Quickscan™ I QD2200

PRODUCT REFERENCE GUIDE

General Purpose Corded Handheld Linear Bar Code Reader

DATALOGIC

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Patents

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

Software Version

This manual refers to the following software versions and later:

QD2200 Boot: 610178511

QD2200 App: 610178613

TABLE OF CONTENTS

PREFACE

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.

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

Programming can alternatively be performed using the Datalogic Aladdin™ Configuration application, which is available from the Datalogic website listed on the back cover of this manual. This multi-platform utility program allows device configuration using a PC. It communicates to the device using a serial or USB cable and can also create configuration bar codes to print.

OVERVIEW

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

Chapter 2, Setup presents information about unpacking and setting up the scanner, and interface configuration bar codes and details.

Chapter 3, Configuration Using Bar Codes provides instructions and bar code labels for customizing your scanner. There are different sections for interface types, general features, data formatting, and symbology-specific features.

Chapter 2, References provides details concerning programmable features.

Appendix A, Technical Specifications lists physical and performance characteristics, as well as environmental specifications. It also provides standard cable pin-outs and descriptions of the functions and behaviors of the scanner's LED and Speaker indicators.

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

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

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

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

Appendix F, ASCII Chart lists hexadecimal reference values for ASCII characters.

Manual Conventions

The following conventions are used in this document:

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

NOTE: This symbol draws attention to details or procedures that may be useful in improving, maintaining, or enhancing the performance of the hardware or software being discussed.

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

WARNING: This symbol advises you of actions that could result in harm or injury to the person performing the task.

HIGH VOLTAGE: This symbol alerts the user they are about to perform an action involving, either a dangerous level of voltage, or to warn against an action that could result in damage to devices or electrical shock.

LASER: This symbol alerts the user they are about to perform an action involving possible exposure to laser light radiation.

GROUNDING: This symbol advises you to pay particular attention to the grounding instructions for correct device functioning.

ESD: This symbol identifies a procedure that requires you take measures to prevent Electrostatic Discharge (ESD) e.g., use an ESD wrist strap. Circuit boards are most at risk. Please follow ESD procedures.

TECHNICAL SUPPORT

Support Through the Website

Datalogic provides several services as well as technical support through its website. Log on to (www.datalogic.com).

For quick access, from the home page click on the search icon, and type in the name of the product you're looking for. This allows you access to download Data Sheets, Manuals, Software & Utilities, and Drawings.

Hover over the Support & Service menu for access to Services and Technical Support.

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.

NOTES

CHAPTER 1
INTRODUCTION

ABOUT THE SCANNER

Today there is an increased trend towards 2D bar codes, however, linear bar codes are still widespread in Retail POS checkout applications. Long bar codes are also commonly used in a variety of applications including utility bills, document processing and packaging. These long barcodes are a challenge for full area imagers to read due to their narrow field-of-view and shorter depth-of-field. The QuickScan™ QD2200 imager is the 1D entry-level corded imager from Datalogic with a superior scanning performance in its category. It reliably reads any type of 1D barcode from up close to a distance with ease in capturing long bar codes.

The Most Prompt Response at the Pos Check-out

Unlike other devices on the market, this imager provides full control to the operator, from the linear aiming to the most prompt visual and audible good-read feedback. It seamlessly reads through plexiglass barriers and can scan electronic coupons from smartphone screens at an incredibly affordable price.

Comfort and Reliability

Lightweight and easy to handle, the QuickScan QD2200 is very responsive at the pull of the trigger, providing a superior robustness for this class of products where the device is mostly stressed, because of the accurate design and quality of parts. Offering simple configuration and ease of use, this robust entry-level scanner delivers continuous operation capabilities with no failures. Finally, the QuickScan QD2200 imager will prove to be the best long term choice, by cutting down-time, no read/misread management time, and service costs.

USING THE QUICKSCAN™ I QD2200 READER

To read a symbol or capture an image, simply aim the reader and pull the trigger. Datalogic's exclusive patented 'Green Spot' for good-read feedback helps to improve productivity in noisy environments or in situations where silence is required.

The Quickscan™ I QD2200 reliably decodes all standard 1D (linear) including GS1 DataBar™ linear codes, Postal Codes (China Post). The data stream - acquired from decoding a symbol - is rapidly sent to the host. The reader is immediately available to read another symbol.

Figure 1 - Correct positioning of the scanner

PROGRAMMING THE READER

Configuration Methods

Programming Bar Codes

The reader is factory-configured with a standard set of default features. After scanning the interface bar code, you can select other options and customize your reader through use of the instructions and programming bar code labels available in the corresponding features section for your interface. Customizable settings for many features are found in Configuration Parameters, starting on page 14.

Some programming labels, like “Restore Custom Defaults”, 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 bar code once to enter Programming Mode. Once the reader is in Programming Mode, scan a number of parameter settings before scanning the ENTER/EXIT bar code a second time, which will then accept your changes, exit Programming Mode and return the reader to normal operation.

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

Datalogic Aladdin™

Datalogic Aladdin™ is a multi-platform utility program providing a quick and user-friendly configuration method via the USB-COM interface. 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 bar codes to be scanned. Aladdin also facilitates image capturing.

In addition, Aladdin makes it easy to upgrade the handheld's firmware, to attain the benefits of new reader features. Reference the Datalogic Aladdin™ Online Help for more details.

Aladdin is available for download free of charge on the Datalogic website.

CHAPTER 2
SETUP

UNPACKING

Check carefully to ensure the scanner and any cables or accessories ordered are present and undamaged. If any damage occurred during shipment, contact "Technical Support" on page xii.

SETTING UP THE QUICKSCAN™ QD2200 READER

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

1. Connect the Interface Cable to the reader as shown in Figure 2. To disconnect the cable, insert a paper clip or similar object into the opening shown.
2. Connect the other end to the Host (see the next section, "Connecting the Host Interface" on page 4 and Figure 3).
3. Program the Reader "Customizing Configuration Settings" on page 11 (only if modifications are needed from factory settings).

CONNECTING THE HOST INTERFACE

The scanner kit you ordered to match your interface should provide a compatible cable for your installation. If this is not so, contact "Technical Support" on page xii.

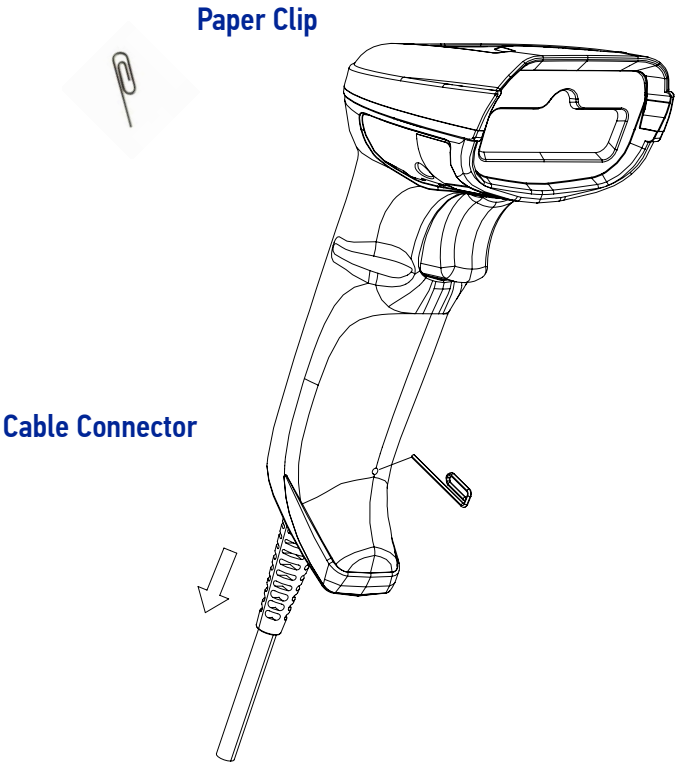
The scanner can communicate using the interface illustrated below.

When inserting the cable, make sure the connector clip is on the same side as the reader release hole. Insert the cable, it should click when it is fully inserted.

To remove the interface cable from the reader, first locate the hole on the front of the handle. Next, take a paper clip and modify it as shown in the figure below. Insert the end of the paper clip into the hole and press it to push on the clip that holds the connector. As you apply pressure, pull out the cable.

NOTE: We recommend the use of a perfectly straight new paper clip to make the operation easier (see the figure below).

Figure 2. Cable Connection/Disconnection at the Scanner



USB Connection

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

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

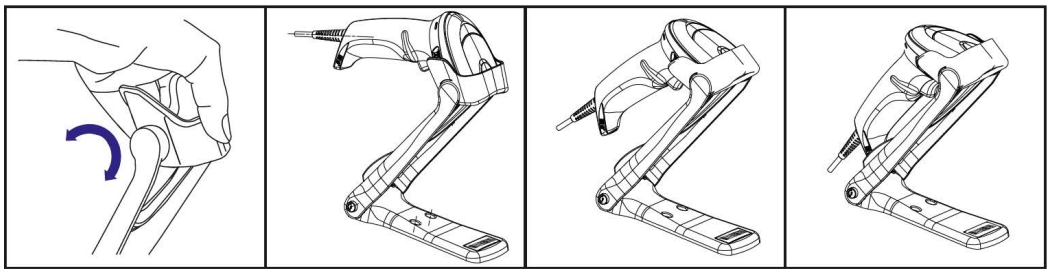
Figure 3 - Connection to the Host

NOTE: Specific cables are required for connection to different hosts. The connections illustrated in Figure 3 are examples only. Actual connectors may vary from those illustrated, but the steps to connect the scanner remain the same.

HANDS FREE STAND/HOLDER

An accessory is available which holds the reader at a convenient angle, allowing hands free scanning of items. It can also be used as a holder.

Figure 4- Adjusting the Stand Arm



Grab and Rotate

Besides the collapsible stand shown in the picture above, all the stands of the Quick-Scan 2500 Series (2D scanners) are also available and compatible with the QD2200 Series, but the auto-sense capability is not active with the QuickScan QD2200.

See page 50 to change Scan Mode and allow the user to operate in hands-free mode.

Figure 5 - Compatible stands for QD2200

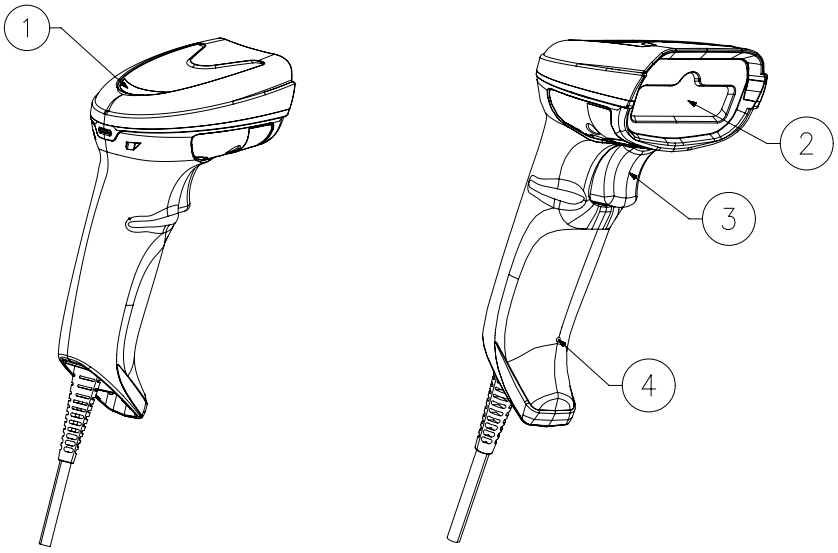
STD-AUTO-QD25-BK
Stand, Autosense, Black

STD-AUTFLX-QD25-BK
Stand, Autosense Flex, Black

PARTS OF THE READER

LEDs on the gun provide information about data transmission.

Figure 6 - Quickscan™ QD2200 Gun LEDs



1. LED
2. Scan Window
3. Trigger
4. Cable Release Hole

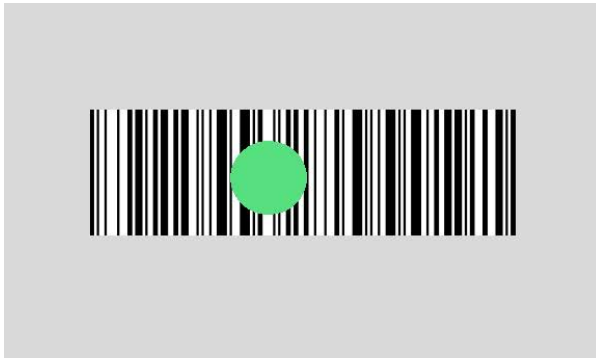
USING THE QUICKSCAN™ I QD2200

The Quickscan™ I QD2200 normally functions by capturing and decoding codes.

Bar Code Reading

Point the reader at the target and pull the trigger to enable the illuminator (red beam) to decode the bar code label. The illuminator will remain on until the symbol is decoded. When scanning a bar code label, you can adjust the distance or angle to the label to help facilitate reading. Successful reading is signaled by an audible tone plus a good-read green spot LED indicator.

Relative Size and Location of Green Spot



INTERFACE SELECTION

Upon completing the physical connection between the scanner and its host, proceed directly to "Configuring the Interface" on page 9 for information and programming for the interface type the scanner is connected to (for example: USB etc.) and scan the appropriate bar code in that section to select your system's correct interface type.

The scanner will support all the following sets of host interfaces:

- USB HID POS
- USB Toshiba TEC
- USB (Keyboard, COM, OEM)
- USB Composite (Keyboard + COM)
- USB for Magellan Scanners

CONFIGURING THE INTERFACE

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

NOTE: Unlike some other programming features and options, interface selections require that you scan only one programming bar code label. DO NOT scan an ENTER/EXIT bar code prior to scanning an interface selection bar code. Some interfaces require the 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 for 5 seconds. The scanner will change to a state that allows programming with bar codes.

USB-COM[A]	
Select USB-COM-STD	USB-COM
USB-Composite (combines USB-KBD emulation and USB-COM	Select USB-Composite

a. USB-COM driver needs to be installed for these interfaces to work. Please download it from www.datalogic.com

OTHER INTERFACES	
USB HID POS	Select USB HID POS
Select USB Toshiba TEC	USB Toshiba TEC
Datalogic Magellan Scanners' specific interface, USB AUX	Select Datalogic Magellan Scanners' USB AUX

USB-OEM

Select USB-OEM	USB-OEM (can be used for OPOS/UPOS/JavaPOS)

NOTE: If you erroneously read the USB-OEM interface selection code, it is required to press and hold the trigger to unlock the reader. Then read the correct interface bar code. This will work only at power-up. Please reconnect the scanner if the unlock is not successful.

KEYBOARD

USB Keyboard with standard key encoding	Select USB Standard Keyboard
Select USB Alternative Keyboard	USB Keyboard with alternative key encoding

CUSTOMIZING CONFIGURATION SETTINGS

Using the Programming Bar Codes

This manual contains feature descriptions and bar codes which allow you to reconfigure your scanner. Some programming bar code labels, like Resetting the Product Configuration to Defaults, starting on page 12, require only the scan of that single label to enact the change.

