Reads = 4	

EAN 13

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

EAN 13 Enable/Disable

When disabled, the reader will not read EAN 13/JAN 13 bar codes.

	EAN 13 = Disable
EAN 13 = Enable	DEFAULT

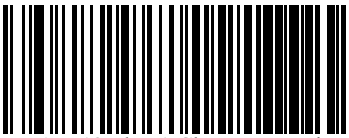
EAN 13 Check Character Transmission

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

	EAN 13 Check Character Transmission = Don't Send
EAN 13 Check Character Transmission = Send	DEFAULT

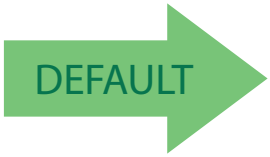
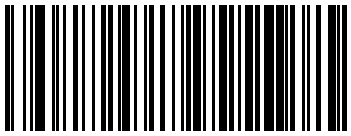
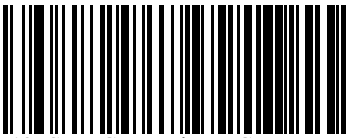
EAN-13 Flag 1 Character

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
 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.

	 EAN-13 ISBN Conversion = Disable
 EAN-13 ISBN Conversion = Convert to ISBN	

ISSN Enable/Disable

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

DEFAULT	ISSN = Disable
ISSN = Enable	

EAN 13 Minimum Reads

This feature specifies the minimum number of consecutive times an EAN 13 label must be decoded before it is accepted as good read.

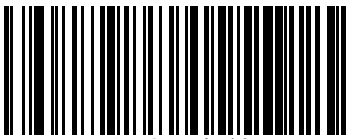
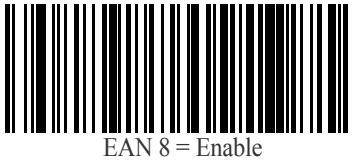
DEFAULT	EAN 13 Minimum Reads = 1
EAN 13 Minimum Reads = 2	
	EAN 13 Minimum Reads = 3
EAN 13 Minimum Reads = 4	

EAN 8

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

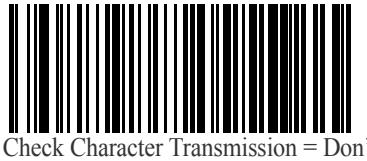
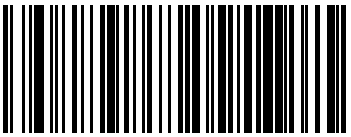
EAN 8 Enable/Disable

When disabled, the reader will not read EAN 8/JAN 8 bar codes.

	 EAN 8 = Disable
 EAN 8 = Enable	

EAN 8 Check Character Transmission

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

	 EAN 8 Check Character Transmission = Don't Send
 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 Both Guards Substitution

Enables/disables the ability of the reader to find an EAN/JAN8 guard pattern in caseswhere the EAN/JAN8 margin makes the guard look like a character.

DEFAULT	EAN 8 Both Guards Substitution = Disable
EAN 8 Both Guards Substitution = Enable	

EAN 8 Guard Insertion

Enables/disables the ability to insert a guard into an otherwise full-strike EAN 8 segment.

DEFAULT	EAN 8 Guard Insertion = Disable
EAN 8 Guard Insertion = Enable	

EAN 8 Guard Substitution

Enables/disables the ability of the reader to substitute guard pattern for even parity 6 when an EAN/JAN8 label is presented.

	EAN 8 Guard Substitution = Disable
EAN 8 Guard Substitution = Enable	DEFAULT

EAN 8 Minimum Segment Length Block

Specifies the minimum number of characters necessary in an EAN/JAN8 label segment in order for the reader to accept the segment for decoding.

	EAN 8 Minimum Segment Length Block = 5
EAN 8 Minimum Segment Length Block = 6	
	EAN 8 Minimum Segment Length Block = 7
EAN 8 Minimum Segment Length Block = 8	DEFAULT
	EAN 8 Minimum Segment Length Block = 9
EAN 8 Minimum Segment Length Block = 10	

EAN 8 Minimum Segment Length Block (continued)

	EAN 8 Minimum Segment Length Block = 11
EAN 8 Minimum Segment Length Block = 12	
	EAN 8 Minimum Segment Length Block = 13
EAN 8 Minimum Segment Length Block = 14	
	EAN 8 Minimum Segment Length Block = 15

EAN 8 Minimum Reads

This feature specifies the minimum number of consecutive times an EAN 8 (Jan 8) label must be decoded before it is accepted as good read.

DEFAULT	EAN 8 Minimum Reads = 1
EAN 8 Minimum Reads = 2	
	EAN 8 Minimum Reads = 3
EAN 8 Minimum Reads = 4	

EAN 8 Stitch Exact Label Halves

Enables/disables the abiliy to stitch exact EAN 8 label halves with no overlapping characters.

NOTE **The label halves being stitched together to assemble a complete label must have the structure GddddC and CddddG.**

DEFAULT

EAN 8 Stitch Exact Label Halves = Disable

EAN 8 Stitch Exact Label Halves = Enable

EAN 8 Stitch Unlike Label Halves

Enables/disables the abiliy to stitch EAN 8 label halves together which may have differing characters in them.

NOTE **The label structure must be GddddCd... and ..dCddddG. The characters dCd must match between the two segments.**

DEFAULT

EAN 8 Stitch Unlike Label Halves = Disable

EAN 8 Stitch Unlike Label Halves = Enable

EAN Two Label

EAN Two Label Enable/Disable

When disabled, the reader will not read EAN two label bar codes.

DEFAULT	EAN Two Label = Disable
EAN Two Label = Enable	

EAN Two Label Combined Transmission

This feature enables/disables transmission of an EAN two label pair as one label. The label type for EAN two label pairs is EAN 13.

DEFAULT	EAN Two Label = Disable
EAN Two Label = Enable	

EAN Two Label Minimum Reads

This feature specifies the minimum number of consecutive times an EAN two label bar code must be decoded before it is accepted as good read.

DEFAULT	EAN 8 Minimum Reads = 1
EAN 8 Minimum Reads = 2	
	EAN 8 Minimum Reads = 3
EAN 8 Minimum Reads = 4	

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 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

UPC/EAN Decoding Level = 1	
DEFAULT	UPC/EAN Decoding Level = 2
UPC/EAN Decoding Level = 3	
	UPC/EAN Decoding Level = 4
UPC/EAN Decoding Level = 5	

UPC/EAN Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	UPC/EAN Correlation = Disable
UPC/EAN Correlation = Enable	

UPC/EAN Price Weight Check

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

Options are

- Disabled
- Enable 4-digit price-weight check-digit calculation
- Enable 5-digit price-weight check-digit calculation
- Enable European 4-digit price-weight check-digit calculation
- Enable European 5-digit price-weight check-digit calculation

DEFAULT

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-A Minimum Reads

This feature specifies the minimum number of consecutive times a UPC-A label must be decoded before it is accepted as good read.

DEFAULT	UPC-A Minimum Reads = 1
UPC-A Minimum Reads = 2	
	UPC-A Minimum Reads = 3
UPC-A Minimum Reads = 4	

UPC/EAN Guard Insertion

Enables/disables the ability to insert either a missing leading or trailing guard on an otherwise complete UPC-A/EAN-13 segment.

NOTE **The segment must have the structure GddddddCdddddd or ddddddCddddddG.**

DEFAULT

UPC/EAN Guard Insertion = Disable

UPC/EAN Guard Insertion = Enable

UPC/EAN Stitch Exact Label Halves

Enables/disables the ability to stitch exact UPC-A/EAN 13 label halves with no overlapping characters.

NOTE **The label halves being stitched together to assemble a complete label must have the structure GddddddC and CddddddG.**

DEFAULT

UPC/EAN Stitch Exact Label Halves = Disable

UPC/EAN Stitch Exact Label Halves = Enable

UPC/EAN Stitch Unlike Label Halves

Enables/disables the ability to stitch two UPC-A/EAN 13 label halves together that may have differing characters in them.

NOTE

The label half structures must have the structure GddddddC and CddddddG. The characters dCd must match between the two segments.

DEFAULT

UPC/EAN Stitch Unlike Label Halves = Disable

UPC/EAN Stitch Unlike Label Halves = Enable

UPC/EAN Minimum Segment Length

Specifies the minimum number of characters necessary in an UPC/EAN/JAN label segment in order for the reader to accept the segment for decoding.

DEFAULT

UPC/EAN Minimum Segment Length Block = 5

UPC/EAN Minimum Segment Length Block = 6

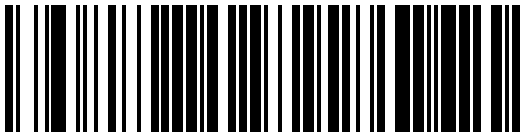
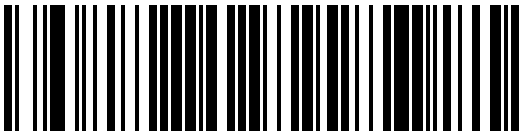
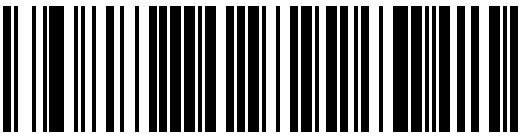
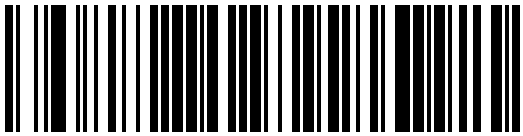
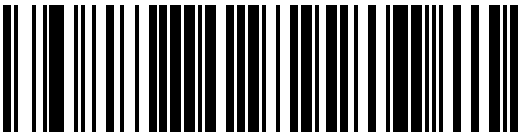
UPC/EAN Minimum Segment Length Block = 7

UPC/EAN Minimum Segment Length Block = 8

UPC/EAN Minimum Segment Length Block = 9

UPC/EAN Minimum Segment Length Block = 10

UPC/EAN Global Settings (continued)

	 UPC/EAN Minimum Segment Length Block = 11
 UPC/EAN Minimum Segment Length Block = 12	
	 UPC/EAN Minimum Segment Length Block = 13
 UPC/EAN Minimum Segment Length Block = 14	
	 UPC/EAN Minimum Segment Length Block = 15

Add-Ons

The following features apply to optional add-ons.

NOTE

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

Optional Add-ons

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

- P2
- P5
- GS1-128

NOTE

If a UPC/EAN base label and a an add-on are both decoded, the reader 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 reader 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 (continued)

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 reader will look for an add-on when an add-on fragment has been seen and optional add-ons are enabled.

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
Optional Add-on Timer = 70ms	DEFAULT
	Optional Add-on Timer = 100ms
Optional Add-on Timer = 120ms	
	Optional Add-on Timer = 140ms
Optional Add-on Timer = 160ms	

P2 Add-Ons Minimum Reads

This feature specifies the minimum number of times a P2 add-on must be read before it is marked as valid and then combined with a base label.

	P2 Add-Ons Minimum Reads = 1
P2 Add-Ons Minimum Reads = 2	DEFAULT
	P2 Add-Ons Minimum Reads = 3
P2 Add-Ons Minimum Reads = 4	

P5 Add-Ons Minimum Reads

This feature specifies the minimum number of times a P5 add-on must be read before it is marked as valid and then combined with a base label.

DEFAULT	P5 Add-Ons Minimum Reads = 1
P5 Add-Ons Minimum Reads = 2	
	P5 Add-Ons Minimum Reads = 3
P5 Add-Ons Minimum Reads = 4	

GS1-128 Add-Ons Minimum Reads

This feature specifies the minimum number of times an GS1-128 add-on must be read before it is marked as valid and then combined with a base label.

