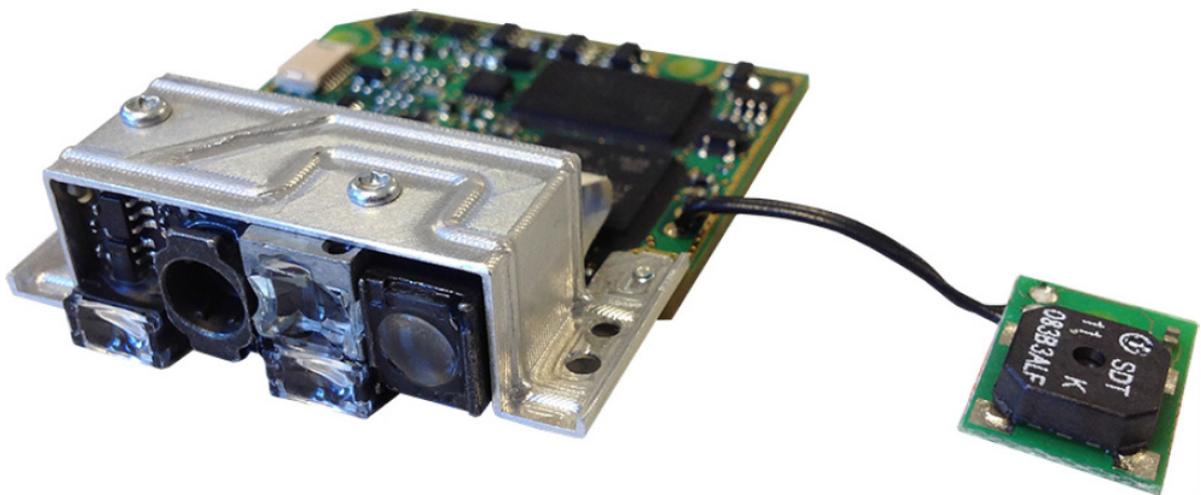


DSE0420

General Purpose
Area Imager Barcode Reader



Product Reference Guide

Datalogic ADC, Inc.

959 Terry Street
Eugene, OR 97402
USA
Telephone: (541) 683-5700
Fax: (541) 345-7140

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Disclaimer

Datalogic has taken reasonable measures to provide information in this manual that is complete and accurate, however, Datalogic reserves the right to change any specification at any time without prior notice.

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Patents

See www.patents.datalogic.com for patent list.

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Chapter 1

Introduction

About this Manual

This Product Reference Guide (PRG) is provided for users seeking advanced technical information, including connection, programming, maintenance and specifications. The Quick Reference Guide (QRG) and other publications associated with this product are downloadable free of charge from the website listed on the back cover of this manual.

Overview

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

[Chapter 2, Setup](#) presents information about setting up the reader.

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

[Chapter 4, References](#) contains additional information and examples for selected barcode features.

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

[Appendix B, Standard Defaults](#) references common factory default settings for reader features and options.

[Appendix C, Sample Barcodes](#) offers sample barcodes for several common symbologies.

[Appendix D, Keypad](#) includes numeric barcodes to be scanned for certain parameter settings.

[Appendix E, Scancode Tables](#) lists control character emulation information for Wedge and USB Keyboard interfaces.

Manual Conventions

The following conventions are used in this document:

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



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



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

CAUTION

Current versions of this Product Reference Guide (PRG), Quick Reference Guide (QRG), the Datalogic Aladdin™ Configuration application, and any other manuals, instruction sheets and utilities for this product can be downloaded from the website listed below. Alternatively, printed copies or product support CDs for most products can be purchased through your Datalogic reseller.

Technical Support

Datalogic Website Support

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

Reseller Technical Support

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

Telephone Technical Support

If you do not have internet or email access, you may contact Datalogic technical support at (541) 349-8283 or check the back cover of your manual for more contact information.

Programming the Reader

Configuration Methods

Programming Barcodes

The reader is factory-configured with a standard set of default features. After scanning the interface barcode, you can select other options and customize your reader through use of the instructions and programming barcode labels available in the corresponding features section for your interface. Customizable settings for many features are found in "[Configuration Parameters](#)" starting on page 9.

Some programming labels, like "Restore Custom Defaults" on page 7, require only the scan of the single label to enact the change. Most, however, require the reader to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT barcode once to enter Programming Mode. Once the reader is in Programming Mode, scan a number of parameter settings before scanning the ENTER/EXIT barcode a second time, which will then accept your changes, exit Programming Mode and return the reader to normal operation.



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

Datalogic Aladdin™

Datalogic Aladdin™ is a multi-platform utility program providing a quick and user-friendly configuration method via the RS-232/USB-COM interface. Aladdin is available for download free of charge on the Datalogic website. Aladdin allows you to program the reader by selecting configuration commands through a user-friendly graphical interface running on a PC. These commands are sent to the reader over the selected communication interface, or they can be printed as barcodes to be scanned.

Aladdin also provides the ability to perform a software upgrade for the connected device (see the Datalogic Aladdin™ Help On-Line for more details).

NOTES

Setting the Interface

Scan the programming barcode from this section which selects the appropriate interface type matching the system the reader will be connected to. Next, proceed to the corresponding section in this manual (also listed in [Table 1 on page 5](#)) to configure any desired settings and features associated with that interface.



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

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

Table 1. Available Interfaces

| USB-COM | | PAGE |
|---|---|--|
| USB COM to simulate RS-232 standard interface |  Select USB-COM-STD ^a | Set USB-COM Interface Features starting on page 13 |
| USB-OEM | | |
|  Select USB-OEM | USB-OEM (can be used for OPOS/UPOS/JavaPOS) | Set USB-OEM Interface Features starting on page 31 |
| USB-COMPOSITE | | |
| USB-Composite (combines USB-KBD emulation and USB-COM) |  Select USB-Composite | Set USB-COM Interface Features starting on page 13 |

| KEYBOARD | | FEATURES |
|--|---|---|
| USB Keyboard with alternate key encoding |  Select USB Alternate Keyboard | Set KEYBOARD Interface Features starting on page 21 |
|  Select USB Keyboard | USB Keyboard with standard key encoding | |
| USB Keyboard for Apple computers |  Select USB-KBD-APPLE | |
| a. Download the correct USB Com driver from www.datalogic.com | | |

Customizing Configuration Settings

Configure Interface Settings

If after scanning the interface barcode from the previous table, your installation requires you to select options to further customize your reader, turn to the appropriate section for your interface type in "Configuration Parameters" starting on page 9.

- "USB-Com Interface" on page 13
- "Keyboard Settings" on page 21
- "USB-OEM Interface" on page 31

Global Interface Features

See "Global Interface Features" on page 11 for settings configurable by all interface types.

Configuring Other Features

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

Data Format: Data Format offers options to control the messages sent to the Host system.

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

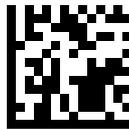
Symbology-Specific Parameters

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

2D Symbologies: Includes options concerning the barcode 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 interfaces by scanning the following label.



Transmit Software Version

Resetting the Product Configuration to Defaults

Restore Custom Defaults

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



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



Restore Custom Default Configuration

NOTES

Chapter 3

Configuration Using Barcodes

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



You must first enable your reader to read barcodes in order to use this section. If you have not done this, go to [Setup](#), starting on page 5 and complete the appropriate procedure.

Configuration Parameters

Once the reader is set up, you can change the default parameters to meet your application needs. Refer to "[Standard Defaults](#)" starting on page 221 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 Configuration:

- "[USB-Com Interface](#)" on page 13
- "[Keyboard Settings](#)" on page 21
- "[USB-OEM Interface](#)" on page 31

Parameters common to all interface applications:

- "[Data Format](#)" on page 35 gives options to control the messages sent to the Host system.
- "[Reading Parameters](#)" on page 49 control various operating modes and indicators status functioning.

Symbology-specific parameters:

- "[1D Symbologies](#)" on page 67 provides configuration of a personalized mix of 1D codes, code families and their options.
- "[2D Symbologies](#)" on page 159 provides configuration of a personalized mix of 2D codes, code families and their options.



You must first enable your reader to read barcodes in order to use this section. If you have not done this, go to [Setup](#), starting on page 5 and complete the appropriate procedure.

To program features:

1. Scan the ENTER/EXIT PROGRAMMING barcode, available at the top of each programming page, when applicable.
2. Scan the barcode to set the desired programming feature. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.



Enter/Exit Programming Mode

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



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

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

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

For more detailed descriptions, programming information and examples for setting selected configuration items, see [References, starting on page 191](#).



By default, the handheld will decode barcode labels only when they are close to the center of the aiming pattern. This allows the handheld to accurately target labels when they are placed close together, such as on a pick sheet. See [Pick Mode, starting on page 57](#).



GLOBAL INTERFACE FEATURES

The following interface features are configurable by all interface types.

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.



Host Commands = Obey
(Do Not Ignore Host Commands)



Host Commands = Ignore

USB Suspend Mode

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



USB Suspend Mode = Disable



USB Suspend Mode = Enable





Enter/Exit Programming Mode

NOTES

USB-COM INTERFACE

| |
|---|
| INTERCHARACTER DELAY on page 14 |
| BEEP ON ASCII BEL on page 14 |
| BEEP ON NOT ON FILE on page 15 |
| ACK NAK OPTIONS on page 16 |
| ACK CHARACTER on page 17 |
| NAK CHARACTER on page 17 |
| ACK NAK TIMEOUT VALUE on page 17 |
| ACK NAK RETRY COUNT on page 18 |
| ACK NAK ERROR HANDLING on page 19 |
| INDICATE TRANSMISSION FAILURE on page 19 |
| DISABLE CHARACTER on page 20 |
| ENABLE CHARACTER on page 20 |

The programming barcodes in this chapter allow modifications to USB-Com interface. Reference [Appendix B, Standard Defaults](#) for a listing of standard factory settings.



Enter/Exit Programming Mode

Intercharacter Delay

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

See [page 192](#) for more information.



Intercharacter Delay = No Delay

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



Select Intercharacter Delay Setting

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



CANCEL



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



Beep On ASCII BEL = Enable



Enter/Exit Programming Mode

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



Beep On Not On File = Enable



Enter/Exit Programming Mode

ACK NAK Options

This enables/disables the ability of the reader to support the RS-232 ACK/NAK protocol. See [page 193](#) for more information.



ACK/NAK Protocol = Disable ACK/NAK



ACK/NAK Protocol = Enable for label transmission



ACK/NAK Protocol = Enable for host-command
acknowledge



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



ACK Character

This setting specifies an ASCII character or hex value to be used as the ACK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See [page 193](#) for more information.



Select ACK Character Setting



0x06 'ACK' Character

NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See [page 194](#) for more information.



Select NAK Character Setting



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.



Enter/Exit Programming Mode

See [page 195](#) for more information on setting this feature.



Select ACK NAK Timeout Value Setting

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

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



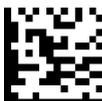
CANCEL



01 ACK NAK Timeout value is 200ms

ACK NAK Retry Count

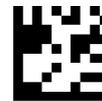
This feature specifies the number of times the reader retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See [page 196](#) for more information.



Select ACK NAK Retry Count Setting

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

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



CANCEL



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.



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





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.

See [page 197](#) for more information on setting this feature.



Select Disable Character Setting



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 [page 198](#) in “References” for more information on setting this feature.



Select Enable Character Setting



0x45 = Enable Character is 'E'

KEYBOARD SETTINGS

| |
|---|
| COUNTRY MODE on page 22 |
| SEND CONTROL CHARACTERS on page 26 |
| CAPS LOCK STATE on page 27 |
| NUMLOCK on page 27 |
| USB KEYBOARD SPEED on page 28 |
| USB KEYBOARD NUMERIC KEYPAD on page 29 |

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

Information about control character emulation which applies to keyboard interfaces is listed in [Appendix E, Scancode Tables](#).



Enter/Exit Programming Mode

Country Mode

This feature specifies the country/language supported by the keyboard. Several languages are supported:



Country Mode = U.S.



Country Mode = Belgium



Country Mode = Britain



Country Mode = Croatia

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

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



Country Mode = Czech Republic



Country Mode = Denmark

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



Enter/Exit Programming Mode

Country Mode (continued)



Country Mode = France

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



Country Mode = French Canadian



Country Mode = Germany

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



Country Mode = Hungary



Country Mode = Italy

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



Country Mode = Japanese 106-key



Enter/Exit Programming Mode

Country Mode (continued)



Country Mode = Lithuanian

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



Country Mode = Norway



Country Mode = Poland

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

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



Country Mode = Portugal



Country Mode = Romania

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

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



Country Mode = Slovakia



Enter/Exit Programming Mode

Country Mode (continued)



Country Mode = Spain



Country Mode = Sweden



Country Mode = Switzerland

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



Enter/Exit Programming Mode

Send Control Characters

This feature specifies how the reader transmits ASCII control characters to the host. Reference [Appendix E, Scancode Tables](#) for more information about control characters.

Options are as follows:

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

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

Control Character 02 : Special keys are located from 00 to 0x1F and characters from 0x80 to 0xFE are intended as an extended ASCII table (see "Microsoft Windows Codepage 1252" on page 242).



Wedge Send Control Characters = 00



Wedge Send Control Characters = 01



Wedge Send Control Characters = 02



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.



Caps Lock State = Caps Lock OFF



Caps Lock State = Caps Lock ON



Caps Lock State = AUTO Caps Lock Enable

Numlock

This option specifies the setting of the NUMLOCK key in the Keyboard Wedge interface.



Numlock = NUMLOCK key unchanged



Numlock = Numlock key toggled



Enter/Exit Programming Mode

USB Keyboard Speed

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



This feature applies ONLY to the USB Keyboard interface.



USB Keyboard Speed = 1ms



USB Keyboard Speed = 2ms



USB Keyboard Speed = 3ms



USB Keyboard Speed = 4ms



USB Keyboard Speed = 5ms



USB Keyboard Speed = 6ms



Enter/Exit Programming Mode

USB Keyboard Speed (continued)



USB Keyboard Speed = 7ms



USB Keyboard Speed = 8ms



USB Keyboard Speed = 9ms



USB Keyboard Speed = 10ms

USB Keyboard Numeric Keypad

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



Standard Keys



Numeric Keypad



Enter/Exit Programming Mode

NOTES

USB-OEM INTERFACE

| |
|--|
| USB-OEM DEVICE USAGE on page 32 |
|--|

| |
|---|
| USB INTERFACE OPTIONS on page 32 |
|---|

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.

Reference [Appendix B](#) for a listing of standard factory settings.



Enter/Exit Programming Mode

USB-OEM Device Usage

The USB-OEM protocol allows for the reader to be identified as one of two different types of barcode scanners. 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



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



USB Interface Options

This feature provides for an interface-specific control mechanism.



Obey Scanner Configuration Host Commands



Ignore Scanner Configuration Host Commands



Transmit Labels in Code 39 Format

This feature enable/disables translation to Code 39 before transmitting label data to a USB-OEM host. Only the symbology identifier is modified for the translation. The data is not converted to Code 39 or verified to be valid for Code 39.

Options are:

IBM Standard Format: Send labels in standard IBM format.

Mixed IBM Standard and Code 39 Format:

Code 39 Format: Translate the following symbologies to Code 39:

- USB-OEM: Code128, Code 93, and Codabar



Transmit Labels in Code 39 Format =
IBM Standard Format



Transmit Labels in Code 39 Format =
Mixed IBM Standard and Code 39 format



Transmit Labels in Code 39 Format =
All Code 39 Format



Enter/Exit Programming Mode

NOTES

DATA FORMAT

| |
|--|
| GLOBAL PREFIX/SUFFIX starting on page 36 |
| GLOBAL AIM ID starting on page 37 |
| LABEL ID starting on page 40 <ul style="list-style-type: none">• Label ID: Pre-Loaded Sets• Individually Set Label ID• Label ID Control• Label ID Symbology Selection – 1D Symbologies• Label ID Symbology Selection – 2D Symbologies |
| CASE CONVERSION starting on page 47 |
| CHARACTER CONVERSION starting on page 48 |



It is not recommended to use these features with IBM interfaces.

CAUTION

The features in this chapter can be used to build specific user-defined data into a message string. See “References” starting on [page 200](#) for more detailed instructions on setting these features.



Global Prefix/Suffix

This option sets up to 20 characters each from the set of ASCII characters or any hex value from 00 to FF. The characters may be added as a prefix (in a position before the barcode data, also called a header) and/or as a suffix (in a position following the barcode data, also called a footer). See [page 201](#) for more detailed instructions on setting this feature.

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



Set Global Prefix



Set Global Suffix

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



CANCEL



No Global Prefix
Global Suffix = 0x0D (CR)



Global AIM ID



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

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned barcode data. See Table 2 on page 3-37 for a listing of AIM IDs.

AIM label identifiers consist of three characters as follows:

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



Global AIM ID = Disable



Global AIM ID = Enable

Table 2. AIM IDs

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



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

Set AIM ID Individually for GS1-128

This feature configures a Label ID individually for the GS1-128 symbology and the programming for this works the same way as Label ID. See [Label ID: Set Individually Per Symbology](#), starting on page 206 for detailed instructions on setting this feature.



Set AIM ID Individually for GS1-128 = Disable



Set AIM ID Individually for GS1-128 = Enable





Label ID

A Label ID is a customizable code of up to three ASCII characters (convert to Hex using the ASCII Chart on the inside back cover of this manual), used to identify a barcode symbology type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs or individually per symbology (see "Individually Set Label ID" on page 41). 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.

See [Label ID, starting on page 203](#) of "References" for more information on setting this feature.

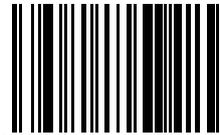
Label ID: Pre-Loaded Sets

The reader supports two pre-loaded sets of Label IDs. See [Label ID: Pre-loaded Sets, starting on page 203](#) for details on the USA set and EU set.

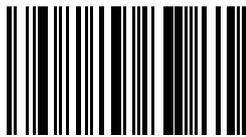


When changing from one Label ID set to another, all other reader configuration settings, including the host interface type, will be erased and set to the standard factory defaults. Any custom configuration or custom defaults will be lost.

CAUTION



Label ID Pre-loaded Set = USA Set



Label ID Pre-loaded Set = EU Set



Individually Set Label ID

This feature configures a Label ID individually for a single symbology. To set, first define whether you want it as a prefix or suffix by scanning a label below. Then turn to [Label ID Symbology Selection – 1D Symbologies, starting on page 42](#) to select the symbology you want to set, followed by up to 3 characters from the ASCII Chart at the back of this manual. See "[Label ID: Set Individually Per Symbology](#)" on page 206 for detailed instructions on setting this feature.

Label ID Control

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



Label ID Transmission = Enable as Prefix



Label ID Transmission = Disable



Label ID Transmission = Enable as Suffix



Label ID Symbology Selection – 1D Symbologies

This option selects the symbology for which a Label ID is to be configured. See "Label ID" on page 40 or page 206 in "References" for more detailed instructions.