Most of the programming labels in this manual, however, require the scanner to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT bar code once to enter Programming Mode. Once the scanner is in Programming Mode, you can scan a number of parameter settings before scanning the ENTER/EXIT bar code a second time, which will then accept your changes, exit Programming Mode and return the scanner to normal operation.

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

Datalogic Aladdin™ Utility

Programming can alternatively be performed using the Datalogic Aladdin™ Configuration application which is available for free download from the Datalogic website listed on the back cover of this manual. This multi-platform utility program allows device configuration using a PC. It communicates to the device using a USB cable and can also create configuration bar codes to print.

Datalogic Aladdin™ is a multi-platform utility program providing a quick and user-friendly configuration method via the USB-COM interface. The Aladdin utility is available on the Datalogic website. Aladdin allows you to program the scanner by selecting configuration commands through a user-friendly graphical interface running on a PC. These commands are sent to the scanner over the selected communication interface, or they can be printed as bar codes to be scanned.

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

Interface Settings

The scanner is typically factory-configured with a set of default features standard to the interface type you ordered. See Appendix B, Standard Defaults.

Global Interface Features, starting on page 16 provides settings configurable by all interface types. If your installation requires you to further customize your scanner, you can select other options through use of the instructions and programming bar codes available in the appropriate section for your interface.

- USB-COM INTERFACE on page 1
- KEYBOARD INTERFACE on page 9
- USB-OEM INTERFACE on page 36

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:

Configuration Using Bar Codes: General Features includes programming for scanning, speaker and LED indicators and other such universal settings.

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

Software Version Transmission

The software version of the device can be transmitted over the Keyboard and USB interfaces by scanning the following label.

Transmit Software Version

Resetting the Product Configuration to Defaults

Restore Custom Default Configuration

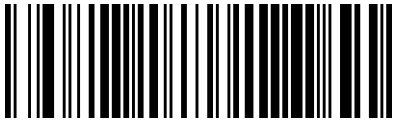
If you aren't sure what programming options are in your scanner, or you've changed some options and want to restore the Custom Default Configuration that may have been saved in the scanner, scan the Restore Custom Default Configuration bar code below. This will restore the custom configuration for the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

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

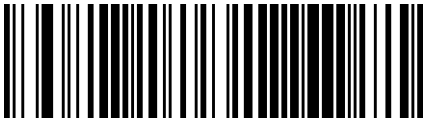
Restore Custom Default Configuration

Restore Factory Configuration

If you want to restore the Factory Configuration for your reader, scan either the Restore USA Factory Configuration bar code or the Restore EU Factory Configuration bar code below. Both labels restore the reader configuration to the factory settings, including the interface type. The USA label restores Label IDs to those historically used in the USA. The EU label restores Label IDs to those historically used in Europe. The Label ID sets for USA and EU are shown in the “Label ID” Section on page 41 of this manual.



Restore USA Factory Configuration



Restore EU Factory Configuration

The programming items listed in the following sections show the factory default settings for each of the menu commands.

CHAPTER 3
CONFIGURATION WITH BAR CODES

This and following sections provide programming bar codes to configure your reader by changing the default settings. For details about additional methods of programming, see "Customizing Configuration Settings" on page 11.

NOTE: You must first enable your PowerScan to read bar codes in order to use this section. If you have not done this, go to Setup, starting on page 4 **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 179 for initial configuration in order to set the default values and select the interface for your application.

NOTE: In the following sections, text shown with a green star indicates a factory default value.

★This is an example of a default value.

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 Settings, starting on page 2
- Keyboard Interface, starting on page 9
- USB-OEM Interface, starting on page 36

Parameters Common to all Interface Applications:

- Global Prefix/Suffix, starting on page 39
- Data Format, starting on page 38 gives options to control the messages sent to the Host system by selecting parameters to control the message strings sent to the handheld.
- Reading Parameters, starting on page 49 controls various operating modes and indicators status functioning.

Symbology-specific Parameters:

Symbologies, starting on page 65 defines options for all symbologies and provides the programming bar codes necessary for configuring these features.

NOTE: You must first enable your reader to read bar codes in order to use this section. If you have not done this, go to Setup, starting on page 4 **and complete the appropriate procedure.**

To program features:

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

NOTE: Additional information about many features can be found in the References, starting on page 147**.**

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

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

For more detailed descriptions, programming information and examples for setting selected configuration items, see References, starting on page 147.

GLOBAL INTERFACE FEATURES

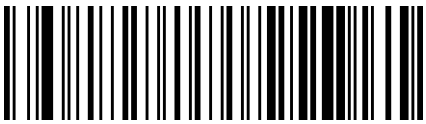
The following interface features are configurable by all interface types.

To set features specific to your interface, turn to that section of this manual.

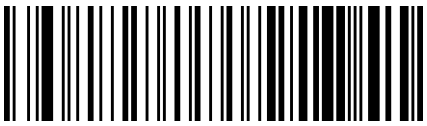
Host Commands — Obey/Ignore

This option specifies whether the reader will obey or ignore host commands. When set to ignore, the reader will ignore all host commands except 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

CONFIGURATION | USB-COM INTERFACES

SECTION CONTENTS

Standard Factory Settings

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

USB-COM SETTINGS

Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay. See "Intercharacter Delay" on page 147 for more detailed programming instructions.

Intercharacter Delay = No Delay

Select Intercharacter Delay Setting

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

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

CANCEL

★00 = No Intercharacter Delay

Beep On ASCII BEL

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

★Beep On ASCII BEL = Disable

Beep On ASCII BEL = Enable

Beep On Not on File

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

Beep On Not On File = Disable

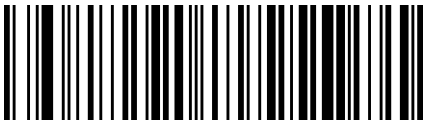
★Beep On Not On File = Enable

ACK NAK Options

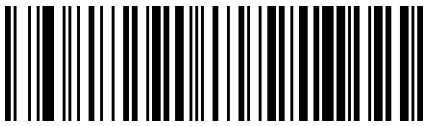
This enables/disables the ability of the scanner to support the ACK/NAK protocol. When configured, the scanner and/or host sends an “ACK” when it receives data properly, and sends “NAK” when the data is in error.

Options are:

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

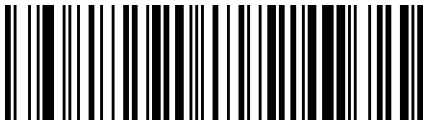


★ACK/NAK Protocol = Disable ACK/NAK



ACK/NAK Protocol = Enable for label transmission

ACK/NAK Protocol = Enable for host-command acknowledge



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

ACK Character

This setting specifies an ASCII character or hex value to be used as the ACK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See "ACK Character" on page 149 for more detailed programming instructions.

NOTE: Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters.

Select ACK Character Setting

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

CANCEL

★0x06 'ACK' Character

NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See "NAK Character" on page 150 for more detailed programming instructions

NOTE: Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters.

Select NAK Character Setting

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

CANCEL

★0x15 'NAK' Character

ACK NAK Timeout Value

This option specifies the amount of time the scanner waits for an ACK character from the host following label transmission. The selectable timeout range is 200 milliseconds to 15,000ms (15 seconds) in 200ms increments. A selection of 0 disables the timeout. See "ACK NAK Timeout Value" on page 151 for more detailed programming instructions.

Select ACK NAK Timeout Value Setting

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

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

CANCEL

★01 ACK NAK Timeout value is 200ms

ACK NAK Retry Count

This feature specifies the number of times the scanner retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See "ACK NAK Retry Count" on page 152 for more detailed programming instructions.

Select ACK NAK Retry Count Setting

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

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

CANCEL

★003 = 3 Retries

ACK NAK Error Handling

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

Options are:

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

★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 scanner'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

Disable Character

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

ASCII characters or any hex value from 0 to 0xFF can be selected. See "Disable Character" on page 153 for more detailed programming instructions.

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

Select Disable Character Setting

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

CANCEL

★0x44 = Disable Character is 'D'

Enable Character

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

ASCII characters or any hex value from 0 to 0xFF can be selected. See "Enable Character" on page 154for more detailed programming instructions

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

Select Enable Character Setting

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

CANCEL

★0x45 = Enable Character is 'E'

CONFIGURATION | KEYBOARD INTERFACE

SECTION CONTENTS

Use the programming bar codes in this chapter to select options for USB Keyboard. Reference Appendix B, for a listing of standard factory settings. Information about control character emulation which applies to keyboard interfaces is listed in Appendix E, Scan-code Tables.

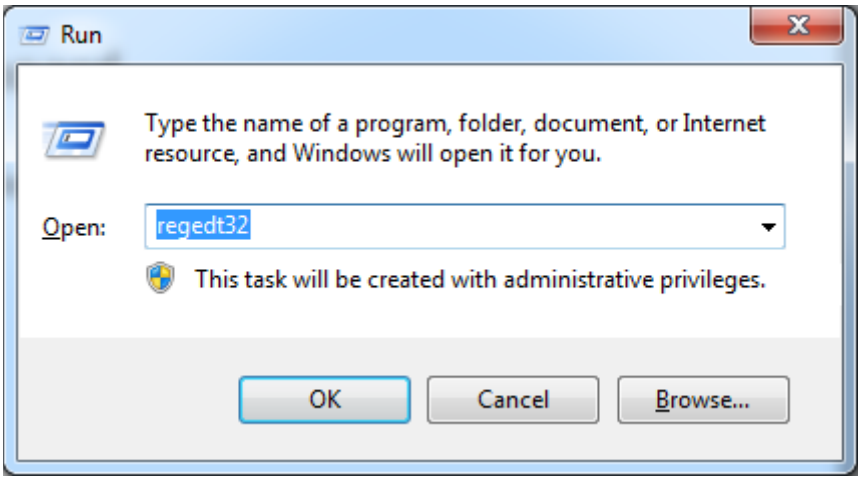
COUNTRY MODE

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

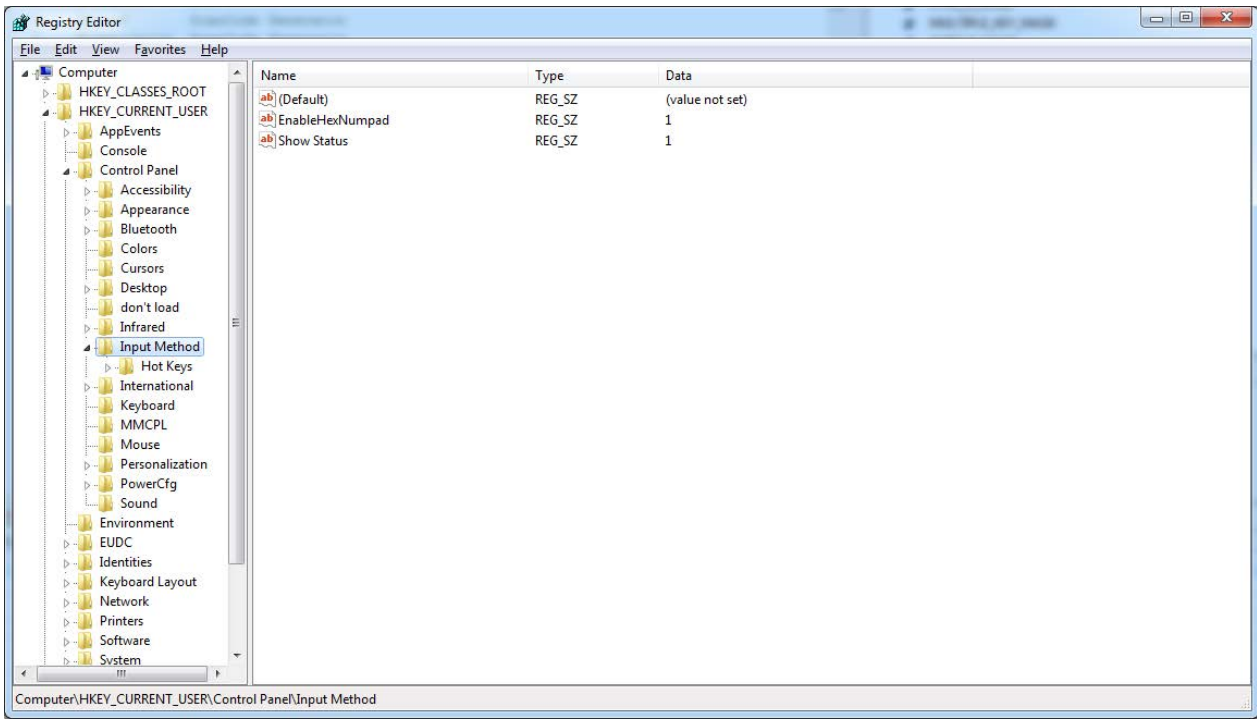
The Country Mode setting is ignored if the interface uses alternate key encoding.