DEFAULT	GS1-128 Add-Ons Minimum Reads = 1
GS1-128 Add-Ons Minimum Reads = 2	
	GS1-128 Add-Ons Minimum Reads = 3
GS1-128 Add-Ons Minimum Reads = 4	

GS1 DataBar™ Omnidirectional

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

GS1 DataBar Omnidirectional Enable/Disable

When disabled, the reader will not read GS1 DataBar Omnidirectional bar codes.

DEFAULT	GS1 DataBar Omnidirectional = Disable
GS1 DataBar Omnidirectional = Enable	

GS1 DataBar Omnidirectional GS1-128 Emulation

When enabled, GS1 DataBar Omnidirectional bar codes 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 Minimum Reads

This feature specifies the minimum number of consecutive times a GS1 DataBar Omnidirectional label must be decoded before it is accepted as good read.

DEFAULT	GS1 DataBar Omnidirectional Minimum Reads = 1
GS1 DataBar Omnidirectional Minimum Reads = 2	
	GS1 DataBar Omnidirectional Minimum Reads = 3
GS1 DataBar Omnidirectional Minimum Reads = 4	

GS1 DataBar™ Expanded

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

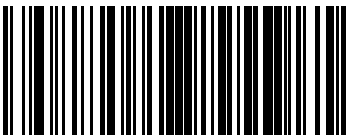
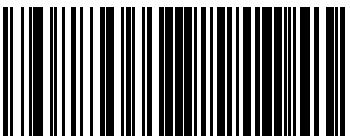
GS1 DataBar Expanded Enable/Disable

When disabled, the reader will not read GS1 DataBar Expanded bar codes.

DEFAULT	 GS1 DataBar Expanded = Disable
 GS1 DataBar Expanded = Enable	

GS1 DataBar Expanded GS1-128 Emulation

When enabled, GS1 DataBar Expanded bar codes 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 Minimum Reads

This feature specifies the minimum number of consecutive times a GS1 DataBar Expanded label must be decoded before it is accepted as good read.

DEFAULT	GS1 DataBar Expanded Minimum Reads = 1
GS1 DataBar Expanded Minimum Reads = 2	
	GS1 DataBar Expanded Minimum Reads = 3
GS1 DataBar Expanded Minimum Reads = 4	

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 bar code lengths for GS1 DataBar Expanded Length Control on page 104. Length 1 is the minimum label length if in Variable Length on page 104 Mode, or the first fixed length if in Fixed Length on page 104 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select GS1 DataBar Expanded Set Length 1 Setting	
Make a mistake? Scan the CANCEL bar code 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 bar code lengths for GS1 DataBar Expanded Length Control on page 104. Length 2 is the maximum label length if in Variable Length on page 104 Mode, or the second fixed length if in Fixed Length on page 104 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select GS1 DataBar Expanded Set Length 2 Setting	
Make a mistake? Scan the CANCEL bar code 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 reader will not read GS1 DataBar Limited bar codes.

DEFAULT	GS1 DataBar Limited = Disable
GS1 DataBar Limited = Enable	

GS1 DataBar Limited GS1-128 Emulation

When enabled, GS1 DataBar Limited bar codes 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 Minimum Reads

This feature specifies the minimum number of consecutive times a GS1 DataBar Limited label must be decoded before it is accepted as good read.

DEFAULT	GS1 DataBar Limited Minimum Reads = 1
GS1 DataBar Limited Minimum Reads = 2	
	GS1 DataBar Limited Minimum Reads = 3
GS1 DataBar Limited Minimum Reads = 4	

Code 39

The following options apply to the Code 39 symbology.

Code 39 Enable/Disable

When disabled, the reader will not read Code 39 bar codes.

	Code 39 = Disable
Code 39 = Enable	DEFAULT

Code 39 Check Character Calculation

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

DEFAULT	Code 39 Check Character Calculation = Don't Calculate
Code 39 Check Character Calculation = Calculate Std Check	
	Code 39 Check Character Calculation = Calculate Mod 7 Check
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 bar code data.

	Code 39 Check Character Transmission = Don't Send
Code 39 Check Character Transmission = Send	DEFAULT

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

In Code 39 decoding, this 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 bar code and are typically 10 times the width of the narrowest bar or space in the label.

Code 39 Quiet Zones = Quiet Zone on one side	
	Code 39 Quiet Zones = Quiet Zones on two sides
Code 39 Quiet Zones = Auto	DEFAULT
	Code 39 Quiet Zones = Virtual Quiet Zones on two sides
Code 39 Quiet Zones = Small Quiet Zones on two sides	

Code 39 Minimum Reads

This feature specifies the minimum number of consecutive times a Code 39 label must be decoded before it is accepted as good read.

	Code 39 Minimum Reads = 1
Code 39 Minimum Reads = 2	DEFAULT
	Code 39 Minimum Reads = 3
Code 39 Minimum Reads = 4	

Code 39 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

Code 39 Decoding Level = 1	
	Code 39 Decoding Level = 2
Code 39 Decoding Level = 3	DEFAULT
	Code 39 Decoding Level = 4
Code 39 Decoding Level = 5	

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 bar code lengths for Code 39 Length Control on page 116. Length 1 is the minimum label length if in Variable Length on page 116 Mode, or the first fixed length if in Fixed Length on page 116 Mode. Length includes the bar code's data characters only.

The length can be set from 0 to 50 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Code 39 Set Length 1 Setting	
Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Code 39 Length Control on page 116. Length 2 is the maximum label length if in Variable Length on page 116 Mode, or the second fixed length if in Fixed Length on page 116 Mode. Length includes the bar code'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 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Code 39Length 2 Setting	
Make a mistake? Scan the CANCEL bar code 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 39 Interdigit Ratio

This feature specifies the ratio between an intercharacter space and module for Code 39 labels.

	Code 39 Interdigit Ratio = Disable
Code 39 Interdigit Ratio = 1	
	Code 39 Interdigit Ratio = 2
Code 39 Interdigit Ratio = 3	
DEFAULT	Code 39 Interdigit Ratio = 4
Code 39 Interdigit Ratio = 5	

Code 39 Interdigit Ratio (continued)

	Code 39 Interdigit Ratio = 6
Code 39 Interdigit Ratio = 7	
	Code 39 Interdigit Ratio = 8
Code 39 Interdigit Ratio = 9	
	Code 39 Interdigit Ratio = 10

Code 39 Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	Code 39 Character Correlation = Disable
Code 39 Character Correlation = Enable	

Code 39 Stitching

This option enables/disables stitching for Code 39 labels. When parts of a Code 39 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

DEFAULT CORDED	Code 39 Stitching = Disable
Code 39 Stitching = Enable	DEFAULT CORDLESS

Code 32 (Italian Pharmaceutical)

The following options apply to the Code 32 symbology.

Code 32 Enable/Disable

When disabled, the reader will not read Code 32 bar codes.

DEFAULT	Code 32 = Disable
Code 32 = Enable	

Code 32 Feature Setting Exceptions

NOTE

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

"Code 39 Quiet Zones" **on page 113**
"Code 39 Minimum Reads" **on page 114**
"Code 39 Decoding Level" **on page 115**
"Code 39 Interdigit Ratio" **on page 119**
"Code 39 Character Correlation" **on page 121**
"Code 39 Stitching" **on page 121**

Code 32 Check Character Transmission

Enable this option to transmit the check character along with Code 32 bar code 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/disable 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 reader to decode Code 39 CIP labels.

DEFAULT	Code 39 CIP = Disable
Code 39 CIP = Enable	

Code 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

When disabled, the reader will not read Code 128 bar codes.

	Code 128 = Disable
Code 128 = Enable	DEFAULT

Expand Code 128 to Code 39

This feature enables/disables expansion of Code 128 labels to Code 39 labels. When enabled, the label identifier for a Code 128 label shall be set to Code 39 and all Code 39 formatting control shall be applied to the label.

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 bar code 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 Change Transmission

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

DEFAULT	Code 128 Sub-Code Change Transmission = Disable
Code 128 Sub-Code Change 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 bar code and are typically 10 times the width of the narrowest bar or space in the label.

	Code 128 Quiet Zones = No Quiet Zones
Code 128 Quiet Zones = Quiet Zone on one side	
	Code 128 Quiet Zones = Quiet Zones on two sides
Code 128 Quiet Zones = Auto	DEFAULT
	Code 128 Quiet Zones = Virtual Quiet Zones on two sides

Code 128 Minimum Reads

This feature specifies the minimum number of consecutive times a Code 128 label must be decoded before it is accepted as good read.

DEFAULT	Code 128 Minimum Reads = 1
Code 128 Minimum Reads = 2	
	Code 128 Minimum Reads = 3
Code 128 Minimum Reads = 4	

Code 128 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

Code 128 Decoding Level = 1	
	Code 128 Decoding Level = 2
Code 128 Decoding Level = 3	DEFAULT
	Code 128 Decoding Level = 4
Code 128 Decoding Level = 5	

Code 128 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 128 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 128 Length Control = Variable Length
Code 128 Length Control = Fixed Length	

Code 128 Set Length 1

This feature specifies one of the bar code lengths for Code 128 Length Control on page 130. Length 1 is the minimum label length if in Variable Length on page 130 Mode, or the first fixed length if in Fixed Length on page 130 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 80 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Code 128 Set Length 1 Setting	
Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Code 128 Length Control on page 130. Length 2 is the maximum label length if in Variable Length on page 130 Mode, or the second fixed length if in Fixed Length on page 130 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 80 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Code 128 Length 2 Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

Code 128 Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	Code 128 Character Correlation = Disable
Code 128 Character Correlation = Enable	

Code 128 Stitching

This option enables/disables stitching for Code 128 labels. When parts of a Code 128 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

	Code 128 Stitching = Disable
Code 128 Stitching = Enable	DEFAULT

GS1-128

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

GS1-128 Enable

This option enables/disables the ability of the reader 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.

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

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 reader will not read I 2 of 5 bar codes.

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. When disabled, any check character in label is treated as a data character.

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

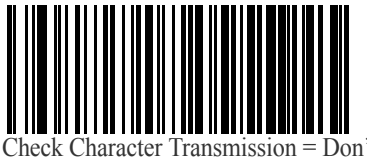
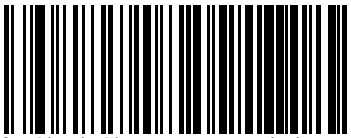
I 2 of 5 Check Character Calculation = Check Daimler Chrysler

I 2 of 5 Check Character Calculation = Check Bosch

I 2 of 5 Check Character Calculation = Check Italian Post

I 2 of 5 Check Character Transmission

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

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

I 2 of 5 Minimum Reads

This feature specifies the minimum number of consecutive times an I 2 of 5 label must be decoded before it is accepted as good read.

	 I 2 of 5 Minimum Reads = 1
 I 2 of 5 Minimum Reads = 2	DEFAULT
	 I 2 of 5 Minimum Reads = 3
 I 2 of 5 Minimum Reads = 4	

I 2 of 5 Decoding Level

NOTE

This configuration item applies to Interleaved 2 of 5, Datalogic 2 of 5 and Standard 2 of 5.

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

	2 of 5 Decoding Level = Disable
2 of 5 Decoding Level = 1	
	2 of 5 Decoding Level = 2
2 of 5 Decoding Level = 3	DEFAULT
	2 of 5 Decoding Level = 4
2 of 5 Decoding Level = 5	

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 bar code lengths for I 2 of 5 Length Control on page 139. 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 bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. See "Set Length 1" on page 257 for more detailed programming instructions.

Select I 2 of 5 Length 1 Setting

Make a mistake? Scan the CANCEL bar code 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 bar code lengths for I 2 of 5 Length Control on page 139. 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 bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. A setting of 0 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select I 2 of 5 Length 2 Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

I 2 of 5 Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	I 2 of 5 Character Correlation = Disable
I 2 of 5 Character Correlation = Enable	

I 2 of 5 Zero Pattern

Enables/disables ZERO-Digit decoding. This character does not represent any cipher. It allows encoding of an odd number of ciphers with Interleaved 2 of 5. It must be enabled to decode Code 2 of 5 CIP/HR.