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



Set ABC Codabar Label ID Character(s)



Set Code 32 Pharmacode Label ID Character(s)



Set Anker Plessey Label ID Character(s)



Set Code 93 Label ID Character(s)



Set Australian Postal Code Label ID Character(s)



Set Concatenated ISBT 128 Label ID Character(s)



Set Codabar Label ID Character(s)



Set Danish PPT Label ID Character(s)



Set Code 11 Label ID Character(s)



Set EAN 13 Label ID Character(s)



Set Code 128 Label ID Character(s)



Set EAN 13 Composite Label ID Character(s)



Set Code 39 Label ID Character(s)



Set EAN 13 P2 Label ID Character(s)

Label ID Symbology Selection – 1D Symbologies (continued)



Set Code 39 CIP Label ID Character(s)



Set EAN 13 P5 Label ID Character(s)



Set EAN 8 Label ID Character(s)



Set GS1 DataBar Expanded Composite Label ID Character(s)



Set EAN 8 Composite Label ID Character(s)



Set GS1-128 Label ID Character(s)



Set EAN 8 P2 Label ID Character(s)



Set GS1-128 Composite Label ID Character(s)



Set EAN 8 P5 Label ID Character(s)



Set GSI DataBar Limited Label ID Character(s)



Set Follett 2 of 5 Label ID Character(s)



GSI DataBar Limited Composite Label ID Character(s)



Set GS1 DataBar 14 Label ID Character(s)



Set GTIN 2 Label ID Character(s)



Set GS1 DataBar 14 Composite Label ID Character(s)



Set GTIN 5 Label ID Character(s)



Label ID Symbology Selection – 1D Symbologies (continued)



Set GS1 DataBar Expanded Label ID Character(s)



Set GTIN 8 Label ID Character(s)



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



Set LaPoste Code 39 Label ID Character(s)



Set IMB Postal Code Label ID Character(s)



Set MSI Label ID Character(s)



Set Industrial 2 of 5 Label ID Character(s)



Set Planet Postal Code Label ID Character(s)



Set Interleaved 2 of 5 Label ID Character(s)



Set Plessey Label ID Character(s)



Set ISBN Label ID Character(s)



Set Portugal Postal Code Label ID Character(s)



Set ISSN Label ID Character(s)



Set Postnet Label ID Character(s)



Set Japan Postal Code Label ID Character(s)



Set Kix Postal Code Label ID Character(s)

Label ID Symbology Selection – 1D Symbologies (continued)



Set PZN Code Label ID Character(s)



Set UPC-A Composite Label ID Character(s)



Set Royal Postal Code Label ID Character(s)



Set UPC-A P2 Label ID Character(s)



Set Standard 2 of 5 Label ID Character(s)



Set UPC-A P5 Label ID Character(s)



Set Swedish Postal Code Label ID Character(s)



Set UPC-E Label ID Character(s)



Set Trioptic Code Label ID Character(s)



Set UPC-E P5 Label ID Character(s)



Set UPC-A Label ID Character(s)



Label ID Symbology Selection – 2D Symbologies



Set Aztec Label ID Character(s)



Set Maxicode Label ID Character(s)



Set China Sensible Label ID Character(s)



Set PDF 417 Label ID Character(s)



Set Data Matrix Label ID Character(s)



Set Micro PDF 417 Label ID Character(s)



Set Micro QR Label ID Character(s)



Set QR Code Label ID Character(s)

Advanced Formatting: User Label Edit

Advanced formatting is available to create user label edit scripts. See the Datalogic Aladdin configuration application or contact Technical Support.

Case Conversion

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



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



Case Conversion = Disable (no case conversion)



Case Conversion = Convert to upper case



Case Conversion = Convert to lower case

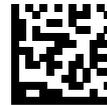


Character Conversion

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.



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



Configure Character Conversion



0xFFFFFFFFFFFFFFFF
(No character conversion)

READING PARAMETERS

| |
|---|
| DOUBLE READ TIMEOUT starting on page 50 |
| LED AND BEEPER INDICATORS starting on page 52 <ul style="list-style-type: none">• Power On Alert• Good Read: When to Indicate• Good Read Beep Type• Good Read Beep Frequency• Good Read Beep Length• Good Read Beep Volume |
| SCANNING FEATURES starting on page 56 <ul style="list-style-type: none">• Scan Mode• Pick Mode• Stand Mode Illumination Off Time• Scanning Active Time• Stand Illumination Control• Flash On Time• Flash Off Time• Illumination: Brightness• Aiming Duration Timer• Green Spot Duration• Mobile Phone Mode• Partial Label Reading Control• Decode Negative Image |
| MULTIPLE LABEL READING starting on page 64 <ul style="list-style-type: none">• Multiple Labels per Frame• Multiple Labels Ordering by Code Symbology• Multiple Labels Ordering by Code Length |



Enter/Exit Programming Mode

Double Read Timeout

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



Double Read Timeout = 0.1 Second



Double Read Timeout = 0.2 Second



Double Read Timeout = 0.3 Second



Double Read Timeout = 0.4 Second



Double Read Timeout = 0.5 Second



Double Read Timeout = 0.6 Second



Double Read Timeout = 0.7 Second



Enter/Exit Programming Mode

Double Read Timeout (continued)



Double Read Timeout = 0.8 Second



Double Read Timeout = 0.9 Second



Double Read Timeout = 1 Second



Enter/Exit Programming Mode

LED AND BEEPER INDICATORS

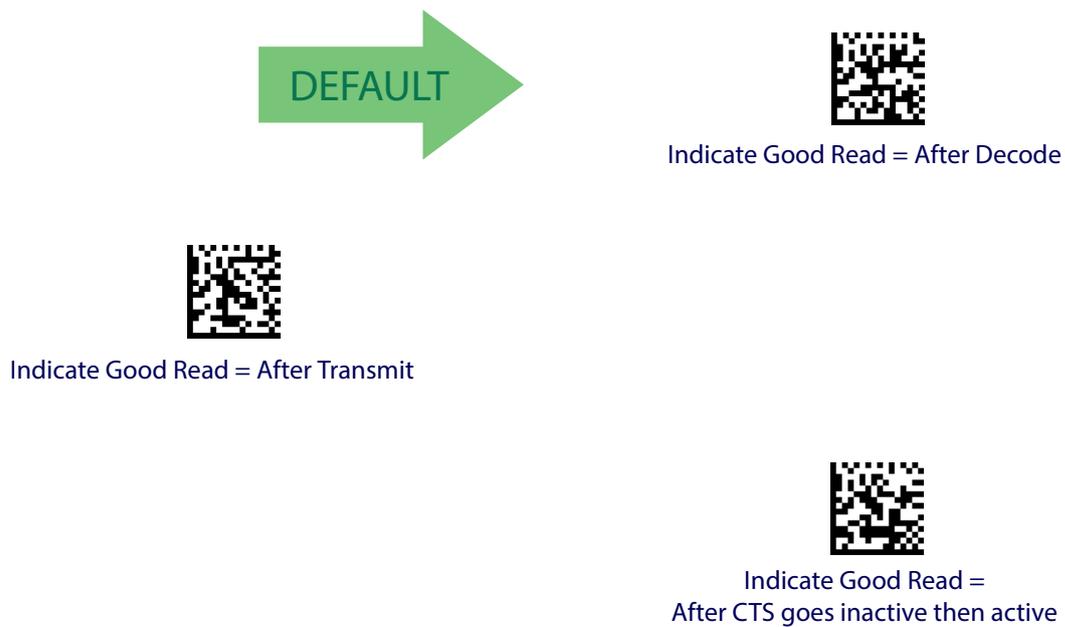
Power On Alert

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



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 barcode.





Enter/Exit Programming Mode

Good Read Beep Type

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



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



Good Read Beep Frequency = High



Enter/Exit Programming Mode

Good Read Beep Length



Good Read Beep Length = 60 msec



Good Read Beep Length = 80 msec



Good Read Beep Length = 100 msec



Good Read Beep Length = 120 msec



Good Read Beep Length = 140 msec



Good Read Beep Length = 160 msec



Good Read Beep Length = 180 msec



Good Read Beep Length = 200 msec



Enter/Exit Programming Mode

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





Enter/Exit Programming Mode

SCANNING FEATURES

Scan Mode

Selects the reader's scan operating mode. See [page 209](#) in "References" for descriptions.



Scan Mode = Trigger Single



Scan Mode = Trigger Hold Multiple



Scan Mode = Trigger Pulse Multiple



Scan Mode = Flashing



Scan Mode = Always On



Scan Mode = Stand Mode



Options concerning Stand Mode behavior are available at the following feature, [Pick Mode](#).



Enter/Exit Programming Mode

Pick Mode

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



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



Pick Mode = Disable



Pick Mode = Enable

Stand Mode Illumination Off Time

Specifies the amount of time reader illumination stays off after pulling the trigger when in Stand Mode. The configurable range is 01 to 32 by 01 in increments of 500ms (500ms to 16 seconds). See [page 210](#) in “References” for a description of this feature.



Select Stand Mode Time Setting

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



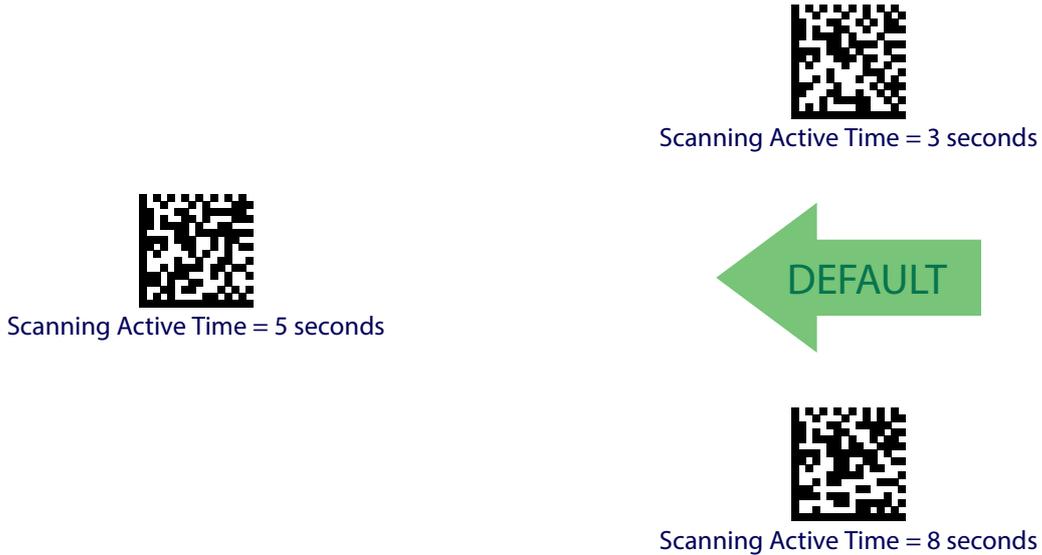
04 = 2 Seconds



Enter/Exit Programming Mode

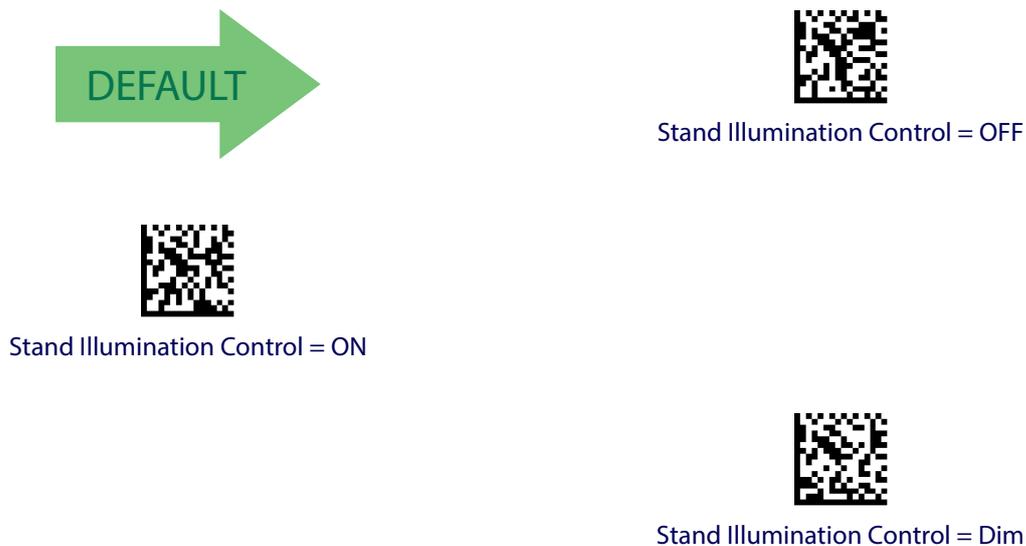
Scanning Active Time

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 [page 211](#) in “References” for further description of this feature.



Stand Illumination Control

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





Flash On Time

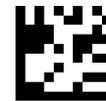
This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See [page 213](#) in “References” for detailed information on setting this feature.



Select Flash ON Time Setting

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

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



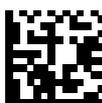
CANCEL



10 = Flash is ON for 1 Second

Flash Off Time

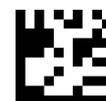
This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See [page 214](#) in “References” for detailed information on setting this feature.



Select Flash OFF Time Setting

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

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



CANCEL



06 = Flash is OFF for 600ms



Enter/Exit Programming Mode

Illumination: Brightness

This feature specifies the brightness of the illumination LEDs during scanning..



High Brightness



Medium Brightness



Low Brightness



Reducing the LED brightness can reduce scanning performance.



Enter/Exit Programming Mode

Aiming Pointer

Enables/disables the aiming pointer for all symbologies.



Aiming Pointer = Enable



Aiming Pointer = Disable



Aiming Duration Timer

Specifies the frame of time the aiming pointer remains on after decoding a label, when in trigger single mode. The range for this setting is from 1 to 255 seconds in 1-second increments. See [page 212](#) in “References” for a description of this feature.



Set Aiming Duration Timer



Aiming Off After Decoding

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

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



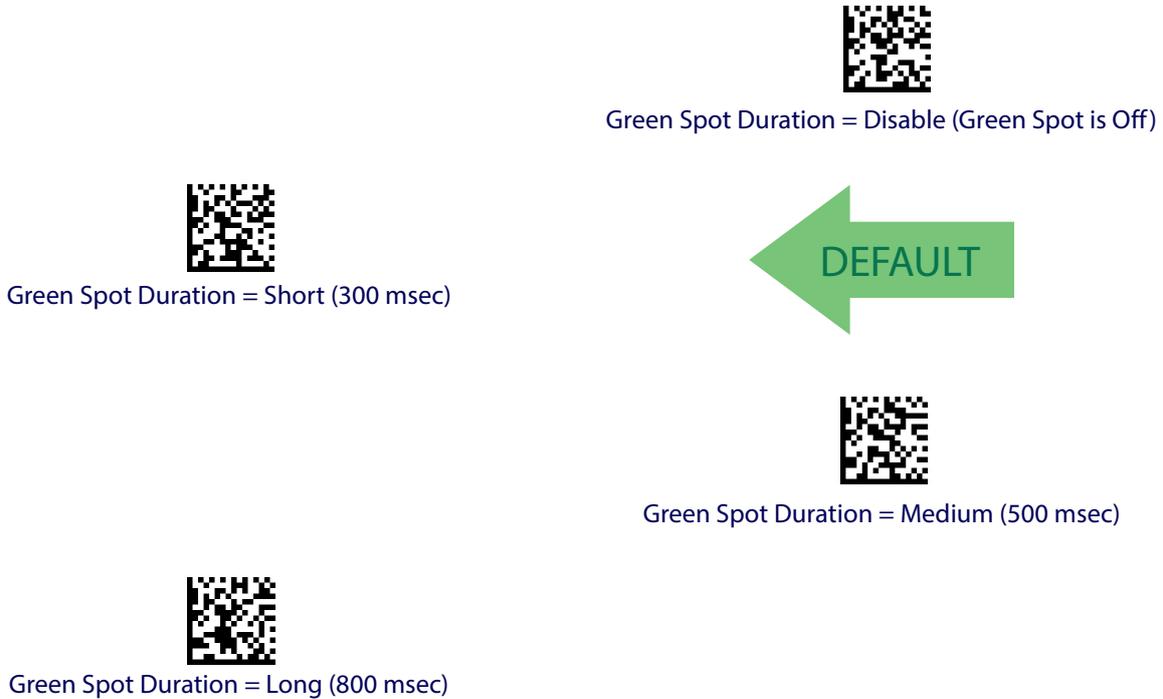
CANCEL



Enter/Exit Programming Mode

Green Spot Duration

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



Mobile Phone Mode

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





Enter/Exit Programming Mode

Partial Label Reading Control

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



Partial Label Reading Control = Disable



Partial Label Reading Control = Enable

Decode Negative Image

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



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



CAUTION

When this feature is enabled, you will be unable to read other programming labels in this manual.



Decode Negative Image = Disable



DEFAULT



Decode Negative Image = Enable



MULTIPLE LABEL READING

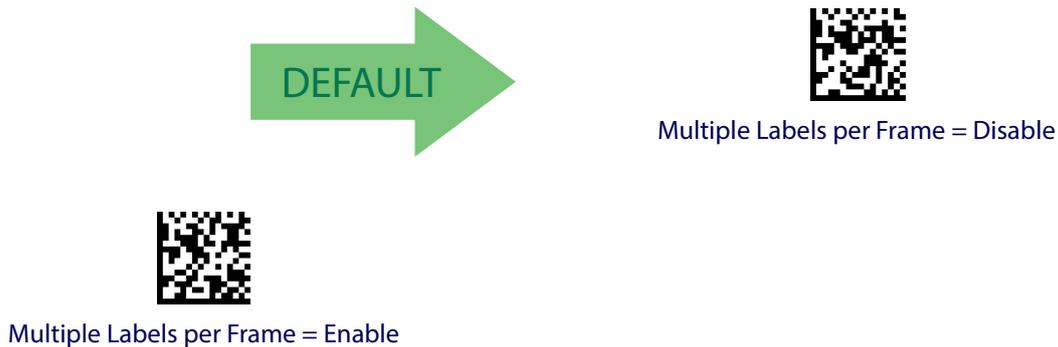
In standard (default) mode, when the reader's aiming system is activated (by a trigger pull, motion or other method depending on the mode), it then acquires and processes each image in the area in front of it (the Volume). In this case, the scanner stops processing the image once it decodes a label.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

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

Multiple Labels per Frame

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

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



Multiple Labels Ordering by Code Symbology

This feature allows you to specify the order multiple labels are transmitted by symbology type, when Multiple Labels per Frame is enabled. See [page 215](#) in “References” for detailed information on setting this feature.



Select Symbologies for Multiple Labels Ordering

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

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



CANCEL



00000000000 = Random order

Multiple Labels Ordering by Code Length

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



Multiple Labels Ordering = Disable



Transmit Increasing Length Order



Transmit Decreasing Length Order

1D SYMBOLOGIES

1D Code Selection

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

| | |
|--|---|
| • Disable All Symbologies, page 68 | • GS1-128, page 105 |
| • Code EAN/UPC, page 69 | • Code ISBT 128, page 106 |
| • UPC-E, page 72 | • Interleaved 2 of 5 (I 2 of 5), page 109 |
| • GTIN Formatting, page 75 | • Interleaved 2 of 5 CIP HR, page 114 |
| • EAN 13 (Jan 13), page 76 | • Follett 2 of 5, page 114 |
| • ISSN, page 78 | • Standard 2 of 5, page 115 |
| • EAN 8 (Jan 8), page 79 | • Industrial 2 of 5, page 119 |
| • UPC/EAN Global Settings, page 81 | • Code IATA, page 123 |
| • Add-Ons, page 83 | • Codabar, page 124 |
| • Code 39, page 90 | • ABC Codabar, page 130 |
| • Trioptic Code, page 96 | • Code 11, page 133 |
| • Code 32 (Ital Pharmaceutical Code), page 96 | • GS1 DataBar™ Omnidirectional, page 137 |
| • Code 39 CIP (French Pharmaceutical), page 98 | • GS1 DataBar™ Expanded, page 138 |
| • Code 39 Danish PPT, page 98 | • GS1 DataBar™ Limited, page 143 |
| • Code 39 LaPoste, page 99 | • Code 93, page 144 |
| • Code 39 PZN, page 99 | • MSI, page 149 |
| • Code 128, page 100 | • Plessey, page 154 |

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

To set most features:

1. Scan the ENTER/EXIT PROGRAMMING barcode at the top of applicable programming pages.
2. Scan the correct barcode to set the desired programming feature or parameter. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.
3. If additional input parameters are needed, go to [Appendix D, Keypad](#), and scan the appropriate characters from the keypad.