SETUP ON PC TO USE ALT UNIVERSAL

1. Open Registry Edit



2. Set EnableHexNumpad to 1 as follows:



3. Reset the PC.

Setting Country Mode

★United States

French International (Belgian French)

United Kingdom

Danish

French (France)

German

Italian

Setting Country Mode (continued)

Norwegian

Portuguese (Portugal)

Spanish

Swedish

Swiss French

Japanese ASCII

Hungarian

Setting Country Mode (continued)

Czech

SlovaK

Romanian

Croatian

Polish_214

French Canadian Win7

Lithuanian

Setting Country Mode (continued)

Vietnamese

Russian

Arabic 101

Chinese ASCII

Thai-Kedmanee

Albanian

Arabic 102

Setting Country Mode (continued)

Arabic 102 AZERTY

Azeri Cyrillic

Azeri Latin

Belarusian

Bosnian Cyrillic

Bosnian Latin

Bulgarian Cyrillic

Setting Country Mode (continued)

Bulgarian Latin

Canadian French (Legacy)

Canadian Multilingual

Chinese (Simplified)

Chinese (Traditional)

Czech Programmers

Czech QWERTY

Setting Country Mode (continued)

Dutch Netherland

Estonian

Faeroese

Finnish

French (Canada) 2000/XP

French (Canada) 95/98

Galician

Setting Country Mode (continued)

Greek

Greek Latin

Greek Polytonic

Greek220

Greek220 Latin

Greek319

Greek319 Latin

Setting Country Mode (continued)

Hebrew Israel

Hungarian_101KEY

Icelandic

Irish

Italian_142

Japanese (Shift-JIS)

Kazakh

Setting Country Mode (continued)

Korean (Hangul)

Korean ASCII

Kyrgyz Cyrillic

Latin America

Latvian

Latvian QWERTY

Lithuanian_IBM

Setting Country Mode (continued)

Macedonian -FYROM

Maltese_47KEY

Mongolian-Cyrillic

Polish Programmer

Portuguese Brazil

Portuguese Brazilian ABNT

Portuguese Brazilian ABNT2

Setting Country Mode (continued)

Romanian Legacy

Romanian Programmer

Romanian Standard

Russian Typewriter

Serbian Cyrillic

Serbian Latin

Slovak QWERTY

Setting Country Mode (continued)

Slovenian

Spanish Variation

Swiss German

Tatar

Turkish F

Turkish Q

Ukrainian

Setting Country Mode (continued)

US Dvorak

US Dvorak Left Hand

US Dvorak Right Hand

US English (Mac)

US English (North American)

US International

Uzbek Cyrillic

OTHER KEYBOARD PARAMETERS

Encoding Type

Encoding Type = Don't Use Encoding

Encoding Type = UTF_8

Encoding Type = Windows 874

Encoding Type = Windows 932

Encoding Type = Windows 936

Encoding Type = Windows 949

Encoding Type = Windows 950

Encoding Type (continued)

Encoding Type = Windows 1250

Encoding Type = Windows 1251

Encoding Type = Windows 1252

Encoding Type = Windows 1253

Encoding Type = Windows 1254

Encoding Type = Windows 1255

Encoding Type = Windows 1256

Encoding Type (continued)

Encoding Type = Windows 1257

Encoding Type = Windows 1258

Encoding Type = Windows 20866

Encoding Type = Windows 54936

Encoding Type = ISO 8859-1

Encoding Type = ISO 8859-2

Encoding Type = ISO 8859-3

Encoding Type (continued)


Encoding Type = ISO 8859-4


Encoding Type = ISO 8859-5


Encoding Type = ISO 8859-6


Encoding Type = ISO 8859-7


Encoding Type = ISO 8859-8


Encoding Type = ISO 8859-9


Encoding Type = ISO 8859-10

Encoding Type (continued)


Encoding Type = ISO 8859-11


Encoding Type = ISO 8859-13


Encoding Type = ISO 8859-14


Encoding Type = ISO 8859-15


Encoding Type = ISO 8859-16


Encoding Type = MS-DOS 437


Encoding Type = MS-DOS 737

Encoding Type (continued)

Encoding Type = MS-DOS 775

Encoding Type = MS-DOS 850

Encoding Type = MS-DOS 852

Encoding Type = MS-DOS 855

Encoding Type = MS-DOS 857

Encoding Type = MS-DOS 860

Encoding Type = MS-DOS 861

Encoding Type (continued)


Encoding Type = MS-DOS 862


Encoding Type = MS-DOS 863


Encoding Type = MS-DOS 865


Encoding Type = MS-DOS 866


Encoding Type = MS-DOS 869


Encoding Type = Mac CP10000

ALT Output Type

This option specifies the encode type of ALT Mode when the scanner sends Output Keyboard Data in Alt Mode. (Be aware that the scanner may switch automatically between ALT mode & Normal Keyboard Scancode, to correctly display some characters that are not present in the current Keyboard Country).

ALT Output Type = ALT Codepage
(use on non Unicode application: Notepad)

★ALT Output Type = ALT Unicode
(use on Unicode application: Word)

ALT Output Type = ALT Universal
(Use for all)

ALT Output Type = ALT Unicode for Linux

Keyboard Numeric Keypad

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

★Keyboard Numeric Keypad = Standard Keys

Keyboard Numeric Keypad = Numeric Keypad

Keyboard Send Control Characters

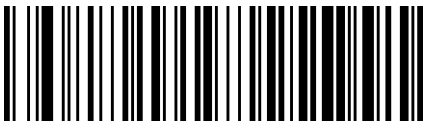
This feature is used by the USB Keyboard interfaces. It specifies how the scanner transmits ASCII control characters to the host. Reference Appendix E Scancode Tables for more information about control characters.

Options are as follows:

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

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

Send Special Function Key : Send characters between 00H and 1FH according to the special function key mapping table (see "Interface Type PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode" on page 196). This is used to send keys that are not in the normal ASCII set. A unique set is provided for each available scancode set.



★Keyboard Send Control Characters = Send Ctrl+Key

Keyboard Send Control Characters = Send Ctrl+Shift+Key

Keyboard Send Control Characters = Send Special Function Key

Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay. See "Intercharacter Delay" on page 155 for more detailed programming instructions.

Intercharacter Delay = No Delay

Select Intercharacter Delay Setting

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

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

CANCEL

★00 = No Intercharacter Delay

Intercode Delay

Specifies the delay between labels transmitted to the host for this interface. The selectable range for this feature is from 0 to 99 seconds. See "Intercode Delay" on page 156 for more detailed programming instructions

Set Intercode Delay

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★00 = No Intercode Delay

USB Keyboard Speed

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

NOTE: This feature applies ONLY to the USB Keyboard interface.

★USB Keyboard Speed = 1ms

USB Keyboard Speed = 2ms

USB Keyboard Speed = 3ms

USB Keyboard Speed = 5ms

USB Keyboard Speed = 7ms

USB Keyboard Speed = 10ms

CONFIGURATION | USB-OEM INTERFACE

SECTION CONTENTS	
•USB-OEM Device Usage	•USB-OEM Interface Options

USB-OEM Device Usage

The USB-OEM protocol allows for the scanner to be identified as one of two different types of bar code 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:

- Tabletop Scanner
- Handheld Scanner

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

USB-OEM Device Usage = Tabletop Scanner

★USB-OEM Device Usage = Handheld Scanner

USB-OEM Interface Options

This setting provides for an interface specific control mechanism.

Options are:

- Obey — Obey Scanner Configuration Host Commands
- Ignore — Ignore Scanner Configuration Host Commands

★Interface Options = Obey Scanner Configuration Host Commands

Interface Options = Ignore Scanner Configuration Host Commands

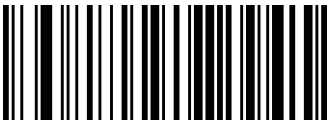
CONFIGURATION | DATA FORMAT

SECTION CONTENTS	
•Global Prefix/Suffix •Global AIM ID	•GS1-128 AIM ID
LABEL ID starting on page 41	
•Label ID: Pre-loaded Sets •Label ID: Set Individually Per Symbology	•Label ID Control •Label ID Symbology Selection
•Case Conversion	•Character Conversion

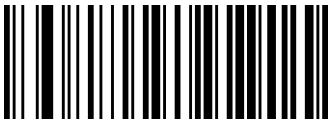
Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the bar code data) and/or as a suffix (in a position following the bar code data). See "Global Prefix/Suffix" on page 158 for more detailed programming instructions.

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



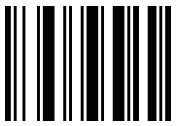
Set Global Prefix



Set Global Suffix

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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



CANCEL

★No Global Prefix

★Global Suffix = 0x0D(CR)

Global AIM ID

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

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. See "Global AIM ID" on page 159 for more detailed programming instructions.

★Global AIM ID = Disable

Global AIM ID = Enable

GS1-128 AIM ID

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

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

GS1-128 AIM ID = Disable

★GS1-128 AIM ID = Enable

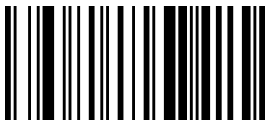
LABEL ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a bar code (symbology) type. It can be appended previous to or following the transmitted bar code data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" below) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 42). If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see the previous feature "Global AIM ID" on page 40.

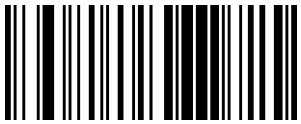
Label ID: Pre-loaded Sets

The scanner supports two pre-loaded sets of Label IDs, the USA set and the EU set. See "Label ID: Pre-loaded Sets" on page 160 for more information concerning the pre-loaded sets that are provided.

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



★Label ID Pre-loaded Set = USA Set



Label ID Pre-loaded Set = EU Set

Label ID: Set Individually Per Symbology

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

NOTE: This setting requires the scanning of bar codes from multiple sections. See "Label ID: Set Individually Per Symbology" on page 162 **for more detailed programming instructions.**

Label ID Control

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

★Label ID Transmission = Disable

Label ID Transmission = Enable as Prefix

Label ID Transmission = Enable as Suffix

Label ID Symbology Selection

This option selects the symbology for which a Label ID is to be configured. See "Label ID: Set Individually Per Symbology" on page 162 for full instructions.

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

CANCEL

Set UPC-A Label ID Character(s)

Set UPC-A/P2 Label ID Character(s)

Set UPC-A/P5 Label ID Character(s)

Set UPC-E Label ID Character(s)

Set UPC-E/P2 Label ID Character(s)

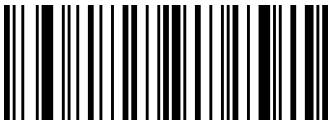
Set UPC-E/P5 Label ID Character(s)

Set EAN-13 Label ID Character(s)

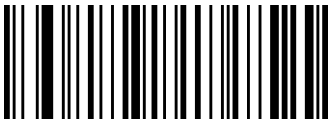
Label ID Symbology Selection (continued)

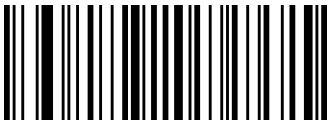

Set EAN-13/P2 Label ID Character(s)

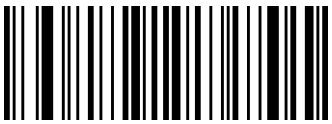

Set EAN-13/P5 Label ID Character(s)

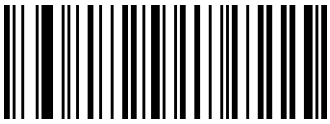

Set ISBN Label ID Character(s)


Set ISSN Label ID Character(s)


Set EAN-8 Label ID Character(s)


Set EAN-8/P2 Label ID Character(s)


Set EAN-8/P5 Label ID Character(s)


Set GS1 DataBar Omnidirectional Label ID Character(s)

Label ID Symbology Selection (continued)

Set GS1 DataBar Expanded Label ID Character(s)

Set GS1 DataBar Limited Label ID Character(s)

Set Code 39 Label ID Character(s)

Set Code 32 Label ID Character(s)

Set Code 39 CIP Label ID Character(s)

Set Code 128 Label ID Character(s)

Set Code GS1-128 Label ID Character(s)

Set Interleaved 2 of 5 Label ID Character(s)

Label ID Symbology Selection (continued)

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

Datalogic 2 of 5 Label ID Character(s)

Standard 2 of 5 Label ID Character(s)

Industrial 2 of 5 Label ID Character(s)

IATA Label ID Character(s)

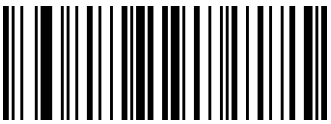
Codabar Label ID Character(s)

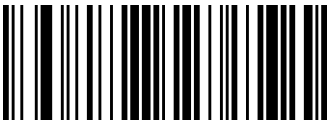
ABC Codabar Label ID Character(s)

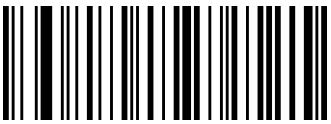
ISBT 128 Label ID Character(s)
(single and concatenated)

Label ID Symbology Selection (continued)


Code 11 Label ID Character(s)


MSI Label ID Character(s)


Plessey Label ID Character(s)


Anker Plessey Label ID Character(s)

Case Conversion

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

NOTE: Case conversion affects ONLY scanned bar code 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. See "Character Conversion" on page 164 for more detailed programming instructions.

Configure Character Conversion

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★0xFFFFFFFFFFFFFFFF
(no character conversion)

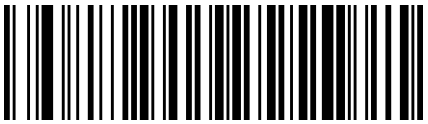
CONFIGURATION | READING PARAMETERS

SECTION CONTENTS

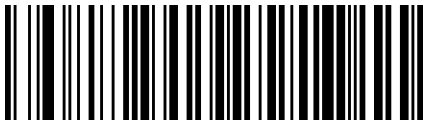
SCANNING FEATURES

Scan Mode

Selects the reader's scan operating mode. See page 165 in "References" for descriptions.

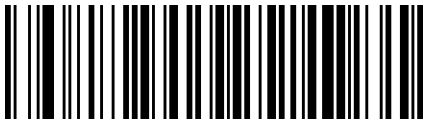


★Scan Mode = Trigger Single



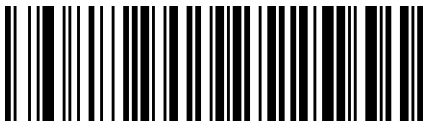
Scan Mode = Trigger Hold Multiple

Scan Mode = Trigger Pulse Multiple



Scan Mode = Flashing

Scan Mode = Always On



Scan Mode = Stand Mode

Scan Mode = Trigger Object Sense

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 166 in “References” for further description of this feature.

Scanning Active Time = 3 seconds

★Scanning Active Time = 5 seconds

Scanning Active Time = 8 seconds

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See page 167 in “References” for detailed information on setting this feature.

Select Flash ON Time Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★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 168 in “References” for detailed information on setting this feature.

Select Flash OFF Time Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★06 = Flash is OFF for 600ms

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 (continued)

Double Read Timeout = 0.5 Second

★Double Read Timeout = 0.6 Second

Double Read Timeout = 0.7 Second

Double Read Timeout = 0.8 Second

Double Read Timeout = 0.9 Second

Double Read Timeout = 1 Second

Stand Mode/Object Detection Sensitivity

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

Stand/Base Detection Sensitivity = Low

★Stand/Base Detection Sensitivity = Medium

Stand/Base Detection Sensitivity = High

Stand Mode/Object Detection Illumination Off Time

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

Set Illumination OFF Time

To configure, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code.

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

CANCEL

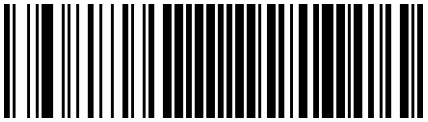
★04 = Illumination OFF Time 2 second

BEEPER CONTROL

Power On Alert

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

Power On Alert = Disable (No Audible Indication)



★Power On Alert = Power-up Beep

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

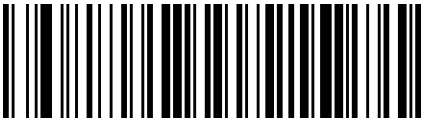
Adjusts the good read beep to sound at a selectable low, medium or high frequency, selectable from the list below. (Controls the beeper's pitch/tone.)

Good Read Beep Frequency = Low

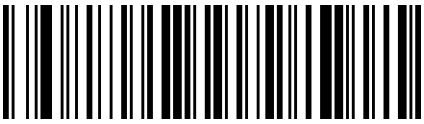
Good Read Beep Frequency = Medium

★Good Read Beep Frequency = High

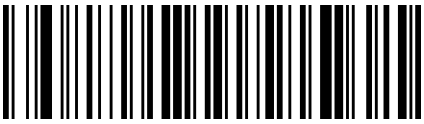
Good Read Beep Length


Good Read Beep Length = 60 msec

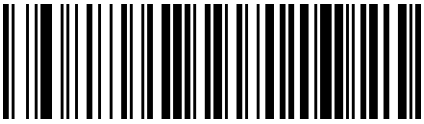

★Good Read Beep Length = 80 msec


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

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

LED CONTROL

Green LED Good Read Enable

Specifies whether the green LED good read indicator is enabled or disabled.