DEFAULT	I 2 of 5 Zero Pattern = Disable
I 2 of 5 Zero Pattern = Enable	

I 2 of 5 Stitching

This option enables/disables stitching for I 2 of 5 labels. When parts of a I 2 of 5 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

DEFAULT	I 2 of 5 Stitching = Disable
I 2 of 5 Stitching = Enable	

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 reader to decode Interleaved 2 of 5 CIP HR labels.

DEFAULT	Interleaved 2 of 5 CIP HR = Disable
Interleaved 2 of 5 CIP HR = Enable	

Datalogic 2 of 5

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

Datalogic 2 of 5 Enable/Disable

When disabled, the reader will not read Datalogic 2 of 5 bar codes.

DEFAULT	Datalogic 2 of 5 = Disable
Datalogic 2 of 5 = Enable	

Datalogic 2 of 5 Check Character Calculation

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

DEFAULT	Datalogic 2 of 5 Check Character Calculation = Disable
Datalogic 2 of 5 Check Character Calculation = Enable	

Datalogic 2 of 5 Check Character Transmission

This option enables/disables transmission of an optional Datalogic 2 of 5 character.

	Datalogic 2 of 5 Check Character Transmission = Don't Send
Datalogic 2 of 5 Check Character Transmission = Send	DEFAULT

Datalogic 2 of 5 Minimum Reads

This feature specifies the minimum number of consecutive times an Datalogic 2 of 5 label must be decoded before it is accepted as good read.

	Datalogic 2 of 5 Minimum Reads = 1
Datalogic 2 of 5 Minimum Reads = 2	DEFAULT
	Datalogic 2 of 5 Minimum Reads = 3
Datalogic 2 of 5 Minimum Reads = 4	

Datalogic 2 of 5 Decoding Level

NOTE

The Datalogic 2 of 5 Decoding Level feature is set using "I 2 of 5 Decoding Level" on page 138.

Datalogic 2 of 5 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Datalogic 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	Datalogic 2 of 5 Length Control = Variable Length
Datalogic 2 of 5 Length Control = Fixed Length	

Datalogic 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for Datalogic 2 of 5 Length Control on page 146. 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 bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. Length includes the bar code's data characters. See "Set Length 1" on page 257 for detailed programming instructions.

Select Datalogic 2 of 5 Length 1 Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

Datalogic 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for Datalogic 2 of 5 Length Control on page 146. Length 2 is the maximum label length if in Variable Length on page 139 Mode, or the second fixed length if in Fixed Length on page 139 Mode. The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Datalogic 2 of 5 Length 2 Setting

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

CANCEL

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

Datalogic 2 of 5 Interdigit Maximum Ratio

This feature specifies the maximum ratio between intercharacter space and module for Datalogic 2 of 5.

Datalogic 2 of 5 Interdigit Maximum Ratio = 1	
	Datalogic 2 of 5 Interdigit Maximum Ratio = 2
Datalogic 2 of 5 Interdigit Maximum Ratio = 3	
DEFAULT	Datalogic 2 of 5 Interdigit Maximum Ratio = 4
Datalogic 2 of 5 Interdigit Maximum Ratio = 5	

Datalogic 2 of 5 Interdigit Maximum Ratio (continued)

	Datalogic 2 of 5 Interdigit Maximum Ratio = 6
Datalogic 2 of 5 Interdigit Maximum Ratio = 7	
	Datalogic 2 of 5 Interdigit Maximum Ratio = 8
Datalogic 2 of 5 Interdigit Maximum Ratio = 9	
	Datalogic 2 of 5 Interdigit Maximum Ratio = 10

Datalogic 2 of 5 Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	Datalogic 2 of 5 Character Correlation = Disable
Datalogic 2 of 5 Character Correlation = Enable	

Datalogic 2 of 5 Stitching

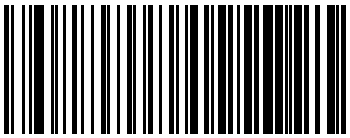
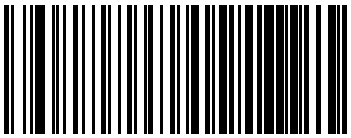
This option enables/disables stitching for Datalogic 2 of 5 labels. When parts of a Datalogic 2 of 5 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

DEFAULT	Datalogic 2 of 5 Stitching = Disable
Datalogic 2 of 5 Stitching = Enable	

Codabar

Codabar Enable/Disable

When disabled, the reader will not read Codabar bar codes.

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 characters in the label are treated as data characters.

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 Calculation = Enable NW-7	

Codabar Check Character Transmission

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

	Codabar Check Character Transmission = Don't Send
Codabar Check Character Transmission = Send	DEFAULT

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
Codabar Start/Stop Character Transmission = Transmit	DEFAULT

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
Codabar Check Character Set = abcd/abcd	DEFAULT

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

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

Codabar Quiet Zones = Quiet Zone on one side	
	Codabar Quiet Zones = Quiet Zones on two sides
Codabar Quiet Zones = Auto	DEFAULT
	Codabar Quiet Zones = Virtual Quiet Zones on two sides
Codabar Quiet Zones = Small Quiet Zones on two sides	

Codabar Minimum Reads

This feature specifies the minimum number of consecutive times a Codabar label must be decoded before it is accepted as good read.

	Codabar Minimum Reads = 1
Codabar Minimum Reads = 2	DEFAULT
	Codabar Minimum Reads = 3
Codabar Minimum Reads = 4	

Codabar Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

	Codabar Decoding Level = Disable
Codabar Decoding Level = 1	
	Codabar Decoding Level = 2
Codabar Decoding Level = 3	DEFAULT
	Codabar Decoding Level = 4
Codabar Decoding Level = 5	

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 bar code lengths for Codabar Length Control on page 159. Length 1 is the minimum label length if in Variable Length on page 159 Mode, or the first fixed length if in Fixed Length on page 159 Mode. Length includes the bar code'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 in increments of two. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Codabar Length 1 Setting	
Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Codabar Length Control on page 159. Length 2 is the maximum label length if in Variable Length on page 159 Mode, or the second fixed length if in Fixed Length on page 159 Mode. The length includes the bar code'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 in increments of two. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select CodabarLength 2 Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

Codabar Interdigit Ratio

This feature specifies the ratio between an intercharacter space and module for Codabar labels.

	Codabar Interdigit Ratio = Disable
Codabar Interdigit Ratio = 1	
	Codabar Interdigit Ratio = 2
Codabar Interdigit Ratio = 3	
DEFAULT	Codabar Interdigit Ratio = 4
Codabar Interdigit Ratio = 5	

Codabar Interdigit Ratio (continued)

	Codabar Interdigit Ratio = 6
Codabar Interdigit Ratio = 7	
	Codabar Interdigit Ratio = 8
Codabar Interdigit Ratio = 9	
	Codabar Interdigit Ratio = 10

Codabar Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	Codabar Character Correlation = Disable
Codabar Character Correlation = Enable	

Codabar Stitching

This option enables/disables stitching for Codabar labels. When parts of a Codabar bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

DEFAULT	Codabar Stitching = Disable
Codabar Stitching = Enable	

ABC Codabar

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

Enables/Disables ability of reader 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 reader will not read Code 11 bar codes.

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
Code 11 Check Character Calculation = Check C and K	DEFAULT

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
Code 11 Check Character Transmission = Send	DEFAULT

Code 11 Minimum Reads

This feature specifies the minimum number of consecutive times a Code 11 label must be decoded before it is accepted as good read.

	Code 11 Minimum Reads = 1
Code 11 Minimum Reads = 2	DEFAULT
	Code 11 Minimum Reads = 3
Code 11 Minimum Reads = 4	

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 bar code lengths for Code 11 Length Control on page 170. Length 1 is the minimum label length if in Variable Length on page 170 Mode, or the first fixed length if in Fixed Length on page 170 Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters, in increments of two. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Code 11 Set Length 1 Setting

Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Code 11 Length Control on page 170. Length 2 is the maximum label length if in Variable Length on page 170 Mode, or the second fixed length if in Fixed Length on page 170 Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Code 11 Length 2 Setting	
Make a mistake? Scan the CANCEL bar code 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 11 Interdigit Ratio

This feature specifies the ratio between an intercharacter space and module for Code 11 labels.

	Code 11 Interdigit Ratio = Disable
Code 11 Interdigit Ratio = 1	
	Code 11 Interdigit Ratio = 2
Code11 Interdigit Ratio = 3	
DEFAULT	Code 11 Interdigit Ratio = 4
Code 11 Interdigit Ratio = 5	

Code 11 Interdigit Ratio (continued)

	Code 11 Interdigit Ratio = 6
Code 11 Interdigit Ratio = 7	
	Code 11 Interdigit Ratio = 8
Code 11 Interdigit Ratio = 9	
	Code 11 Interdigit Ratio = 10

Code 11 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

Code 11 Decoding Level = 1	
	Code 11 Decoding Level = 2
Code 11 Decoding Level = 3	DEFAULT
	Code 11 Decoding Level = 4
Code 11 Decoding Level = 5	

Code 11 Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	Code 11 Character Correlation = Disable
Code 11 Character Correlation = Enable	

Code 11 Stitching

This option enables/disables stitching for Code 11 labels. When parts of a Code 11 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

DEFAULT	Code 11 Stitching = Disable
Code 11 Stitching = 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 reader will not read Standard 2 of 5 bar codes.

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
Standard 2 of 5 Check Character Transmission = Send	DEFAULT

Standard 2 of 5 Minimum Reads

This feature specifies the minimum number of consecutive times a Standard 2 of 5 label must be decoded before it is accepted as good read.

	Standard 2 of 5 Minimum Reads = 1
Standard 2 of 5 Minimum Reads = 2	DEFAULT
	Standard 2 of 5 Minimum Reads = 3
Standard 2 of 5 Minimum Reads = 4	

Standard 2 of 5 Decoding Level

NOTE

The Standard 2 of 5 Decoding Level feature is set using "I 2 of 5 Decoding Level" on page 138.

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 bar code lengths for Standard 2 of 5 Length Control on page 179. Length 1 is the minimum label length if in Variable Length on page 179 Mode, or the first fixed length if in Fixed Length on page 179 Mode. Length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Standard 2 of 5 Length 1 Setting

Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Standard 2 of 5 Length Control on page 179. Length 2 is the maximum label length if in Variable Length on page 179 Mode, or the second fixed length if in Fixed Length on page 179 Mode. Length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Standard 2 of 5 Length 2 Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

Standard 2 of 5 Character Correlation

When correlation is enabled, the bar code reader will combine label data from multiple scans when decoding. Enabling correlation will help the reader read labels that have some spots and/or voids. It may also help read labels that have damaged areas. Enabling correlation will also increase the chances that a label will be read incorrectly.

DEFAULT	Standard 2 of 5 Character Correlation = Disable
Standard 2 of 5 Character Correlation = Enable	

Standard 2 of 5 Stitching

This option enables/disables stitching for Standard 2 of 5 labels. When parts of a Standard 2 of 5 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader's software, and the data will be decoded if all bar code proofing requirements are met.

DEFAULT	Standard 2 of 5 Stitching = Disable
Standard 2 of 5 Stitching = Enable	

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 reader 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
Industrial 2 of 5 Check Character Transmission = Enable	DEFAULT

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 bar code lengths for Industrial 2 of 5 Length Control on page 184. 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 bar code's data characters only.

The length can be set from 1 to 50 characters, and includes check and data characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Industrial 2 of 5 Set Length 1 Setting	
Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Industrial 2 of 5 Length Control on page 184. 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 bar code's check, data, and full-ASCII shift characters.