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

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

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



DISABLE ALL SYMBOLOGIES

Use this feature to disable all symbologies.

1. Scan the ENTER/EXIT PROGRAMMING Mode barcode.
2. Scan the Disable All Symbologies barcode.
3. Complete the programming sequence by scanning the ENTER/EXIT PROGRAMMING barcode.



Disable All Symbologies



This does not disable the reading of programming labels.



CODE EAN/UPC

Coupon Control

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



Coupon Control = Allow all coupon barcodes to be decoded



Coupon Control = Enable only UPCA coupon decoding



Coupon Control = Enable only GS1 DataBar™ coupon decoding



UPC-A

The following options apply to the UPC-A symbology.

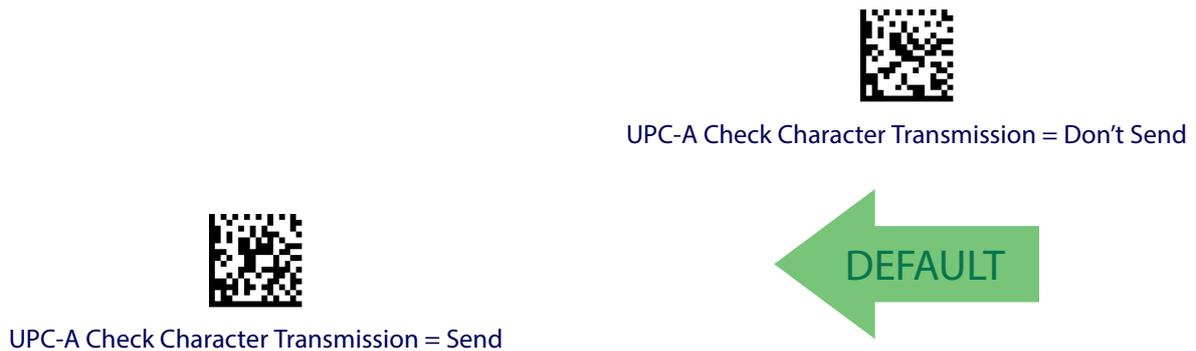
UPC-A Enable/Disable

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



UPC-A Check Character Transmission

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



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.



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





UPC-A 2D Component

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



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



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

UPC-E

The following options apply to the UPC-E symbology.

UPC-E Enable/Disable

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



UPC-E = Disable

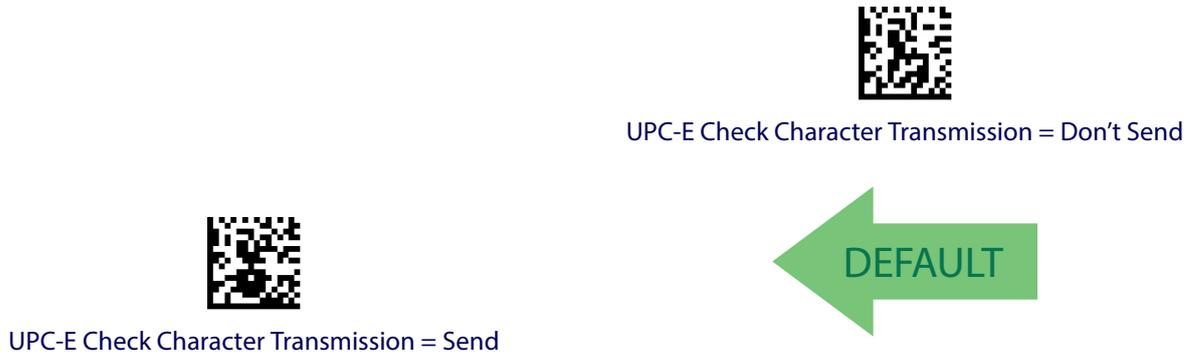


UPC-E = Enable



UPC-E Check Character Transmission

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



UPC-E 2D Component

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





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.



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.



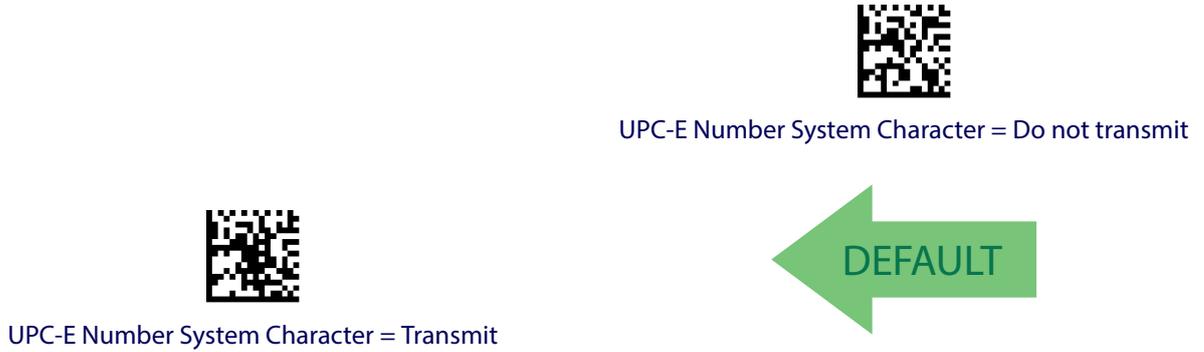
UPC-E to UPC-A = Don't Expand



UPC-E to UPC-A = Expand

UPC-E Number System Character Transmission

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



GTIN FORMATTING

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



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





EAN 13 (JAN 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 barcodes.



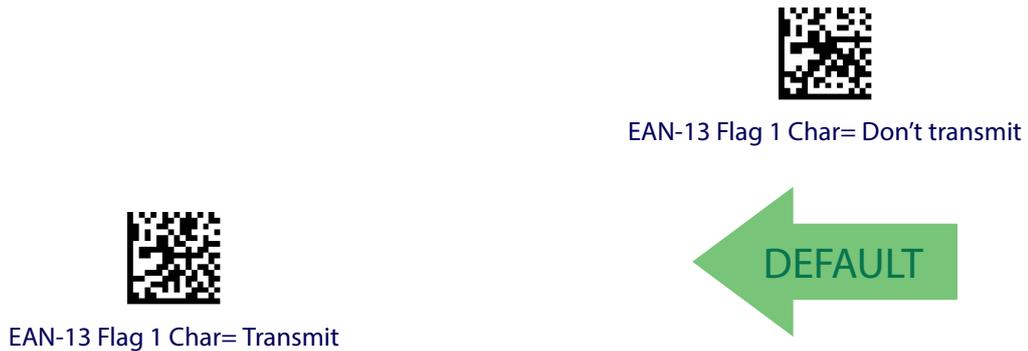
EAN 13 Check Character Transmission

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



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 ISBN Conversion

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





EAN-13 2D Component

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



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



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

ISSN

The following options apply to the ISSN symbology.

ISSN Enable/Disable

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



ISSN = Disable



ISSN = Enable

EAN 8 (JAN 8)

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

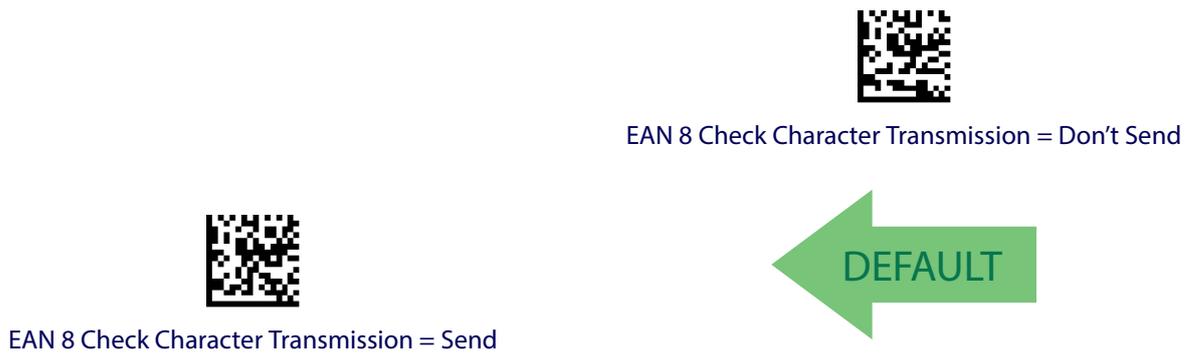
EAN 8 Enable/Disable

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



EAN 8 Check Character Transmission

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





Expand EAN 8 to EAN 13

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



Expand EAN 8 to EAN 13 = Disable



Expand EAN 8 to EAN 13 = Enable

EAN 8 2D Component

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



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



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

UPC/EAN GLOBAL SETTINGS

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

UPC/EAN Price Weight Check

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



Price Weight Check = Disabled



Price Weight Check = 4-digit price-weight check



Price Weight Check = 5-digit price-weight check



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



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



UPC/EAN Quiet Zones

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



UPC/EAN Quiet Zones = Two Modules



UPC/EAN Quiet Zones = Three Modules



ADD-ONS

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

Optional Add-ons

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



If a UPC/EAN base label and an add-on are both decoded, the 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.



Optional Add-Ons = Disable P2



Optional Add-Ons = Enable P2



Optional Add-Ons = Disable P5



Optional Add-Ons = Enable P5

Cordless models only:



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. (Also see ["Optional GS1-128 Add-On Timer" on page 87.](#))



Optional Add-on Timer = 10ms



Optional Add-on Timer = 20ms



Optional Add-on Timer = 30ms

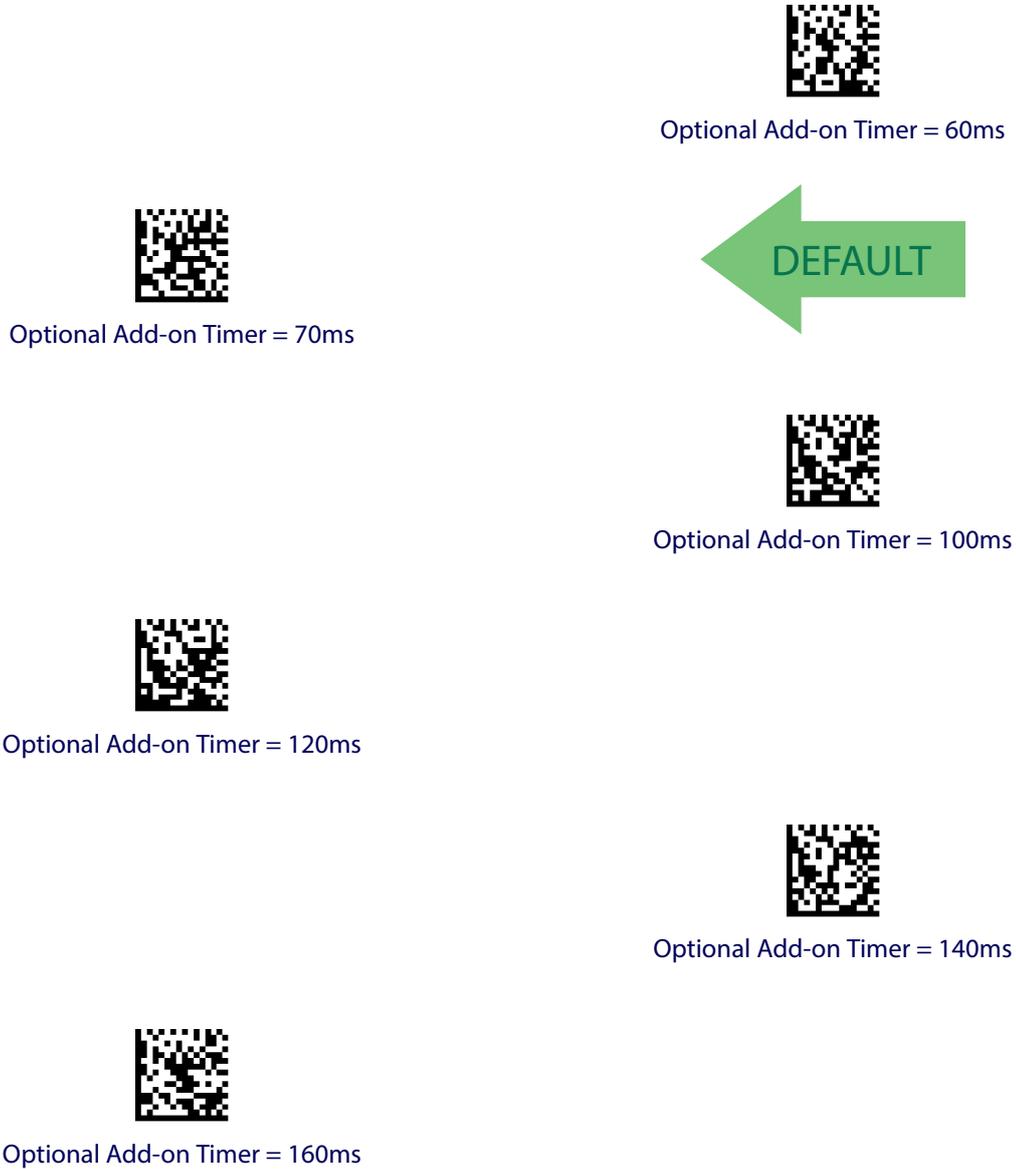


Optional Add-on Timer = 40ms



Optional Add-on Timer = 50ms

Optional Add-On Timer (continued)





Optional Add-On Timer (continued)



Optional Add-on Timer = 180ms



Optional Add-on Timer = 200ms



Optional Add-on Timer = 220ms



Optional Add-on Timer = 240ms



Optional Add-on Timer = 260ms



Optional Add-on Timer = 280ms



Optional Add-on Timer = 300ms

Optional GS1-128 Add-On Timer

This option sets the timer expiration value to read the added part after reading the linear EAN/UPC part. For UPC/EAN add-ons other than those of that type, see "[Optional Add-On Timer](#)" on page 84.



Optional GS1-128 Add-On Timer = Disable



Optional GS1-128 Add-On Timer = 10ms



Optional GS1-128 Add-On Timer = 20ms



Optional GS1-128 Add-On Timer = 30ms



Optional GS1-128 Add-On Timer = 40ms



Optional GS1-128 Add-On Timer = 50ms



Optional GS1-128 Add-On Timer (continued)



Optional GS1-128 Add-On Timer = 60ms



Optional GS1-128 Add-On Timer = 70ms



Optional GS1-128 Add-On Timer = 100ms



Optional GS1-128 Add-On Timer = 120ms



Optional GS1-128 Add-On Timer = 140ms



Optional GS1-128 Add-On Timer = 160ms

Optional GS1-128 Add-On Timer (continued)



Optional GS1-128 Add-On Timer = 180ms



Optional GS1-128 Add-On Timer = 200ms



Optional GS1-128 Add-On Timer = 220ms



Optional GS1-128 Add-On Timer = 240ms



Optional GS1-128 Add-On Timer = 260ms



Optional GS1-128 Add-On Timer = 280ms



Optional GS1-128 Add-On Timer = 300ms



CODE 39

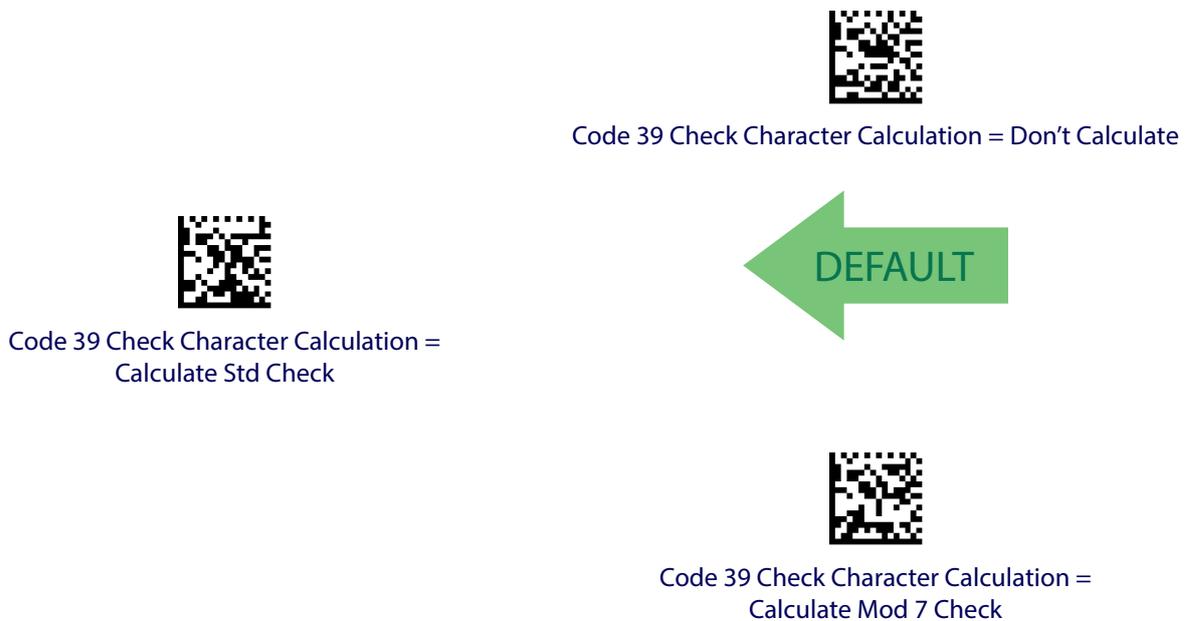
The following options apply to the Code 39 symbology.

Code 39 Enable/Disable



Code 39 Check Character Calculation

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



Code 39 Check Character Calculation (continued)



Code 39 Check Character Calculation =
Enable Italian Post Check



Code 39 Check Character Calculation =
Enable Daimler Chrysler Check

Code 39 Check Character Transmission

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



Code 39 Check Character Transmission = Don't Send



Code 39 Check Character Transmission = Send





Code 39 Start/Stop Character Transmission

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



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



Code 39 Start/Stop Character Transmission = Transmit

Code 39 Full ASCII

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



Code 39 Full ASCII = Disable



Code 39 Full ASCII = Enable

Code 39 Quiet Zones

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



Code 39 Quiet Zones = Quiet Zones on two sides



Code 39 Quiet Zones = Small Quiet Zones on two sides

Code 39 Length Control

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

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

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



Code 39 Length Control = Variable Length



Code 39 Length Control = Fixed Length



Code 39 Set Length 1

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

Table 3 provides examples for setting Length 1. See page 199 for detailed instructions on setting this feature.

Table 3. Code 39 Length 1 Setting Examples

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



Select Code 39 Set Length 1 Setting

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



CANCEL



02 = Length 1 is 2 Characters

Code 39 Set Length 2

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

[Table 4](#) provides examples for setting Length 2. See [page 199](#) for detailed instructions on setting this feature.

Table 4. Code 39 Length 2 Setting Examples

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



Select Code 39 Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters



TRIOPTIC CODE

The following options apply to the Trioptic symbology.

Trioptic Code Enable/Disable



Trioptic Code = Disable



Trioptic Code = Enable

CODE 32 (ITAL PHARMACEUTICAL CODE)

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

Code 32 Enable/Disable

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



Code 32 = Disable



Code 32 = Enable

Code 32 Feature Setting Exceptions



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

- "Code 39 Quiet Zones" on page 93
- "Code 39 Length Control" on page 93
- "Trioptic Code" on page 96

Code 32 Check Char Transmission

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



Code 32 Check Character Transmission = Don't Send



Code 32 Check Character Transmission = Send

Code 32 Start/Stop Character Transmission

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



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.