Green LED Good Read = Disable

★Green LED Good Read = Enable

Good Read LED Duration

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

See page 169 in “References” for detailed instructions and examples for setting this feature.

Select Good Read LED Duration Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

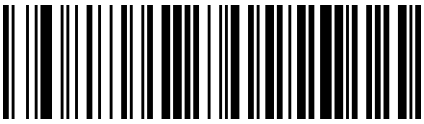
CANCEL

★003 = Good Read LED stays on for 300 ms.

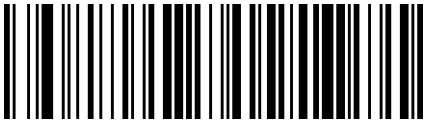
NOTE: Indicators are dimmed during sleep.

Good Read: When to Indicate

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



★Indicate Good Read = After Decode



Indicate Good Read = After Transmit

Indicate Good Read =
After CTS goes inactive then active

Green Spot Duration

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

Green Spot Duration = Disable (Green Spot is Off)

★Green Spot Duration = Short (300 msec)

Green Spot Duration = Medium (500 msec)

Green Spot Duration = Long (800 msec)

Illuminator Intensity (Power Level)

This setting selects the illumination level for bar code reading.

Illuminator Intensity = Low

Illuminator Intensity = Medium

★Illuminator Intensity = High

CONFIGURATION | SYMBOLOGIES

SECTION CONTENTS

DISABLE ALL SYMBOLOGIES

Scan this label to disable all symbologies.

Disable All Symbologies

COUPON CONTROL

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

Options are:

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

To set this feature:

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

Coupon Control = Allow all

★Coupon Control = Enable only UPC/EAN

Coupon Control = Enable only GS1 DataBar

UPC-A

The following options apply to the UPC-A symbology.

UPC-A Enable/Disable

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

UPC-A = Disable

★UPC-A = Enable

UPC-A Check Character Transmission

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

UPC-A Check Character Transmission = Don't Send

★UPC-A Check Character Transmission = Send

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

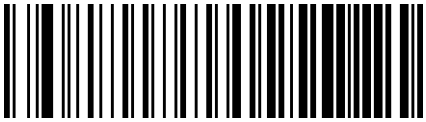
★UPC-A Number System Character = Transmit

UPC-E

The following options apply to the UPC-E symbology.

UPC-E Enable/Disable

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

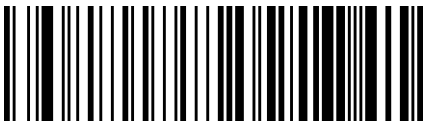

UPC-E = Disable


★UPC-E = Enable

UPC-E Check Character Transmission

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


UPC-E Check Character Transmission = Don't Send


★UPC-E Check Character Transmission = Send

Expand UPC-E to EAN-13

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

★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. Selecting this feature also changes the symbology ID to match those required for UPC-A.

★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 number system character.

UPC-E Number System Character = Do not transmit

★UPC-E Number System Character = Transmit

GTIN Formatting

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

★GTIN Formatting = Disable

GTIN Formatting = Enable

EAN-13

The following options apply to the EAN-13 symbology.

EAN-13 Enable/Disable

When disabled, the scanner will not read EAN-13 bar codes.

EAN-13 = Disable

★EAN-13 = Enable

EAN-13 Check Character Transmission

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

EAN-13 Check Character Transmission = Don't Send

★EAN-13 Check Character Transmission = Send

EAN-13 Flag 1 Character

Enables/disables transmission of an EAN/JAN-13 Flag1 character. The Flag 1 character is the first character of the label

EAN-13 Flag 1 Char = Don't transmit

★EAN-13 Flag 1 Char = Transmit

EAN-13 to ISBN Conversion

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

★EAN-13 ISBN Conversion = Disable

EAN-13 ISBN Conversion = Enable

EAN-13 to ISSN Conversion

Enables/disables conversion of EAN/JAN-13 Bookland labels starting with 977 to ISSN labels.

★ISSN = Disable

ISSN = Enable

EAN-8

The following options apply to the EAN-8 symbology.

EAN-8 Enable/Disable

When disabled, the scanner will not read EAN-8 bar codes.

EAN-8 = Disable

★EAN-8 = Enable

EAN-8 Check Character Transmission

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

EAN-8 Check Character Transmission = Don't Send

★EAN-8 Check Character Transmission = Send

Expand EAN-8 to EAN-13

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

★EAN-8 to EAN-13 = Don't Expand

EAN-8 to EAN-13 = Expand

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.

Options are

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


★Price Weight Check = Disabled


Price Weight Check = 4-digit price-weight check


Price Weight Check = 5-digit price-weight check

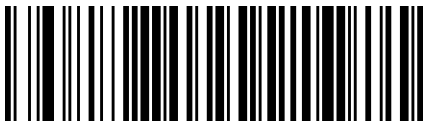

Price Weight Check = European 4-digit price-weight check


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

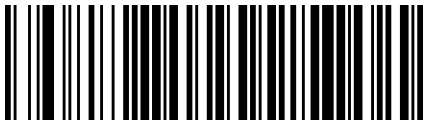
UPC/EAN Quiet Zones

This feature specifies the number of quiet zones for UPC/EAN labels. Quiet zones are blank areas at the ends of a bar code, 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 ADD-ONs.

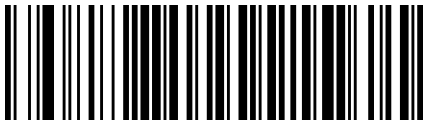

UPC/EAN Quiet Zones = One Module


★UPC/EAN Quiet Zones = Two Modules

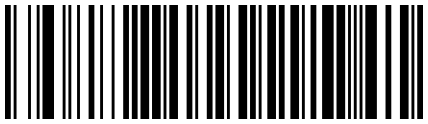

UPC/EAN Quiet Zones = Three Modules


UPC/EAN Quiet Zones = Four Modules


UPC/EAN Quiet Zones = Five Modules


UPC/EAN Quiet Zones = Six Modules


UPC/EAN Quiet Zones = Seven Modules


UPC/EAN Quiet Zones = Eight Modules

Add-Ons

The following features apply to optional add-ons.

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

Optional Add-ons

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

- P2
- P5

NOTE: If a UPC/EAN base label and a an add-on are both decoded, the scanner will transmit the base label and add-on. If a UPC/EAN base label is decoded without an add-on, the base label will be transmitted without an add-on.

Conditional add-on settings (if enabled) are considered by the scanner before optional add-on settings.

★Optional Add-Ons = Disable P2

Optional Add-Ons = Enable P2

★Optional Add-Ons = Disable P5

Optional Add-Ons = Enable P5

Optional Add-On Timer

This option sets the time the scanner will look for an add-on when an add-on fragment has been seen and optional add-ons are enabled.

Optional Add-on Timer = 10ms

Optional Add-on Timer = 20ms

Optional Add-on Timer = 30ms

Optional Add-on Timer = 50ms

★Optional Add-on Timer = 70ms

Optional Add-on Timer = 100ms

Optional Add-on Timer = 160ms

GS1 DATABAR™ OMNIDIRECTIONAL

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

GS1 DataBar Omnidirectional Enable/Disable

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

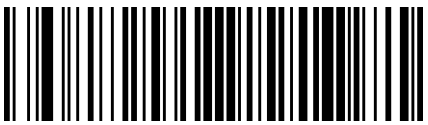
★GS1 DataBar Omnidirectional = Disable

GS1 DataBar Omnidirectional = Enable

GS1 DataBar Omnidirectional to GS1-128 Emulation

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

★GS1 DataBar Omnidirectional to GS1-128 Emulation = Disable



GS1 DataBar Omnidirectional to GS1-128 Emulation = Enable

GS1 DATABAR™ EXPANDED

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

GS1 DataBar Expanded Enable/Disable

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

★GS1 DataBar Expanded = Disable

GS1 DataBar Expanded = Enable

GS1 DataBar Expanded to GS1-128 Emulation

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

★GS1 DataBar Expanded to GS1-128 Emulation = Disable

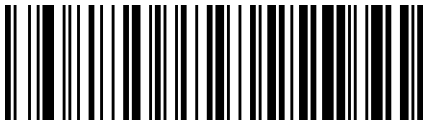
GS1 DataBar Expanded to GS1-128 Emulation = Enable

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 bar code lengths for "GS1 DataBar Expanded Length Control" on page 84. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select GS1 DataBar Expanded Set Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

GS1 DataBar Expanded Set Length 2

This feature specifies one of the bar code lengths for "GS1 DataBar Expanded Length Control" on page 84. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select GS1 DataBar Expanded Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 74 (74 characters)

GS1 DATABAR™ LIMITED

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

GS1 DataBar Limited Enable/Disable

When disabled, the scanner will not read GS1 DataBar Limited bar codes.

★GS1 DataBar Limited = Disable

GS1 DataBar Limited = Enable

GS1 DataBar Limited to GS1-128 Emulation

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

★GS1 DataBar Limited to GS1-128 Emulation = Disable

GS1 DataBar Limited to GS1-128 Emulation = Enable

CODE 39

The following options apply to the Code 39 symbology.

Code 39 Enable/Disable

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

Code 39 = Disable

★Code 39 = Enable

Code 39 Check Character Calculation

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

★Code 39 Check Character Calculation = Don't Calculate

Code 39 Check Character Calculation = Calculate Std Check

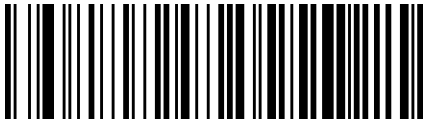
Code 39 Check Character Calculation = Calculate Mod 7 Check

Code 39 Check Character Calculation = Enable Italian Post Check

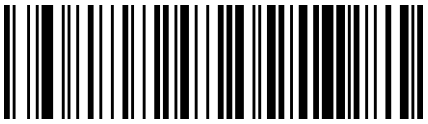
Code 39 Check Character Calculation
= Enable Daimler Chrysler Check

Code 39 Check Character Transmission

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



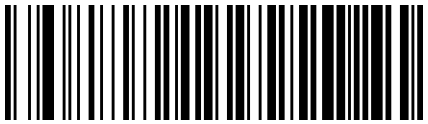
Code 39 Check Character Transmission = Don't Send



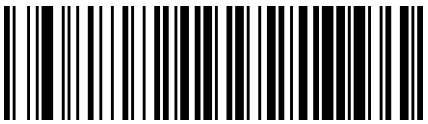
★Code 39 Check Character Transmission = Send

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

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

★Code 39 Quiet Zones = No Quiet Zones

Code 39 Quiet Zones = Quiet Zone on one side

Code 39 Quiet Zones = Quiet Zones on two sides

Code 39 Quiet Zones = Auto

Code 39 Quiet Zones = Virtual 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 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 bar code lengths for "Code 39 Length Control" on page 90. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 0 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Code 39 Set Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 02 (2 characters)

Code 39 Set Length 2

This feature specifies one of the bar code lengths for "Code 39 Length Control" on page 90. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Code 39 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

TRIOPTIC CODE

The following options apply to the trioptic symbology.

Trioptic Code Enable/Disable

When disabled, the scanner will not read Trioptic Code bar codes.

★Trioptic Code = Disable

Trioptic Code = Enable

CODE 39 DANISH PPT

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

Code 39 Danish PPT Enable/Disable

When disabled, the scanner will not read Code 39 Danish PPT bar codes.

★Code 39 Danish PPT = Disable

Code 39 Danish PPT = Enable

CODE 39 PZN

The following options apply to the Code 39 PZN symbology.

Code 39 PZN Enable/Disable

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

★Code 39 PZN = Disable

Code 39 PZN = Enable

CODE 39 LA POSTE

The following options apply to the Code 39 La Poste symbology.

Code 39 La Poste Enable/Disable

When disabled, the scanner will not read Code 39 La Poste bar codes.

★Code 39 La Poste = Disable

Code 39 La Poste = Enable

CODE 32 (ITALIAN PHARMACEUTICAL)

The following options apply to the Code 32 symbology.

Code 32 Enable/Disable

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

★Code 32 = Disable

Code 32 = Enable

Code 32 Feature Setting Exceptions

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

"Code 39 Quiet Zones" on page 89

"Code 39 Length Control" on page 90

Code 32 Check Character Transmission

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

★Code 32 Check Character Transmission = Don't Send

Code 32 Check Character Transmission = Send

Code 32 Start/Stop Character Transmission

Enable this option to enable/disable 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 scanner to decode Code 39 CIP labels.

★Code 39 CIP = Disable

Code 39 CIP = Enable

CODE 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

Enables/Disables ability of the scanner to decode Code 128 labels.

Code 128 = Disable

★Code 128 = Enable

Expand Code 128 to Code 39

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

★Code 128 to Code 39 = Don't Expand

Code 128 to Code 39 = Expand

Code 128 Check Character Transmission

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

★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 bar code and are typically 10 times the width of the narrowest bar or space in the label.

Code 128 Quiet Zones = No Quiet Zones

Code 128 Quiet Zones = Quiet Zone on one side

Code 128 Quiet Zones = Quiet Zones on two sides

★Code 128 Quiet Zones = Auto

Code 128 Quiet Zones = Virtual 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.

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

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

★Code 128 Length Control = Variable Length

Code 128 Length Control = Fixed Length

Code 128 Set Length 1

This feature specifies one of the bar code lengths for "Code 128 Length Control" on page 99. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 80 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Code 128 Set Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

Code 128 Set Length 2

This feature specifies one of the bar code lengths for "Code 128 Length Control" on page 99. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 80 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Code 128 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 80 (80 characters)

GS1-128

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

GS1-128 Enable

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

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

GS1-128 = Transmit in Code 128 data format

★GS1-128 = Transmit in GS1-128 data format

GS1-128 = Do not transmit GS1-128 labels

INTERLEAVED 2 OF 5 (I 2 OF 5)

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

CAUTION: When reading this symbology, the settings for I 2 of 5 Length Control AND I 2 of 5 Check Character Calculation MUST be enabled to increase decoding safety.

I 2 of 5 Enable/Disable

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

★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.

★I 2 of 5 Check Character Calculation = Disable

I 2 of 5 Check Character Calculation
= Calculate Std Check (Modulo 10 no AR)

I 2 of 5 Check Character Calculation
= Calculate German Parcel Check

I 2 of 5 Check Character Calculation
= Calculate DHL Check

I 2 of 5 Check Character Calculation
= Calculate Daimler Chrysler Check

I 2 of 5 Check Character Calculation (continued)

I 2 of 5 Check Character Calculation
= Calculate Bosch Check

I 2 of 5 Check Character Calculation
= Calculate Italian Post Check

I 2 of 5 Check Character Transmission

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

NOTE: This feature is valid only when I 2 of 5 Check Character Calculation is enabled.

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

★I 2 of 5 Check Character Transmission = Send

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 length may be set.