The length can be set from 1 to 50 characters. The length includes check and data characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Industrial 2 of5 Length 2 Setting

Make a mistake? Scan the CANCEL bar code 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 Minimum Reads

This feature specifies the minimum number of consecutive times an Industrial 2 of 5 label must be decoded before it is accepted as good read.

DEFAULT

Industrial 2 of 5 Minimum Reads = 1

Industrial 2 of 5 Minimum Reads = 2

Industrial 2 of 5 Minimum Reads = 3

Industrial 2 of 5 Minimum Reads = 4

Industrial 2 of 5 Stitching

Enables/disables fixed length stitching for Industrial 2 of 5.

DEFAULT	Industrial 2 of 5 Stitching = Disable
Industrial 2 of 5 Stitching = Enable	

Industrial 2 of 5 Character Correlation

Enable/disables character correlation for Industrial 2 of 5.

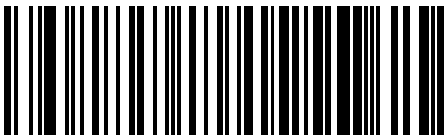
DEFAULT	Industrial 2 of 5 Character Correlation = Disable
Industrial 2 of 5 Character Correlation = Enable	

IATA

The following options apply to the IATA symbology.

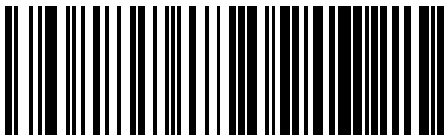
IATA Enable/Disable

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

DEFAULT	 IATA = Disable
 IATA = Enable	

IATA Check Character Transmission

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

	 IATA Check Character Transmission = Disable
 IATA Check Character Transmission = Enable	DEFAULT

ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

Enables/disables ISBT128 concatenation of 2 labels.

DEFAULT	ISBT 128 Concatenation = Disable
ISBT128 Concatenation = Enable	

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

NOTE

This option is only valid when ISBT 128 Concatenation on page 190 is enabled (see page 10-190).

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 Force Concatenation

When enabled, this feature forces all ISBT 128 labels to be concatenated.

NOTE **This option is only valid when ISBT 128 Concatenation on page 190 is enabled. (see page 10-190).**

DEFAULT	ISBT 128 Force Concatenation = Disable
ISBT 128 Force Concatenation = Enable	

ISBT 128 Advanced Concatenation Options

NOTE **Use the HP USB Scanner Configuration and Firmware Utility or contact Customer Support to set up pairs of label types for concatenation.**

MSI

The following options apply to the MSI symbology.

MSI Enable/Disable

Enables/Disables ability of reader 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
MSI Check Character Calculation = Enable Mod10	DEFAULT
	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
MSI Check Character Transmission = Enable	DEFAULT

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.

DEFAULT	MSI Length Control = Variable Length
MSI = Fixed Length	

MSI Set Length 1

This feature specifies one of the bar code lengths for MSI Length Control on page 194. Length 1 is the minimum label length if in Variable Length on page 194 Mode, or the first fixed length if in Fixed Length on page 194 Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select MSI Set Length 1 Setting

Make a mistake? Scan the CANCEL bar code 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 bar code lengths for MSI Length Control on page 194. Length 2 is the maximum label length if in Variable Length on page 194 Mode, or the second fixed length if in Fixed Length on page 194 Mode. Length includes the bar code'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). See "Set Length 2" on page 258 for more detailed programming instructions.

Select MSI Length 2 Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	CANCEL

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

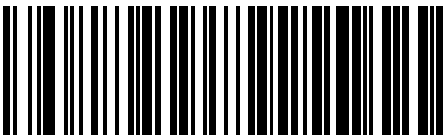
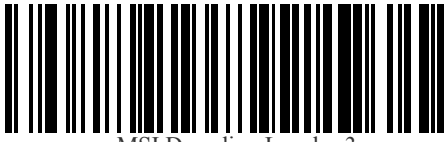
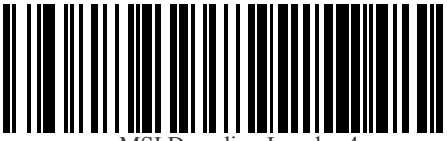
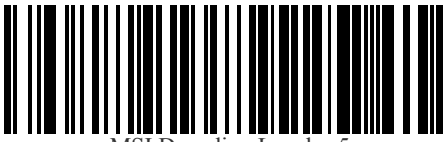
MSI Minimum Reads

This feature specifies the minimum number of consecutive times an MSI label must be decoded before it is accepted as good read.

	MSI Minimum Reads = 1
MSI Minimum Reads = 2	
	MSI Minimum Reads = 3
MSI Minimum Reads = 4	DEFAULT

MSI Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

	 MSI Decoding Level = Disable
 MSI Decoding Level = 1	
	 MSI Decoding Level = 2
 MSI Decoding Level = 3	
	 MSI Decoding Level = 4
 MSI Decoding Level = 5	

Code 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

Enables/Disables ability of reader 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
Code 93 Check Character Calculation = Enable Check C and K	DEFAULT

Code 93 Check Character Transmission

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

DEFAULT	Code 93 Check Character Transmission = Disable
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

This feature specifies one of the bar code lengths for Code 93 Length Control on page 200. Length 1 is the minimum label length if in Variable Length on page 200 Mode, or the first fixed length if in Fixed Length on page 200 Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Code 93 Set Length 1 Setting	
Make a mistake? Scan the CANCEL bar code 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 bar code lengths for Code 93 Length Control on page 200. Length 2 is the maximum label length if in Variable Length on page 200 Mode, or the second fixed length if in Fixed Length on page 200 Mode. Length includes the bar code'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 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Code 93 Length 2 Setting

Make a mistake? Scan the CANCEL bar code 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 Minimum Reads

This feature specifies the minimum number of consecutive times a Code 93 label must be decoded before it is accepted as good read.

DEFAULT	Code 93 Minimum Reads = 1
Code 93 Minimum Reads = 2	
	Code 93 Minimum Reads = 3
Code 93 Minimum Reads = 4	

Code 93 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

	Code 93 Decoding Level = Disable
Code 93 Decoding Level = 1	
	Code 93 Decoding Level = 2
Code 93 Decoding Level = 3	DEFAULT
	Code 93 Decoding Level = 4
Code 93 Decoding Level = 5	

Code 93 Quiet Zones

Enables/disables fixed length stitching for Code 93.

	Code 93 Quiet Zones = No Quiet Zones
Code 93 Quiet Zones = Quiet Zone on one side	
	Code 93 Quiet Zones = Quiet Zones on two sides
Code 93 Quiet Zones = Auto	DEFAULT
	Code 93 Quiet Zones = Virtual Quiet Zones on two sides

Code 93 Stitching

Disable/enable fixed or variable length stitching for Code 93.

	Code 93 Stitching = Disable
Code 93 Stitching = Enable	DEFAULT

Code 93 Character Correlation

Enables/disables Character Correlation for Code 93.

DEFAULT	Code 93 Character Correlation = Disable
Code 93 Character Correlation = Enable	

Codablock F

The following options apply to the Codablock F symbology.

Codablock F Enable/Disable

Enables/Disables the ability of the reader to decode Codablock F labels.

DEFAULT	Codablock F = Disable
Codablock F = Enable	

Codablock F EAN Enable/Disable

Enables/Disables the Codablock F EAN subtype (code with FNC1 in the first position).

DEFAULT	Codablock F EAN = Disable
Codablock F EAN = Enable	

Codablock F AIM Check

Specifies if Check Digit calculation algorithm is AIM compliant or not.

	Codablock F AIM Check = Not AIM compliant
Codablock F AIM Check = AIM compliant	DEFAULT

Codablock F Length Control

This feature specifies either variable length decoding or fixed length decoding for the Codablock F 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	Codablock F Length Control = Variable Length
Codablock F = Fixed Length	

Codablock F Set Length 1

This feature specifies one of the bar code lengths for Codablock F Length Control on page 208. Length 1 is the minimum label length if in Variable Length on page 208 Mode, or the first fixed length if in Fixed Length on page 208 Mode. Length includes the bar code's data characters only.

The length can be set from 003 to 255 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select Codablock F Length 1 Setting

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

CANCEL

DEFAULT

003 = Length 1 is 3 Characters

Codablock F Set Length 2

This feature specifies one of the bar code lengths for Codablock F Length Control on page 208. Length 2 is the maximum label length if in Variable Length on page 208 Mode, or the second fixed length if in Fixed Length on page 208 Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 3 to 255 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Codablock F Length 2 Setting

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

CANCEL

DEFAULT

100 = Length 2 is 100 Characters

Code 4

The following options apply to the Code 4 symbology.

Code 4 Enable/Disable

Enables/Disables ability of reader to decode Code 4 labels.

DEFAULT	Code 4 = Disable
Code 4 = Enable	

Code 4 Check Character Transmission

This feature enables/disables transmission of an optional Code 4 check character.

	Code 4 Check Character Transmission = Don't Send
Code 4 Check Character Transmission = Send	DEFAULT

Code 4 Hex to Decimal Conversion

This feature enables/disables the conversion of hexadecimal label data to decimal label data.

	Code 4 Hex to Decimal Conversion = Disable
Code 4 Hex to Decimal Conversion = Enable	DEFAULT

Code 5

The following options apply to the Code 5 symbology.

Code 5 Enable/Disable

Enables/Disables ability of reader to decode Code 5 labels.

DEFAULT	Code 5 = Disable
Code 5 = Enable	

Code 5 Check Character Transmission

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

	Code 5 Check Character Transmission = Don't Send
Code 5 Check Character Transmission = Send	DEFAULT

Code 5 Hex to Decimal Conversion

This feature enables/disables the conversion of hexadecimal label data to decimal label data.

	Code 5 Hex to Decimal Conversion = Disable
Code 5 Hex to Decimal Conversion = Enable	DEFAULT

Code 4 and Code 5 Common Configuration Items

The following options apply to both Code 4 and Code 5 symbologies.

Code 4 and 5 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative, depending on customer needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

NOTE

This configuration item applies to Code 4 and Code 5.

	Code 4 and Code 5 Decoding Level = Disable
Code 4 and Code 5 Decoding Level = 1	
	Code 4 and Code 5 Decoding Level = 2
Code 4 and Code 5 Decoding Level = 3	DEFAULT
	Code 4 and Code 5 Decoding Level = 4
Code 4 and Code 5 Decoding Level = 5	

Code 4 and Code 5 Minimum Reads

This feature specifies the minimum number of consecutive times a Code 4 or Code 5 label must be decoded before it is accepted as good read.

DEFAULT	Code 4 or Code 5 Minimum Reads = 1
Code 4 or Code 5 Minimum Reads = 2	
	Code 4 or Code 5 Minimum Reads = 3
Code 4 or Code 5 Minimum Reads = 4	

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 reader to decode Follett 2 of 5 labels.

DEFAULT	Follett 2 of 5 = Disable
Follett 2 of 5 = Enable	

BC412

The following options apply to the BC412 symbology.

BC412 Enable/Disable

Enables/Disables ability of reader to decode BC412 labels.

DEFAULT	BC412 = Disable
BC412 = Enable	

BC412 Check Character Calculation

Enable this option to enable/disable calculation and verification of an optional BC412 check character. When disabled, any check character in the label is treated as a data character.

	BC412 Check Character Calculation = Don't Calculate
BC412 Check Character Calculation = Calculate Check Character	DEFAULT

BC412 Minimum Reads

This feature specifies the minimum number of consecutive times a BC412 label must be decoded before it is accepted as good read.

DEFAULT	BC412 Minimum Reads = 1
BC412 Minimum Reads = 2	
	BC412 Minimum Reads = 3
BC412 Minimum Reads = 4	

BC412 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 256 for more detailed programming instructions.