Code 39 CIP = Disable



Code 39 CIP = Enable

CODE 39 DANISH PPT

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

Code 39 Danish PPT Enable/Disable

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



Code 39 Danish PPT = Disable



Code 39 Danish PPT = Enable

CODE 39 LAPOSTE

The following options apply to the Code 39 LaPoste symbology.

Code 39 LaPoste Enable/Disable

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



Code 39 LaPoste = Disable



Code 39 LaPoste = Enable

CODE 39 PZN

The following options apply to the Code 39 PZN symbology.

Code 39 PZN Enable/Disable

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



Code 39 PZN = Disable



Code 39 PZN = Enable



CODE 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

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



Expand Code 128 to Code 39

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



Code 128 Check Character Transmission

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



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.



Code 128 Function Character Transmission = Don't Send



Code 128 Function Character Transmission = Send



Code 128 Quiet Zones

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



Code 128 Quiet Zones = Quiet Zones on two sides



Code 128 Quiet Zones = Small Quiet Zones on two sides

Code 128 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 128 symbology. See [page 199](#) for more information.



Code 128 Length Control = Variable Length



Code 128 Length Control = Fixed Length

Code 128 Set Length 1

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

[Table 5](#) provides some examples for setting Length 1. See [page 199](#) for detailed instructions on setting this feature.

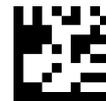
Table 5. Code 128 Length 1 Setting Examples

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



Select Code 128 Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character



Code 128 Set Length 2

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

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

Table 6 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

Table 6. Code 128 Length 2 Setting Examples

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



Select Code 128 Length 2 Setting

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



CANCEL



80 = Length 2 is 80 Characters

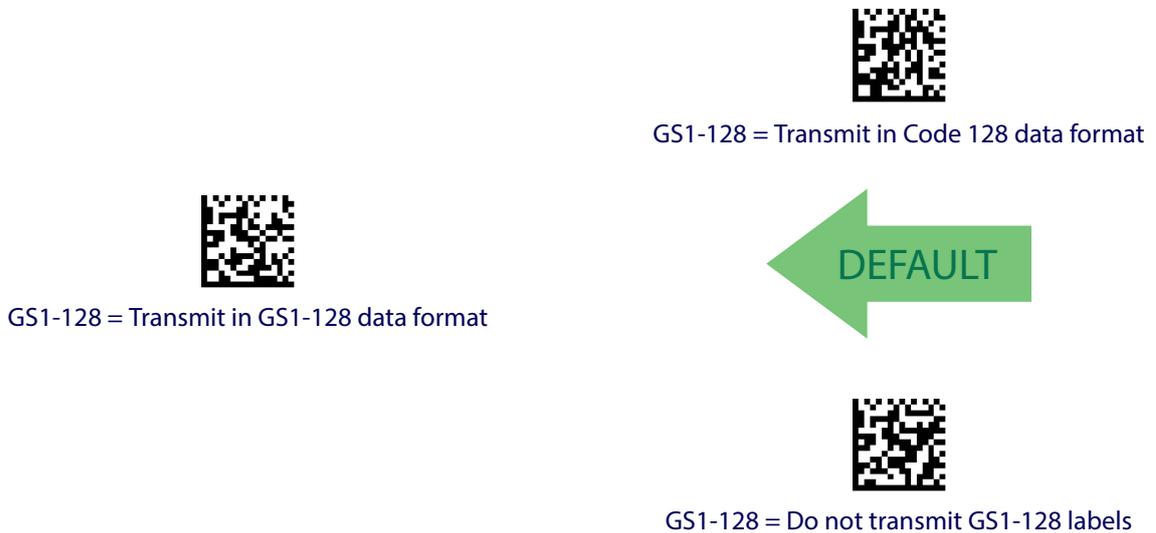
GS1-128

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

GS1-128 Enable

This option enables/disables the ability of the 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.



GS1-128 2D Component

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





CODE ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

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



ISBN 128 Concatenation = Disable



ISBN 128 Concatenation = Enable

ISBT 128 Force Concatenation

When enabled, this feature forces concatenation for ISBT.



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



ISBT 128 Force Concatenation = Disable



ISBT 128 Force Concatenation = Enable

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.



This option is only valid when ISBT 128 Concatenation is enabled (see "ISBT 128 Concatenation" on page 106).



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



ISBT 128 Dynamic Concatenation Timeout = 200 msec



ISBT 128 Dynamic Concatenation Timeout = 500 msec



ISBT 128 Dynamic Concatenation Timeout = 750 msec



ISBT 128 Dynamic Concatenation Timeout = 1 second

ISBT 128 Advanced Concatenation Options



To set up pairs of label types for concatenation, use the Datalogic Aladdin configuration application or contact Datalogic Technical Support, as described on [page 2](#).

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 barcodes.



I 2 of 5 = Disable



I 2 of 5 = Enable



I 2 of 5 Check Character Calculation

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



I 2 of 5 Check Character Calculation = Disable



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



I 2 of 5 Check Character Calculation = Check German Parcel



I 2 of 5 Check Character Calculation = Check DHL



I 2 of 5 Check Character Calculation = Check Daimler Chrysler



I 2 of 5 Check Character Calculation = Check Bosch



I 2 of 5 Check Character Calculation = Italian Post

I 2 of 5 Check Character Transmission

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

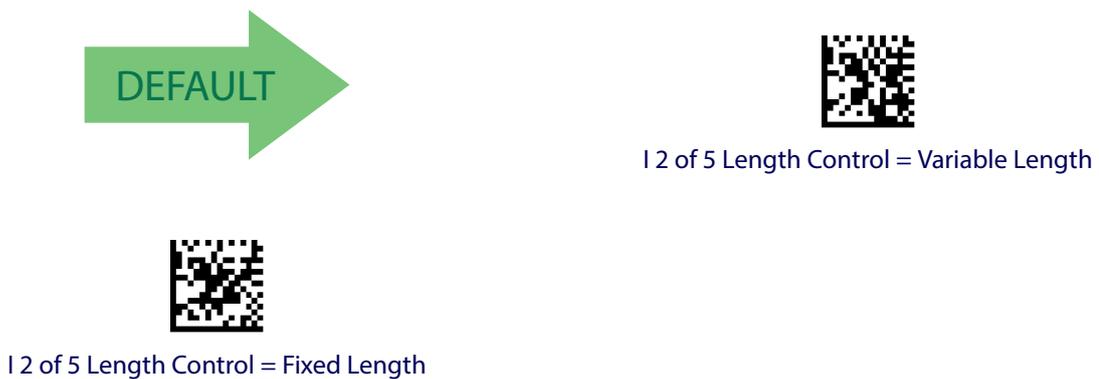


I 2 of 5 Length Control

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.





I 2 of 5 Set Length 1

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

Table 7 provides some examples for setting Length 1. See page 199 for detailed instructions on setting this feature.

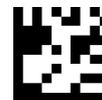
Table 7. I 2 of 5 Length 1 Setting Examples

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



Select I 2 of 5 Length 1 Setting

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



CANCEL



06 = Length 1 is 6 Characters

I 2 of 5 Set Length 2

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

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

Table 8 provides examples for setting Length 2. See [page 199](#) for detailed instructions on setting this feature.

Table 8. I 2 of 5 Length 2 Setting Examples

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



Select I 2 of 5 Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters



INTERLEAVED 2 OF 5 CIP HR

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

Interleaved 2 of 5 CIP HR Enable/Disable

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



Interleaved 2 of 5 CIP HR = Disable



Interleaved 2 of 5 CIP HR = Enable

FOLLETT 2 OF 5

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

Follett 2 of 5 Enable/Disable

Enables/Disables ability of reader to decode Plessey labels.



Follett 2 of 5 = Disable



Follett 2 of 5 = Enable



STANDARD 2 OF 5

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

Standard 2 of 5 Enable/Disable

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



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.



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



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.



Standard 2 of 5 Length Control = Variable Length



Standard 2 of 5 Length Control = Fixed Length



Standard 2 of 5 Set Length 1

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

[Table 9](#) provides some examples for setting Length 1. See [page 199](#) if you want detailed instructions on setting this feature.

Table 9. Standard 2 of 5 Length 1 Setting Examples

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



Select Standard 2 of 5 Length 1 Setting

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



CANCEL



08 = Length 1 is 8 Characters



Standard 2 of 5 Set Length 2

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

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

[Table 10](#) provides examples for setting Length 2. See [page 199](#) for detailed instructions on setting this feature.

Table 10. Standard 2 of 5 Length 2 Setting Examples

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



Select Standard 2 of 5 Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters

INDUSTRIAL 2 OF 5

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

Industrial 2 of 5 Enable/Disable

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



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.



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



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.



Industrial 2 of 5 Length Control = Variable Length



Industrial 2 of 5 = Fixed Length

Industrial 2 of 5 Set Length 1

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

[Table 11](#) provides some examples for setting Length 1. See [page 199](#) if you want detailed instructions on setting this feature.

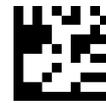
Table 11. Industrial 2 of 5 Length 1 Setting Examples

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



Select Industrial 2 of 5 Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character



Industrial 2 of 5 Set Length 2

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

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

Table 12 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

Table 12. Industrial 2 of 5 Length 2 Setting Examples

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



Select Industrial 2 of 5 Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters



CODE IATA

The following options apply to the IATA symbology.

IATA Enable/Disable

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



IATA = Disable



IATA = Enable

IATA Check Character Transmission

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



IATA Check Character Transmission = Disable



IATA Check Character Transmission = Enable





CODABAR

The following options apply to the Codabar symbology.

Codabar Enable/Disable

When disabled, the reader will not read Codabar barcodes.



Codabar = Disable



Codabar = Enable

Codabar Check Character Calculation

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



Codabar Check Character Calculation = Don't Calculate



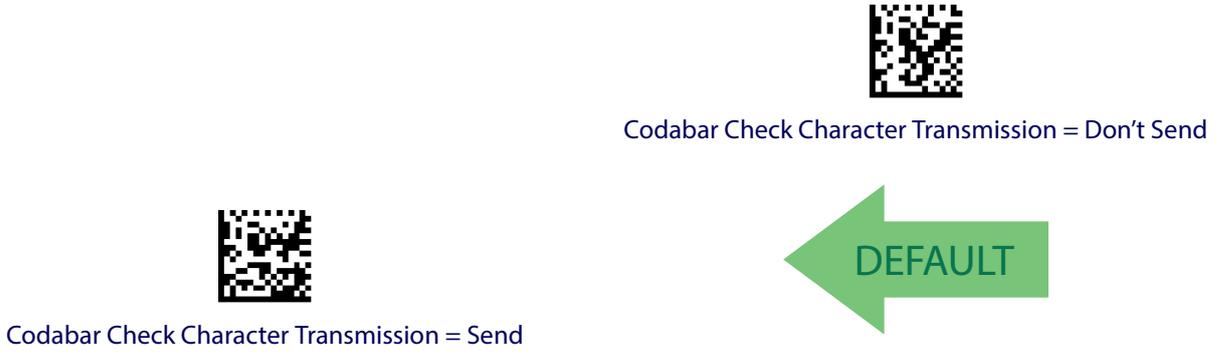
Codabar Check Character Calculation = Enable AIM standard check char.



Codabar Check Character Calculation = Enable Modulo 10 check char.

Codabar Check Character Transmission

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



Codabar Start/Stop Character Transmission

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





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



Codabar Start/Stop Character Match

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



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



Codabar Start/Stop Character Match = Require Match

Codabar Quiet Zones

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



Codabar Quiet Zones = Quiet Zones on two sides



Codabar Quiet Zones = Small Quiet Zones on two sides



Codabar Length Control

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

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

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



Codabar Length Control = Variable Length



Codabar Length Control = Fixed Length



Codabar Set Length 1

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

Table 13 provides some examples for setting Length 1. See page 199 for detailed instructions on setting this feature.

Table 13. Codabar Length 1 Setting Examples

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



Select Codabar Length 1 Setting

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



CANCEL



03 = Length 1 is 3 Characters



Codabar Set Length 2

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

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

Table 14 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

Table 14. Codabar Length 2 Setting Examples

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



Select Codabar Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters



ABC CODABAR

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

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



ABC Codabar = Disable



ABC Codabar = Enable

ABC Codabar Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.



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



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.



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 barcodes.



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





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

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.



Code 11 Length Control = Variable Length



Code 11 Length Control = Fixed Length

Code 11 Set Length 1

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

[Table 15](#) provides some examples for setting Length 1. See [page 199](#) for detailed instructions on setting this feature.

Table 15. Code 11 Length 1 Setting Examples

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



Select Code 11 Set Length 1 Setting

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



CANCEL



04 = Length 1 is 4 Characters



Code 11 Set Length 2

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

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

Table 16 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

Table 16. Code 11 Length 2 Setting Examples

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



Select Code 11 Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters

GS1 DATABAR™ OMNIDIRECTIONAL

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

GS1 DataBar™ Omnidirectional Enable/Disable

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



GS1 DataBar™ Omnidirectional = Disable



GS1 DataBar™ Omnidirectional = Enable

GS1 DataBar™ Omnidirectional GS1-128 Emulation

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



GS1 DataBar™ Omnidirectional GS1-128 Emulation =
Disable



GS1 DataBar™ Omnidirectional GS1-128 Emulation =
Enable



GS1 DataBar™ Omnidirectional 2D Component

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



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



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

GS1 DATABAR™ EXPANDED

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

GS1 DataBar™ Expanded Enable/Disable

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



GS1 DataBar™ Expanded = Disable



GS1 DataBar™ Expanded = Enable

GS1 DataBar™ Expanded GS1-128 Emulation

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



GS1 DataBar™ Expanded GS1-128 Emulation = Disable



GS1 DataBar™ Expanded GS1-128 Emulation = Enable

GS1 DataBar™ Expanded 2D Component

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



GS1 DataBar™ Expanded 2D Component = Disable



GS1 DataBar™ Expanded 2D Component = Enable



GS1 DataBar™ Expanded Length Control

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

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

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



GS1 DataBar™ Expanded Length Control = Variable Length



GS1 DataBar™ Expanded Length Control = Fixed Length



GS1 DataBar™ Expanded Set Length 1

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

Table 17 provides some examples for setting Length 1. See page 199 for detailed instructions on setting this feature.

Table 17. GS1 DataBar™ Expanded Length 1 Setting Examples

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



Select GS1 DataBar™ Expanded Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character



GS1 DataBar™ Expanded Set Length 2

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

Table 18 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

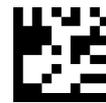
Table 18. GS1 DataBar™ Expanded Length 2 Setting Examples

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



Select GS1 DataBar™ Expanded Set Length 2 Setting

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



CANCEL



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 barcodes.



GS1 DataBar™ Limited = Disable



GS1 DataBar™ Limited = Enable

GS1 DataBar™ Limited GS1-128 Emulation

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



GS1 DataBar™ Limited GS1-128 Emulation = Disable



GS1 DataBar™ Limited GS1-128 Emulation = Enable



GS1 DataBar™ Limited 2D Component

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



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



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

CODE 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

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



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



Code 93 Check Character Transmission

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



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.



Code 93 Length Control = Variable Length



Code 93 = Fixed Length

Code 93 Set Length 1

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

[Table 19](#) provides some examples for setting Length 1. See [page 199](#) for detailed instructions on setting this feature.

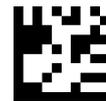
Table 19. Code 93 Length 1 Setting Examples

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



Select Code 93 Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character



Code 93 Set Length 2

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

Table 20 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

Table 20. CODE 93 Length 2 Setting Examples

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



Select Code 93 Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters

Code 93 Quiet Zones

Enables/disables quiet zones for Code 93.



MSI

The following options apply to the MSI symbology.

MSI Enable/Disable

Enables/Disables ability of reader to decode MSI labels.





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



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

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.



MSI Length Control = Variable Length



MSI = Fixed Length



MSI Set Length 1

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

Table 21 provides some examples for setting Length 1. See page 199 for detailed instructions on setting this feature.

Table 21. MSI Length 1 Setting Examples

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



Select MSI Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character

MSI Set Length 2

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

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

Table 22 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

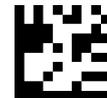
Table 22. MSI Length 2 Setting Examples

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



Select MSI Length 2 Setting

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



CANCEL



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.



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



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 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.





Plessey Set Length 1

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

Table 23 provides some examples for setting Length 1. See page 199 for detailed instructions on setting this feature.

Table 23. Plessey Length 1 Setting Examples

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



Select Plessey Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character

Plessey Set Length 2

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

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

Table 24 provides examples for setting Length 2. See page 199 for detailed instructions on setting this feature.

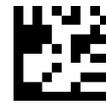
Table 24. Plessey Length 2 Setting Examples

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



Select Plessey Length 2 Setting

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



CANCEL



50 = Length 2 is 50 Characters



NOTES

2D SYMBOLOGIES

| 2D Global Features | |
|--|--|
| • 2D Maximum Decoding Time on page 160 | • 2D Normal/Inverse Symbol Control on page 161 |
| • 2D Structured Append on page 161 | |

The reader supports the following 2D symbologies (barcode types). Symbology-dependent options for each symbology are included in this chapter. See "[1D Code Selection](#)" starting on page 67 for configuration of 1D barcodes.

| 2D Symbologies | |
|---|---|
| • Aztec Code on page 162 | • Micro PDF417 on page 177 |
| • China Sensible Code on page 165 | • QR Code on page 180 |
| • Data Matrix on page 168 | • Micro QR Code on page 183 |
| • Maxicode on page 171 | • UCC Composite on page 186 |
| • PDF417 on page 174 | • Postal Code Selection on page 188 |

2D Global Features

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

To set most features:

1. Scan the ENTER/EXIT PROGRAMMING barcode at the top of applicable programming pages.
2. Scan the correct barcode to set the desired programming feature or parameter. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.
3. If additional input parameters are needed, go to [Appendix D, Keypad](#), and scan the appropriate characters from the keypad.



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

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

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



2D Maximum Decoding Time

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



2D Maximum Decoding Time = 100 msec



2D Maximum Decoding Time = 200 msec



2D Maximum Decoding Time = 350 msec



2D Maximum Decoding Time = 500 msec



2D Maximum Decoding Time = 1 Second



2D Maximum Decoding Time = 2 Seconds



2D Maximum Decoding Time = 2.55 Seconds

2D Structured Append

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

- Data Matrix
- QR Code
- Aztec
- PDF 417



Structured Append = Disable



Structured Append = Enable

2D Normal/Inverse Symbol Control

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

To decode all symbologies, including linear symbologies, refer to "[Decode Negative Image](#)" on page 62D



Normal/Inverse Symbol Control = Normal



Normal/Inverse Symbol Control = Inverse



Normal/Inverse Symbol Control =
Both Normal and Inverse



SYMBOLOLOGY SELECTION

Aztec Code

Aztec Code Enable / Disable

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



Aztec Code = Disable



Aztec Code = Enable

Aztec Code Length Control

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

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

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



Aztec Code Length Control = Variable Length



Aztec Code Length Control = Fixed Length

Aztec Code Set Length 1

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

See [page 199](#) for detailed instructions on setting this feature.



Select Aztec Code Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character



Aztec Code Set Length 2

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

See [page 199](#) for detailed instructions on setting this feature.