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

★I 2 of 5 Length Control = Variable Length

I 2 of 5 Length Control = Fixed Length

I 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for "I 2 of 5 Length Control" on page 104. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters. The length can be set from 2 to 62 characters in increments of two. See "Set Length 1" on page 170 for more detailed programming instructions.

Select I 2 of 5 Set Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 06 (6 characters)

I 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for "I 2 of 5 Length Control" on page 104. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters. The length can be set from 2 to 62 characters in increments of two. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select I 2 of 5 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 62 (62 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 the scanner to decode Interleaved 2 of 5 CIP HR labels.

★Interleaved 2 of 5 CIP HR = Disable

Interleaved 2 of 5 CIP HR = Enable

STANDARD 2 OF 5

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

Standard 2 of 5 Enable/Disable

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

★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 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 bar code lengths for "Standard 2 of 5 Length Control" on page 107. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Standard 2 of 5 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 08 (8 characters)

Standard 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for "Standard 2 of 5 Length Control" on page 107. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Standard 2 of 5 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

COMPRESSED 2 OF 5

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

Compressed 2 of 5 Enable/Disable

When disabled, the scanner will not read Compressed 2 of 5 bar codes.

★Compressed 2 of 5 = Disable

Compressed 2 of 5 = Enable

Compressed 2 of 5 Check Character Calculation

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

★Compressed 2 of 5 Check Character Calculation = Disable

Compressed 2 of 5 Check Character Calculation = Enable

Compressed 2 of 5 Check Character Transmission

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

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

★Compressed 2 of 5 Check Character Transmission = Send

Compressed 2 of 5 Length Control

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

★Compressed 2 of 5 Length Control = Variable Length

Compressed 2 of 5 Length Control = Fixed Length

Compressed 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for "Compressed 2 of 5 Length Control" on page 110. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Compressed 2 of 5 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

Compressed 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for "Compressed 2 of 5 Length Control" on page 110. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Compressed 2 of 5 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

DATALOGIC 2 OF 5

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

Datalogic 2 of 5 Enable/Disable

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

★Datalogic 2 of 5 = Disable

Datalogic 2 of 5 = Enable

Datalogic 2 of 5 Check Character Calculation

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

★Datalogic 2 of 5 Check Character Calculation = Disable

Datalogic 2 of 5 Check Character Calculation = Enable

Datalogic 2 of 5 Check Character Transmission

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

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

★Datalogic 2 of 5 Check Character Transmission = Send

Datalogic 2 of 5 Length Control

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

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

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

★Datalogic 2 of 5 Length Control = Variable Length

Datalogic 2 of 5 Length Control = Fixed Length

Datalogic 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for "Datalogic 2 of 5 Length Control" on page 113. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters. The length can be set from 2 to 50 characters in increments of two. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Datalogic 2 of 5 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 06 (6 characters)

Datalogic 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for "Datalogic 2 of 5 Length Control" on page 113. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters. The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Datalogic 2 of 5 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

INDUSTRIAL 2 OF 5

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

Industrial 2 of 5 Enable/Disable

When disabled, the scanner will not read Industrial 2 of 5 bar codes.

★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 = Don't Send

★Industrial 2 of 5 Check Character Transmission = Send

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 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 Length Control = Fixed Length

Industrial 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for "Industrial 2 of 5 Length Control" on page 116. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Industrial 2 of 5 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 06 (6 characters)

Industrial 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for "Industrial 2 of 5 Length Control" on page 116. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Industrial 2 of 5 Set Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

IATA

The following options apply to the IATA symbology.

IATA Enable/Disable

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

★IATA = Disable

IATA = Enable

IATA Check Character Transmission

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

IATA Check Character Transmission = Don't Send

★IATA Check Character Transmission = Send

FOLLETT 2 OF 5

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

Follett 2 of 5 Enable/Disable

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

★Follett 2 of 5 = Disable

Follett 2 of 5 = Enable

CODABAR

The following options apply to the Codabar symbology.

Codabar Enable/Disable

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

★Codabar = Disable

Codabar = Enable

Codabar Check Character Calculation

This option enables/disables calculation and verification of an optional Codabar check character. When disabled, any check characters in the label are treated as data characters.

★Codabar Check Character Calculation = Disable

Codabar Check Character Calculation = Calculate AIM Std Check

Codabar Check Character Calculation = Calculate Modulo 10 Check

Codabar Check Character Calculation = Calculate NW-7 Check

Codabar Check Character Transmission

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

NOTE: This feature is valid only when Codabar Check Character Calculation is enabled.

Codabar Check Character Transmission
= Don't Send

★Codabar Check Character Transmission
= Send

Codabar Start/Stop Character Transmission

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

Codabar Start/Stop Character Transmission
= Don't Transmit

★Codabar Start/Stop Character Transmission
= Transmit

Codabar Start/Stop Character Set

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


Codabar Check Character Set = ABCD/TN*E


Codabar Check Character Set = ABCD/ABCD


Codabar Check Character Set = abcd/tn*e


★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

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

Codabar Quiet Zones = Quiet Zone on one side

★Codabar Quiet Zones = Quiet Zones on two sides

Codabar Quiet Zones = Auto

Codabar Quiet Zones = Virtual 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 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 bar code lengths for "Codabar Length Control" on page 124. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's 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. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Codabar Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 03 (3 characters)

Codabar Set Length 2

This feature specifies one of the bar code lengths for "Codabar Length Control" on page 124. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's 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 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Codabar Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

ABC CODABAR

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

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

★ABC Codabar = Disable

ABC Codabar = Enable

ABC Codabar Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

★ABC Codabar Contatenation Mode = Static

ABC Codabar Concatenation Mode = Dynamic

ABC Codabar Dynamic Concatenation Timeout

This parameter specifies the timeout in 10-millisecond ticks used by the ABC Codabar Dynamic Concatenation Mode. The timeout can be set within a range of 05 to 255 in 10ms increments. A setting of zero specifies no delay.

Select ABC Codabar Dynamic Concatenation Timeout Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Timeout = 20 (200 ms)

ABC Codabar Force Concatenation

When ABC Codabar Concatenation is enabled and Force Concatenation is disabled, both Codabar stand alone labels and ABC Codabar concatenated labels are transmitted. When ABC Codabar Concatenation is enabled and Force Concatenation is enabled only ABC Codabar concatenated labels are transmitted while Codabar stand alone labels are not transmitted.

Force Concatenation has no effect if the ABC Codabar Concatenation is disabled. The Force Concatenation mode has effect both in Static and Dynamic Concatenation Modes.

★ABC Codabar Force Contatenation = Disable

ABC Codabar Force Concatenation = Enable

ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

Enables/disables ISBT 128 concatenation of 2 labels.

★ISBT 128 Concatenation = Disable

ISBT 128 Concatenation = Enable

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

★ISBT 128 Contatenation 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 Force Concatenation

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

NOTE: This option is only valid when "ISBT 128 Concatenation" on page 128 is enabled.

★ISBT 128 Force Contatenation = Disable

ISBT 128 Force Concatenation = Enable

ISBT 128 Advanced Concatenation Options

NOTE: Use the Datalogic Aladdin configuration application or Contact Customer Support to set up pairs of label types for concatenation.

CODE 11

The following options apply to the Code 11 symbology.

Code 11 Enable/Disable

When disabled, the scanner will not read Code 11 bar codes.

★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 = Calculate Check C

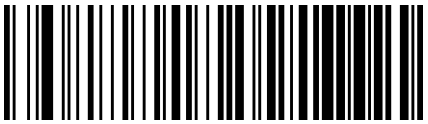
Code 11 Check Character Calculation
= Calculate Check K

★Code 11 Check Character Calculation
= Calculate 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

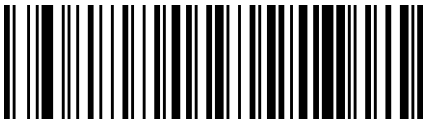
Code 11 Length Control

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

Variable Length: For variable-length decoding, a minimum 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 bar code lengths for "Code 11 Length Control" on page 132. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Code 11 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 04 (4 characters)

Code 11 Set Length 2

This feature specifies one of the bar code lengths for "Code 11 Length Control" on page 132. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Code 11 Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

CODE 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

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

★Code 93 = Disable

Code 93 = Enable

Code 93 Check Character Calculation

This option enables/disables calculation and verification of optional Code 93 check character.

Code 93 Check Character Calculation = Disable

Code 93 Check Character Calculation = Calculate Check C

Code 93 Check Character Calculation
= Calculate Check K

★Code 93 Check Character Calculation
= Calculate Check C and K

Code 93 Check Character Transmission

This feature enables/disables transmission of an optional Code 93 check character.

★Code 93 Check Character Transmission = Don't Send

Code 93 Check Character Transmission = Send

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 length may be set.

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

★Code 93 Length Control = Variable Length

Code 93 Length Control = Fixed Length

Code 93 Set Length 1

This feature specifies one of the bar code lengths for "Code 93 Length Control" on page 135. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Code 93 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

Code 93 Set Length 2

This feature specifies one of the bar code lengths for "Code 93 Length Control" on page 135. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Code 93 Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

Code 93 Quiet Zones

This feature specifies the number of quiet zones for Code 93 labels. Quiet zones are blank areas at the ends of a bar code and are typically 10 times the width of the narrowest bar or space in the label.

Code 93 Quiet Zones = No Quiet Zones

Code 93 Quiet Zones = Quiet Zone on one side

Code 93 Quiet Zones = Quiet Zones on two sides

★Code 93 Quiet Zones = Auto

Code 93 Quiet Zones = Virtual Quiet Zones on two sides

MSI

The following options apply to the MSI symbology.

MSI Enable/Disable

Enables/Disables ability of scanner to decode MSI labels.

★MSI = Disable

MSI = Enable

MSI Check Character Calculation

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

MSI Check Character Calculation = Disable

★MSI Check Character Calculation = Calculate Mod 10

MSI Check Character Calculation
= Calculate Mod 11/10

MSI Check Character Calculation
= Calculate Mod 10/10

MSI Check Character Transmission

Enables/disables transmission of an MSI check character.

MSI Check Character Transmission = Don't Send

★MSI Check Character Transmission = Send

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 length may be set.

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

★MSI Length Control = Variable Length

MSI Length Control = Fixed Length

MSI Set Length 1

This feature specifies one of the bar code lengths for "MSI Length Control" on page 139. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select MSI Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

MSI Set Length 2

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

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select MSI Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

PLESSEY

The following options apply to the Plessey symbology.

Plessey Enable/Disable

Enables/Disables ability of scanner to decode Plessey labels.

★Plessey = Disable

Plessey = Enable

Plessey Check Character Calculation

Enables/Disables calculation and verification of a Plessey check character.

Plessey Check Character Calculation = Disable

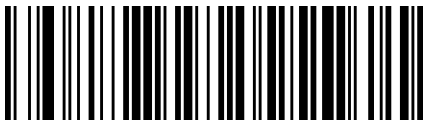
★Plessey Check Character Calculation
= Plessey std check char. verification

Plessey Check Character Calculation
= Anker check char. verification

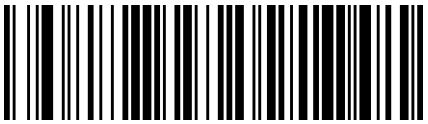
Plessey Check Character Calculation
= Plessey std and Anker check char. verification

Plessey Check Character Transmission

Enables/disables transmission of a Plessey check character.



Plessey Check Character Transmission = Don't Send



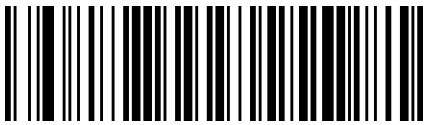
★Plessey Check Character Transmission = Send

Plessey Length Control

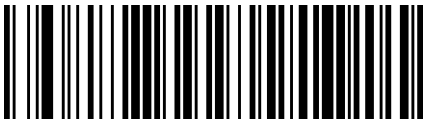
This feature specifies either variable length decoding or fixed length decoding for the Plessey symbology.

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

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



★Plessey Length Control = Variable Length



Plessey Length Control = Fixed Length

Plessey Set Length 1

This feature specifies one of the bar code lengths for "Plessey Length Control" on page 142. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.

Select Plessey Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

Plessey Set Length 2

This feature specifies one of the bar code lengths for "Plessey Length Control" on page 142. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

Length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select Plessey Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

BC412

The following options apply to the BC412 symbology.

BC412 Enable/Disable

Enables/Disables ability of scanner to decode BC412 labels.

★BC412 = Disable

BC412 = Enable

BC412 Check Character Calculation

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

BC412 Check Character Calculation = Disable

★BC412 Check Character Calculation = Calculate

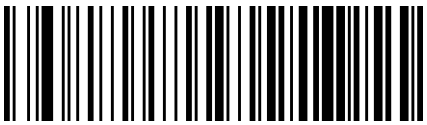
BC412 Length Control

This feature specifies either variable length decoding or fixed length decoding for the BC412 symbology.

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

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

★BC412 Length Control = Variable Length

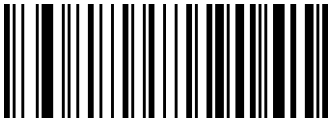


BC412 Length Control = Fixed Length

BC412 Set Length 1

This feature specifies one of the bar code lengths for "BC412 Length Control" on page 145. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 170 for more detailed programming instructions.



Select BC412 Length 1 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 1 = 01 (one character)

BC412 Set Length 2

This feature specifies one of the bar code lengths for "BC412 Length Control" on page 145. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 171 for more detailed programming instructions.

Select BC412 Length 2 Setting

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code 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 bar code again.

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

CANCEL

★Length 2 = 50 (50 characters)

CHAPTER 2
REFERENCES

This section contains explanations and examples of selected bar code features. See Configuration with Bar Codes, starting on page 14 for the actual bar code labels used to configure the scanner.

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 bar code to enter Programming Mode.
4. Go to page 2 and scan the bar code: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the following table for examples of how to set this feature.

Table 1 - 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	10	60	85
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT INTERCHARACTER DELAY SETTING**				
5	**Scan two characters from** Appendix D	‘0’ and ‘5’	‘1’ and 5’	‘6’ and ‘0’	8’ and ‘5’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

ACK NAK Options

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

Options are:

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

ACK Character

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

NOTE: Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters.

1. Determine the desired character or value.
2. Use the ASCII Chart on page 204 to find the hex equivalent for the desired character/value.
3. Scan ENTER/EXIT PROGRAMMING MODE to enter Programming Mode.
4. Scan the bar code: SELECT ACK CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit.

See the table below for examples of how to set this feature.

Table 2 - ACK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Character/Value**	ACK	$	@	>
2	**Hex equivalent from ASCII Chart on** page 204	0x06	0x24	0x40	0x3E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ACK CHARACTER SETTING**				
5	**Scan two characters from** Appendix D	‘0’ and ‘6’	‘2’ and ‘4’	‘4’ and ‘0’	‘3’ AND ‘E’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

NAK Character

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

NOTE: Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters.