	BC412 Decoding Level = Disable
BC412 Decoding Level = 1	
	BC412 Decoding Level = 2
BC412 Decoding Level = 3	DEFAULT
	BC412 Decoding Level = 4
BC412 Decoding Level = 5	

BC412 Length Control

This feature specifies either variable length decoding or fixed length decoding for the BC412 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	BC412 Length Control = Variable Length
BC412 Length Control = Fixed Length	

BC412 Set Length 1

This feature specifies one of the bar code lengths for BC412 Length Control on page 219. Length 1 is the minimum label length if in Variable Length on page 219 Mode, or the first fixed length if in Fixed Length on page 219 Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 257 for more detailed programming instructions.

Select BC412 Set Length 1 Setting

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

CANCEL

DEFAULT

01 = Length 1 is 1 Character

BC412 Set Length 2

This feature specifies one of the bar code lengths for BC412 Length Control on page 219. Length 2 is the maximum label length if in Variable Length on page 219 Mode, or the second fixed length if in Fixed Length on page 219 Mode. Length includes the bar code'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 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 258 for more detailed programming instructions.

Select Code 39Length 2 Setting	
Make a mistake? Scan the CANCEL bar code 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 reader 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
Plessey Check Character Transmission = Enable	DEFAULT

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 on page 224. Length 1 is the minimum label length if in Variable Length on page 224 Mode, or the first fixed length if in Fixed Length on page 224 Mode. Length includes the barcode's data characters only. The length can be set from 01 to 50 characters.

Table 2 provides some examples for setting Length 1. See page 257 for detailed instructions on setting this feature.

Table 2. 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 on page 224. Length 2 is the maximum label length if in Variable Length on page 224 Mode, or the second fixed length if in Fixed Length on page 224 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 3 provides examples for setting Length 2. See page 258 for detailed instructions on setting this feature.

Table 3. 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**

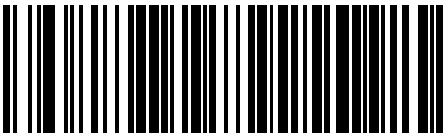
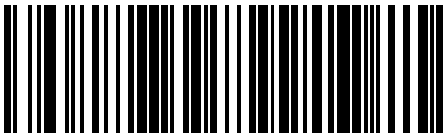
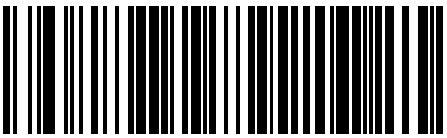
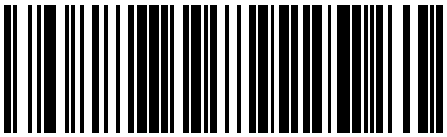
Plessey Minimum Reads

This feature specifies the minimum number of consecutive times a Plessey label must be decoded before it is accepted as good read.

	Plessey Minimum Reads = 1
Plessey Minimum Reads = 2	
	Plessey Minimum Reads = 3
Plessey Minimum Reads = 4	DEFAULT

Plessey Decoding Level

Specifies the decoding level for Plessey. Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 256 for more information on this feature.

	 Plessey Decoding Level = Disable
 Plessey Decoding Level = 1 (conservative)	
	 Plessey Decoding Level = 2
 Plessey Decoding Level = 3	
	 Plessey Decoding Level = 4
 Plessey Decoding Level = 5 (aggressive)	

Plessey Stitching

Enables/disables fixed length stitching for Plessey.

DEFAULT	Plessey Stitching = Disable
Plessey Stitching = Enable	

Plessey Character Correlation

Enables/disables Character Correlation for Plessey.

DEFAULT	Plessey Character Correlation = Disable
Plessey Character Correlation = Enable	

NOTES

Chapter 5
References

This section contains explanations and examples of selected bar code features. See the programming sections for the actual bar code labels used to configure the reader.

USB COM (RS-232) 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 bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING on page 14.
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 bar code to abort and not save the entry string. You can then start again at the beginning.

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

This completes the procedure. See Table 4 for some examples of how to set this feature.

Table 4. 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				

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.

To set this feature:

1. Determine the desired character or value.
2. Use the ASCII Chart on page 295 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ACK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric 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 bar code to exit Programming Mode.

This completes the procedure. See Table 5 for some examples of how to set this feature.

Table 5. ACK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Character/Value	ACK	$	@	>
2	Hex equivalent	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.

To set this feature:

1. Determine the desired character or value.
2. Use the ASCII Chart on page 295 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric 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 bar code to exit Programming Mode.

This completes the procedure. See Table 6 for some examples of how to set this feature.

Table 6. NAK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Character/Value	NAK	$	@	>
2	Hex equivalent	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 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.

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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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.

NOTE

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

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

This completes the procedure. See Table 19 for some examples of how to set this feature.

Table 7. ACK NAK Timeout Value Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Setting	200ms	1,000ms (1 sec.)	5200ms (5.2 sec.)	15,000ms (1 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'
7	Scan ENTER/EXIT PROGRAMMING MODE				

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.

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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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.

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

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

This completes the procedure. See Table 8 for some examples of how to set this feature.

Table 8. 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 RS-232 host command used to disable the reader. ASCII characters or any hex value from 0 to 0xFF can be selected.

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the the Disable Character is not used (not available).
2. Use the ASCII Chart on page 295 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT DISABLE CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric 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 bar code to exit Programming Mode.

This completes the procedure. See Table 9 for some examples of how to set this feature.

Table 9. Disable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired character/value	'd'	'}'	'D'	Disable Command Not Used
2	Hex equivalent	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 RS-232 host command used to enable the reader. ASCII characters or any hex value from 0 to 0xFF can be selected.

To set this feature:

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

1. Determine the desired character or value.
2. Use the ASCII Chart on page 295 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ENABLE CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric 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 bar code to exit Programming Mode.

This completes the procedure. See Table 10 for some examples of how to set this feature.

Table 10. Enable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired character/value	'e'	'}'	'E'	Enable Command Not Used
2	Hex equivalent	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

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 bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING on page 14.
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 bar code to abort and not save the entry string. You can then start again at the beginning.**

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

This completes the procedure. See Table 11 for some examples of how to set this feature.

Table 11. 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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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.

NOTE

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

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

This completes the procedure. See Table 12 for some examples of how to set this feature.

Table 12. 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'
7	Scan ENTER/EXIT PROGRAMMING MODE				

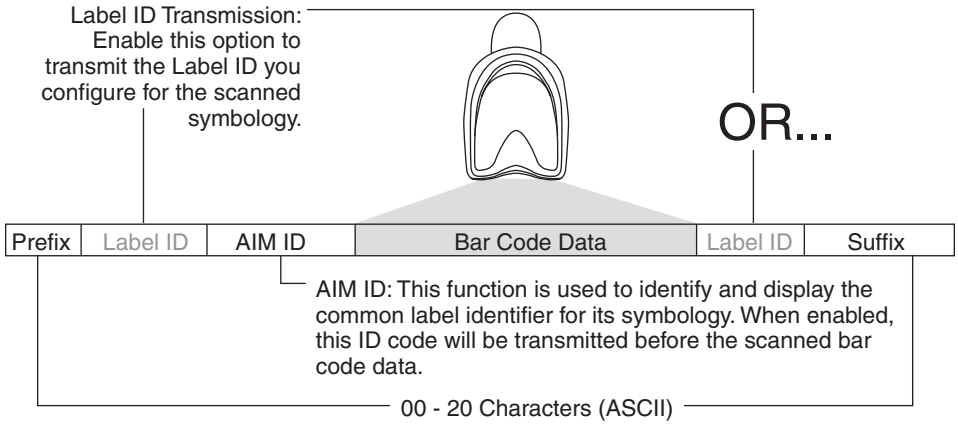
Data Editing

Data Editing Overview

When a bar code is scanned, additional information can be sent to the host computer along with the bar code data. This combination of bar code data and supplementary user-defined data is called a “message string.” The features in this chapter 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 3 shows the available elements you can add to a message string:

Figure 3. Breakdown of a Message String



NOTE **Additional advanced editing is available. See the Advanced Formatting features in the HP USB Scanner Configuration and Firmware Utility.**

Please Keep In Mind...

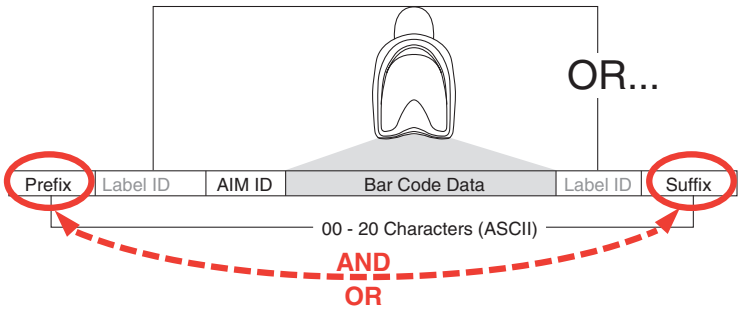
- Modifying a message string is not a mandatory requirement. Data editing is sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied (reference the Symbologies on page 65 chapter for these settings) across all symbologies (set via the Global features in this chapter).
- You can add any character from the ASCII Chart on page 295 (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 bar code data) and/or as a suffix (in a position following the bar code data) as indicated in Figure 4.

Figure 4. 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 bar code data. In this example, we'll add a dollar sign ('$') as a prefix.
2. Scan the ENTER/EXIT bar code.
3. Scan the SET GLOBAL PREFIX bar code.
4. Reference the ASCII Chart on the inside back cover of this manual, to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' bar codes from Appendix D, Keypad.

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

5. If less than the expected string of 20 characters are selected, scan the ENTER/EXIT bar code to terminate the string.
6. Scan the ENTER/EXIT bar code once again to exit Programming Mode.
7. The resulting message string would appear as follows:

Scanned bar code data:12345
Resulting message string output: $12345

This option sets up to 20 characters each from the set of ASCII characters or any hex value from 00 to FF. To configure this feature, scan the ENTER/EXIT bar code to place the unit in Programming Mode, then the "Set Global Prefix" or "Set Global Suffix," bar code 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 bar code to terminate the string. Reference the section, "Example: Setting a Prefix" on page 242, for more information. Exit programming mode by scanning the ENTER/EXIT bar code once again.

Global AIM ID

NOTE

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

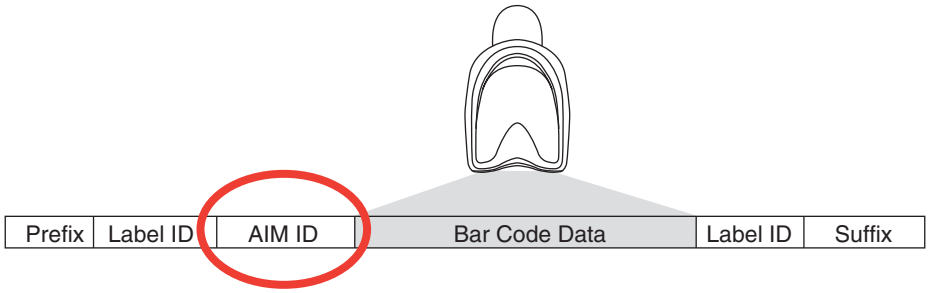
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. AIM label identifiers consist of three characters as follows:

- 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	GS1 DataBar Omnidirectional, GS1 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 5. AIM ID



Label ID: Pre-loaded Sets

The following table lists the pre-loaded label ID sets for the USA and Europe.