Select Aztec Code Length 2 Setting

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

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



CANCEL



Length 2 is 3,832 Characters

China Sensible Code

China Sensible Code Enable / Disable

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

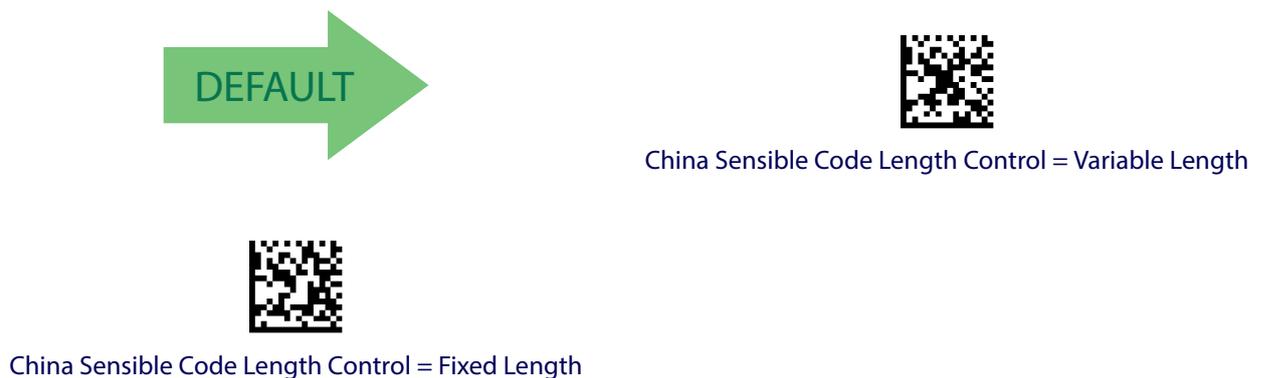


China Sensible Code Length Control

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

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

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





China Sensible Code Set Length 1

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

See [page 199](#) for detailed instructions on setting this feature.



Select China Sensible Code Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character

China Sensible Code Set Length 2

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

See [page 199](#) for detailed instructions on setting this feature.



Select China Sensible Code Length 2 Setting

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

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



CANCEL



Length 2 is 7,827 Characters



Data Matrix

Data Matrix Enable / Disable

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



Data Matrix Square/Rectangular Style

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

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

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



Data Matrix Length Control

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

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

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



Data Matrix Length Control = Variable Length



Data Matrix Length Control = Fixed Length

Data Matrix Set Length 1

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

See [page 199](#) for detailed instructions on setting this feature.



Select Data Matrix Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character



Data Matrix Set Length 2

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

See [page 199](#) for detailed instructions on setting this feature.



Select Data Matrix Length 2 Setting

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

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



CANCEL



Length 2 is 3,116 Characters

Maxicode

Maxicode Enable / Disable

Enables/disables ability of reader to decode Maxicode labels.



Maxicode = Disable



Maxicode = Enable

Maxicode Primary Message Transmission

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



Maxicode Primary Message Transmission = Disable



Maxicode Primary Message Transmission = Enable



Maxicode Length Control

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

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

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



Maxicode Length Control = Variable Length



Maxicode Length Control = Fixed Length

Maxicode Set Length 1

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

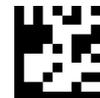
See [page 199](#) for detailed instructions on setting this feature.



Select Maxicode Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character

Maxicode Set Length 2

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

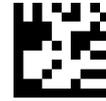
See [page 199](#) for detailed instructions on setting this feature.



Select Maxicode Length 2 Setting

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

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



CANCEL



Length 2 is 0145 Characters



PDF417

PDF417 Enable / Disable

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



PDF417 Length Control

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

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

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



PDF417 Set Length 1

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

See [page 199](#) for detailed instructions on setting this feature.



Select PDF417 Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character



PDF417 Set Length 2

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

See [page 199](#) for detailed instructions on setting this feature.



Select PDF417 Length 2 Setting

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

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



CANCEL



Length 2 is 2,710 Characters

Micro PDF417

Micro PDF417 Enable / Disable

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



Micro PDF417 = Disable



Micro PDF417 = Enable

Micro PDF417 Code 128 GS1-128 Emulation

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

Emulation choices are:

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



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



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



Micro PDF417 Length Control

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

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

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



Micro PDF417 Length Control = Variable Length



Micro PDF417 Length Control = Fixed Length

Micro PDF417 Set Length 1

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

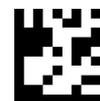
See [page 199](#) for detailed instructions on setting this feature.



Select Micro PDF417 Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character

Micro PDF417 Set Length 2

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

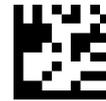
See [page 199](#) for detailed instructions on setting this feature.



Select Micro PDF417 Length 2 Setting

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

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



CANCEL



Length 2 is 0366 Characters



QR Code

QR Code Enable / Disable

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



QR Code Length Control

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

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

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



QR Code Set Length 1

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

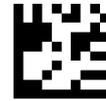
See [page 199](#) for detailed instructions on setting this feature.



Select QR Code Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character



QR Code Set Length 2

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

See [page 199](#) for detailed instructions on setting this feature.



Select QR Code Length 2 Setting

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

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



CANCEL



Length 2 is 7,089 Characters

Micro QR Code

Micro QR Code Enable/Disable

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



Micro QR Code = Disable



Micro QR Code = Enable

Micro QR Code Length Control

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

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

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



Micro QR Code Length Control = Variable Length



Micro QR Code Length Control = Fixed Length



Micro QR Code Set Length 1

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

See [page 199](#) for detailed instructions on setting this feature.



Select Micro QR Code Length 1 Setting

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

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



CANCEL



0001 = Length 1 is 1 Character

Micro QR Code Set Length 2

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

See [page 199](#) for detailed instructions on setting this feature.



Select QR Code Length 2 Setting

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

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



CANCEL



Length 2 is 0035 Characters



UCC Composite

UCC Composite Enable / Disable

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



This feature is not effective when Global AIM IDs are enabled (see ["Global AIM ID" on page 37](#)).



UCC Composite = Disable



UCC Composite = Enable

UCC Optional Composite Timer

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



UCC Optional Composite Timer = Timer Disabled



UCC Optional Composite Timer = 100msec



UCC Optional Composite Timer = 200msec



UCC Optional Composite Timer = 300msec



UCC Optional Composite Timer = 400msec



UCC Optional Composite Timer = 500msec

Postal Code Selection

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

- Disable All Postal Codes
- Postnet
- Planet
- Royal Mail
- Kix
- Australia Post
- Japan Post
- IMB
- Sweden Post
- Portugal Post



Postal Code Selection = Disable All Postal Codes



Postal Code Selection = Enable Postnet



Postal Code Selection = Enable Planet



Postal Code Selection = Enable Royal Mail



Postal Code Selection = Enable Kix



Postal Code Selection = Enable Australia Post

Postal Code Selection (continued)



Postal Code Selection = Enable Japan Post



Postal Code Selection = Enable IMB



Postal Code Selection = Enable Sweden Post



Postal Code Selection = Enable Portugal Post

Postnet BB Control

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



Postnet BB Control = Disable



Postnet BB Control = Enable

NOTES

Chapter 4

References

This section contains explanations and examples of selected barcode features. See [Configuration Using Barcodes](#), starting on page 9 for the actual barcode labels used to configure the reader.

| |
|--|
| USB COM PARAMETERS starting on page 192 <ul style="list-style-type: none">•Intercharacter Delay•ACK NAK Options•ACK Character•NAK Character•ACK NAK Timeout Value•ACK NAK Retry Count•Disable Character•Enable Character |
| SYMBOLOGIES starting on page 199 <ul style="list-style-type: none">•Set Length |
| DATA EDITING starting on page 200 <ul style="list-style-type: none">•Global Prefix/Suffix•Global AIM ID•Label ID•Character Conversion |
| SCANNING FEATURES starting on page 209 <ul style="list-style-type: none">•Scan Mode•Stand Mode Off Time•Scanning Active Time•Aiming Duration Time•Flash On Time•Flash Off Time•Multiple Labels Ordering by Code Symbology |

USB COM Parameters

Intercharacter Delay

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

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Go to [page 14](#) and scan the barcode: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 25](#) for some examples of how to set this feature.

Table 25. Intercharacter Delay Setting Examples

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

ACK NAK Options

This enables/disables the ability of the 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

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.

1. Determine the desired character or value.
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to [page 17](#) and scan ENTER/EXIT PROGRAMMING MODE to enter Programming Mode.
4. Scan the barcode: SELECT ACK CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit.

See [Table 26](#) for some examples of how to set this feature.

Table 26. ACK Character Setting Examples

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

NAK Character

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

To set this feature:

1. Determine the desired character or value.
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to [page 17](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See [Table 27](#) for some examples of how to set this feature.

Table 27. NAK Character Setting Examples

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

ACK NAK Timeout Value

This option specifies the amount of time the 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. Go to [page 17](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ACK NAK TIMEOUT VALUE SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 28](#) for some examples of how to set this feature.

Table 28. ACK NAK Timeout Value Setting Examples

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

ACK NAK Retry Count

This feature specifies the number of times the 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. Go to [page 18](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ACK NAK RETRY COUNT SETTING.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#), that represent the number which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 29](#) for some examples of how to set this feature.

Table 29. ACK NAK Retry Count Setting Examples

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

Disable Character

Specifies the value of the USB-COM 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 Disable Character is not used (not available).
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to [page 20](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT DISABLE CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See [Table 30](#) for some examples of how to set this feature.

Table 30. Disable Character Setting Examples

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

Enable Character

Specifies the value of the USB-COM 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 Enable Character is not used (not available).

1. Determine the desired character or value.
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to [page 20](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ENABLE CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 2 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See [Table 31](#) for some examples of how to set this feature.

Table 31. Enable Character Setting Examples

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

Symbologies

Set Length

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

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

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

Set Length 1

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

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

1. Determine the desired character length (varies depending on symbology). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
3. Scan the barcode to SELECT LENGTH 1 SETTING for your selected symbology.
4. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the length setting which was determined in the steps above. You will hear a two-beep indication after the last character.



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

5. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Prog Mode.

Set Length 2

This feature allows you to set one of the barcode lengths for the specified symbology. Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. See the page for the specific symbology for parameters.

The length that can be set varies depending on the symbology. A setting of 0 specifies to ignore this length (only one fixed length).

Follow these instructions to set this feature:

1. Determine the desired character length (from 1 to 50 — or 0 to ignore this length). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
3. Scan the barcode to SELECT LENGTH 2 SETTING for your selected symbology.

References

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



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

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

This completes the procedure.

Data Editing



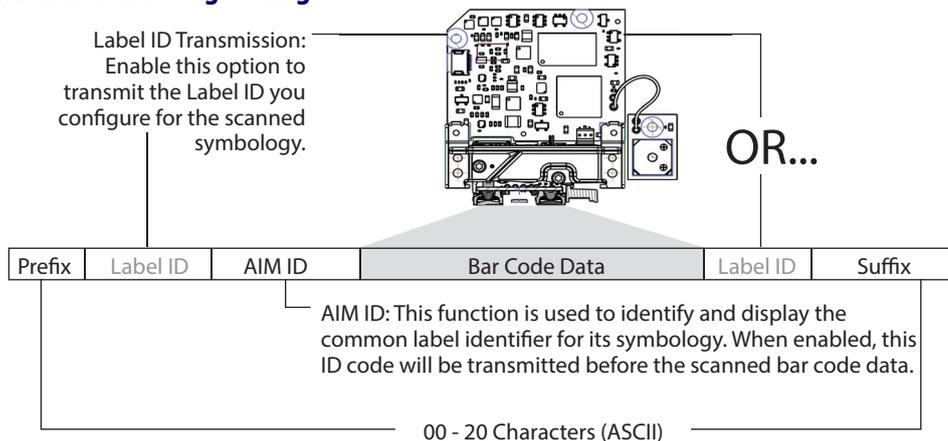
CAUTION

It is not recommended to use these features with IBM interfaces.

When a barcode is scanned, additional information can be sent to the host computer along with the barcode data. This combination of barcode data and supplementary user-defined data is called a “message string.” The Data Editing features can be used to build specific user-defined data into a message string.

There are several types of selectable data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. Figure 1 shows the available elements you can add to a message string:

Figure 1. Breakdown of a Message String



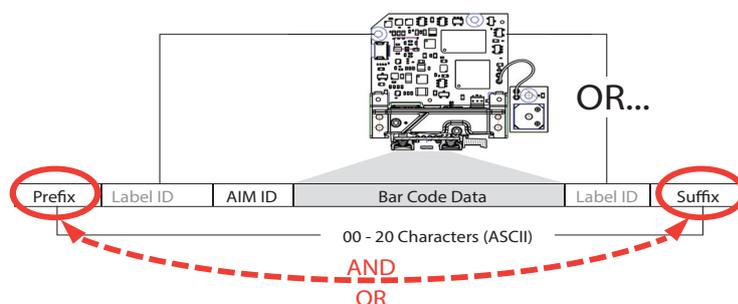
Additional advanced editing is available. See the [Advanced formatting features in the Datalogic Aladdin configuration software](#), or contact [Technical Support](#) (as described on [page 2](#)) for more information.

Please Keep In Mind...

- Modifying a message string is not a mandatory requirement. Data editing is a sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied only to a specified symbology (reference [1D Code Selection, starting on page 67](#)) or across all symbologies (set via the Global features in this chapter).
- You can add any character from the [ASCII Chart](#) (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the barcode data) and/or as a suffix (in a position following the barcode data) as indicated in Figure 2.

Figure 2. Prefix and Suffix Positions**Example: Setting a Prefix**

In this example, we'll set a prefix for all symbologies.

1. Determine which ASCII character(s) are to be added to scanned barcode data. In this example, we'll add a dollar sign ('\$') as a prefix.
2. Go to [page 36](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode, then scan the SET GLOBAL PREFIX barcode.
3. Reference the [ASCII Chart](#) on the inside back cover of this manual to find the hex value assigned to the desired character. The corresponding hex number for the '\$' character is 24. To enter this selection code, scan the '2' and '4' barcodes from [Appendix D, Keypad](#).



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

4. If less than the expected string of 20 characters are selected, scan the ENTER/EXIT barcode to terminate the string.
5. Scan the ENTER/EXIT barcode once again to exit Programming Mode.
6. The resulting message string would appear as follows:
Scanned barcode data: **12345**
Resulting message string output: **\$12345**

Global AIM ID



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

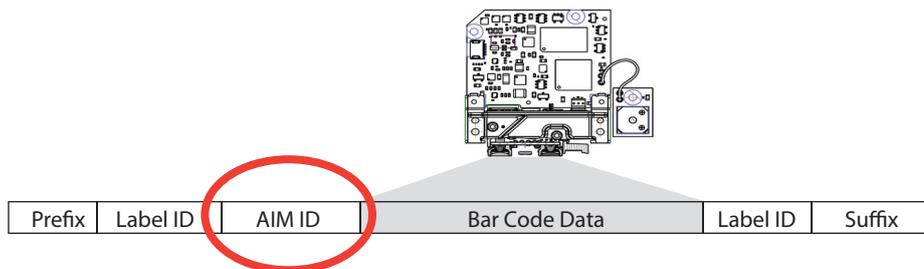
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned barcode data. AIM label identifiers consist of three characters as follows:

- A close brace character (ASCII ‘]’), followed by...
- A code character (see the table below), followed by...
- A modifier character (the modifier character is symbol dependent).

| SYMBOLGY | CHAR | SYMBOLGY | CHAR |
|---------------------|----------------|---|----------------|
| UPC/EAN | E ^a | Code 128/GS1-128 | C |
| Code 39 and Code 32 | A | DataBar Omnidirectional, DataBar Expanded | e |
| Codabar | F | Standard 2 of 5 | S |
| Interleaved 2 of 5 | I | ISBN | x ^b |
| Code 93 | G | Code 11 | H |

- UPC-A and UPC-E labels are converted to EAN 13 when adding AIM IDs.
- ISBN (X with a 0 modifier character)

Figure 3. AIM ID



Label ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a barcode (symbology) type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" below) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 206). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see "Global AIM ID" on page 37.

Label ID: Pre-loaded Sets

The reader supports two pre-loaded sets of Label IDs. Table 32 shows the USA and the EU sets.



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 standard factory defaults. Any custom configuration or custom defaults will be lost.

CAUTION

Table 32. Label ID Pre-loaded Sets

| Symbology | USA Label ID set | | EU Label ID set | |
|---------------------|-------------------|---------------|-------------------|---------------|
| | Default Character | Default ASCII | Default Character | Default ASCII |
| ABC CODABAR | S | 530000 | S | 530000 |
| ANKER PLESSEY | o | 6F0000 | o | 6F0000 |
| AZTEC | Az | 417A00 | ! | 210000 |
| CHINA SENSIBLE CODE | \$S | 245300 | \$S | 245300 |
| CODABAR | % | 250000 | R | 520000 |
| CODE11 | CE | 434500 | b | 620000 |
| CODE128 | # | 230000 | T | 540000 |
| CODE32 | A | 410000 | X | 580000 |
| CODE39 | * | 2A0000 | V | 560000 |
| CODE39 CIP | Y | 590000 | Y | 590000 |
| CODE39 DANISH PPT | \$Y | 245900 | \$Y | 245900 |
| CODE39 LAPOSTE | \$a | 246100 | \$a | 246100 |
| CODE39 PZN | \$Z | 245A00 | \$Z | 245A00 |
| CODE93 | & | 260000 | U | 550000 |
| CODE NW7 | \$N | | | |

References

| Symbology | USA Label ID set | | EU Label ID set | |
|----------------------------|-------------------|---------------|-------------------|---------------|
| | Default Character | Default ASCII | Default Character | Default ASCII |
| DATABAR 14 | R4 | 523400 | u | 750000 |
| DATABAR 14 COMPOSITE | R4 | 523400 | c | 523400 |
| DATABAR EXPANDED | RX | 525800 | t | 740000 |
| DATABAR EXPANDED COMPOSITE | RX | 525800 | d | 525800 |
| DATABAR LIMITED | RL | 524C00 | v | 760000 |
| DATABAR LIMITED COMPOSITE | RL | 524C00 | i | 524C00 |
| DATA MATRIX | Dm | 446D00 | w | 770000 |
| EAN128 | | 000000 | k | 6B0000 |
| EAN128 COMPOSITE | | 000000 | \$E | 244500 |
| EAN13 | F | 460000 | B | 420000 |
| EAN13 P2 | F | 460000 | L | 4C0000 |
| EAN13 P5 | F | 460000 | M | 4D0000 |
| EAN13 COMPOSITE | F | 460000 | \$F | 244600 |
| EAN8 | FF | 464600 | A | 410000 |
| EAN8 P2 | FF | 464600 | J | 4A0000 |
| EAN8 P5 | FF | 464600 | K | 4B0000 |
| EAN8 COMPOSITE | FF | 464600 | \$G | 244700 |
| FOLLET 2OF5 | O | 4F0000 | O | 4F0000 |
| GTIN | G | 470000 | \$A | 244100 |
| GTIN2 | G2 | 473200 | \$B | 244200 |
| GTIN5 | G5 | 473500 | \$C | 244300 |
| I2OF5 | i | 690000 | N | 4E0000 |
| I2OF5 CIP HR | e | | | |
| IATA INDUSTRIAL 2OF5 | IA | 494100 | & | 260000 |
| INDUSTRIAL 2OF5 | W | 570000 | W | 570000 |
| ISBN | l | 490000 | @ | 400000 |
| ISBT128 CONCAT | f | 660000 | f | 660000 |
| ISSN | n | 6E0000 | n | 6E0000 |

| Symbology | USA Label ID set | | EU Label ID set | |
|-------------------|-------------------|---------------|-------------------|---------------|
| | Default Character | Default ASCII | Default Character | Default ASCII |
| MATRIX 2OF5 | g | | | |
| MAXICODE | MC | 4D4300 | x | 780000 |
| MICRO QR | \$Q | 245100 | \$Q | 245100 |
| MICRO PDF | mP | 6D5000 | 8 | 380000 |
| MSI | @ | 400000 | Z | 5A0000 |
| PDF417 | P | 500000 | r | 720000 |
| PLESSEY | a | 610000 | a | 610000 |
| POSTAL AUSTRALIAN | \$K | 244B00 | \$K | 244B00 |
| POSTAL IMB | \$V | 245600 | \$V | 245600 |
| POSTAL JAPANESE | \$R | 245200 | \$R | 245200 |
| POSTAL KIX | \$U | 245500 | \$U | 245500 |
| POSTAL PLANET | \$W | 245700 | \$W | 245700 |
| POSTAL PORTUGAL | \$P | 245000 | \$P | 245000 |
| POSTAL POSTNET BB | \$L | 244C00 | \$L | 244C00 |
| POSTAL ROYAL MAIL | \$M | 244D00 | \$M | 244D00 |
| POSTAL SWEDISH | \$X | 245800 | \$X | 245800 |
| POSTNET | 1 | 310000 | 1 | 310000 |
| QR CODE | QR | 515200 | y | 790000 |
| S25 | s | 730000 | P | 500000 |
| TRIOPTIC | \$T | 245400 | \$T | 245400 |
| UPCA | A | 410000 | C | 430000 |
| UPCA P2 | A | 410000 | F | 460000 |
| UPCA P5 | A | 410000 | G | 470000 |
| UPCA COMPOSITE | A | 410000 | \$H | 244800 |
| UPCE | E | 450000 | D | 440000 |
| UPCE P2 | E | 450000 | H | 480000 |
| UPCE P5 | E | 450000 | I | 490000 |
| UPCE COMPOSITE | E | 450000 | \$J | 244A00 |

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1. Go to [page 41](#) and scan the ENTER/EXIT barcode.
2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate barcode in the section "Label ID Control" on page 41. Reference Figure 4 for Label ID positioning options if multiple identification features are enabled.
3. Scan a barcode to select the symbology for which you wish to configure a custom Label ID from the section "Label ID Symbology Selection – 1D Symbologies" on page 42.
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.
5. Turn to the [ASCII Chart](#) on the inside back cover of this manual and find the equivalent hex digits associated with your choice of Label ID. For example, if you wish to select an equal sign (=) as a Label ID, the chart indicates its associated hex characters as 3D. Turn to [Keypad, starting on page 235](#) and scan the barcodes representing the hex characters determined. For the example given, the characters '3' and 'D' would be scanned. More examples of Label ID settings are provided in [Table 33](#).