To set this feature:

1. Determine the desired character or value.
2. Use the ASCII Chart on page 204 to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in Appendix D, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See the table below for examples of how to set this feature.

Table 3 - NAK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Character/Value**	NAK	$	@	>
2	**Hex equivalent**	0x15	0x24	0x40	0x3E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT NAK CHARACTER SETTING**				
5	**Scan two characters from** Appendix D	'1' and '5'	'2' and '4'	'4' and '0'	'3' AND 'E'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

ACK NAK Timeout Value

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

To set this value:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 200 (setting is in 200ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ACK NAK TIMEOUT VALUE SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 4 - 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	'0' and '1'	'0' and '5'	'2' and '6'	'7' AND '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

ACK NAK Retry Count

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

To set this feature:

1. Determine the desired setting.
2. Pad the number with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ACK NAK RETRY COUNT SETTING.
5. Scan the appropriate three digits from the keypad in Appendix D, that represent the number which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 5 - 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	'0', '0' and '0'	'0', '0' and '3'	'0', '5' and '4'	'2', '5' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Disable Character

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

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

NOTE: Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option "Data Bits" on page 36 has been set as 7 Data Bits.

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 page 204 to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT DISABLE CHARACTER SETTING on page 8.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See the table below for examples of how to set this feature.

Table 6 -Disable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/value**	'd'	'}'	'D'	Disable Command Not Used
2	**Hex equivalent from ASCII Chart on** page 204	0x64	0x7D	0x44	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT DISABLE CHARACTER VALUE SETTING**				
5	**Scan three characters from** Appendix D	'6' and '4'	'7' and 'D'	'4' and '4'	'F' and 'F'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Enable Character

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

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

NOTE: Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option "Data Bits" on page 36 **has been set as 7 Data Bits.**

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the Enable Character is not used (not available).
2. Use the ASCII Chart in Appendix F to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ENABLE CHARACTER SETTING on page 8.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See the table below for examples of how to set this feature.

Table 7 - Enable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/value**	‘e’	‘}’	‘E’	Enable Command Not Used
2	**Hex equivalent from ASCII Chart on** page 204	0x65	0x7D	0x45	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ENABLE CHARACTER VALUE SETTING**				
5	**Scan two characters from** Appendix D	‘6’ and ‘5’	‘7’ and ‘D’	‘4’ and ‘5’	‘F’ and ‘F’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

KEYBOARD INTERFACE

Intercharacter Delay

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

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to page 85 and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING on page 34.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 8 - Intercharacter Delay Setting Examples

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

Intercode Delay

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

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc
3. Go to page 86 and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCODE DELAY SETTING on page 34.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 9 - Intercode Delay Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	No Delay	5 seconds	60 seconds	99 seconds
2	**Pad with leading zero(es)**	00	05	60	99
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT INTERCODE DELAY SETTING**				
5	**Scan two characters from** Appendix D	'0' and '0'	'0' and '5'	'6' and '0'	'9' and '9'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

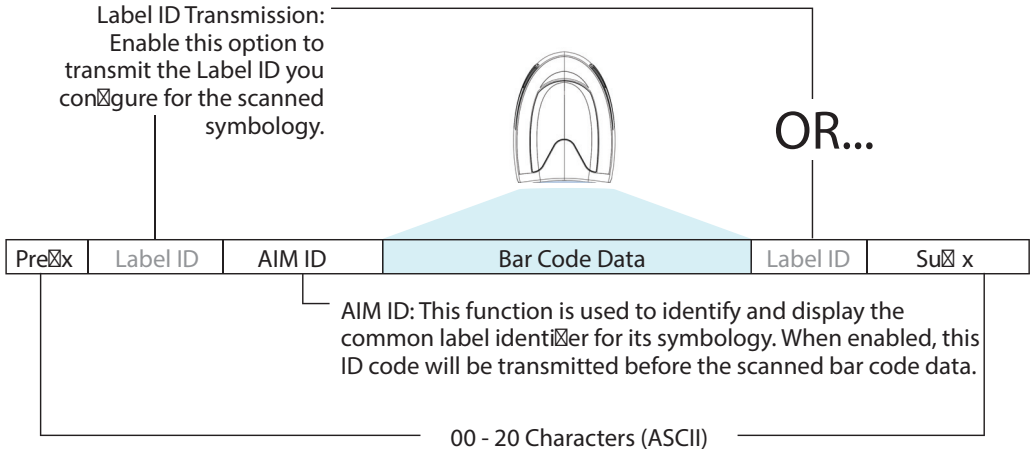
DATA FORMAT

Data Editing

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

Figure 1 - Breakdown of a Message String



NOTE: Additional advanced editing is available. See the Advanced formatting features in the Datalogic Aladdin configuration software, or contact "Technical Support" on page xii **for more information.**

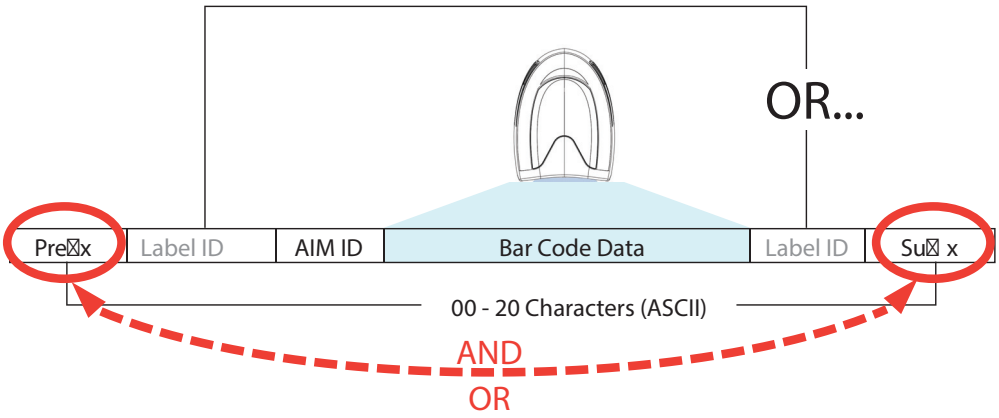
Please Keep In Mind...

- 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 Symbologies, starting on page 65) or across all symbologies (set via the Global features in Configuration with Bar Codes, starting on page 14).
- You can add any character from the ASCII Chart on page 204 (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

Global Prefix/Suffix

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

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 bar code data. In this example, we'll add a dollar sign ('$') as a prefix.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code, then scan the SET GLOBAL PREFIX bar code.
3. Reference the ASCII Chart on page 204 in Appendix F to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' bar codes from Appendix D.

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

4. If less than the expected string of 20 characters are selected, scan the ENTER/EXIT bar code to terminate the string.
5. Scan the ENTER/EXIT bar code once again to exit Programming Mode.

The resulting message string would appear as follows:

Scanned bar code data: **12345**

Resulting message string output: **$12345**

Global AIM ID

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

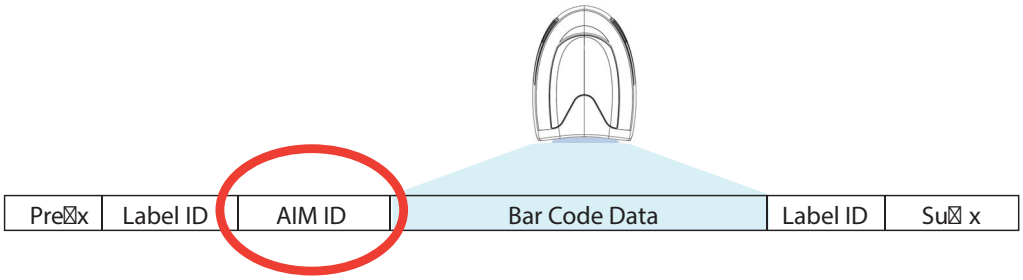
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. AIM label identifiers consist of three characters as follows:

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

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

a. UPC-A and UPC-E labels are converted to EAN 13 when adding AIM IDs.
b. ISBN (E 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 bar code (symbology) type. It can be appended previous to or following the transmitted bar code data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 42). If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see "Global AIM ID" on page 40.

Label ID: Pre-loaded Sets

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

Table 10 - Label ID Pre-loaded Sets

SYMBOLOGY	USA LABEL ID SET		EU LABEL ID SET	
	ASCII character	Hex value	ASCII character	Hexadecimal value
ABC Codabar	S	530000	S	530000
CODABAR	%	250000	R	520000
Code 39 CIP	Y	590000	Y	590000
Code 93	&	260000	U	550000
Code 11	CE	434500	b	620000
Code 128	#	230000	T	540000
Code 32	A	410000	X	580000
Code 39	*	2A0000	V	560000
Datalogic 2of5	s	730000	s	730000
EAN13	F	460000	B	420000
EAN13 P2	F	460000	L	4C0000
EAN13 P5	F	460000	M	4D0000
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000
FOLLETT 2OF5	O	4F0000	O	4F0000
GS1 DATABAR EXPANDED	RX	525800	t	740000
GS1 DATABAR LIMITED	RL	524C00	v	760000
GS1 DATABAR OMNIDIRECTIONAL	R4	523400	u	750000
GS1-128		000000	k	6B0000
I2OF5	i	690000	N	4E0000
IATA	IA	494100	&	260000
Industrial 2 of 5	W	570000	W	570000
Interleaved 2 of 5 CIP HR	e	650000	e	650000
ISBN	I	490000	@	400000
ISBT128	f	660000	f	660000

SYMBOLOGY	USA LABEL ID SET		EU LABEL ID SET	
ISSN	n	6E0000	n	6E0000
MSI	@	400000	Z	5A0000
S25	s	730000	P	500000
UPCA	A	410000	C	430000
UPCA P2	A	410000	F	460000
UPCA P5	A	410000	G	470000
UPCE	E	450000	D	440000
UPCE P2	E	450000	H	480000
UPCE P5	E	450000	I	490000

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

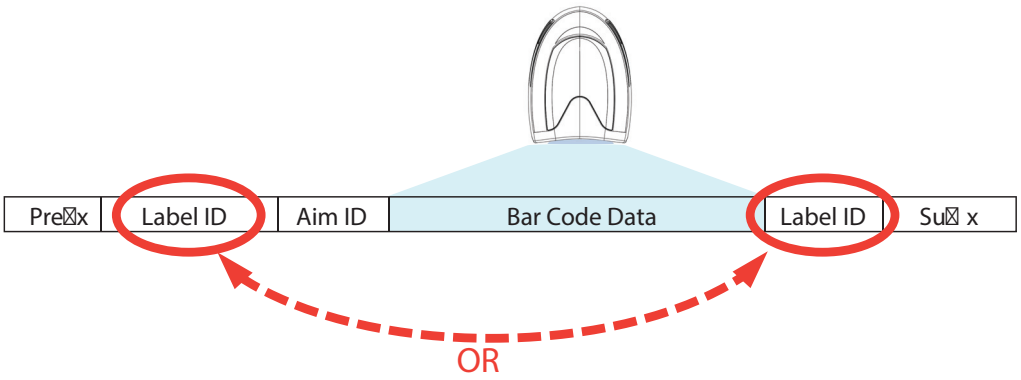
1. Scan the ENTER/EXIT bar code.
2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate bar code in the section "Label ID Control" on page 42. Reference Figure 4 for Label ID positioning options if multiple identification features are enabled.
3. Scan a bar code to select the symbology for which you wish to configure a custom Label ID from the section "Label ID Symbology Selection" on page 43.
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.
5. Turn to the ASCII Chart on page 204 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, in Appendix D, and scan the bar codes representing the hex characters determined. For the example given, the characters '3' and 'D' would be scanned. More examples of Label ID settings are provided in Table 11 on page 163.

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

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

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

Figure 4 Label ID Position Options



Label ID: Set Individually Per Symbology — continued

Table 11 Label ID Examples

STEP	ACTION	EXAMPLES			
1	Scan the ENTER/EXIT bar code	(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 42	Enable as Prefix	Enable as Suffix	Enable as Prefix	Enable as Suffix
3	Scan the bar code selecting the symbology type you wish to designate label ID characters for using Label ID Symbology Selection, starting on page 43	GS1 DataBar Omnidirectional	Code 39	Interleaved 2 of 5	Code 32
4	Custom Label ID example (desired characters):	D B *	= C 3	+	PH
5	Find hex equivalents from the ASCII table (inside back cover), then scan in these digits/characters using the bar codes in the section: Keypad, starting on page 191. f you make a mistake before the last character, scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	44 42 2A	3D 43 33	2B	50 48
6	Scan the ENTER/EXIT bar code	(Scanner exits Label ID entry)			
7	Scan the ENTER/EXIT bar code once again	(Scanner exits Programming Mode)			
Result:		DB*[bar code data]	[bar code data]=C3	+[bar code data]	[bar code 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. Scan the ENTER/EXIT bar code.
2. Scan the bar code for "Character Conversion" on page 48
3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the ASCII Chart on page 204 on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.
4. Turn to Appendix D, Keypad and scan the bar codes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT bar code to exit Programming Mode.

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

SCANNING FEATURES

Scan Mode

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

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

•Stand Mode/Object Detection has elapsed

•a label has been read

•the trigger is released

This mode is associated with typical handheld reader operation: when the trigger is pulled, scanning starts and the product scans until the trigger is released, or a label is read, or the maximum Stand Mode/Object Detection has elapsed.

Trigger Hold Multiple : When the trigger is pulled, scanning starts and the product scans until the trigger is released or Stand Mode/Object Detection 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 Stand Mode/Object Detection 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[1] 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 reader reads continuously. When Flash is OFF scanning is deactivated.

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

Stand Mode: No trigger pull is required to read a bar code. Scanning turns on automatically when an item is placed in reader's field of view.

Trigger Object Sense: It is similar to Stand Mode. A trigger pull is required to activate the decoder.

1. Controlled by Flash On Time.

Scanning Active Time

This setting specifies the amount of time that the reader stays in scan ON state once the state is entered. The range for this setting is from 1 to 255 seconds in 1-second increments.

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT SCANNING ACTIVE TIME SETTING on page 51.
5. Scan the appropriate three digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 12 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	‘0’, ‘0’ and ‘1’	‘0’, ‘9’ and ‘0’	‘1’, ‘8’ and ‘0’	‘2’, ‘5’ and ‘5’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Flash On Time

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

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT FLASH ON TIME SETTING on page 51.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 13 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	‘0’ and ‘5’	‘1’ and ‘0’	‘5’ and ‘2’	‘9’ and ‘9’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Flash Off Time

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

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT FLASH OFF TIME SETTING on page 52.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 14 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	‘0’ and ‘5’	‘1’ and ‘0’	‘5’ and ‘2’	‘9’ and ‘9’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

LED AND BEEPER INDICATORS

Good Read LED Duration

This feature specifies the amount of time that the Good Read LED remains on following a good read. The good read LED on time can be set within a range of 10 milliseconds to 2,550 milliseconds (0.001 to 2.55 seconds) in 100ms increments.

Follow these instructions to set this feature:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 100ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Go to page 100 and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT GOOD READ LED DURATION SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the following table for some examples of how to set this feature.