Table 13. Label ID Pre-loaded Sets

Symbology	USA Label ID set		EU Label ID set	
	ASCII character	Hex value	ASCII character	Hexadecimal value
ABC Codabar	S	530000	S	530000
CODABAR	%	250000	R	520000
Codablock F	l	6C0000	m	6D0000
Code 39 CIP	Y	590000	Y	590000
Code 93	&	260000	U	550000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
CODE4	4	340000	4	340000
CODE5	j	6A0000	j	6A0000
DATALOGIC 2OF5	s	730000	s	730000
EAN13	F	460000	B	420000
EAN13 P2	F	460000	L	4C0000
EAN13 P5	F	460000	M	4D0000
EAN13 P8	F	460000	#	230000
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000
EAN8 P8	FF	464600	*	2A0000
FOLLETT 2OF5	O	4F0000	O	4F0000
GS1 DATABAR EXPANDED	RX	525800	t	740000
GS1 DATABAR LIMITED	RL	524C00	v	760000
GS1 DATABAR OMNIDIREC-TIONAL	R4	523400	u	750000
GS1-128		000000	k	6B0000
I2OF5	i	690000	N	4E0000
IATA	IA	494100	&	260000

Symbology	USA Label ID set		EU Label ID set	
Industrial 2 of 5	W	570000	W	570000
Interleaved 2 of 5 CIP HR	e	650000	e	650000
ISBN	I	490000	@	400000
ISBT128	f	660000	f	660000
ISSN	n	6E0000	n	6E0000
MSI	@	400000	Z	5A0000
S25	s	730000	P	500000
UPCA	A	410000	C	430000
UPCA P2	A	410000	F	460000
UPCA P5	A	410000	G	470000
UPCA P8	A	410000	Q	510000
UPCE	E	450000	D	440000
UPCE P2	E	450000	H	480000
UPCE P5	E	450000	I	490000
UPCE P8	E	450000	E	450000

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1. Scan the ENTER/EXIT bar code.
2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate bar code in the section "Label ID Control" on page 39. Reference Figure 6 for Label ID positioning options if multiple identification features are enabled.
3. Scan a bar code to select the symbology for which you wish to configure a custom Label ID from the section Label ID Symbology Selection, starting on page 40.
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 page 295 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 281 and scan the bar codes 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 14.

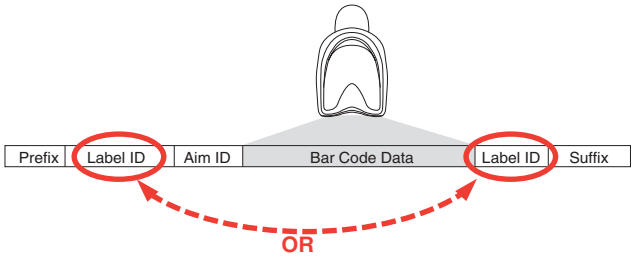
NOTE

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

6. Scan the ENTER/EXIT bar code to exit Label ID entry.
7. Scan the ENTER/EXIT bar code once again to exit Programming Mode.

This completes the steps to configure a Label ID for a given symbology.

Figure 6. Label ID Position Options



Label ID: Set Individually Per Symbology — continued

Table 14. Label ID Examples

STEP	ACTION	EXAMPLES			
1.	Scan the ENTER/EXIT bar code	(Reader enters Programming Mode)			
2.	Determine placement of the Label ID characters BEFORE or AFTER with regard to scanned data using "Label ID Control" on page 39	Enable as Prefix	Enable as Suffix	Enable as Prefix	Enable as Suffix
3.	Scan the bar code selecting the symbology type you wish to designate label ID characters for using Label ID Symbology Selection, starting on page 40.	GS1 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 table (inside back cover), then scan in these digits/ characters using the bar codes in the section: Keypad, starting on page 281. f you make a mistake before the last character, scan the CANCEL bar code 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 theENTER/EXIT bar code	(Reader exits Label ID entry)			
7.	Scan the ENTER/EXIT bar code once again	(Reader exits Programming Mode)			
Result:		DB*[bar code data]	[bar code data]=C3	+[bar code data]	[bar code data]PH

Set Global Mid Label ID Character(s)

Specifies a mid-label ID that is added for transmission between the labels of a two label pair. The expected string is a maximum of 20 characters. When combining two label pairs into a single label for transmission to the host, this label ID can be added to the data, following the first label and preceding the second label. To set this feature...

1. Scan the ENTER/EXIT bar code.
2. Determine the desired character(s) (you may choose up to twenty) which will represent the Mid Label ID for two label pairs. If the first character is 00, then nothing is added between the two labels.
3. Turn to the ASCII Chart on page 295 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 the characters 'M', 'I' and 'D' as a Label ID, the chart indicates its associated hex characters as 4D4944. Turn to Keypad, starting on page 281 and scan the bar codes representing the hex characters determined. For the example given, the characters '4', 'D', '4', '9', '4' and '4' would be scanned. More examples of Label ID settings are provided in Table 14.

NOTE

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

4. The reader will save the string and exit Programming Mode when...

- the ENTER/EXIT baqr code is scanned a second time, or
- the hex values for all twenty available characters have been entered, or
- the first 00 hex value entered terminates the string.

This completes the steps to configure a Global Mid Label ID for two label pairs

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. Scan the ENTER/EXIT bar code.
2. Scan the “Configure Character Conversion” bar code.
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 bar codes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT bar code to exit Programming Mode.

NOTE

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

Reading Parameters

Label Gone Timeout

This feature sets the time after the last label segment is seen before the reader prepares for a new label. The timeout can be set within a range of 10 milliseconds to 2,550 milliseconds (2.55 seconds) in 10ms increments. Label Gone Timeout does not apply to scan modes that require a trigger pull for each label that is read

Follow these instructions to set this feature:

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 three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT LABEL GONE TIMEOUT SETTING.
5. Scan the appropriate three alpha-numeric characters 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 bar code to abort and not save the entry string. You can then start again at the beginning.**

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

This completes the procedure. See Table 15 for some examples of how to set this feature.

Table 15. Timeout Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Setting	50ms	150ms	1800ms (1.8 sec.)	2550ms (2.55 sec.)
2	Divide by 10 (and pad with leading zeroes)	005	015	180	255
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECT LABEL GONE TIMEOUT SETTING				
5	Scan Three Characters From Appendix D, Keypad	'0', '0' and '5'	'0', '1' and '5'	'1', '8' and '0'	"2', '5' and '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

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 0.1 to 25.5 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 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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 bar code to abort and not save the entry string. You can then start again at the beginning.**

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

This completes the procedure. See Table 16 for some examples of how to set this feature.

Table 16. Good Read LED Duration Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Setting	Good Read LED stays on until next trigger pull (00)	200ms	1500ms (1.5 sec.)	2500ms (2.5 sec.)
2	Divide by 100 (and pad with leading zeroes)	000	002	015	025
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'	'0', '2' and '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

Scan Mode

Selects the scan operating mode for the reader. Selections are:

Trigger Single: When the trigger is pulled, scanning is activated until one of the following occurs:

- Scanning Active Time on page 62 has elapsed
- a label has been read
- the trigger is released

This mode is associated with typical handheld reader operation: when the trigger is pulled, scanning starts and the product scans until the trigger is released, or a label is read, or the maximum Scanning Active Time on page 62 has elapsed.

Trigger Hold Multiple : When the trigger is pulled, scanning starts and the product scans until the trigger is released or Scanning Active Time on page 62 has elapsed. Reading a label does not disable scanning. Double Read Timeout on page 50 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 on page 62 has elapsed or the trigger has been released and pulled again. Double Read Timeout on page 50 prevents undesired multiple reads of the same label while in this mode.

Flashing: The reader flashes[1] on and off regardless of the trigger status. Flash rate is controlled by Flash On Time on page 63 and Flash Off Time on page 64. When Flash is ON the reader reads continuously. When Flash is OFF scanning is deactivated.

Always On: No trigger pull is required to read a bar code. Scanning is continually on. Double Read Timeout on page 50 prevents undesired multiple reads while in this mode.

Autosense® Stand Mode: No trigger pull is required to read a bar code. Scanning is turned on automatically when an item is placed in reader's field of view. If the trigger is pulled, the reader acts as if it in single read mode. Double Read Timeout on page 50 prevents undesired multiple reads of the same label while in this mode.

1. Controlled by Flash On Time on page 63.

Scanning Active Time

This setting specifies the amount of time that the reader 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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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.

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

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

This completes the procedure. See Table 17 for some examples of how to set this feature.

Table 17. 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**				

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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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.

NOTE

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

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

This completes the procedure. See Table 18 for some examples of how to set this feature.

Table 18. 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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: 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 bar code to abort and not save the entry string. You can then start again at the beginning.**

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

This completes the procedure. See Table 19 for some examples of how to set this feature.

Table 19. 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				

Symbology Settings

Decoding Levels

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs.

- Choosing Level 1 results in a very conservative decoder at the expense of not being able to read poorly printed or damaged labels.
- Choosing Level 5 results in a very aggressive decoder. This aggressive behavior allows decoding of poorly printed and damaged labels at the expense of increasing the likelihood of decoding errors.
- Choosing Level 3, which is the default setting, allows the majority of product labels to be decoded.

There are many factors that determine when to change the decoding level for a particular symbology. These factors include spots, voids, non-uniform bar/space widths, damaged labels, etc. that may be experienced in some bar code labels. If there are many hard to read or damaged labels that cannot be decoded using a conservative setting, increase the decoding level to be more aggressive. If the majority of labels are very good quality labels, or there is a need to decrease the possibility of a decoder error, lower the decoding level to a more conservative level.

Set Length

Set Length 1

This feature specifies one of the bar code lengths for a given symbology. Length 1 is the minimum label length if in Varible Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

Reference the Symbologies on page 65 section to view the selectable range (number of characters) for the symbology being set.

Follow these instructions to set this feature:

1. Determine the desired character length. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the "Select Length 1 Setting" for the symbology being set.
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 bar code to abort and not save the entry string. You can then start again at the beginning.**

5. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See Table 20 for some examples of how to set this feature.

Table 20. 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 LENGTH 1SETTING for the desired symbology**				
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**				

Set Length 2

This feature specifies one of the bar code lengths for a given symbology. 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 bar code's data characters only.

Reference the Symbologies on page 65 section to view the selectable range (number of characters) for the symbology being set.. A setting of 00 specifies to ignore this length (only one fixed length).

Follow these instructions to set this feature:

1. Determine the desired character length. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the "Select Length 2 Setting" for the symbology being set.
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 bar code to abort and not save the entry string. You can then start again at the beginning.

5. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See Table 21 for some examples of how to set this feature.

Table 21. 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 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**				

Appendix A
Technical Specifications

The following tables contain Physical and Performance Characteristics, User Environment and Regulatory information, and Standard Cable Pinouts.