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

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

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

Figure 4. Label ID Position Options

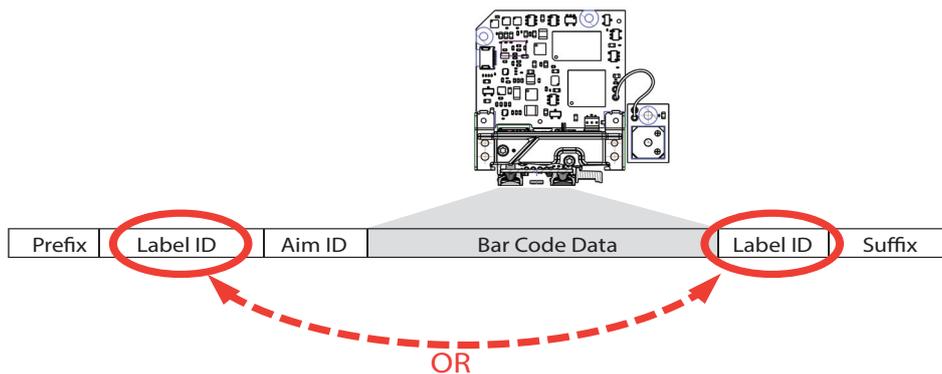


Table 33. Label ID Examples

| STEP | ACTION | EXAMPLES | | | |
|----------------|---|-----------------------------------|------------------|--------------------|------------------|
| 1. | Scan the ENTER/EXIT barcode | (Scanner enters Programming Mode) | | | |
| 2. | Determine placement of the Label ID characters BEFORE or AFTER with regard to scanned data using Label ID Control, starting on page 41 | Enable as Prefix | Enable as Suffix | Enable as Prefix | Enable as Suffix |
| 3. | Scan the barcode selecting the symbology type you wish to designate label ID characters for using Label ID Symbology Selection – 1D Symbologies, starting on page 42. | DataBar Omnidirectional | Code 39 | Interleaved 2 of 5 | Code 32 |
| 4. | Custom Label ID example (desired characters): | D B * | = C 3 | + | P H |
| 5. | Find hex equivalents from the ASCII Chart (inside back cover), then scan in these digits/characters using the barcodes in the section: Keypad, starting on page 235. If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning. | 44 42 2A | 3D 43 33 | 2B | 50 48 |
| 6. | Scan the ENTER/EXIT barcode | (Scanner exits Label ID entry) | | | |
| 7. | Scan the ENTER/EXIT barcode once again | (Scanner exits Programming Mode) | | | |
| Result: | DB*[barcode data] | [barcode data]=C3 | +[barcode data] | [barcode data]PH | |

Character Conversion

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

For example, if you have the character conversion configuration item set to the following:
41423132FFFFFFFF

The first pair is 4142 or AB (41 hex is an ASCII capital A, 42 hex is an ASCII capital B) and the second pair is 3132 or 12 (31 hex is an ASCII 1, 32 is an ASCII 2). The other two pairs are FFFF and FFFF.

With the label, AB12BA21, it would look as follows after the character conversion: BB22BB22.

The A characters were converted to B characters and the 1 characters were converted to 2 characters. Nothing is done with the last two character pairs, since they are all FF.

To set Character Conversion:

1. Go to [page 48](#) and scan the ENTER/EXIT barcode.
2. Scan the “Configure Character Conversion” barcode.
3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the [ASCII Chart](#) on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.
4. Turn to [Appendix D, Keypad](#) and scan the barcodes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT barcode to exit Programming Mode.



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

Scanning Features

Scan Mode

This mode is associated with typical handheld reader operation. Selects the scan operating mode for the reader. The following selections are valid for all models:

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

- [Scanning Active Time](#) has elapsed
- a label has been read
- the trigger is released

Trigger Hold Multiple: When the trigger is pulled, scanning starts and the product scans until the trigger is released or [Scanning Active Time](#) has elapsed. Reading a label does not disable scanning. [Double Read Timeout](#) prevents undesired multiple reads of the same label while in this mode.

Trigger Pulse Multiple: When the trigger is pulled, continuous scanning is activated until [Scanning Active Time](#) has elapsed or the trigger has been released and pulled again. [Double Read Timeout](#) prevents undesired multiple reads of the same label while in this mode.

Flashing: The reader flashes on and off regardless of the trigger status. Flash rate is controlled by [Flash On Time](#) and [Flash Off Time](#). When Flash is ON the imager reads continuously; when Flash is OFF scanning is deactivated.

Always On: No trigger pull is required to read a barcode. Scanning is continually on. If the trigger is pulled, the reader acts as if it is in Trigger Single Mode. [Double Read Timeout](#) prevents undesired multiple reads of the same label while in this mode.

Stand Mode: No trigger pull is required to read a barcode. Scanning is turned on automatically when an item is placed in the reader's field of view. If the trigger is pulled, the reader acts as if it in single read mode. [Double Read Timeout](#) prevents undesired multiple reads while in this mode.

Stand Mode Off Time

This feature specifies the amount of time reader illumination stays off after pulling the trigger when in Stand Mode. The configurable range is 01 to 32 by 01 in increments of 500ms (500ms to 16 seconds).

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the result with leading zeroes to yield two digits. For example: 2 = 02, 5 = 05, 20 = 20, etc.
3. Go to [page 57](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: Set Stand Mode Illuminator Off Time.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the setting which was determined in the steps above. You will hear a two-beep indication after the last character.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See [Table 34](#) for some examples of how to set this feature.

Table 34. Stand Mode Off Time

| STEP | ACTION | EXAMPLES | | | |
|------|--|-------------|-------------|-------------|-------------|
| 1 | Desired Setting | 500 ms | 1 Second | 5.5 Seconds | 16 Seconds |
| 2 | Pad leading zero | 01 | 02 | 11 | 32 |
| 3 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |
| 4 | Scan SELECT STAND MODE OFF TIME | | | | |
| 5 | Scan Two Characters From Appendix D, Keypad | '0' and '1' | '0' and '2' | '1' and '1' | '3' and '2' |
| 6 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |

Scanning Active Time

This setting specifies the amount of time that the 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. Go to [page 58](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT SCANNING ACTIVE TIME SETTING.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 35](#) for some examples of how to set this feature.

Table 35. Scanning Active Time Setting Examples

| STEP | ACTION | EXAMPLES | | | |
|------|---|------------------|--------------------|-------------------|-------------------------|
| 1 | Desired Setting | 1 Second | 90 Sec. (1.5 min.) | 180 Sec. (3 min.) | 255 Seconds (4.25 min.) |
| 2 | Pad leading zero(es) | 001 | 090 | 180 | 255 |
| 3 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |
| 4 | Scan SELECT SCANNING ACTIVE TIME SETTING | | | | |
| 5 | Scan Three Characters From Appendix D, Keypad | '0', '0' and '1' | '0', '9' and '0' | '1', '8' and '0' | '2', '5' and '5' |
| 6 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |

Aiming Duration Time

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

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Go to [page 61](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT AIMING DURATION TIME SETTING.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 36](#) for some examples of how to set this feature.

Table 36. Aiming Duration Time Setting Examples

| STEP | ACTION | EXAMPLES | | | |
|------|--|------------------|--------------------|-------------------|-------------------------|
| 1 | Desired Setting | 1 Second | 90 Sec. (1.5 min.) | 180 Sec. (3 min.) | 255 Seconds (4.25 min.) |
| 2 | Pad leading zero(es) | 001 | 090 | 180 | 255 |
| 3 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |
| 4 | Scan SELECT AIMING DURATION TIME SETTING | | | | |
| 5 | Scan Three Characters From Appendix D, Keypad | '0', '0' and '1' | '0', '9' and '0' | '1', '8' and '0' | '2', '5' and '5' |
| 6 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments.

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to [page 58](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT FLASH ON TIME SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#) representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 37](#) for examples of how to set this feature.

Table 37. Flash On Time Setting Examples

| STEP | ACTION | EXAMPLES | | | |
|------|--|-------------|------------------|-------------------|--------------------|
| 1 | Desired Setting | 500ms | 1,000ms (1 sec.) | 5200ms (5.2 sec.) | 9,900ms (9.9 sec.) |
| 2 | Divide by 100 (and pad with leading zeroes to yield two digits) | 05 | 10 | 52 | 99 |
| 3 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |
| 4 | Scan SELECT FLASH ON TIME SETTING | | | | |
| 5 | Scan Two Characters From Appendix D, Keypad | '0' and '5' | '1' and '0' | '5' and '2' | '9' and '9' |
| 6 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |

Flash Off Time

This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments.

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to [page 59](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT FLASH OFF TIME SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

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

This completes the procedure. See [Table 38](#) for some examples of how to set this feature.

Table 38. Flash Off Time Setting Examples

| STEP | ACTION | EXAMPLES | | | |
|------|--|-------------|------------------|-------------------|--------------------|
| 1 | Desired Setting | 500ms | 1,000ms (1 sec.) | 5200ms (5.2 sec.) | 9,900ms (9.9 sec.) |
| 2 | Divide by 100 (and pad with leading zeroes to yield two digits) | 05 | 10 | 52 | 99 |
| 3 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |
| 4 | Scan SELECT FLASH OFF TIME SETTING | | | | |
| 5 | Scan Two Characters From Appendix D, Keypad | '0' and '5' | '1' and '0' | '5' and '2' | '9' and '9' |
| 6 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |

Multiple Labels Ordering by Code Symbology

This feature Specifies the transmission ordering by symbology type, when Multiple Labels per Frame is enabled. Up to six symbologies can be selected. Zeroes must be added to pad the string to 12 characters if not using all six symbologies.

The labels are ordered first as specified in the output mask. Labels present in the volume but not specified will be transmitted as unspecified symbologies in random order as allowed by the reading time sequence. For each label decoded in the volume the reader signals the standard beeper and LED indications.

To specify the symbology order:

1. Determine the symbologies and order you want to specify.
2. Use [Table 40 on page 216](#) to find the hex values for up to six symbologies.
3. Go to [page 65](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: “SELECT SYMBOLOGIES FOR MULTIPLE LABELS ORDERING”.
5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 2 above.
6. Scan zeroes if needed to make a 12-character string.
7. When finished, scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See [Table 39](#) for some examples of how to set this feature.

Table 39. Multiple Labels Ordering by Code Symbology Examples

| STEP | ACTION | EXAMPLES | | | |
|------|---|----------------|-------------|-------------|-------------|
| 1 | Desired symbology | Code 39 | Data Matrix | Code 128 | Aztec |
| 2 | Hex equivalent from ASCII Chart | 24 | 0E | 0C | 4E |
| 3 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |
| 4 | Scan SELECT SYMBOLOGIES FOR MULTIPLE LABELS ORDERING | | | | |
| 5 | Scan Two Characters From Appendix D, Keypad | '2' and '4' | '0' and 'E' | '0' and 'C' | '4' and 'E' |
| | RESULT | 0x240E0C4E0000 | | | |
| 6 | Scan ENTER/EXIT PROGRAMMING MODE | | | | |

[Table 40 on page 216](#) shows the hex value associated with each symbology.

References

Table 40. Symbology Hex Values

| Hex Value | Symbology ID | Hex Value | Symbology ID |
|-----------|------------------------|-----------|----------------------------------|
| 00 | Don't care | 2C | GTIN5 |
| 01 | UPC-A | 2D | GTIN8 |
| 02 | UPC-E | 2E | S2OF5 |
| 03 | EAN8 | 2F | PDF417 |
| 04 | EAN13 | 30 | CODE11 |
| 05 | UPC2 | 31 | IATA |
| 06 | UPC5 | 32 | MICRO_PDF |
| 07 | C128_ADDON | 33 | GS1 DataBar_LIM_ID |
| 0A | EAN128 | 34 | GS1 DataBar_LIM_COMP |
| 0B | C128_PROGRAMMING_LABEL | 35 | GS1 DataBar_Omnidirectional_COMP |
| 0C | CODE128 | 36 | GS1 DataBar_EXP_COMP |
| 0D | FNC3_C128_LABEL | 37 | GENERIC_DATA |
| 0E | DATA MATRIX | 38 | CC_A |
| 0F | MAXICODE | 39 | CC_B |
| 10 | QRCODE | 3A | CC_C |
| 11 | Reserved | 3B | LABELIMAGE |
| 12 | Reserved | 3C | CAPTURE_IMAGE_LABEL |
| 13 | CODE49 | 3D | Reserved |
| 14 | UPC-E2 | 3E | M2OF5 |
| 15 | UPC-E5 | 3F | D2OF5 |
| 16 | Reserved | 40 | PLESSEY65 |
| 17 | UPC-A2 | 42 | ISSN |
| 18 | UPC-A5 | 43 | ISBT |
| 19 | Reserved | 44 | Reserved |
| 1A | EAN82 | 45 | TIMER_EXPIRED_EVENT |
| 1B | EAN85 | 46 | FOLLETT_2OF5 |
| 1C | Reserved | 47 | Reserved |
| 1D | EAN132 | 48 | Reserved |
| 1E | EAN135 | 49 | CODE39_CIP |
| 1F | EAN138 | 4A | ABC_CODABAR |
| 20 | ISBN_ID | 4B | I2OF5_CIP |
| 21 | TWO_LABEL_PAIR | 4C | C2OF5 |
| 22 | I2OF5 | 4D | IND2OF5 |
| 23 | CODABAR | 4E | AZTEC |
| 24 | CODE39 | 4F | UPC-E_COMP |
| 25 | PHARMAC39 | 50 | UPC-A_COMP |
| 26 | MSI_PLESSEY | 51 | EAN8_COMP |
| 27 | CODE93 | 52 | EAN13_COMP |
| 28 | RSS_EXP_ID | 53 | EAN128_COMP |
| 29 | RSS_14_ID | 54 | DATA MATRIX_PROGRAMMING_LABEL |
| 2A | GTIN | 55 | LABEL_ID_MAX |
| 2B | GTIN2 | FF | INVALID_LABEL_TYPE |

Appendix A

Technical Specifications

Table 41 contains Physical and Performance Characteristics, User Environment and Regulatory information.

Table 41. Technical Specifications

| Item | Description |
|--------------------------------------|--|
| | DSE0420-HP |
| Physical Characteristics | |
| Dimensions (without Beeper Board) | Height 0.6"/14 mm Length 1.9"/47 mm Width 1.6"/40 mm |
| Weight (without cable) | Approximately 0.7 ounces/20 g |
| Electrical Characteristics | |
| Voltage & Current | Input Voltage: 5.0 VDC |
| | Operating (typical): 150mA |
| | Operating (max): 415mA |
| | Idle/standby (typical): 28mA |

Optical Characteristics

Key Parameters

| Parameter | Value |
|---------------------|--|
| Optical Format | 1/3-inch |
| Active Imager Size | 4.51mm(H) x 2.88mm(V) 5.35mm diagonal |
| Active Pixels | 752H x 480V |
| Illumination System | LED source White emission (wavelength = 400-750 nm) IEC 62471 – EXEMPT RISK GROUP |
| Aiming System | Laser source Red emission (wavelength = 630-680 nm) Pulsed source: maximum lamp duration 15ms, repetition rate 16.6 ms Maximum emitted power: 1 mW IEC 60825 – CLASS 2 LASER PRODUCT |
| Tilt Tolerance | Up to $\pm 360^\circ$ |
| Pitch Tolerance | $\pm 65^\circ$ |
| Skew Tolerance | $\pm 60^\circ$ |
| Field of View | 40° H x 26° V |

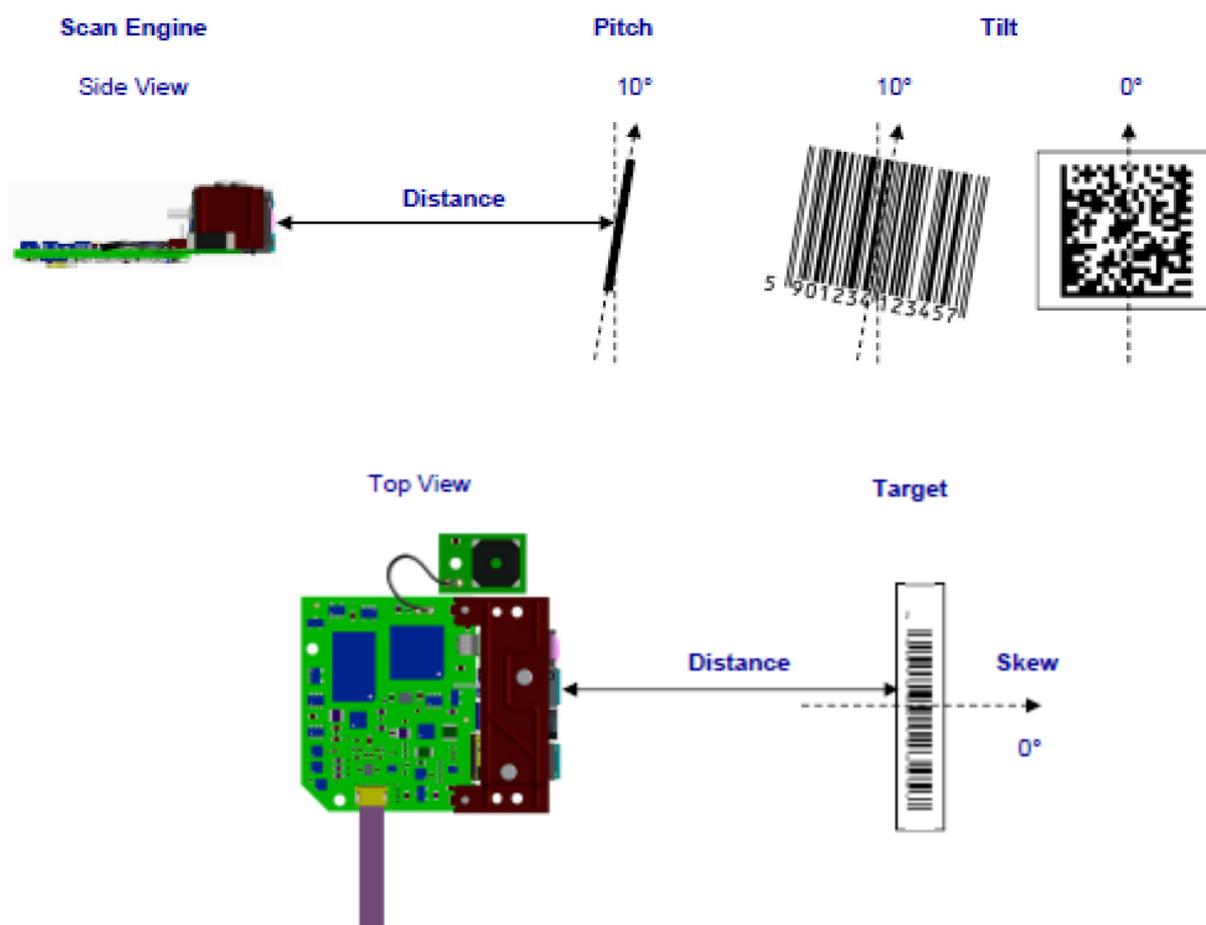
Reading Performances

| Symbology | Resolution [mils] | Distance | | | |
|------------|-------------------|-------------------------------------|----------|-------------|----------|
| | | Guaranteed | | Typical | |
| | | min [mm] | max [mm] | min [mm] | max [mm] |
| Code 39 | 3 | Maximum resolution (test at 105 mm) | | | |
| Code 39 | 5 | 70 | 190 | 65 | 210 |
| EAN13 | 13 | 55 | 360 | 55 | 390 |
| Datamatrix | 15 | 40 | 230 | 40 | 250 |
| Code 39 | 20 | FOV limited | 470 | FOV limited | 500 |