Table 15 Good Read LED Duration Setting Example

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	Good Read LED stays on until next trigger pull (00)	20ms	150ms	2550ms (2.55 sec.)
2	**Divide by 10 (and pad with leading zeroes)**	000	002	015	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT GOOD READ LED DURATION SETTING**				
5	**Scan three characters from** Appendix D	'0', '0' and '0'	'0', '0' and '2'	'0', '1' and '5'	'2', '5' and '5'
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 bar code lengths for a given symbology. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode.

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

Follow these instructions to set this feature:

1. Determine the desired character length. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the “Select Length 1 Setting” for the symbology being set.
4. Scan the appropriate two digits from the keypad in Appendix D, that represent the length setting which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 16 Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Character	52 Character	74 Character
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT LENGTH 1 SETTING for the desired symbology**				
4	**Scan two characters from** Appendix D	'0' and '1'	'0' and '7'	'5' and '2'	'7' AND '4'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Set Length 2

This feature specifies one of the bar code lengths for a given symbology. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode.

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

Follow these instructions to set this feature:

1. Determine the desired character length. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the "Select Length 2 Setting" for the symbology being set.
4. Scan the appropriate two digits from the keypad in Appendix D, that represent the length setting which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See the table below for examples of how to set this feature.

Table 17 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (ignore second length)	07 Character	52 Character	74 Character
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT LENGTH 2 SETTING**				
4	**Scan two characters from** Appendix D	'0' and '0'	'0' and '7'	'5' and '2'	'7' AND '4'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

APPENDIX A
TECHNICAL SPECIFICATIONS

The table below contains Physical and Performance Characteristics, User Environment and Regulatory information. Table 34 provides Standard Cable Pinouts.

QD2200 TECHNICAL SPECIFICATIONS

Table 18 QD2200 Technical Specifications

PHYSICAL CHARACTERISTICS	
Color	Black
Dimensions	Height 15.6 cm (6.1") Length 10.7 cm (4.2") Width 6.7 cm (2.6")
Weight (without cable)	QD2200 approx. 123 g (4.34 oz.)
ELECTRICAL CHARACTERISTICS	
Power Supply	QD2220: 5VDC ± 5%
Consumption	Operating (Typical): <500mA @ 5V Standby/Idle (Typical): <50mA @5V
Max. Scan Rate	400 reads/sec
Reading Indicators	Top illumination, Good Read Spot, Beep
ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	0 °C to + 50 °C (+32° F to +122 °F)
Storage Temperature	-40 °C to + 70 °C (-40 ° F to +158 °F)
Humidity	95% non condensing
Drop Resistance	IEC 68-2-32 Tested 1.5 m (6 ft)
ESD Protection	16 KV
Protection Class	IP52
Ambient Light	120000 Lux

Cable Length	Refer to www.datalogic.com
OPTICAL CHARACTERISTICS	
Tilt Tolerance[a]	+/- 45°
Pitch Tolerance[a]	+/- 65°
Skew Tolerance[a]	+/- 65°
Field of View[a]	HORIZONTAL 56° +/- 2°
PCS (Datalogic Test Chart)	minimum 15%

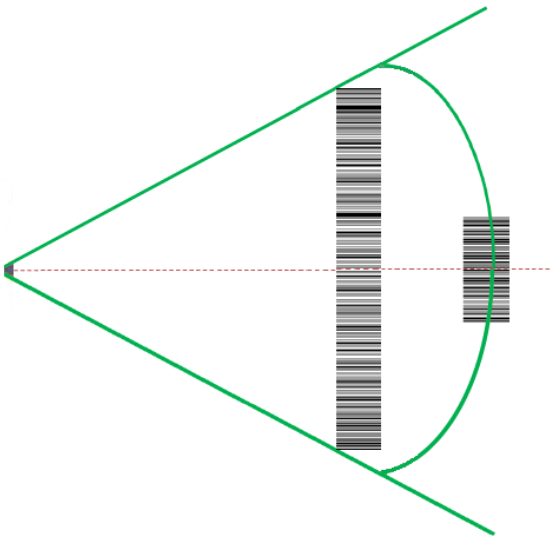
a. Based on ISO 15423 specifications

COMMON READING CHARACTERISTICS

Table 19 Reading Characteristics

READING CHARACTERISTICS	
DOF[a]	Code 39 4mils: 25 to 220mm / 0.98 to 8.66 inch[b]
	Code 39 5mils: 10 to 300mm / 0.39 to 11.8 inch[b]
	Code 39 7.5mils: 10 to 450mm / 0.39 to 17.7 inch[b]
	Code 39 10mils: 10 to 600mm / 0.39 to 23.6 inch[b]
	Code 39 20mils: 30 to 1030mm / 1.18 to 40.55 inch[b]
	EAN13/UPC A 13 mils: 10 to 680mm / 0.39 to 26.77 inch[b]
Resolution (Maximum)	0.0077mm /3mils

a. The depth of field is defined by an arc and not a plane. Shorter bar codes of a given resolution can be read at a further distance than longer bar codes (as explained in the following image).
b. All labels grade A, typical environmental light, 20°C, label inclination 10°.



DECODING CAPABILITIES

DECODE CAPABILITY
1D Bar Codes 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; Datalogic 2 of 5 (China Post Code/Chinese 2 of 5); IATA 2of5 Air cargo code; Code 11; Codabar; Codabar (NW7); ABC Codabar; Code 93; MSI; PZN; Plessey; Anker Plessey; Follet 2 of 5; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.

LED AND BEEPER INDICATIONS

The imager's beeper sounds and its illumination flashes or changes color to indicate various functions or errors on the reader. A "Green Spot" also lights to indicate a good read. The tables below list these indications.

Table 20LED and Beeper Indications

INDICATION	LED	BEEPER
Power-up	Upper LED flashes/blinks on power-up, however, this may be too rapid to view. With a USB interface, the LED blinks until enumeration with the host is completed.	Reader beeps four times at highest frequency and volume upon power-up.
Good Read	Upper green LED comes on for programmed time (default). LED behavior for this indication is configurable using Aladdin utility.	One beep at current frequency, volume, mono/bi-tonal setting upon a successful label scan. It is also possible to upload custom jingles with Aladdin.
ROM Failure	200 ms on ↔ 200 ms off	Reader sounds one error beep at highest volume for 200 ms.
Limited Scanning Label Read	N/A	Reader 'chirps' six times at the highest frequency and current volume.
Reader Disabled	The LED blinks continuously 100 ms on ↔ 900 ms off	N/A

USER INDICATIONS FOR QD2200

Table 21 User Indications for QD2200

STATUS	3GL AND GOOD READ LED
Power-up	OFF
USB Enumeration Phase	250 ms ON ↔ 250 ms OFF
USB Suspend	Depends on Power Cable and specific configurations
Idle	OFF
While Reading	OFF
Decode Done	Solid ON Programmable Duration (300ms default)
Reader Disabled (POS) Communication with host not established	100 ms ON ↔ 900 ms OFF
Firmware Upgrade	250 ms ON ↔ 250 ms OFF
Enter Service Mode	No Effect
Label Programming	No Effect

PROGRAMMING MODE

The following indications ONLY occur when the scanner is in Programming Mode.

INDICATION	DESCRIPTION	LED	BEEPER
Enter Programming Mode	A valid programming label has been scanned.	LED no effect	Scanner sounds four low frequency beeps.
Rejection of Label	Label has been rejected.	N/A	Scanner sounds three times at lowest frequency & current volume.
Acceptance of Partial Label	In cases where multiple labels must be scanned to program one feature, this indication acknowledges each portion as it is successfully scanned.	N/A	Scanner sounds one short beep at highest frequency & current volume.
Acceptance of Programming	Configuration option(s) have been successfully programmed via labels and the scanner has exited Programming Mode.	N/A	Scanner sounds one high frequency beep and four low frequency beeps.
Cancel Item Entry	Cancel label has been scanned.	N/A	Scanner sounds two times at low frequency & current volume.

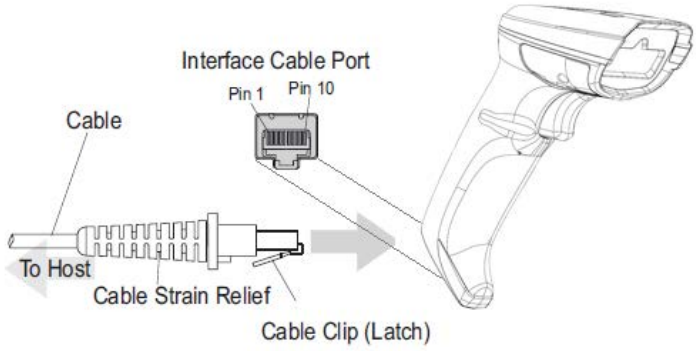
TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Nothing happens when the scan button is pulled.	No power to the imager	Check system power. Ensure power supply is connected.
	Interface or power cables are loose.	Ensure all cable connections are secure.
LED comes on but bar code does not decode.	Imager not programmed for correct bar code type.	Ensure imager is programmed to read the type of bar code scanned.
	Bar code label is unreadable.	Check the label to ensure it is not defaced. Try scanning another bar code type.
	Distance between imager and bar code is incorrect.	Move imager closer to or further from the bar code.
Bar code is decoded but not transmitted to the host.	Imager not programmed for the correct host type.	Scan the appropriate host type bar code..

STANDARD CABLE PINOUTS

Figure 5 and Table 22 on page 178 provide standard pinout information for the scanner's cable.

Figure 5 Standard Cable Pinouts



The signal descriptions in Table 21 apply to the connector on the scanner and are for reference only.

Table 22 Standard Cable Pinouts — Scanner Side

PIN	USB
1	
2	D+
3	D-
4	GND
5	
6	
7	VCC
8	
9	
10	

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 bar codes for each parameter. A column has also been provided for recording of your preferred default settings for these same configurable features.

Table 23 Standard Defaults

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
GLOBAL INTERFACE FEATURES			
Host Commands — Obey/Ignore	Obey		16
USB Suspend Mode	Enable		17
USB-COM			
Intercharacter Delay	No Delay		2
Beep On ASCII BEL	Disable		3
Beep On Not on File	Enable		3
ACK NAK Options	Disable		4
ACK Character	‘ACK’		5
NAK Character	‘NAK’		5
ACK NAK Timeout Value	200 ms		6
ACK NAK Retry Count	3 Retries		5
ACK NAK Error Handling	Ignore Errors Detected		7
Indicate Transmission Failure	Enable		7
Disable Character	‘D’		8
Enable Character	‘E’		8
USB OEM			
USB-OEM Device Usage	Handheld		37

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
USB-OEM Interface Options	Ignore Scanner Configuration Host Commands		37
DATA FORMAT			
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)		39
Global AIM ID	Disable		40
GS1-128 AIM ID	Enable		40
Label ID: Pre-loaded Sets	USA Set		41
Label ID Control	Disable		42
Label ID Symbology Selection			43
Case Conversion	Disable (no case conversion)		48
Character Conversion	0xFFFFFFFFFFFFFFFF (no character conversion)		48
READING PARAMETERS			
Scan Mode	Trigger Single		50
Scanning Active Time	5s		51
Flash On Time	10 = Flash is ON for 1 Second		51
Flash Off Time	06 = Flash is OFF for 600ms		52
Double Read Timeout	0.6 second		52
Stand Mode/Object Detection Sensitivity	Medium		54
Stand Mode/Object Detection Illumination Off Time	04 = Illumination OFF Time 2 second		55
Power On Alert	Power On Alert = Power-up Beep		56
Good Read Beep Type	Mono		56
Good Read Beep Frequency	High		57
Good Read Beep Length	80 msec		58
Good Read Beep Volume	High		59
Green LED Good Read Enable	Enable		60
Good Read LED Duration	300 ms.		61
Good Read: When to Indicate	After Decode		62
Green Spot Duration	Short (300 msec)		63
CODE SELECTION			

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
Code EAN/UPC			
Coupon Control	Enable only UPC/EAN		66
UPC-A			
UPC-A Enable/Disable	Enable		67
UPC-A Check Character Transmission	Send		67
Expand UPC-A to EAN-13	Don't expand		68
UPC-A Number System Character Transmission	Transmit		68
UPC-E			
UPC-E Enable/Disable	Enable		69
UPC-E Check Character Transmission	Send		69
Expand UPC-E to EAN-13	Don't expand		70
Expand UPC-E to UPC-A	Don't expand		70
UPC-E Number System Character Transmission	Transmit		70
GTIN			
GTIN Formatting	Disable		71
EAN 13 (Jan 13)			
EAN-13 Enable/Disable	Enable		72
EAN-13 Check Character Transmission	Send		72
EAN-13 Flag 1 Character	Transmit		73
EAN-13 to ISBN Conversion	Disable		73
ISSN			
EAN-13 to ISSN Conversion	Disable		74
EAN 8			
EAN-8 Enable/Disable	Enable		75
EAN-8 Check Character Transmission	Send		75
Expand EAN-8 to EAN-13	Disable		76
UPC/EAN Global Settings			
UPC/EAN Price Weight Check	Disable		77

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
UPC/EAN Quiet Zones	Two Modules		78
ADD-ONS			
Optional Add-ons	Disable P2, P5, P8		80
Optional Add-On Timer	70 ms		81
GS1 DATABAR™ OMNIDIRECTIONAL			
GS1 DataBar Omnidirectional Enable/Disable	Disable		82
GS1 DataBar Omnidirectional to GS1-128 Emulation	Disable		82
GS1 DataBar Expanded Enable/Disable	Disable		83
GS1 DataBar Expanded to GS1-128 Emulation	Disable		83
GS1 DataBar Expanded Length Control	Variable		84
GS1 DataBar Expanded Set Length 1	1		84
GS1 DataBar Expanded Set Length 2	74		85
GS1 DATABAR™ LIMITED			
GS1 DataBar Limited Enable/Disable	Disable		86
GS1 DataBar Limited to GS1-128 Emulation	Disable		86
CODE 39			
Code 39 Enable/Disable	Enable		87
Code 39 Check Character Calculation	Don't calculate		87
Code 39 Check Character Transmission	Send		88
Code 39 Start/Stop Character Transmission	Don't transmit		88
Code 39 Full ASCII	Disable		89
Code 39 Quiet Zones	No quiet zones		89
Code 39 Length Control	Variable		90
Code 39 Set Length 1	1		91
Code 39 Set Length 2	50		92
CODE 32 (Italian Pharmaceutical Code)			