Item	HP Linear Barcode Scanner II	
Physical Characteristics		
Dimensions	Height 6.4”/163 mm Length 3.6”/91 mm Width 1.6”/41 mm	
Weight (without cable)	5.3 ounces (150 g)	Reader - 6.7 ounces (190 g) Cradle - 7.8 ounces (221 g)
Color	Black	
Electrical Characteristics		
Voltage & Current	Input Voltage: 4.5 - 14.0 VDC Operating (typical): 140 mA Operating (max): 380 mA Idle/standby (typical): 50 mA	

Item	HP Linear Barcode Scanner II
Performance Characteristics	
Light Source	LEDs
Roll (Tilt) Angle[a]	Up to 45°
Pitch Angle[a]	± 65°
Skew (Yaw) Angle[a]	70°
Field of View	56 ± 2°
Field of View	Code 39 5 mils: 0.8” - 7” (2 - 18 cm) 7.5 mils: 0.8” - 12” (2 - 30 cm) 10 mils: 0.8” - 17” (2 - 44 cm) 20 mils: up to 29.5” (75 cm) EAN 13 mils: 0.8” - 23” (2 - 58 cm)
Depth of Field (Typical)[b]	
Minimum Element Width	4 mils - 0,01 cm
Print Contrast Minimum	25% minimum reflectance

a. Based on ISO 15423 specifications

b. 13 mils DOF based on EAN. All other codes are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°

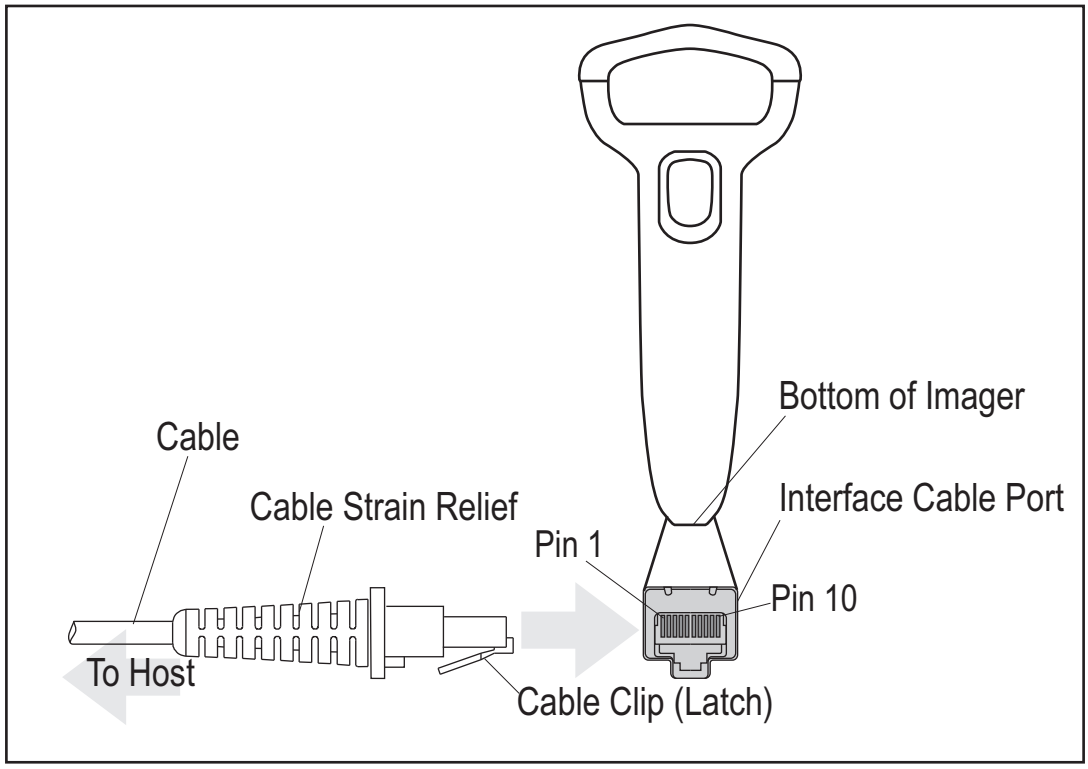
Item	HP Linear Barcode Scanner II
Decode Capability	
UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN / Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit 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; Datalogic 2 of 5 (China Post Code/Chinese 2 of 5); IATA 2of5 Air cargo code; Code 11; Codabar; Codabar (NW7); ABC Codabar; Code 93; MSI; PZN; Plessey; Anker Plessey; Follet 2 of 5; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.	
Interfaces Supported	
USB Com Std., USB Keyboard, USB Alternate Keyboard, USB OEM, Keyboard Wedge (AT with or w/o Alternate Key, IBM AT PS2 with or w/o Alternate Key, USB Composite (keyboard + COM).	

Item	HP Linear Barcode Scanner II
User Environment	
Operating Temperature	32° to 122° F (0° to 50° C)
Storage Temperature	-40° to 70 °C (-40° to 158° F)
Humidity	Operating: 0% to 95% relative humidity, non-condensing
Drop Specifications	Scanner withstands 18 drops from 1.5 m (4.9 feet) to concrete
Ambient Light Immunity	Up to 120,000 Lux
Contaminants Spray/rain Dust/particulates	IEC 529-IP42 (scanner only)
ESD Level	15 KV

Standard Cable Pinouts

Figure 7 and Table 22 provide standard pinout information for the reader's cable.

Figure 7. Standard Cable Pinouts



The signal descriptions in Table 22 apply to the connector on the reader and are for reference only.

Table 22. Standard Cable Pinouts - Reader Side

Pin	RS-232	USB	Keyboard Wedge
1	RTS (out)		
2		D+	CLKIN (KBD side)
3		D-	DATAIN (KBD side)
4	GND	GND	GND
5	RX		
6	TX		
7	VCC	VCC	VCC
8			CLKOUT (PC side)
9			DATAOUT (PC side)
10	CTS (in)		

LED and Beeper Indications

The reader's beeper sounds and its LED illuminates to indicate various functions or errors on the reader. 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 reader'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 bar code labels.

INDICATION	DESCRIPTION	LED	BEEPER
Power-up Beep	The reader is in the process of powering-up.		Reader beeps four times at highest frequency and volume upon power-up.
Good Read Beep	A label has been successfully scanned by the reader.	LED behavior for this indication is configurable via the feature "Good Read: When to Indicate"	The reader 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 reader's software/programming	Flashes	Reader 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	Reader 'chirps' six times at the highest frequency and current volume.
Reader Active Mode	The reader is active and ready to scan.	The LED is lit steadily[a]	N/A
Reader Disabled	The reader has been disabled by the host.	The LED blinks continuously	N/A
Green Spot is on continuously	While in Stand Mode or Trigger Object Sense 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

a. Except when in sleep mode or when a Good Read LED Duration other than 00 is selected

Programming Mode

The following indications ONLY occur when the reader is in Programming Mode:

INDICATION	DESCRIPTION	LED	BEEPER
Label Programming Mode Entry	A valid programming label has been scanned.	LED blinks continuously	Reader sounds four low frequency beeps.
Label Programming Mode Rejection of Label	A label has been rejected.	N/A	Reader sounds three times at lowest frequency & current volume.
Label Programming 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	Reader sounds one short beep at highest frequency & current volume.
Label Programming Mode Acceptance of Programming	Configuration option(s) have been successfully programmed via labels and the reader has exited Programming Mode.	N/A	Reader sounds one high frequency beep and four low frequency beeps followed by reset beeps.
Label Programming Mode Cancel Item Entry	Cancel label has been scanned.	N/A	Reader sounds two times at low frequency and current volume.

Error Codes

Upon startup, if the reader sounds a long tone, this means the reader has not passed its automatic Selftest and has entered FRU (Field Replaceable Unit) isolation mode. If the reader 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	Contact Helpdesk for assistance
2	Interface PCB	
4	Reader Module	
5	[Reserved]	
6	Digital PCB	
14	CPLD/Code Mismatch	

Appendix B
Standard Defaults

The most common configuration settings are listed in the “Default” column of Table 23. The settings in this table are as applied to a standard RS-232 interface. See Table 24 for a listing of default exceptions to this list as applied to other interface types. Page references are also provided for feature descriptions and programming bar codes for each parameter. A column has also been provided for recording of your preferred default settings for these same configurable features.

Table 23. Standard Defaults

Parameter	Default	Your Setting
Global Interface Features		
Host Commands — Obey/Ignore	Obey	
USB Suspend Mode	Enable	
USB-COM		
Intercharacter Delay	No Delay	
Beep on ASCII BEL	Disable	
Beep on Not on File	Enable	
ACK Character	‘ACK’	
NAK Character	‘NAK’	
ACK NAK Timeout Value	600 ms	
ACK NAK Retry Count	3 Retries	
ACK NAK Error Handling	Ignore Errors Detected	
Indicate Transmission Failure	Enable	
Disable Character	‘D’	
Enable Character	‘E’	
Keyboard		
Country Mode	U.S. Keyboard	
Caps Lock State	Caps Lock OFF	
Keyboard Numeric Keypad	Standard Keys	

Parameter	Default	Your Setting
Keyboard Send Control Characters	Disable	
Intercode Delay	100 ms	
USB Keyboard Speed	1 ms	
USB-OEM		
USB-OEM Device Usage	Handheld Scanner	
USB-OEM Interface Options	Ignore	
Data Editing		
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)	
Global AIM ID	Disable	
GS1-128 AIM ID	Enable	
Label ID Control	Disable	
Set Global Mid Label ID Character(s)	No Characters	
Case Conversion	Disable	
Character Conversion	No Char Conversion	
Reading Parameters		
Double Read Timeout	0.4 Second	
Label Gone Timeout	160 ms	
LED and Beeper Indicators	Enabled	
Power On Alert	4 Beeps	
Good Read: When to Indicate	After Decode	
Good Read Beep Type	Mono	
Good Read Beep Frequency	Medium for corded High for cordless	
Good Read Beep Length	100 ms for corded 80 ms for cordless	
Good Read Beep Volume	Illumination Off during beep	
Good Read Beep Volume	High	
Good Read LED Duration	LED on until next trigger pull	
Scan Mode	Trigger Single	

Parameter	Default	Your Setting
Stand Mode Triggered Timeout	0.5 Seconds	
Scanning Active Time	5 Seconds	
Stand Mode Flash	Disable	
Flash On Time	1 Second	
Flash Off Time	600 ms	
Green Spot Duration	Medium	
Green Spot Duration	300 ms	
Symbologies		
Coupon Control	Enable only UPC/ EAN	
UPC-A		
UPC-A Enable/Disable	Enable	
UPC-A Check Character Transmission	Enable	
Expand UPC-A to EAN-13	Don't Expand	
UPC-A Number System Character Transmission	Transmit	
In-Store Minimum Reads	2	
UPC-E		
UPC-E Enable/Disable	Enable	
UPC-E Check Character Transmission	Send	
Expand UPC-E to EAN-13	Don't Expand	
Expand UPC-E to UPC-A	Don't Expand	
UPC-E Number System Character Transmission	Transmit	
UPC-E Minimum Reads	2	
EAN 13		
EAN 13 Enable/Disable	Enable	
EAN 13 Check Character Transmission	Send	
EAN-13 Flag 1 Character	Transmit	
EAN-13 ISBN Conversion	Disable	
ISSN Enable/Disable	Disable	
EAN 13 Minimum Reads	1	
EAN 8		

Parameter	Default	Your Setting
EAN 8 Enable/Disable	Enable	
EAN 8 Check Character Transmission	Send	
Expand EAN 8 to EAN 13	Disable	
EAN 8 Both Guards Substitution	Disable	
EAN 8 Guard Insertion	Disable	
EAN 8 Guard Substitution	Disable	
EAN 8 Minimum Segment Length Block	8	
EAN 8 Minimum Reads	1	
EAN 8 Stitch Exact Label Halves	Disable	
EAN 8 Stitch Unlike Label Halves	Disable	
EAN Two Label		
EAN Two Label Enable/Disable	Disable	
EAN Two Label Combined Transmission	Disable	
EAN Two Label Minimum Reads	1 Read	
UPC/EAN Global Settings		
UPC/EAN Decoding Level	2	
UPC/EAN Correlation	Disable	
UPC/EAN Price Weight Check	Disable	
UPC-A Minimum Reads	1 Read	
UPC/EAN Guard Insertion	Disable	
UPC/EAN Stitch Exact Label Halves	Disable	
UPC/EAN Stitch Unlike Label Halves	Disable	
UPC/EAN Minimum Segment Length	5	
Add-Ons		
Optional Add-ons	Disable P2, P5 and P8	
Optional Add-On Timer	70 ms	
P2 Add-Ons Minimum Reads	2	
P5 Add-Ons Minimum Reads	1	
GS1-128 Add-Ons Minimum Reads	1	
GS1 DataBar Omnidirectional		