Test Conditions

All distances are taken on axis from the illumination lenses at the following typical conditions:

- “in open air” means without any interposed transparent or semi-transparent material
- environmental light = 300 lux
- Pitch angle = 10°
- Skew angle = 0°
- Tilt angle = 10° (1D labels) – 0° (2D labels)



Quality and Reliability

| Test ID | Test | Description | | | | | | |
|-----------------|---|---|-------------|---|--------------|------------------------|-----------------|---|
| 1 | Shock | <p>Dynamic Shock: 2000 G \pm 5% applied via any mounting surface at -30° C and 70° C for a period of 0.85 ± 0.05 msec . 2500 G \pm 5% applied via any mounting surface at 23° C for a period of 0.85 ± 0.05 msec</p> <p>Vibration:</p> <table border="0"> <tr> <td>20 to 80 Hz</td> <td>Ramp up at 0.04 G_z/Hz at 3 dB/octave</td> </tr> <tr> <td>80 to 350 Hz</td> <td>0.4 G_z/Hz</td> </tr> <tr> <td>350 Hz to 2 kHz</td> <td>Ramp down at 0.04 G_z/Hz at 3 dB/octave</td> </tr> </table> | 20 to 80 Hz | Ramp up at 0.04 G _z /Hz at 3 dB/octave | 80 to 350 Hz | 0.4 G _z /Hz | 350 Hz to 2 kHz | Ramp down at 0.04 G _z /Hz at 3 dB/octave |
| 20 to 80 Hz | Ramp up at 0.04 G _z /Hz at 3 dB/octave | | | | | | | |
| 80 to 350 Hz | 0.4 G _z /Hz | | | | | | | |
| 350 Hz to 2 kHz | Ramp down at 0.04 G _z /Hz at 3 dB/octave | | | | | | | |
| 2 | Environmental | <p>Storage Temperature: -40° C to $+70^\circ$ C Operating Temperature: -15° C to $+55^\circ$ C</p> <p>Testing on the module was performed from -40° C to 70° C (Storage Temp) and from -15° C to $+55^\circ$ C (Operative)</p> | | | | | | |

Technical Specifications

| Test ID | Test | Description |
|---------|--------------------|---|
| 3 | Radiated Emissions | EN 55022 / 1998 CLASS B |
| 4 | ESD | The Scan Engine must be shielded from ESD strikes up to $\pm 15\text{KV}$ with the enclosure. To date, testing on the Imager Module has been performed at level of 2,5KV on the connector. The module was tested inside another host product up to 4Kv direct and 8KV air. |

| Item | Description |
|---|--|
| Decode Capability | <p>1D Barcodes</p> <p>UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN /Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit enabled); Danish PPT; Code 32 (Italian Pharmacode 39); Code 128; Code 128 ISBT; Interleaved 2 of 5; Standard 2 of 5; Interleaved 2 of 5 CIP (HR); Industrial 2 of 5; Discrete 2 of 5; IATA 2of5 Air cargo code; Code 11; Codabar; ABC Codabar; Code 93; MSI; PZN; Plessey; Anker Plessey; Follett 2 of 5; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.</p> |
| | <p>2D / Stacked Codes</p> <p>The QuickScan I QD24XX scanner is capable of decoding the following symbologies using multiple frames (i.e. Multi-Frame Decoding): PDF-417; QR Code; Aztec; Data Matrix; Inverse Data Matrix; Data Matrix is configurable for the following parameters;; Normal or Inverted; Square or Rectangular Style; Data length (1 - 3600 characters); Maxicode; QR Codes (QR and Multiple QR Codes); Aztec; Postal Codes; Australian Post; Japanese Post; KIX Post; Planet Code; Postnet; Royal Mail Code (RM45CC); Intelligent Mail Barcode (IMB); Sweden Post; Portugal Post; LaPoste A/R 39; 4-State Canada; PDF-417; Micro PDF417; GS1 Composites (1 - 12); French CIP13^a; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; GS1 DataBar Expanded Stacked; GSI Databar Composites; Chinese Sensible Code; Inverted 2D codes^b.</p> <p>Note: The reader can apply the Normal/Reverse Decoding Control to the following symbologies: Data Matrix, QR, Aztec and Chinese Sensible Code.</p> |
| Interfaces Supported^c | USB Com Std., USB Keyboard, USB OEM, USB Composite. |

a. It is acceptable to handle this with ULE

b. The SW can apply the Normal/Reverse Decoding Control to the following symbologies: Datamatrix, QR, Micro QR, Aztec and Chinese Sensible Code

c. See "Configure Interface Settings" on page 6 for a listing of available interface sets

Appendix B

Standard Defaults

The most common configuration settings are listed in the “Default” column of the table below. Page references are also provided for feature descriptions and programming barcodes for each parameter. A column has also been provided for recording of your preferred default settings for these same configurable features.

Table 42. Standard Defaults

| Parameter | Default | Your Setting | Page Number |
|----------------------------------|------------------------|--------------|-------------|
| GLOBAL INTERFACE FEATURES | | | |
| Host Commands — Obey/Ignore | Obey | | 11 |
| USB Suspend Mode | Disable | | 11 |
| USB-Com | | | |
| Intercharacter Delay | No Delay | | 14 |
| Beep On ASCII BEL | Disable | | 14 |
| Beep On Not on File | Enable | | 15 |
| ACK NAK Options | Disable | | 16 |
| ACK Character | 'ACK' | | 17 |
| NAK Character | 'NAK' | | 17 |
| ACK NAK Timeout Value | 200 ms | | 17 |
| ACK NAK Retry Count | 3 Retries | | 18 |
| ACK NAK Error Handling | Ignore Errors Detected | | 19 |
| Indicate Transmission Failure | Enable | | 19 |
| Disable Character | 'D' | | 20 |
| Enable Character | 'E' | | 20 |
| USB Keyboard | | | |
| Country Mode | U.S. Keyboard | | 22 |
| Send Control Characters | 00 | | 26 |
| Caps Lock State | Caps Lock OFF | | 27 |
| Numlock | NumLock Key Unchanged | | 27 |

Standard Defaults

| Parameter | Default | Your Setting | Page Number |
|-------------------------------------|---|--------------|-------------|
| USB Keyboard Speed | 1 ms | | 28 |
| USB Keyboard Numeric Keypad | Standard Keys | | 29 |
| USB-OEM | | | |
| USB-OEM Device Usage | Handheld | | 32 |
| USB Interface Options | Ignore Scanner Configuration Host Commands | | 32 |
| DATA FORMAT | | | |
| Global Prefix/Suffix | No Global Prefix Global Suffix = 0x0D (CR) | | 36 |
| Global AIM ID | Disable | | 37 |
| Set AIM ID Individually for GS1-128 | Enable | | 39 |
| Label ID: Pre-Loaded Sets | EU Set | | 40 |
| Individually Set Label ID | Disable | | 41 |
| Case Conversion | Disable | | 47 |
| Character Conversion | No Char Conversion | | 48 |
| READING PARAMETERS | | | |
| Double Read Timeout | 0.6 Second | | 49 |
| Power On Alert | Power-up Beep | | 52 |
| Good Read: When to Indicate | After Decode | | 52 |
| Good Read Beep Type | Mono | | 53 |
| Good Read Beep Frequency | High | | 53 |
| Good Read Beep Length | 80 ms | | 54 |
| Good Read Beep Volume | High | | 55 |
| Scanning Features | | | |
| Scan Mode | Trigger Single | | 56 |
| Pick Mode | Disable | | 57 |
| Stand Mode Illumination Off Time | 2 Seconds | | 57 |
| Scanning Active Time | 5 Seconds | | 58 |
| Stand Illumination Control | OFF | | 58 |

| Parameter | Default | Your Setting | Page Number |
|--|----------------------------------|--------------|-------------|
| Flash On Time | 10 = Flash is ON for 1 Second | | 59 |
| Flash Off Time | 06 = Flash is OFF for 600ms | | 59 |
| Illumination: Brightness | Enable | | 60 |
| Aiming Duration Timer | Aiming Off After Decoding | | 61 |
| Green Spot Duration | 300 ms | | 62 |
| Mobile Phone Mode | Enable | | 62 |
| Partial Label Reading Control | Enable | | 63 |
| Decode Negative Image | Disable | | 63 |
| Multiple Label Reading | | | |
| Multiple Labels per Frame | Disable | | 64 |
| Multiple Labels Ordering by Code Symbology | Random Order | | 65 |
| Multiple Labels Ordering by Code Length | Disable | | 65 |
| CODE SELECTION - 1D SYMBOLOGIES | | | |
| Code EAN/UPC | | | |
| Coupon Control | Enable only UPCA coupon decoding | | 69 |
| UPC-A | | | |
| UPC-A Enable/Disable | Enable | | 70 |
| UPC-A Check Character Transmission | Send | | 70 |
| Expand UPC-A to EAN-13 | Don't Expand | | 71 |
| UPC-A Number System Character Transmission | Transmit | | 71 |
| UPC-A 2D Component | 2D Component Not Required | | 72 |
| UPC-E | | | |
| UPC-E Enable/Disable | Enable | | 72 |
| UPC-E Check Character Transmission | Send | | 73 |
| UPC-E 2D Component | 2D Component Not Required | | 73 |
| Expand UPC-E to EAN-13 | Don't Expand | | 74 |
| Expand UPC-E to UPC-A | Don't Expand | | 74 |

Standard Defaults

| Parameter | Default | Your Setting | Page Number |
|--|---------------------------|--------------|-------------|
| UPC-E Number System Character Transmission | Transmit | | 75 |
| GTIN | | | |
| GTIN Formatting | Disable | | 75 |
| EAN 13 (Jan 13) | | | |
| EAN 13 Enable/Disable | Enable | | 76 |
| EAN 13 Check Character Transmission | Send | | 76 |
| EAN-13 Flag 1 Character | Transmit | | 77 |
| EAN-13 ISBN Conversion | Disable | | 77 |
| EAN-13 2D Component | 2D Component Not Required | | 78 |
| ISSN | | | |
| ISSN Enable/Disable | Disable | | 78 |
| EAN 8 | | | |
| EAN 8 Enable/Disable | Enable | | 79 |
| EAN 8 Check Character Transmission | Send | | 79 |
| Expand EAN 8 to EAN 13 | Disable | | 80 |
| EAN 8 2D Component | 2D Component Not Required | | 80 |
| UPC/EAN Global Settings | | | |
| UPC/EAN Price Weight Check | Disable | | 81 |
| UPC/EAN Quiet Zones | Two Modules | | 82 |
| Add-Ons | | | |
| Optional Add-ons | Disable P2, P5 and P8 | | 83 |
| Optional Add-On Timer | 70 ms | | 84 |
| Optional GS1-128 Add-On Timer | Disable | | 87 |
| Code 39 | | | |
| Code 39 Enable/Disable | Enable | | 90 |
| Code 39 Check Character Calculation | Disable | | 90 |
| Code 39 Check Character Transmission | Send | | 91 |
| Code 39 Start/Stop Character Transmission | Don't Transmit | | 92 |
| Code 39 Full ASCII | Disable | | 92 |

| Parameter | Default | Your Setting | Page Number |
|---|----------------------------------|--------------|-------------|
| Code 39 Quiet Zones | Small Quiet Zones on two sides | | 93 |
| Code 39 Length Control | Variable | | 93 |
| Code 39 Set Length 1 | 2 | | 94 |
| Code 39 Set Length 2 | 50 | | 95 |
| Trioptic Code | | | |
| Trioptic Code Enable/Disable | Disable | | 96 |
| Code 32 (Italian Pharmaceutical Code) | | | |
| Code 32 Enable/Disable | Disable | | 96 |
| Code 32 Check Char Transmission | Don't Send | | 97 |
| Code 32 Start/Stop Character Transmission | Don't Transmit | | 97 |
| Code 39 CIP (French Pharmaceutical Code) | | | |
| Code 39 CIP Enable/Disable | Disable | | 98 |
| Special Codes | | | |
| Code 39 Danish PPT Enable/Disable | Disable | | 98 |
| Code 39 LaPoste Enable/Disable | Disable | | 99 |
| Code 39 PZN Enable/Disable | Disable | | 99 |
| Code 128 | | | |
| Code 128 Enable/Disable | Enable | | 100 |
| Expand Code 128 to Code 39 | Don't Expand | | 100 |
| Code 128 Check Character Transmission | Don't Send | | 101 |
| Code 128 Function Character Transmission | Don't Send | | 101 |
| Code 128 Quiet Zones | Small Quiet Zones on two sides | | 102 |
| Code 128 Length Control | Variable | | 102 |
| Code 128 Set Length 1 | 1 | | 103 |
| Code 128 Set Length 2 | 80 | | 104 |
| GS1-128 | | | |
| GS1-128 Enable | Transmit in Code 128 Data Format | | 105 |
| GS1-128 2D Component | Disable | | 105 |
| ISBT 128 | | | |

Standard Defaults

| Parameter | Default | Your Setting | Page Number |
|--|----------|--------------|-------------|
| ISBT 128 Concatenation | Disable | | 106 |
| ISBT 128 Force Concatenation | Disable | | 106 |
| ISBT 128 Concatenation Mode | Static | | 107 |
| ISBT 128 Dynamic Concatenation Timeout | 200 msec | | 108 |
| Interleaved 2 of 5 | | | |
| I 2 of 5 Enable/Disable | Disable | | 109 |
| I 2 of 5 Check Character Calculation | Disable | | 110 |
| I 2 of 5 Check Character Transmission | Send | | 111 |
| I 2 of 5 Length Control | Variable | | 111 |
| I 2 of 5 Set Length 1 | 6 | | 112 |
| I 2 of 5 Set Length 2 | 50 | | 113 |
| Interleaved 2 of 5 CIP HR | | | |
| Interleaved 2 of 5 CIP HR Enable/Disable | Disable | | 114 |
| Follett 2 of 5 | | | |
| Follett 2 of 5 Enable/Disable | Disable | | 114 |
| Standard 2 of 5 | | | |
| Standard 2 of 5 Enable/Disable | Disable | | 115 |
| Standard 2 of 5 Check Character Calculation | Disable | | 115 |
| Standard 2 of 5 Check Character Transmission | Send | | 116 |
| Standard 2 of 5 Length Control | Variable | | 116 |
| Standard 2 of 5 Set Length 1 | 8 | | 117 |
| Standard 2 of 5 Set Length 2 | 50 | | 118 |
| Industrial 2 of 5 | | | |
| Industrial 2 of 5 Enable/Disable | Disable | | 119 |
| Industrial 2 of 5 Check Character Calculation | Disable | | 119 |
| Industrial 2 of 5 Check Character Transmission | Enable | | 120 |
| Industrial 2 of 5 Length Control | Variable | | 120 |
| Industrial 2 of 5 Set Length 1 | 1 | | 121 |
| Industrial 2 of 5 Set Length 2 | 50 | | 122 |
| Code IATA | | | |

| Parameter | Default | Your Setting | Page Number |
|--|--------------------------------|--------------|-------------|
| IATA Enable/Disable | Disable | | 123 |
| IATA Check Character Transmission | Enable | | 123 |
| Codabar | | | |
| Codabar Enable/Disable | Disable | | 124 |
| Codabar Check Character Calculation | Don't Calculate | | 124 |
| Codabar Check Character Transmission | Send | | 125 |
| Codabar Start/Stop Character Transmission | Transmit | | 125 |
| Codabar Start/Stop Character Set | abcd/abcd | | 126 |
| Codabar Start/Stop Character Match | Don't Require Match | | 126 |
| Codabar Quiet Zones | Small Quiet Zones on two sides | | 127 |
| Codabar Length Control | Variable | | 127 |
| Codabar Set Length 1 | 3 | | 128 |
| Codabar Set Length 2 | 50 | | 129 |
| ABC Codabar | Disable | | 130 |
| ABC Codabar | | | |
| ABC Codabar Enable/Disable | Disable | | 130 |
| ABC Codabar Concatenation Mode | Static | | 130 |
| ABC Codabar Dynamic Concatenation Timeout | 200 msec | | 131 |
| ABC Codabar Force Concatenation | Disable | | 132 |
| Code 11 | | | |
| Code 11 Enable/Disable | Disable | | 133 |
| Code 11 Check Character Calculation | Check C and K | | 133 |
| Code 11 Check Character Transmission | Send | | 134 |
| Code 11 Length Control | Variable | | 134 |
| Code 11 Set Length 1 | 4 | | 135 |
| Code 11 Set Length 2 | 50 | | 136 |
| GS1 DataBar™ Omnidirectional | | | |
| GS1 DataBar™ Omnidirectional Enable/Disable | Disable | | 137 |
| GS1 DataBar™ Omnidirectional GS1-128 Emulation | Disable | | 137 |