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
Code 32 Enable/Disable	Disable		95
Code 32 Check Character Transmission	Don't Send		95
Code 32 Start/Stop Character Transmission	Don't Transmit		96
CODE 39 CIP (French Pharmaceutical Code)			
Code 39 CIP Enable/Disable	Disable		96
SPECIAL CODES			
Code 128			
Code 128 Enable/Disable	Enable		97
Expand Code 128 to Code 39	Don't Expand		97
Code 128 Check Character Transmission	Don't Send		98
Code 128 Function Character Transmission	Don't Send		98
Code 128 Quiet Zones	Auto		99
Code 128 Length Control	Variable		99
Code 128 Set Length 1	1		100
Code 128 Set Length 2	80		100
GS1-128			
GS1-128 Enable	Transmit in GS1-128 Data Format		101
INTERLEAVED 2 of 5			
I 2 of 5 Enable/Disable	Disable		102
I 2 of 5 Check Character Calculation	Disable		102
I 2 of 5 Check Character Transmission	Send		103
I 2 of 5 Length Control	Variable		104
I 2 of 5 Set Length 1	6		104
I 2 of 5 Set Length 2	62		105
INTERLEAVED 2 of 5 CIP HR			
Interleaved 2 of 5 CIP HR Enable/Disable	Disable		105
STANDARD 2 of 5			
Standard 2 of 5 Enable/Disable	Disable		106

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
Standard 2 of 5 Check Character Calculation	Disable		106
Standard 2 of 5 Check Character Transmission	Send		107
Standard 2 of 5 Length Control	Variable Length		107
Standard 2 of 5 Set Length 1	08 (8 characters)		108
Standard 2 of 5 Set Length 2	50 (50 characters)		108
COMPRESSED 2 of 5			
Compressed 2 of 5 Enable/Disable	Disable		109
Compressed 2 of 5 Check Character Calculation	Disable		109
Compressed 2 of 5 Check Character Transmission	Send		110
Compressed 2 of 5 Length Control	Variable Length		110
Compressed 2 of 5 Set Length 1	01 (1 characters)		111
Compressed 2 of 5 Set Length 2	50 (50 characters)		111
DATALOGIC 2 OF 5			
Datalogic 2 of 5 Enable/Disable	Disable		112
Datalogic 2 of 5 Check Character Calculation	Disable		112
Datalogic 2 of 5 Check Character Transmission	Send		113
Datalogic 2 of 5 Length Control	Variable Length		113
Datalogic 2 of 5 Set Length 1	1 = 06 (6 characters)		114
Datalogic 2 of 5 Set Length 2	50 (50 characters)		114
INDUSTRIAL 2 of 5			
Industrial 2 of 5 Enable/Disable	Disable		115
Industrial 2 of 5 Check Character Calculation	Disable		115
Industrial 2 of 5 Check Character Transmission	Send		116
Industrial 2 of 5 Length Control	Variable		116
Industrial 2 of 5 Set Length 1	1 = 06 (6 characters)		117
Industrial 2 of 5 Set Length 2	2 = 50 (50 characters)		117

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
CODE IATA			
IATA Enable/Disable	Disable		118
IATA Check Character Transmission	Send		118
FOLLET 2 OF 5			
Follett 2 of 5 Enable/Disable	Disable		119
CODABAR			
Codabar Enable/Disable	Disable		120
Codabar Check Character Calculation	Disable		120
Codabar Check Character Transmission	Send		121
Codabar Start/Stop Character Transmission	Transmit		121
Codabar Start/Stop Character Set	abcd/abcd		122
Codabar Start/Stop Character Match	Don't Require Match		122
Codabar Quiet Zones	Quiet Zones on two sides		123
Codabar Length Control	Variable		124
Codabar Set Length 1	1 = 03 (3 characters)		124
Codabar Set Length 2	2 = 50 (50 characters)		125
ABC CODABAR			
ABC Codabar Enable/Disable	Disable		126
ABC Codabar Concatenation Mode	Static		126
ABC Codabar Dynamic Concatenation Timeout	20 (200 ms)		127
ABC Codabar Force Concatenation	Disable		127
ISBT-128			
ISBT 128 Concatenation	Disable		128
ISBT 128 Concatenation Mode	Static		128
ISBT 128 Dynamic Concatenation Timeout	200 msec		129
ISBT 128 Force Concatenation	Disable		130
CODE 11			
Code 11 Enable/Disable	Disable		131

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
Code 11 Check Character Calculation	Check C and K		131
Code 11 Check Character Transmission	Send		132
Code 11 Length Control	Variable		132
Code 11 Set Length 1	04 (4 characters)		133
Code 11 Set Length 2	50 (50 characters)		133
CODE 93			
Code 93 Enable/Disable	Disable		134
Code 93 Check Character Calculation	Enable Check C and K		134
Code 93 Check Character Transmission	Disable		135
Code 93 Length Control	Variable		135
Code 93 Set Length 1	1		136
Code 93 Set Length 2	50		136
Code 93 Quiet Zones	Auto		137
MSI			
MSI Enable/Disable	Disable		138
MSI Check Character Calculation	Enable Mod10		138
MSI Check Character Transmission	Send		139
MSI Length Control	Variable		139
MSI Set Length 1	1		140
MSI Set Length 2	50		140
PLESSEY			
Plessey Enable/Disable	Disable		141
Plessey Check Character Calculation	Plessey std check char. verification		141
Plessey Check Character Transmission	Send		142
Plessey Length Control	Variable		142
Plessey Set Length 1	01 (one character)		143
Plessey Set Length 2	50 (50 characters)		143
BC412			
BC412 Enable/Disable	Disable		144

PARAMETERS	DEFAULT	YOUR SETTING	PAGE NUMBER
BC412 Check Character Calculation	Calculate		144
BC412 Length Control	Variable		145
BC412 Set Length 1	01 (one character)		146
BC412 Set Length 2	50 (50 characters)		146

DEFAULT EXCEPTIONS

Table 24 - Default Exceptions by Interface Type

PARAMETER	DEFAULT EXCEPTION
Interfaces: USB-OEM	
Global Suffix	No Global Suffix
Interfaces: All USB Keyboard	
No unique settings	

APPENDIX C
SAMPLE BARCODES

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

SAMPLE BARCODES

1D Barcodes

UPC-A

EAN-13

Code 39

Code 128

Interleaved 2 of 5

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 82).

GS1 DataBar™ Expanded

1234890hjio9900mnb

GS1 DataBar™ Limited

08672345650916

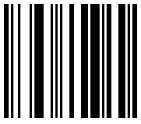
GS1 Databar™ (-14)

GS1 DataBar™ Omnidirectional Truncated

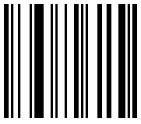
55432198673467

APPENDIX D
KEYPAD

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


A

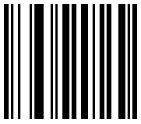

B

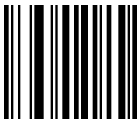

C


D


E

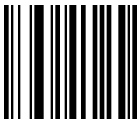

F


0



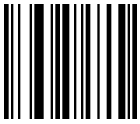
1

2



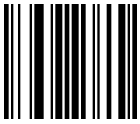
3

4



5

6



7

8

9

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 201).

Single Press and Release Keys

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

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

INTERFACE TYPE PC AT PS/2, USB-KEYBOARD OR USB-KEYBOARD FOR APPLE

Table 25. Scancode Set When Control Character is 00 or 01

	x0	x1	x2	x3	x4	x5	X6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C(S)+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C+\	GS C+]	RS C+^	US C(S)+_
2x	SP	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	Del
8x	€	Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Home	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr ↑		‘	*f*	„	…	†	‡	ˆ	‰	Š	‹	Ś	‹	Œ	
Bx	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
Cx	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Dx	Ð		Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

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

INTERFACE TYPE PC AT PS/2, USB-KEYBOARD OR USB-KEYBOARD FOR APPLE (CONTINUED)

Table 26. Scancode Set When Control Character is 02

	x0	x1	x2	x3	x4	x5	X6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓	Cr ↑	BS	Tab	→	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Space	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	Del
8x	€		‘	*f*	„	…	†	‡	ˆ	‰	Š	‹	Ś	‹	Œ	
9x		‘	’	“	”	•	–	—	˜	™	š	›	œ		ž	Ÿ
Ax	NBSP	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
Bx	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
Cx	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Dx	Ð		Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

INTERFACE TYPE PC AT PS/2 ALT MODE OR USB-KEYBOARD ALT MODE

Table 27. Scancode Set When Control Character is 00 or 01

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

INTERFACE TYPE PC AT PS/2 ALT MODE OR USB-KEYBOARD ALT MODE (CONTINUED)

Table 28. Scancode Set When Control Character is 02

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

DIGITAL INTERFACE

Table 29. Scancode Set When Control Character is 00 or 01

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C(S)+\	GS C+]	RS C(S)+^	US C(S)+_
2x	Space	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	Del
8x		Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	F13	F14	F15	F16	↑	↓	←	→					Cl ↓	Cl ↑	

Table 30. Scancode Set When Control Character is 02

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

IBM31XX 102-KEY

Table 31. Scancode Set When Control Character is 00 or 01

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C(S)+\	GS C+]	RS C(S)+^	US C(S)+_
2x	Space	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	‘	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{	|	}		Del
8x		Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Enter	Reset	Insert	Delete	Field -	Field +	Enter paddle	Printl	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr ↑															

Table 32. Scancode Set When Control Character is 02

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓	Cr ↑	BS	Tab	→	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Space	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	‘	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{	|	}		Del

IBM XT

Table 33. Scancode Set When Control Character is 00 or 01

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS C(S)+H	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C(S)+\	GS C+]	RS C(S)+^	US C(S)+_
2x	Space	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	‘	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{	|	}		Del
8x		Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Home	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr ↑															

Table 34. Scancode Set when Control Character 02

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓	Cr ↑	BS	Tab	→	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Space	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	‘	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{	|	}		Del

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Windows-1252 is a character encoding of the Latin alphabet, used by default in the legacy components of Microsoft Windows in English and some other Western languages.

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL 0000	STX 0001	SOT 0002	ETX 0003	EOT 0004	ENQ 0005	ACK 0006	BEL 0007	BS 0008	HT 0009	LF 000A	VT 000B	FF 000C	CR 000D	SO 000E	SI 000F
10	DLE 0010	DC1 0011	DC2 0012	DC3 0013	DC4 0014	NAK 0015	SYN 0016	ETB 0017	CAN 0018	EM 0019	SUB 001A	ESC 001B	FS 001C	GS 001D	RS 001E	US 001F
20	SP 0020	! 0021	" 0022	# 0023	$ 0024	% 0025	& 0026	' 0027	(0028	) 0029	* 002A	+ 002B	, 002C	- 002D	. 002E	/ 002F
30	0 0030	1 0031	2 0032	3 0033	4 0034	5 0035	6 0036	7 0037	8 0038	9 0039	: 003A	; 003B	< 003C	= 003D	> 003E	? 003F
40	@ 0040	A 0041	B 0042	C 0043	D 0044	E 0045	F 0046	G 0047	H 0048	I 0049	J 004A	K 004B	L 004C	M 004D	N 004E	O 004F
50	P 0050	Q 0051	R 0052	S 0053	T 0054	U 0055	V 0056	W 0057	X 0058	Y 0059	Z 005A	[005B	\ 005C	] 005D	^ 005E	_ 005F
60	` 0060	a 0061	b 0062	c 0063	d 0064	e 0065	f 0066	g 0067	h 0068	i 0069	j 006A	k 006B	l 006C	m 006D	n 006E	o 006F
70	p 0070	q 0071	r 0072	s 0073	t 0074	u 0075	v 0076	w 0077	x 0078	y 0079	z 007A	{ 007B	| 007C	} 007D	~ 007E	DEL 007F
80	€ 20AC		‚ 201A	ƒ 0192	„ 201E	… 2026	† 2020	‡ 2021	ˆ 02C6	‰ 2030	Š 0160	‹ 2039	Œ 0152		Ž 017D	
90		' 2018	' 2019	" 201C	" 201D	• 2022	– 2013	— 2014	˜ 02DC	™ 2122	š 0161	› 203A	œ 0153		ž 017E	Ÿ 0178
A0	NBSP 00A0	¡ 00A1	¢ 00A2	£ 00A3	¤ 00A4	¥ 00A5	¦ 00A6	§ 00A7	¨ 00A8	© 00A9	ª 00AA	« 00AB	¬ 00AC	- 00AD	® 00AE	¯ 00AF
B0	° 00B0	± 00B1	² 00B2	³ 00B3	´ 00B4	µ 00B5	¶ 00B6	· 00B7	¸ 00B8	¹ 00B9	º 00BA	» 00BB	¼ 00BC	½ 00BD	¾ 00BE	¿ 00BF
C0	À 00C0	Á 00C1	Â 00C2	Ã 00C3	Ä 00C4	Å 00C5	Æ 00C6	Ç 00C7	È 00C8	É 00C9	Ê 00CA	Ë 00CB	Ì 00CC	Í 00CD	Î 00CE	Ï 00CF
D0	Ð 00D0	Ñ 00D1	Ò 00D2	Ó 00D3	Ô 00D4	Õ 00D5	Ö 00D6	× 00D7	Ø 00D8	Ù 00D9	Ú 00DA	Û 00DB	Ü 00DC	Ý 00DD	Þ 00DE	ß 00DF
E0	à 00E0	á 00E1	â 00E2	ã 00E3	ä 00E4	å 00E5	æ 00E6	ç 00E7	è 00E8	é 00E9	ê 00EA	ë 00EB	ì 00EC	í 00ED	î 00EE	ï 00EF
F0	ð 00F0	ñ 00F1	ò 00F2	ó 00F3	ô 00F4	õ 00F5	ö 00F6	÷ 00F7	ø 00F8	ù 00F9	ú 00FA	û 00FB	ü 00FC	ý 00FD	þ 00FE	ÿ 00FF

APPENDIX F
ASCII CHART

ASCII Char.	Hex No.	ASCII Char.	Hex No.	ASCII Char.	Hex No.	ASCII Char.	Hex No.
NUL	00	SP	20	@	40	‘	60
SOH	01	!	21	A	41	a	61
STX	02	“	22	B	42	b	62
ETX	03	#	23	C	43	c	63
EOT	04	$	24	D	44	d	64
ENQ	05	%	25	E	45	e	65
ACK	06	&	26	F	46	f	66
BEL	07	’	27	G	47	g	67
BS	08	(	28	H	48	h	68
HT	09	)	29	I	49	i	69
LF	0A	*	2A	J	4A	j	6A
VT	0B	+	2B	K	4B	k	6B
FF	0C	,	2C	L	4C	l	6C
CR	0D	-	2D	M	4D	m	6D
SO	0E	.	2E	N	4E	n	6E
SI	0F	/	2F	O	4F	o	6F
DLE	10	0	30	P	50	p	70
DC1	11	1	31	Q	51	q	71
DC2	12	2	32	R	52	r	72
DC3	13	3	33	S	53	s	73
DC4	14	4	34	T	54	t	74
NAK	15	5	35	U	55	u	75
SYN	16	6	36	V	56	v	76
ETB	17	7	37	W	57	w	77
CAN	18	8	38	X	58	x	78
EM	19	9	39	Y	59	y	79
SUB	1A	:	3A	Z	5A	z	7A
ESC	1B	;	3B	[	5B	{	7B
FS	1C	<	3C	\	5C	|	7C
GS	1D	=	3D	]	5D	}	7D
RS	1E	>	3E	^	5E	~	7E
US	1F	?	3F	_	5F	DEL	7F

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