Parameter	Default	Your Setting
GS1 DataBar Omnidirectional Enable/Disable	Disable	
GS1 DataBar Omnidirectional GS1-128 Emulation	Disable	
GS1 DataBar Omnidirectional Minimum Reads	1	
GS1 DataBar Expanded		
GS1 DataBar Expanded Enable/Disable	Disable	
GS1 DataBar Expanded GS1-128 Emulation	Disable	
GS1 DataBar Expanded Minimum Reads	1	
GS1 DataBar Expanded Length Control	Variable	
GS1 DataBar Expanded Set Length 1	1	
GS1 DataBar Expanded Set Length 2	74	
GS1 DataBar Limited		
GS1 DataBar Limited Enable/Disable	Disable	
GS1 DataBar Limited GS1-128 Emulation	Disable	
GS1 DataBar Limited Minimum Reads	1	
Code 39		
Code 39 Enable/Disable	Enable	
Code 39 Check Character Calculation	Don't Calculate	
Code 39 Check Character Transmission	Send	
Code 39 Start/Stop Character Transmission	Don't Transmit	
Code 39 Full ASCII	Disable	
Code 39 Quiet Zones	Auto	
Code 39 Minimum Reads	2	
Code 39 Decoding Level	3	
Code 39 Length Control	Variable	
Code 39 Set Length 1	2	
Code 39 Set Length 2	50	
Code 39 Interdigit Ratio	4	
Code 39 Character Correlation	Disable	
Code 39 Stitching	Cordless Enable Corded Disable	
Code 32		

Parameter	Default	Your Setting
Code 32 Enable/Disable	Disable	
Code 32 Check Character Transmission	Don't Send	
Code 32 Start/Stop Character Transmission	Don't Transmit	
Code 39 CIP		
Code 39 CIP Enable/Disable	Disable	
Code 128		
Code 128 Enable/Disable	Enable	
Expand Code 128 to Code 39	Don't Expand	
Code 128 Check Character Transmission	Don't Send	
Code 128 Quiet Zones	Auto	
Code 128 Minimum Reads	1	
Code 128 Decoding Level	3	
Code 128 Length Control	Variable	
Code 128 Set Length 1	1	
Code 128 Set Length 2	80	
Code 128 Character Correlation	Disable	
Code 128 Stitching	Enable	
GS1-128		
GS1-128 Enable	Transmit in Code 128 Data Format	
Interleaved 2 of 5		
I 2 of 5 Enable/Disable	Disable	
I 2 of 5 Check Character Calculation	Disable	
I 2 of 5 Check Character Transmission	Send	
I 2 of 5 Minimum Reads	2	
I 2 of 5 Decoding Level	3	
I 2 of 5 Length Control	Variable	
I 2 of 5 Set Length 1	12	
I 2 of 5 Set Length 2	100	
I 2 of 5 Character Correlation	Disable	
I 2 of 5 Stitching	Disable	

Parameter	Default	Your Setting
Interleaved 2 of 5 CIP		
Interleaved 2 of 5 CIP HR Enable/Disable	Disable	
Datalogic 2 of 5		
Datalogic 2 of 5 Enable/Disable	Enable	
Datalogic 2 of 5 Check Character Calculation	Disable	
Datalogic 2 of 5 Check Character Transmission	Don't Send	
Datalogic 2 of 5 Minimum Reads	2	
Datalogic 2 of 5 Length Control	Variable	
Datalogic 2 of 5 Set Length 1	12	
Datalogic 2 of 5 Set Length 2	100	
Datalogic 2 of 5 Interdigit Maximum Ratio	4	
Datalogic 2 of 5 Character Correlation	Disable	
Datalogic 2 of 5 Stitching	Disable	
Codabar		
Codabar Enable/Disable	Disable	
Codabar Check Character Calculation	Don't Calculate	
Codabar Check Character Transmission	Send	
Codabar Start/Stop Character Transmission	Transmit	
Codabar Start/Stop Character Set	abcd/abcd	
Codabar Start/Stop Character Match	Don't Require Match	
Codabar Quiet Zones	Auto	
Codabar Minimum Reads	2	
Codabar Decoding Level	3	
Codabar Length Control	Variable	
Codabar Set Length 1	3	
Codabar Set Length 2	50	
Codabar Interdigit Ratio	4	
Codabar Character Correlation	Disable	
Codabar Stitching	Disable	
ABC Codabar		

Parameter	Default	Your Setting
ABC Codabar Enable/Disable	Disable	
ABC Codabar Concatenation Mode	Static	
ABC Codabar Dynamic Concatenation Timeout	200mS	
ABC Codabar Force Concatenation	Disable	
Code 11		
Code 11 Enable/Disable	Disable	
Code 11 Check Character Calculation	Check C and K	
Code 11 Check Character Transmission	Send	
Code 11 Minimum Reads	2	
Code 11 Length Control	Variable	
Code 11 Set Length 1	4	
Code 11 Set Length 2	50	
Code 11 Interdigit Ratio	4	
Code 11 Decoding Level	3	
Code 11 Character Correlation	Disable	
Code 11 Stitching	Disable	
Standard 2 of 5		
Standard 2 of 5 Enable/Disable	Disable	
Standard 2 of 5 Check Character Calculation	Disable	
Standard 2 of 5 Check Character Transmission	Send	
Standard 2 of 5 Minimum Reads	2	
Standard 2 of 5 Decoding Level	3	
Standard 2 of 5 Length Control	Variable	
Standard 2 of 5 Set Length 1	8	
Standard 2 of 5 Set Length 2	50	
Standard 2 of 5 Character Correlation	Disable	
Standard 2 of 5 Stitching	Disable	
Industrial 2 of 5		
Industrial 2 of 5 Enable/Disable	Disable	
Industrial 2 of 5 Check Character Calculation	Disable	
Industrial 2 of 5 Check Character Transmission	Enable	

Parameter	Default	Your Setting
Industrial 2 of 5 Length Control	Variable	
Industrial 2 of 5 Set Length 1	1 Character	
Industrial 2 of 5 Set Length 2	50 Characters	
Industrial 2 of 5 Minimum Reads	1 Read	
Industrial 2 of 5 Stitching	Disable	
Industrial 2 of 5 Character Correlation	Disable	
IATA		
IATA Enable/Disable	Disable	
IATA Check Character Transmission	Enable	
ISBT 128		
ISBT 128 Concatenation	Disable	
ISBT 128 Concatenation Mode	Static	
ISBT 128 Dynamic Concatenation Timeout	200ms	
ISBT 128 Force Concatenation	Disable	
ISBT 128 Advanced Concatenation Options	Disable	
MSI		
MSI Enable/Disable	Disable	
MSI Check Character Calculation	Enable Mod10	
MSI Check Character Transmission	Enable	
MSI Length Control	Variable	
MSI Set Length 1	1 Character	
MSI Set Length 2	50 Characters	
MSI Minimum Reads	4 Reads	
MSI Decoding Level	Level 3	
Code 93		
Code 93 Enable/Disable	Disable	
Code 93 Check Character Calculation	Disable	
Code 93 Check Character Transmission	Enable	
Code 93 Length Control	Variable	
Code 93 Set Length 1	1 Character	
Code 93 Set Length 2	50 Characters	

Parameter	Default	Your Setting
Code 93 Minimum Reads	1 Read	
Code 93 Decoding Level	Level 3	
Code 93 Quiet Zones	Auto	
Code 93 Stitching	Enable	
Code 93 Character Correlation	Enable	
Codablock F		
Codablock F Enable/Disable	Disable	
Codablock F EAN Enable/Disable	Disable	
Codablock F AIM Check	Enable Check C	
Codablock F Length Control	Variable	
Codablock F Set Length 1	3 Characters	
Codablock F Set Length 2	100 Characters	
Code 4		
Code 4 Enable/Disable	Disable	
Code 4 Check Character Transmission	Enable	
Code 4 Hex to Decimal Conversion	Enable	
Code 5		
Code 5 Enable/Disable	Disable	
Code 5 Check Character Transmission	Enable	
Code 5 Hex to Decimal Conversion	Enable	
Code 4 and Code 5 Common Configuration Items		
Code 4 and 5 Decoding Level	3	
Code 4 and Code 5 Minimum Reads	1	
Follett 2 of 5		
Follett 2 of 5 Enable/Disable	Disable	
BC412		
BC412 Enable/Disable	Disable	
BC412 Check Character Calculation	Don’t Calculate	
BC412 Minimum Reads	2 Reads	
BC412 Decoding Level	3	
BC412 Length Control	Variable Length	

Parameter	Default	Your Setting
BC412 Set Length 1	1 Character	
BC412 Set Length 2	50 Characters	
Plessey		
Plessey Enable/Disable	Disable	
Plessey Check Character Calculation	Enable Plessey std. check char. verification	
Plessey Check Character Transmission	Enable	
Plessey Length Control	Variable	
Plessey Set Length 1	1	
Plessey Set Length 2	50	

Default Exceptions

Table 23 lists standard default settings as applied to a standard RS-232 interface. Table 24 provides a listing of default exceptions to that list as applied to the other interface types.

Table 24. Default Exceptions by Interface Type3

Parameter	Default Exception
Interfaces: USB-OEM	
Global Suffix	No Global Suffix
Double Read Timeout	500 msec
Interfaces: USB Keyboard	
No unique settings	

Appendix C
Sample Bar Codes

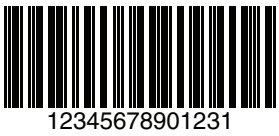
The sample bar codes in this appendix are typical representations for their symbology types.

UPC-A

EAN-13

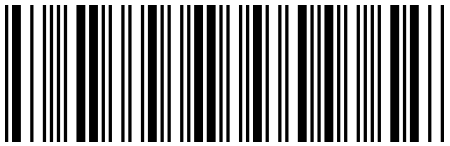
Code 39

Code 128



Interleaved 2 of 5

Code 32



Codabar

Code 93

Code 11

GS1 DataBar (RSS)

NOTE **GS1 DataBar variants must be enabled to read the bar codes below (see "GS1 DataBar (RSS)" on page 279).**

1029384756019283746501928374602947845036652 3
(GS1 DataBar Expanded Stacked)

1234890hjio9900mnb
(GS1 DataBar Expanded)

08672345650916
(GS1 DataBar Limited)

GS1 DataBar-14

55432198673467
(GS1 DataBar Omnidirectional Truncated)

90876523412674
(GS1 DataBar Omnidirectional Stacked)

78123465709811
(GS1 DataBar Omnidirectional Stacked)

NOTES

Appendix D
Keypad

Use the bar codes 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

NOTES

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 Wedge and 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 346).

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 PC AT PS/2 or USB-Keyboard

Table 25. 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(S)+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS	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+\	GS C+]	RS C+^	US C(S)+_
2x	SP	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
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 ↑		‘	ƒ	„	…	†	‡	ˆ	‰	Š	‹	Ś	‹	Œ	
Bx	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
Cx	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Dx	Ð		Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Extended characters (sky blue) are sent through dedicated keys (when available in the selected country mode) or by using an Alt Mode sequence.

Interface Type PC AT PS/2 or USB-Keyboard (continued)

Table 26. 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	à	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	ß	â	á	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
8x	_	_	‘	ƒ	„	…	†	‡	ˆ	‰	Š	‹	Ś	‹	Œ	_
9x	_	‘	’	“	”	•	–	—	˜	™	š	›	œ	_	_	Ÿ
Ax	NBSP	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
Bx	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
Cx	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Dx	Ð	_	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Interface type PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode

Table 27. 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	Alt+008	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	á	â	ß	à	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 PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode (continued)

Table 28. 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	à	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	ß	â	á	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

Table 29. 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(S)+@	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	F13	F14	F15	F16	á	â	ß	à					Cl↓	Cl↑	

Digital Interface (continued)

Table 30. Scancode Set When Control Character is 02

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x					Cl↓	Cl↑			BS	Tab	à	S+ Tab	Enter Keypd	Enter	Ins	
1x			ß	â	á	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

IBM XT

Table 31. 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(S)+@	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	á	â	ß	à	Ar↓	Ar↑	Al↓	Al↑	Cl↓	Cl↑	Cr↓
Ax	Cr↑															

IBM XT (continued)

Table 32. 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	à	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	ß	â	á	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

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