Standard Defaults

| Parameter | Default | Your Setting | Page Number |
|---|--------------------------------|--------------|-------------|
| GS1 DataBar™ Omnidirectional 2D Component | 2D component not required | | 138 |
| GS1 DataBar™ Expanded | | | |
| GS1 DataBar™ Expanded Enable/Disable | Disable | | 138 |
| GS1 DataBar™ Expanded GS1-128 Emulation | Disable | | 139 |
| GS1 DataBar™ Expanded 2D Component | 2D component not required | | 139 |
| GS1 DataBar™ Expanded Length Control | Variable | | 140 |
| GS1 DataBar™ Expanded Set Length 1 | 1 | | 141 |
| GS1 DataBar™ Expanded Set Length 2 | 74 | | 142 |
| GS1 DataBar™ Limited | | | |
| GS1 DataBar™ Limited Enable/Disable | Disable | | 143 |
| GS1 DataBar™ Limited GS1-128 Emulation | Disable | | 143 |
| GS1 DataBar™ Limited 2D Component | 2D component not required | | 144 |
| Code 93 | | | |
| Code 93 Enable/Disable | Disable | | 144 |
| Code 93 Check Character Calculation | Enable Check C and K | | 145 |
| Code 93 Check Character Transmission | Disable | | 145 |
| Code 93 Length Control | Variable | | 146 |
| Code 93 Set Length 1 | 1 | | 147 |
| Code 93 Set Length 2 | 50 | | 148 |
| Code 93 Quiet Zones | Small Quiet Zones on two sides | | 149 |
| MSI | | | |
| MSI Enable/Disable | Disable | | 149 |
| MSI Check Character Calculation | Enable Mod10 | | 150 |
| MSI Check Character Transmission | Enable | | 150 |
| MSI Length Control | Variable | | 152 |
| MSI Set Length 1 | 1 | | 152 |
| MSI Set Length 2 | 50 | | 153 |

| Parameter | Default | Your Setting | Page Number |
|--|---|--------------|-------------|
| Plessey | | | |
| Plessey Enable/Disable | Disable | | 154 |
| Plessey Check Character Calculation | Enable Plessey std. check char. verification | | 154 |
| Plessey Check Character Transmission | Enable | | 155 |
| Plessey Length Control | Variable | | 155 |
| Plessey Set Length 1 | 1 | | 156 |
| Plessey Set Length 2 | 50 | | 157 |
| CODE SELECTION - 2D SYMBOLOGIES | | | |
| 2D Maximum Decoding Time | 350msec | | 160 |
| 2D Structured Append | Disable | | 161 |
| 2D Normal/Inverse Symbol Control | Normal | | 161 |
| Aztec Code Enable / Disable | Disable | | 162 |
| Aztec Code Length Control | Enable | | 162 |
| Aztec Code Length Control | Variable | | 162 |
| Aztec Code Set Length 1 | 1 | | 163 |
| China Sensible Code Enable / Disable | Disable | | 165 |
| China Sensible Code Length Control | Variable | | 165 |
| China Sensible Code Set Length 1 | 1 | | 166 |
| China Sensible Code Set Length 2 | 7,827 | | 167 |
| Data Matrix Enable / Disable | Enable | | 168 |
| Data Matrix Square/Rectangular Style | Both Square and Rectangular style | | 168 |
| Data Matrix Length Control | Variable | | 169 |
| Data Matrix Set Length 1 | 1 | | 169 |
| Data Matrix Set Length 2 | 3,116 | | 170 |
| Maxicode Enable / Disable | Disable | | 171 |
| Maxicode Primary Message Transmission | Disable | | 171 |
| Maxicode Length Control | Variable | | 172 |
| Maxicode Set Length 1 | 1 | | 172 |
| Maxicode Set Length 2 | 0145 | | 173 |

Standard Defaults

| Parameter | Default | Your Setting | Page Number |
|---|---------------------------------|--------------|-------------|
| PDF417 Enable / Disable | Enable | | 174 |
| PDF417 Length Control | Variable | | 174 |
| PDF417 Set Length 1 | 1 | | 175 |
| PDF417 Set Length 2 | 2,710 | | 176 |
| Micro PDF417 Enable / Disable | Disable | | 177 |
| Micro PDF417 Code 128 GS1-128 Emulation | Micro PDF AIM ID and label type | | 177 |
| Micro PDF417 Length Control | Variable | | 178 |
| Micro PDF417 Set Length 1 | 1 | | 178 |
| Micro PDF417 Set Length 2 | 0366 | | 179 |
| QR Code Enable / Disable | Enable | | 180 |
| QR Code Length Control | Variable | | 180 |
| QR Code Set Length 1 | 1 | | 181 |
| QR Code Set Length 2 | 7,089 | | 182 |
| Micro QR Code Enable/Disable | Disable | | 183 |
| Micro QR Code Length Control | Variable | | 183 |
| Micro QR Code Set Length 1 | 0001 | | 184 |
| Micro QR Code Set Length 2 | 0035 | | 185 |
| UCC Composite Enable / Disable | Disable | | 186 |
| UCC Optional Composite Timer | Timer Disabled | | 187 |
| Postal Code Selection | Disable all Postal codes | | 188 |
| Postnet BB Control | Disable | | 189 |

Appendix C

Sample Barcodes

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

1D Barcodes



Sample Barcodes (continued)

Code 32



Codabar



Code 93



Code 11



GS1 DataBar™ (RSS)



GS1 DataBar™ variants must be enabled to read the barcodes below (see [GS1 DataBar™ Omnidirectional](#) on page 137).

GS1 DataBar™ Expanded Stacked



10293847560192837465019283746029478450366523

GS1 DataBar™ Expanded



1234890hjio9900mnb

GS1 DataBar™ Limited



08672345650916

GS1 DataBar™-14

GS1 DataBar™ Omnidirectional Truncated



55432198673467

GS1 DataBar™ Omnidirectional Stacked



90876523412674

GS1 DataBar™ Omnidirectional Stacked



78123465709811

2D Barcodes

Aztec



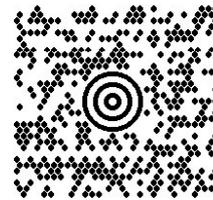
Datamatrix



China Sensible Code



MaxiCode



PDF 417



ABCabc

Micro PDF 417



BV17453

QR Code



35900G9

Micro QR Code



123456

UCC Composite



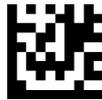
(17) 050923 (10) ABC123

(01) 0 4012345 67890 1 1

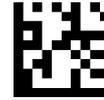
Appendix D

Keypad

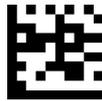
Use the barcodes in this appendix to enter numbers as you would select digits/characters from a keypad.



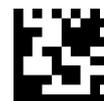
0



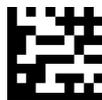
1



2



3



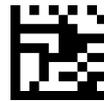
4



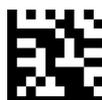
5



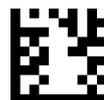
6



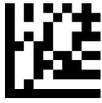
7



8



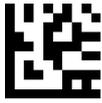
9



A



B



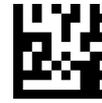
C



D



E



F

Appendix E

Scancode Tables

Control Character Emulation

Control character emulation selects from different scancode tables as listed in this appendix. Each of the control character sets below are detailed by interface type in the tables. These apply to USB Keyboard platforms.

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

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

Control Character 02: Special keys are located from 00 to 0x1F and characters from 0x80 to 0xFE are intended as an extended ASCII table (Microsoft Windows Codepage 1252 — see page [242](#)).

Single Press and Release Keys

In the following tables, Ar↓ means Alt right pressed and Ar↑ means Alt right released and so on. Definitions for other keys are Al (Alt left), Cr (Control right) Cl (Control left) Sh (Shift). This method can be used for combining Alt, Control or Shift with other keys.

Example

Consider a Control character set to 00. If AltRight+A is required before sending a label to the host, it could be done by setting three Prefix keys in this way: 0x99 0x41 0x9A.

Interface Type USB-Keyboard or USB-Keyboard for APPLE

Table 43. 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 | <u>SP</u> | <u>!</u> | <u>"</u> | <u>#</u> | <u>\$</u> | <u>%</u> | <u>&</u> | <u>'</u> | <u>(</u> | <u>)</u> | <u>*</u> | <u>±</u> | <u>·</u> | <u>=</u> | <u>·</u> | <u>/</u> |
| 3x | <u>0</u> | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>6</u> | <u>7</u> | <u>8</u> | <u>9</u> | <u>:</u> | <u>:</u> | <u>≤</u> | <u>≡</u> | <u>≥</u> | <u>?</u> |
| 4x | <u>@</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> | <u>F</u> | <u>G</u> | <u>H</u> | <u>I</u> | <u>J</u> | <u>K</u> | <u>L</u> | <u>M</u> | <u>N</u> | <u>O</u> |
| 5x | <u>P</u> | <u>Q</u> | <u>R</u> | <u>S</u> | <u>T</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>X</u> | <u>Y</u> | <u>Z</u> | <u>[</u> | <u>\</u> | <u>]</u> | <u>^</u> | <u>_</u> |
| 6x | <u>`</u> | <u>a</u> | <u>b</u> | <u>c</u> | <u>d</u> | <u>e</u> | <u>f</u> | <u>g</u> | <u>h</u> | <u>i</u> | <u>j</u> | <u>k</u> | <u>l</u> | <u>m</u> | <u>n</u> | <u>o</u> |
| 7x | <u>p</u> | <u>q</u> | <u>r</u> | <u>s</u> | <u>t</u> | <u>u</u> | <u>v</u> | <u>w</u> | <u>x</u> | <u>y</u> | <u>z</u> | <u>{</u> | <u> </u> | <u>}</u> | <u>~</u> | <i>Del</i> |
| 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↑ | | ‘ | f | „ | ... | † | ‡ | ^ | % | Š | < | Š | < | 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 USB-Keyboard or USB-Keyboard for APPLE (continued)

Table 44. Scancode Set When Control Character is 02

| | x0 | x1 | x2 | x3 | x4 | x5 | X6 | x7 | x8 | x9 | xA | xB | xC | xD | xE | xF |
|----|--------|------|-----|-----|-----|-----|-----|-----|----|-----|----|--------|--------------|-------|-----|-------|
| 0x | Ar↓ | Ar↑ | Al↓ | Al↑ | Cl↓ | Cl↑ | Cr↓ | Cr↑ | BS | Tab | → | S+ Tab | Enter Keyprd | Enter | Ins | Pg Up |
| 1x | Pg Dwn | Home | ← | ↓ | ↑ | F6 | F1 | F2 | F3 | F4 | F5 | ESC | F7 | F8 | F9 | F10 |
| 2x | Space | ! | “ | # | \$ | % | & | ‘ | (|) | * | + | , | - | . | / |
| 3x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 4x | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 5x | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 6x | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 7x | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | Del |
| 8x | € | | ‘ | f | „ | ... | † | ‡ | ^ | %o | Š | < | Š | < | Œ | |
| 9x | | ‘ | ’ | “ | ” | • | — | — | ~ | ™ | š | > | œ | | ž | ÿ |
| Ax | NBSP | ı | ç | £ | □ | ¥ | | § | ¨ | © | 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 USB-Keyboard Alt Mode

Table 45. Scancode Set When Control Character is 00 or 01

| | x0 | x1 | x2 | x3 | x4 | x5 | X6 | x7 | x8 | x9 | xA | xB | xC | xD | xE | Xf |
|----|---------|---------|---------|---------|---------------|---------|---------|---------|---------|-----------|---------|------------|---------|-------------|---------|---------|
| 0x | Alt+000 | Alt+001 | Alt+002 | Alt+003 | Alt+004 | Alt+005 | Alt+006 | Alt+007 | BS | HT TAB | Alt+010 | Alt+011 | Alt+012 | CR Enter | Alt+014 | Alt+015 |
| 1x | Alt+016 | Alt+017 | Alt+018 | Alt+019 | Alt+020 | Alt+021 | Alt+022 | Alt+023 | Alt+024 | Alt+025 | Alt+026 | ESC Esc | Alt+028 | Alt+029 | Alt+030 | Alt+031 |
| 2x | A+032 | A+033 | A+034 | A+035 | A+036 | A+037 | A+038 | A+039 | A+040 | A+041 | A+042 | A+043 | A+044 | A+045 | A+046 | A+047 |
| 3x | A+048 | A+049 | A+050 | A+051 | A+052 | A+053 | A+054 | A+055 | A+056 | A+057 | A+058 | A+059 | A+060 | A+061 | A+062 | A+063 |
| 4x | A+064 | A+065 | A+066 | A+067 | A+068 | A+069 | A+070 | A+071 | A+072 | A+073 | A+074 | A+075 | A+076 | A+077 | A+078 | A+079 |
| 5x | A+080 | A+081 | A+082 | A+083 | A+084 | A+085 | A+086 | A+087 | A+088 | A+089 | A+090 | A+091 | A+092 | A+093 | A+094 | A+095 |
| 6x | A+096 | A+097 | A+098 | A+099 | A+100 | A+101 | A+102 | A+103 | A+104 | A+105 | A+106 | A+107 | A+108 | A+109 | A+110 | A+111 |
| 7x | A+112 | A+113 | A+114 | A+115 | A+116 | A+117 | A+118 | A+119 | A+120 | A+121 | A+122 | A+123 | A+124 | A+125 | A+126 | A+127 |
| 8x | € | Sh↓ | Sh↑ | Ins | Ent (keyp) | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | F11 |
| 9x | F12 | Home | End | Pg Up | Pg Dwn | ↑ | ↓ | ← | → | Ar↓ | Ar↑ | Al↓ | Al↑ | Cl↓ | Cl↑ | Cr↓ |
| Ax | Cr↑ | A+0161 | A+0162 | A+0163 | A+0164 | A+0165 | A+0166 | A+0167 | A+0168 | A+0169 | A+0170 | A+0171 | A+0172 | A+0173 | A+0174 | A+0175 |
| Bx | A+0176 | A+0177 | A+0178 | A+0179 | A+0180 | A+0181 | A+0182 | A+0183 | A+0184 | A+0185 | A+0186 | A+0187 | A+0188 | A+0189 | A+0190 | A+0191 |
| Cx | A+0192 | A+0193 | A+0194 | A+0195 | A+0196 | A+0197 | A+0198 | A+0199 | A+0200 | A+0201 | A+0202 | A+0203 | A+0204 | A+0205 | A+0206 | A+0207 |
| Dx | A+0208 | A+0209 | A+0210 | A+0211 | A+0212 | A+0213 | A+0214 | A+0215 | A+0216 | A+0217 | A+0218 | A+0219 | A+0220 | A+0221 | A+0222 | A+0223 |
| Ex | A+0224 | A+0225 | A+0226 | A+0227 | A+0228 | A+0229 | A+0230 | A+0231 | A+0232 | A+0233 | A+0234 | A+0235 | A+0236 | A+0237 | A+0238 | A+0239 |
| Fx | A+0240 | A+0241 | A+0242 | A+0243 | A+0244 | A+0245 | A+0246 | A+0247 | A+0248 | A+0249 | A+0250 | A+0251 | A+0252 | A+0253 | A+0254 | A+0255 |

Interface type USB-KeyBoard Alt Mode (continued)

Table 46. Scancode Set When Control Character is 02

| | x0 | x1 | x2 | x3 | x4 | x5 | X6 | x7 | x8 | x9 | xA | xB | xC | xD | xE | xF |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|--------|--------|--------|
| 0x | Ar↓ | Ar↑ | Al↓ | Al↑ | Cl↓ | Cl↑ | Cr↓ | Cr↑ | BS | Tab | → | S+ Tab | Enter Keyprd | Enter | Ins | Pg Up |
| 1x | Pg Dwn | Home | ← | ↓ | ↑ | F6 | F1 | F2 | F3 | F4 | F5 | ESC | F7 | F8 | F9 | F10 |
| 2x | A+032 | A+033 | A+034 | A+035 | A+036 | A+037 | A+038 | A+039 | A+040 | A+041 | A+042 | A+043 | A+044 | A+045 | A+046 | A+047 |
| 3x | A+048 | A+049 | A+050 | A+051 | A+052 | A+053 | A+054 | A+055 | A+056 | A+057 | A+058 | A+059 | A+060 | A+061 | A+062 | A+063 |
| 4x | A+064 | A+065 | A+066 | A+067 | A+068 | A+069 | A+070 | A+071 | A+072 | A+073 | A+074 | A+075 | A+076 | A+077 | A+078 | A+079 |
| 5x | A+080 | A+081 | A+082 | A+083 | A+084 | A+085 | A+086 | A+087 | A+088 | A+089 | A+090 | A+091 | A+092 | A+093 | A+094 | A+095 |
| 6x | A+096 | A+097 | A+098 | A+099 | A+100 | A+101 | A+102 | A+103 | A+104 | A+105 | A+106 | A+107 | A+108 | A+109 | A+110 | A+111 |
| 7x | A+112 | A+113 | A+114 | A+115 | A+116 | A+117 | A+118 | A+119 | A+120 | A+121 | A+122 | A+123 | A+124 | A+125 | A+126 | A+127 |
| 8x | A+0128 | A+0129 | A+0130 | A+0131 | A+0132 | A+0133 | A+0134 | A+0135 | A+0136 | A+0137 | A+0138 | A+0139 | A+0140 | A+0141 | A+0142 | A+0143 |
| 9x | A+0144 | A+0145 | A+0146 | A+0147 | A+0148 | A+0149 | A+0150 | A+0151 | A+0152 | A+0153 | A+0154 | A+0155 | A+0156 | A+0157 | A+0158 | A+0159 |
| Ax | A+0160 | A+0161 | A+0162 | A+0163 | A+0164 | A+0165 | A+0166 | A+0167 | A+0168 | A+0169 | A+0170 | A+0171 | A+0172 | A+0173 | A+0174 | A+0175 |
| Bx | A+0176 | A+0177 | A+0178 | A+0179 | A+0180 | A+0181 | A+0182 | A+0183 | A+0184 | A+0185 | A+0186 | A+0187 | A+0188 | A+0189 | A+0190 | A+0191 |
| Cx | A+0192 | A+0193 | A+0194 | A+0195 | A+0196 | A+0197 | A+0198 | A+0199 | A+0200 | A+0201 | A+0202 | A+0203 | A+0204 | A+0205 | A+0206 | A+0207 |
| Dx | A+0208 | A+0209 | A+0210 | A+0211 | A+0212 | A+0213 | A+0214 | A+0215 | A+0216 | A+0217 | A+0218 | A+0219 | A+0220 | A+0221 | A+0222 | A+0223 |
| Ex | A+0224 | A+0225 | A+0226 | A+0227 | A+0228 | A+0229 | A+0230 | A+0231 | A+0232 | A+0233 | A+0234 | A+0235 | A+0236 | A+0237 | A+0238 | A+0239 |
| Fx | A+0240 | A+0241 | A+0242 | A+0243 | A+0244 | A+0245 | A+0246 | A+0247 | A+0248 | A+0249 | A+0250 | A+0251 | A+052 | A+0253 | A+0254 | A+0255 |

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 | <u>NUL</u> 0000 | <u>STX</u> 0001 | <u>SOT</u> 0002 | <u>ETX</u> 0003 | <u>EOT</u> 0004 | <u>ENQ</u> 0005 | <u>ACK</u> 0006 | <u>BEL</u> 0007 | <u>BS</u> 0008 | <u>HT</u> 0009 | <u>LF</u> 000A | <u>VT</u> 000B | <u>FF</u> 000C | <u>CR</u> 000D | <u>SO</u> 000E | <u>SI</u> 000F |
| 10 | <u>DLE</u> 0010 | <u>DC1</u> 0011 | <u>DC2</u> 0012 | <u>DC3</u> 0013 | <u>DC4</u> 0014 | <u>NAK</u> 0015 | <u>SYN</u> 0016 | <u>ETB</u> 0017 | <u>CAN</u> 0018 | <u>EM</u> 0019 | <u>SUB</u> 001A | <u>ESC</u> 001B | <u>FS</u> 001C | <u>GS</u> 001D | <u>RS</u> 001E | <u>US</u> 001F |
| 20 | <u>SP</u> 0020 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | <u>DEL</u> 007F |
| 80 | € 20AC | ⋯ | 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 | <u>NBSP</u> 00A0 | ı 00A1 | ı̇ 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. |
|-------------|---------|-------------|---------|-------------|---------|-------------|---------|
| 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 |

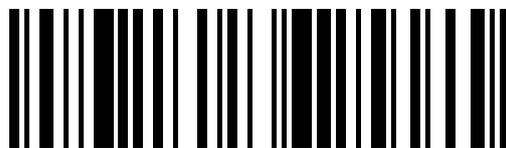


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Datalogic ADC, Inc.

959 Terry Street | Eugene | OR 97402 | USA
Telephone: (1) 541-683-5700 | Fax: (1) 541-345-7140



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